Guinea-Bissau's Nationally Determined Contribution 3.0 (NDC 3.0)

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Abbreviations

BAU	Business-as-Usual
BRT	Bus Rapid Transit
BTR	Biennial Transparency Report
BTR1	First Biennial Transparency Report
CH_4	Methane
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
ETF	Enhanced Transparency Framework
EV	Electric Vehicle
EAGB	Electricidade e Águas da Guiné-Bissau
FAO	Food and Agriculture Organization of the United Nations
GHG	Greenhouse Gas
GACMO	Green House Gas Abatement Cost Model
HVAC	Heating, Ventilation and Air Conditioning
IPCC	Intergovernmental Panel on Climate Change
IPPU	Industrial Processes and Product Use
$ktCO_2e$	Kilotonne of Carbon Dioxide Equivalent
LDC	Least Developed Country
LED	Light Emitting Diode
LPG	Liquefied Petroleum Gas
LULUCF	Land Use, Land-Use Change and Forestry
MSW	Municipal Solid Waste
N_2O	Nitrous Oxide
NC	National Communication
NC4	Fourth National Communication
NDC	Nationally Determined Contribution
NIR	National Inventory Report
OMVG	Organisation pour la Mise en Valeur du fleuve Gambie
PANEE	National Action Plan for Energy Efficiency
PV	Photovoltaic
REDD+	Reducing Emissions from Deforestation and Forest Degradation
SIDS	Small Island Developing State
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

PREFACE

The Republic of Guinea-Bissau is pleased to present its Third Nationally Determined Contribution (NDC 3.0), reaffirming its unwavering commitment to the objectives of the Paris Agreement and to the global effort to address climate change while advancing sustainable development.

As a Least Developed Country (LDC) and a Small Island Developing State (SIDS), Guinea-Bissau remains among the countries most vulnerable to the adverse impacts of climate change. Sea level rise, coastal erosion, saltwater intrusion, changing rainfall patterns, prolonged droughts, floods, and other extreme weather events increasingly threaten our ecosystems, livelihoods, food security, water resources, public health, and national development. These impacts are particularly severe for rural communities, whose well-being depends largely on agriculture, fisheries, forests, and other natural resources.

NDC 3.0 reflects a new phase of Guinea-Bissau's climate ambition. Building upon the achievements and lessons learned from our previous NDCs, this updated contribution incorporates the latest scientific knowledge, improved national data, and the outcomes of an inclusive and participatory consultation process involving government institutions, local authorities, civil society, the private sector, academia, youth, women, and development partners. It is also informed by the outcomes of the first Global Stocktake under the Paris Agreement and aligns with the country's long-term vision for resilient, low-emission, and inclusive development.

Guinea-Bissau commits to strengthening climate action across all sectors of the economy through this NDC. On mitigation, the country will pursue a sustainable development pathway that reduces greenhouse gas emissions while preserving and enhancing its unique natural capital, particularly its forests, mangroves, and other ecosystems that continue to play a critical role as carbon sinks and providers of essential ecosystem services.

On adaptation, Guinea-Bissau places resilience at the center of its national development agenda. Priority actions focus on strengthening the adaptive capacity of vulnerable communities and enhancing the resilience of key sectors, including agriculture, fisheries, forestry, water resources, coastal zones, biodiversity, health, energy, infrastructure, and disaster risk management.

This NDC also recognizes that effective climate action requires strong institutions, sound governance, reliable climate information, enhanced transparency, technology transfer, innovation, and sustained investment in human and institutional capacities. It further emphasizes the importance of ensuring that climate policies are inclusive, gender-responsive, and sensitive to the needs and aspirations of women, youth, children, indigenous peoples, and local communities, ensuring that no one is left behind in the transition towards climate-resilient development.

The successful implementation of this NDC will depend on effective national coordination and the active engagement of all stakeholders. It also requires strengthened international cooperation through predictable and adequate climate finance, technology development and transfer, capacity-building, and equitable access to the mechanisms established under the Paris Agreement, including those provided under Article 6.

Guinea-Bissau remains firmly committed to fulfilling its obligations under the United Nations Framework Convention on Climate Change and the Paris Agreement. Through this NDC 3.0, we reaffirm our determination to contribute, in accordance with our national circumstances and capabilities, to the achievement of the long-term goals of the Paris Agreement and the 2030

Agenda for Sustainable Development.

The Government of Guinea-Bissau expresses its deep appreciation to the United Nations, through the United Nations Development Programme (UNDP), for the technical and financial support provided to the preparation of this NDC 3.0.

Climate action is not only an environmental imperative; it is a strategic investment in the future of our nation. Together, we can build a more resilient, prosperous, inclusive and sustainable Guinea-Bissau for present and future generations.

Bissau,

Dr. Carlos Pinto Pereira
Minister of Environment and Climate Action
Republic of Guinea-Bissau

EXECUTIVE SUMMARY

Guinea-Bissau's Nationally Determined Contribution (NDC 3.0) sets out a comprehensive framework to advance climate action while aligning with national development priorities and international commitments under the UNFCCC. The document presents an integrated approach that combines mitigation, adaptation and cross-cutting enablers to support a low-emission and climate-resilient development pathway. The country remains a net carbon sink due to its significant forest cover and the mitigation strategy focuses on limiting future emissions growth while preserving this status. In the mitigation scenario, emissions excluding land use, land-use change and forestry (LULUCF) are considered. Guinea-Bissau commits to reducing its **GHG emissions by 40% in 2035**, relative to the BAU scenario, considering the emitting sectors (Agriculture, Energy and Waste), **reducing emissions from 4,214 $ktCO_2e$ to 2,512 $ktCO_2e$**.

The Energy Sector presents the greatest mitigation effort with **90% reduction**, supported by the expansion of renewable energy, rural electrification, improvements in energy efficiency and the dissemination of clean cooking technologies.

The Agricultural Sector, with a **30% reduction**, through climate-smart agriculture, improved livestock management, agroecological practices and increased productivity.

The Waste Sector, with a **54% reduction**, is based on improved solid waste management, organic waste composting and plastic waste recycling.

In the **LULUCF sector**, the sector continues to be the main national carbon sink, increasing net sequestration by **approximately 917 $ktCO_2e$**, because of the conservation and restoration of forests, mangroves and other ecosystems. These actions aim to balance emissions reduction with socioeconomic development, ensuring that climate interventions also generate additional benefits, such as improved livelihoods, access to energy and environmental sustainability.

Guinea-Bissau's high vulnerability to climate risks such as sea-level rise, coastal erosion, droughts and changing rainfall patterns. The adaptation strategy prioritizes key sectors including agriculture, water resources, coastal zones, health, infrastructure, disaster risk management and energy access. Targeted interventions aim to strengthen resilience, protect livelihoods and enhance adaptive capacity, particularly for vulnerable communities. The approach integrates nature-based solutions, community participation and gender-responsive measures to ensure inclusive and sustainable outcomes.

The implementation of NDC 3.0 requires significant financial, technical and institutional support. Mitigation measures will require significant investment, with a substantial share expected to depend on international climate finance. Adaptation actions require increased financial support, complemented by technology transfer and capacity-building initiatives to enable their effective implementation. Strengthening governance systems, data frameworks and coordination mechanisms remains essential to ensure effective implementation, monitoring and reporting.

The NDC 3.0 reflects Guinea-Bissau's commitment to contribute to global climate goals while addressing national circumstances as a Least Developed Country and Small Island Developing State . The framework provides a structured pathway to enhance resilience, promote sustainable development and mobilize international support, positioning the country to transition toward a climate-resilient and low-emission future.

1. INTRODUCTION

The Government of Guinea-Bissau has identified climate change as a critical development challenge that affects economic stability, natural resources and the well-being of its population. The preparation of NDC 3.0 reflects a strategic effort to strengthen climate ambition, improve planning frameworks and align national priorities with global climate commitments under the Paris Agreement. The document builds on previous national communications, biennial transparency reports and earlier NDC submissions, incorporating updated data, improved methodologies and enhanced stakeholder engagement processes.

The NDC 3.0 adopts an integrated and evidence-based approach that combines mitigation and adaptation actions within a unified framework. The preparation process followed an inclusive and iterative approach, engaging government institutions, technical experts, development partners, civil society and local communities to reflect national and sectoral priorities. The framework emphasizes alignment with national development strategies, ensuring that climate actions contribute to sustainable growth, poverty reduction and resilience-building across sectors.

The structure of the document provides a clear progression from context to implementation, with each section addressing a specific component of climate action. The national context section presents an overview of Guinea-Bissau's geographic, climatic and socio-economic conditions, highlighting key vulnerabilities and development challenges that shape the country's climate response. The mitigation section outlines sector-wise emission trajectories, targets and priority measures across agriculture, energy, LULUCF and waste, supported by quantitative analysis and scenario modelling. The adaptation section focuses on resilience-building by identifying priority sectors and defining targeted interventions in areas such as agriculture, water, coastal zones, health, infrastructure and disaster risk management.

The cross-cutting section describes the enabling conditions required for effective implementation, including governance strengthening, stakeholder engagement, gender and social inclusion and capacity development. The means of implementation section presents financial requirements, investment priorities, conditional elements and potential funding sources, along with a pipeline of projects to support execution. Supporting sections provide information on methodologies, assumptions and transparency elements, ensuring clarity, consistency and completeness of the NDC.

Implementation of NDC 3.0 is designed as a phased process over the period 2025–2035, enabling gradual scaling of interventions across sectors. The framework highlights the importance of coordinated governance, stakeholder participation and international cooperation to address financial and technical constraints. Continued engagement with development partners and climate finance mechanisms remains essential to support implementation and achieve the intended outcomes.

The NDC 3.0 provides a structured foundation for advancing climate action in Guinea-Bissau, supporting the transition toward a resilient and sustainable development pathway while contributing to global efforts to address climate change.

2. NATIONAL CONTEXT

2.1 Geographic and Climate Profile

Guinea-Bissau is located on the west coast of Africa, bordered by Senegal, Guinea and the Atlantic Ocean. The national territory covers approximately 36,125 km^2, including the Bijagós Archipelago. Guinea-Bissau stretches 330 km from east to west and approximate more 200 km from north to south as shown in Figure 1. The terrain is predominantly flat, with low-lying coastal areas prone to flooding and inland zones used for agriculture.

Figure 1: Geographic Location of Guinea- Bissau

These geographic characteristics increase exposure to flooding in coastal areas and rainfall variability in inland regions. The climate is humid Sudanese, with high temperatures and seasonal variability[1].

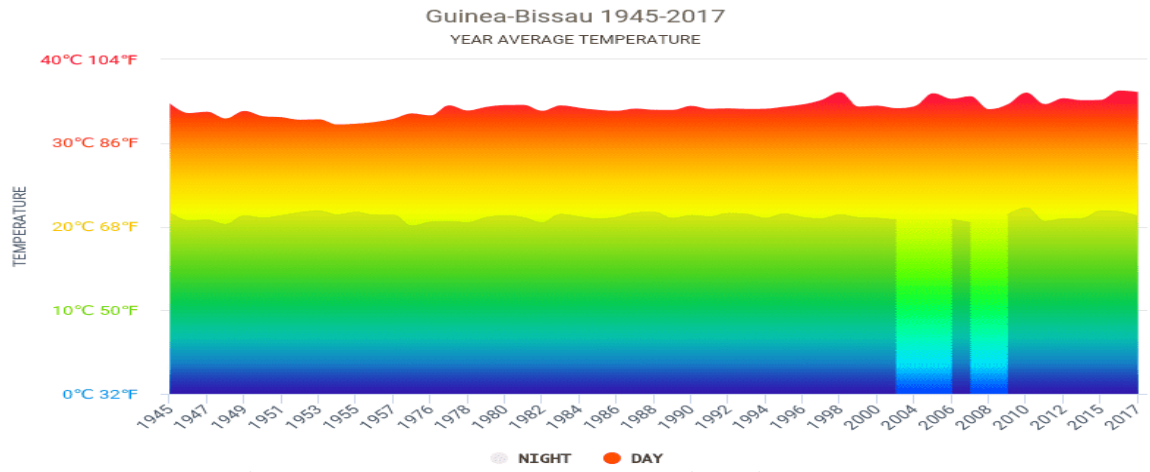


Figure 2: Yearly Average Temperatures of Guinea-Bissau (1945 - 2017)

The annual and monthly average temperatures are high and vary from season to season. Long-term observations of monthly average temperatures show a steady increase from 1945 to 2017

[1] Sambou et al 2018

as shown in Figure 2. Rainfall is generally abundant, dividing the country into four zones based on isohyets. The south-western regions are characterised by heavy rainfall of up to 2,500 mm per year, the western regions by rainfall ranging between 2,000 and 2,500 mm, the northern and central regions by rainfall of up to 2,000 mm and the eastern regions by rainfall of around 1,500 mm. However, variations in rainfall have remained consistent since the 1970s. Deficits have ranged from 52.7 mm to 179.8 mm across different observations as shown in Figure 3. Similarly, isohyets are shifting further south, resulting in frequent droughts[2].

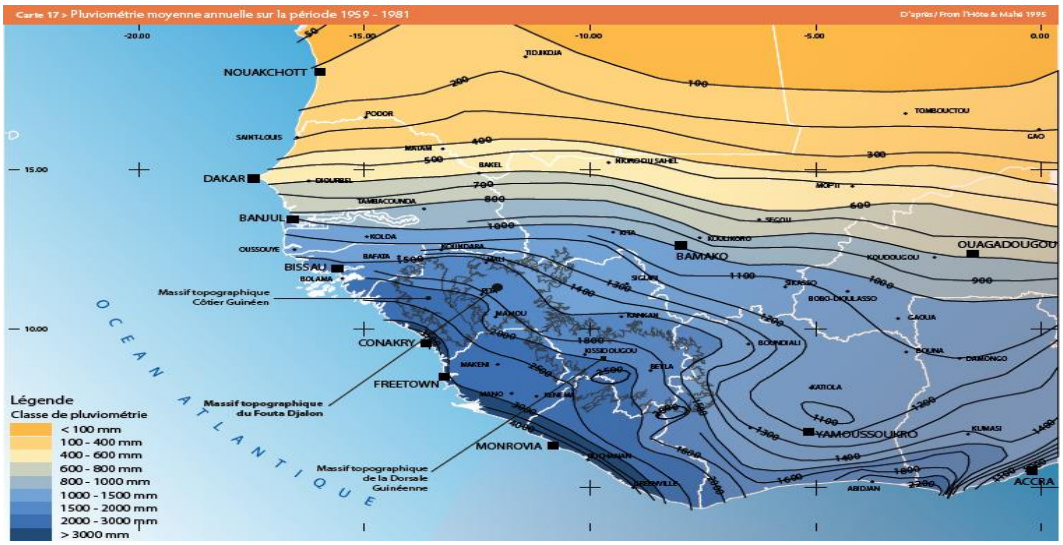


Figure 3: Rainfall Distribution in Guinea-Bissau

Projections of rainfall for the period 2016–2045 indicate a continued decline in rainfall duration and intensity, as well as later starts and earlier ends to the rainy season. These regressive trends characterised by a 30% decrease in rainfall, and a more southerly migration of isohyets affect the whole country[3].

Climate elements exhibit significant variability and characterised by the following trends:

- **High spatiotemporal variability of extremes**: Flood events alternate with prolonged drought cycles. In wetter years, flooding is frequent and can persist for extended periods, while in drier years, widespread drought conditions lead to substantial losses in agricultural productivity, livestock and livelihoods.
- **Rising temperatures**: Average temperatures show an increasing trend, contributing to elevated evapotranspiration rates and accelerating the drying of rivers and surface water resources.
- **Declining soil productivity**: Soil fertility is deteriorating across large parts of the country due to the combined impacts of climate change and deforestation.
- **Loss of biodiversity**: Environmental degradation is intensifying, accompanied by a growing risk of species loss and ecosystem decline.

2.2 Population and Socio-Economic Profile

Guinea-Bissau has experienced sustained and rapid population growth since gaining

[2] PANA, 2006

[3] CGIAR Research Program on Climate Change, Agriculture and Food Security

independence. The population[4] increased from 0.56 million in 1955 to 2.2 million in 2025 as shown in Figure 4, driven by rising birth rates and declining mortality.

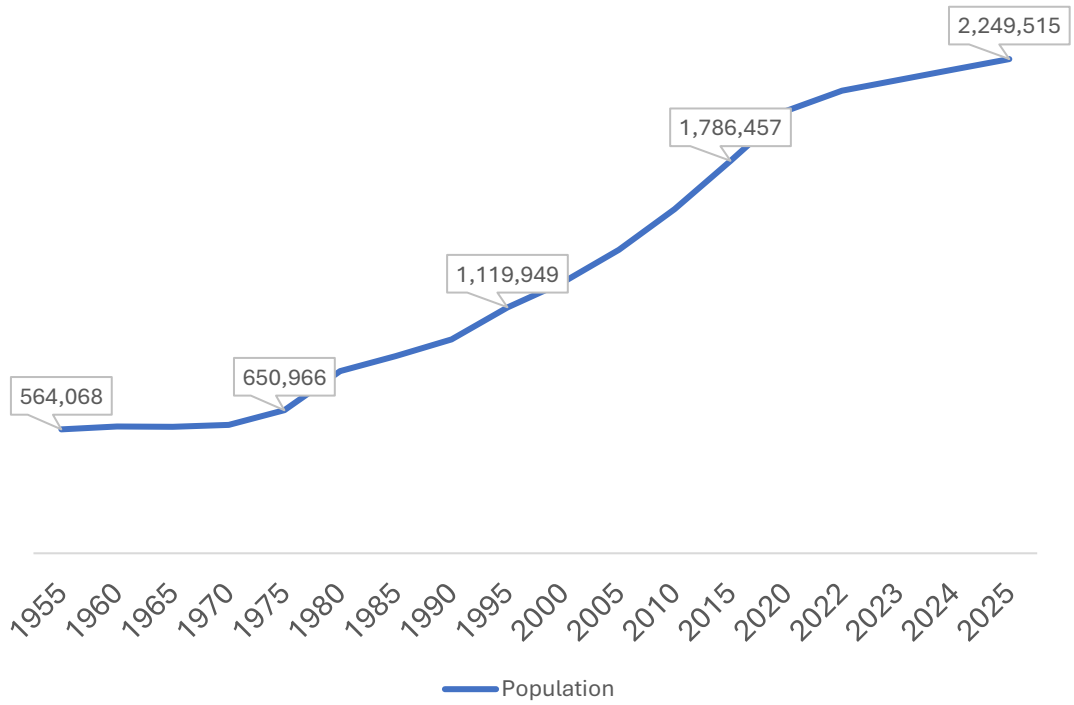


Figure 4: Population Trend - Guinea-Bissau (1955 – 2025)

Population growth has driven expansion of cultivated land, particularly cashew monoculture, leading to deforestation and also has a significant impact on vegetation cover due to increased domestic energy requirements. Consumption of wood for firewood and charcoal is one of the main factors contributing to deforestation in Guinea-Bissau with over the 90% of household energy comes from charcoal (~85%) and firewood (~5%). Guinea-Bissau has faced a series of political, economic and ecological challenges since gaining independence. The country remains a low-income economy, ranking 175th out of 189 countries in the 2022 Human Development Index[5] and it is highly dependent on climate sensitive sectors.

Agriculture contributes about 52% of GDP, employs 70% of the labor force and accounts for 87% of exports[6]. In 2025, cashew exports supported economic growth by about 5.5%. Despite its central role in the economy, agriculture remains climate-dependent and is fundamentally seasonal and rain-fed, relying on both cash crops (cashew nuts) and subsistence crops (millet, sorghum, maize, tubers and rice). The livestock farming plays an important role in the country's economy, especially in rural areas where it contributes to wealth creation. The rainfall shortages observed annually or over a series of years are disrupting the sector, decimating livestock and causing serious social and economic problems. They also revive tensions with other socio-professional categories during transhumance[7].
The fisheries sector plays a significant role in Guinea-Bissau's economy, accounting for around 40% of the balance of payments through revenues from fishing licences and international

[4] Worldometer- Guinea-Bissau Population
[5] The Human Development Index (HDI) considers three components: standard of living (GDP per capita), health (life expectancy) and education (length of schooling).
[6] IFAD
[7] Transhumance is the seasonal, regulated movement of livestock (such as sheep, cattle etc.) and their human herders between fixed summer (highland) and winter (lowland) pastures.

agreements. However, its contribution to the national economy remains highly variable and closely linked to political and institutional stability. Between 2010 and 2021, the sector's share fluctuated considerably, reflecting this dependence. Overall, Guinea-Bissau's economy is fragile and highly climate-sensitive, with key sectors such as agriculture and fisheries dependent on rainfall patterns and vulnerable to climate impacts.

2.3 Natural Resources, Land Use & Vulnerability to Climate Change

Guinea-Bissau's economy and livelihoods are intrinsically linked to its natural assets protecting and sustainably managing these assets is therefore fundamental to achieving climate resilience, food security, economic diversification and sustainable development under the NDC 3.0. Forests, agricultural land, fisheries, water resources and coastal ecosystems sustain the country's principal economic activities, provide critical ecosystem services, and support the well-being of most of the population. Forest ecosystems, comprising mangroves, riparian forests and dryland forests, provide ecological, economic and socio-cultural services and contributed approximately 10.43% to national GDP in 2021. However, these resources are under increasing pressure from agricultural expansion, logging, mining, charcoal production and bushfires. The conversion of forests into agricultural land remains the primary driver of deforestation. Land degradation and ecosystem transformation, including the transition from forests to savannah landscapes, are increasing, leading to reduced ecosystem services, declining agricultural productivity and heightened food insecurity.

Climate variability is increasing across the country and is already affecting natural systems and livelihoods. Average temperatures have risen by about 1°C since the 1960s and are projected to increase by approximately 1.5°C to 3°C by 2100[8], depending on emissions scenarios. Rainfall patterns have become more variable, with an overall declining trend, isohyets shifting by about 100 km and annual precipitation decreasing by 100 to 500 mm. Regional disparities are evident, with more frequent droughts in Bafata, Gabu and Oio and excessive rainfall in Tombali and Quinara. Sea-level rise is affecting coastal areas, with around 70% of the population exposed to risks such as coastal flooding and salinization of rice fields, reducing the availability of productive land. National assessments further indicate increasing frequency and intensity of storms, prolonged droughts, heatwaves and irregular rainfall patterns, with climate risks expected to intensify over time.

Climate change impacts in Guinea-Bissau are affecting multiple sectors, with rural communities, women, children and other vulnerable groups facing the greatest risks. Agriculture and livestock are increasingly exposed to droughts, floods, heat stress and soil salinization, reducing food security and rural incomes. Water resources are under pressure from declining rainfall, groundwater salinization and pollution, while weak sanitation systems increase public health risks. Coastal areas remain highly vulnerable to erosion, flooding and ecosystem degradation, affecting fisheries, settlements and infrastructure. At the same time, climate-sensitive diseases, water-borne illnesses, floods and extreme weather events are placing additional pressure on health systems and disaster response capacity. As per the World Bank's Country Climate Development Report (CCDR)[9] for Guinea-Bissau, a 7.3% reduction in GDP per capita is projected by 2050, with up to 200,000 additional people in poverty, and a sevenfold increase in drought-affected populations by 2050. However, the impacts of climate change are also highly unequal and cause socioeconomic inequalities and differential access to productive assets, services, and decision-making affecting particularly women, children, young people,

[8] IPCC, 2021 (as referred from BTR1, 2025)
[9] World Bank: Country Climate and Development Report

elderly people, people with disabilities, and communities dependent on natural resources. These risks are highlight in the Guinea-Bissau's UNICEF Children's Climate Risk Index (CCRI), needing therefore, integrating Gender Equality and Social Inclusion (GESI) considerations into climate policies and investments to ensure that adaptation measures are equitable, inclusive, and effective. Further, Guinea-Bissau's fragility in climate context considering conflict and migration risks is high (ranked 31st on the Fragile State Index).These risks are compounded by limited technical capacity, weak institutional coordination, data gaps and insufficient financial resources, which constrain effective adaptation planning and implementation. Strengthening governance, improving access to climate finance and promoting locally appropriate technology transfer are therefore critical. In response, NDC 3.0 prioritizes adaptation across key sectors including agriculture and livestock, water and sanitation, forests and biodiversity, coastal ecosystems, resilient infrastructure, public health, disaster risk management and energy access, focusing on areas where climate risks are highest and resilience gains are most significant.

Guinea-Bissau faces multiple climate-related hazards that pose significant risks to ecosystems, livelihoods and economic development. The key climate risks and their associated environmental and socio-economic impacts is summarised in Table 1.

Table 1: Projected impacts of climate change in Guinea-Bissau

Climate Change Risks	Environmental Impacts	Socio-Economic Impacts
Changes in precipitation patterns	○ Loss of biodiversity ○ Disrupt ion of the hydrological cycle	○ Decline in agricultural yields ○ Changes in agricultural production and the agricultural calendar ○ Loss of animal production ○ Decrease in purchasing power ○ Rural exodus
Droughts	○ Land degradation ○ Loss of biodiversity ○ Surface water loss ○ Drying of the soil ○ Deterioration of water quality ○ Draining of small streams and ponds ○ Water scarcity for wildlife ○ Sedimentation of watercourses ○ Wildlife migration ○ Increase in bushfires ○ Proliferation of plant pathogens	○ Decline in agricultural yields ○ Crop losses ○ Decreased animal productivity ○ Loss of livestock ○ Loss of income ○ Famine ○ Diseases ○ Changes in agricultural production and the agricultural calendar ○ Social conflicts related to resource scarcity
Floods	○ Flooding of agricultural land ○ Decomposing tubers ○ Erosion and loss of arable land ○ Loss of biodiversity ○ High air and soil humidity	○ Waterborne diseases ○ Population displacement ○ Loss of life ○ Loss of access to agricultural areas ○ Pest development

Climate Change Risks	Environmental Impacts	Socio-Economic Impacts
Extreme temperatures	○ Loss of biodiversity ○ Dehydration of certain animal and plant species ○ Soil desiccation ○ Increased evapotranspiration rate of plants ○ Increase in bushfires	○ Disease increase ○ Loss of productivity and crop production ○ Destruction of livelihoods and cultures
Severe storms	○ Erosion ○ Uprooting trees ○ Habitat destruction ○ Loss of biodiversity	○ Destruction of infrastructure ○ Losses in agricultural production ○ Livestock losses ○ Loss of life

2.4 International Commitments and Alignment with National Policies and Priorities

As a Party to the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, Guinea-Bissau remains committed to addressing climate change through nationally determined actions that reflect its development priorities, national circumstances and international obligations. NDC 3.0 strengthens this commitment by outlining mitigation and adaptation actions that contribute to sustainable development while supporting the implementation of the Paris Agreement. The NDC follows the principles of transparency, progressive ambition and national ownership, in accordance with Article 4 of the Paris Agreement and the Enhanced Transparency Framework (ETF).

Climate change directly affects Guinea-Bissau's economic development, natural resources and the livelihoods of its population. Recognising these interlinkages, NDC 3.0 integrates climate action into the country's broader development agenda and promotes a coordinated approach across key sectors, including agriculture, energy, forestry, water resources, coastal ecosystems, waste management and public health. Guinea-Bissau seeks to strengthen resilience, reduce climate risks and support sustainable economic and social development through this approach. NDC 3.0 serves as a guiding document which helps to formulate strategic framework that guides climate action in support of national development priorities. The implementation of mitigation and adaptation measures contributes to strengthening food security, protecting ecosystems, improving energy access, enhancing resilience to climate impacts and supporting sustainable management of natural resources. By integrating climate considerations into sectoral planning, the NDC promotes policy coherence and supports long-term sustainable development while responding to the country's climate vulnerabilities.

The NDC also strengthens coherence between Guinea-Bissau's climate commitments and its national policy framework. It supports the implementation of existing national strategies while providing a foundation for the forthcoming National Climate Policy and complementing the National Adaptation Plan (NAP), which is being developed in parallel. Together, these instruments establish a coordinated framework for addressing climate change through integrated mitigation and adaptation actions across priority sectors.

In addition to supporting Guinea-Bissau's commitments under the Paris Agreement, NDC 3.0 contributes to the country's broader sustainable development agenda by integrating climate

action with national development priorities. Therefore, Guinea-Bissau's NDC 3.0 is fully aligned with the 2030 Agenda for Sustainable Development and contributes to the country's commitment to achieving the SDGs. These coherences are reflected in the mitigation, adaptation and cross-cutting measures presented in this NDC to contribute to promote climate resilience, low-emission development, biodiversity conservation, poverty reduction and inclusive economic growth and provide an important basis for reporting climate-related progress through Guinea-Bissau's Voluntary National Review (VNR) process. The detailed alignment of sectoral mitigation and adaptation measures with the relevant SDGs is presented in Table 18 and Table 19.

Guinea-Bissau has also strengthened its forest strategy by developing the National Forest Financing Strategy (NFFS), improving the National System of Protected Areas (SNAP), developing community forests, improving agricultural practices to reduce deforestation and land degradation, and strengthening and implementing the National Strategy REDD+. NDC 3.0 therefore incorporates and aligns with the following national policies, strategies and programmes:

- The National Forest Financing Strategy (NFFS) of Guinea-Bissau is a strategic framework for mobilizing, coordinating and optimizing financial resources to support the sustainable management, conservation and restoration of the country's forest ecosystems. Recognizing the critical role of forests in biodiversity conservation, climate change mitigation and adaptation, watershed protection, and rural livelihoods, the Strategy seeks to address the persistent financing gap that limits effective implementation of national forest policies and programmes. The NFFS directly contributes to the implementation of the NDC 3.0 by supporting sustainable forest management, reducing deforestation and forest degradation, enhancing carbon sequestration, restoring degraded landscapes and improving the resilience of forest-dependent communities. It also contributes to achieving the objectives of the National Biodiversity Strategy and Action Plan (NBSAP), the National Adaptation Plan (NAP), and the 2030 Agenda for Sustainable Development, particularly SDGs 13 (Climate Action) and 15 (Life on Land).
- The National Adaptation Plan (NAP) currently being co-developed in alignment with NDC 3.0 sectoral priorities, measures and targets, aims to integrate climate resilience into priority sectors, strengthen national and local capacities, mobilise funding, develop and implement appropriate policy and sectoral instruments, and ensure awareness-raising and the inclusion of vulnerable populations
- The REDD+ Strategy and the Forest Investment Programme (PIF) support efforts to preserve forest cover and promote sustainable rural development
- The Strategy and National Action Plan for the Biodiversity 2015–2020, which aims to is to preserve and prevent the loss of biodiversity, reduce the degradation of ecosystems through the sustainable use of their components, in a continuous process of participation and unity of action of all sectors of society, with a view to guaranteeing the well-being of the current and future Guinean generation; additionally, the new Kunming-Montreal Global Biodiversity Framework (GBF) targets for 2030-aligned National Biodiversity Strategy and Action Plan (NBSAP) is still under development as of 2026.
- The National Drought Plan (PNS): aims to prepare Guinea-Bissau to address drought crises. This involves setting out a range of environmental, institutional, political and economic measures designed to enhance the resilience of ecosystems and communities. Environmental measures emphasise the sustainable management of water resources (rivers, rice fields, lakes, etc.) and soil protection;
- The Agricultural Development Policy Paper: Its main objective is the rational management and conservation of agricultural, forestry and pastoral resources through the protection of the country’s natural capital (forests, soil, water, biodiversity). Its

priorities are: (i) to ensure that the basic needs of the population are met, to restore a fairer redistribution of income and to combat poverty; and (ii) to make rational use of natural resources. The latter priority complements the current NDC 3.0 in that it aims, above all, to conserve forest resources in order to improve soil productivity and food security.

- The National Action Programme to Combat Desertification (NAP/CCD): It is based on a multi-faceted approach to managing the country's natural capital. Very clearly, this Strategic Plan is based on the multifunctional management of heritage or resources, underpinned by in-depth knowledge derived from practical experience and high-quality research into (i) the ecological function (biodiversity-centred management), (ii) the economic (production) function, (iii) the social function (priority given to hunting, sacred forests, etc.).

These instruments reflect Guinea-Bissau's commitment to balancing economic development, reducing inequalities and building climate resilience. As such, the NDC 3.0 not only reflects Guinea-Bissau's international climate commitments, but also their practical implementation in development policies at national, sectoral and local levels.

2.5 Institutional and Governance Framework

The institutional and governance framework for Guinea-Bissau's NDC 3.0 is designed to ensure coordinated, transparent and effective implementation of climate actions across sectors and administrative levels. The framework builds on existing national arrangements while strengthening linkages between institutions, stakeholders and international partners to support integrated planning, implementation and reporting as shown in Figure 5.

The NDC 3.0 gathered a diverse range of stakeholders and partners and is intended to be a participatory and integrated framework. With a national scope, the NDC 3.0 is under the direct authority of the Prime Minister and convene state actors, civil society organisations, universities, research institutes, development partners, and international organisations. The Prime Minister's Office coordinates the stakeholders' various tasks, which include collecting and processing climate data, disseminating information on climate hazards and risks and overseeing proactive responses to climate hazards, funding mobilisation.

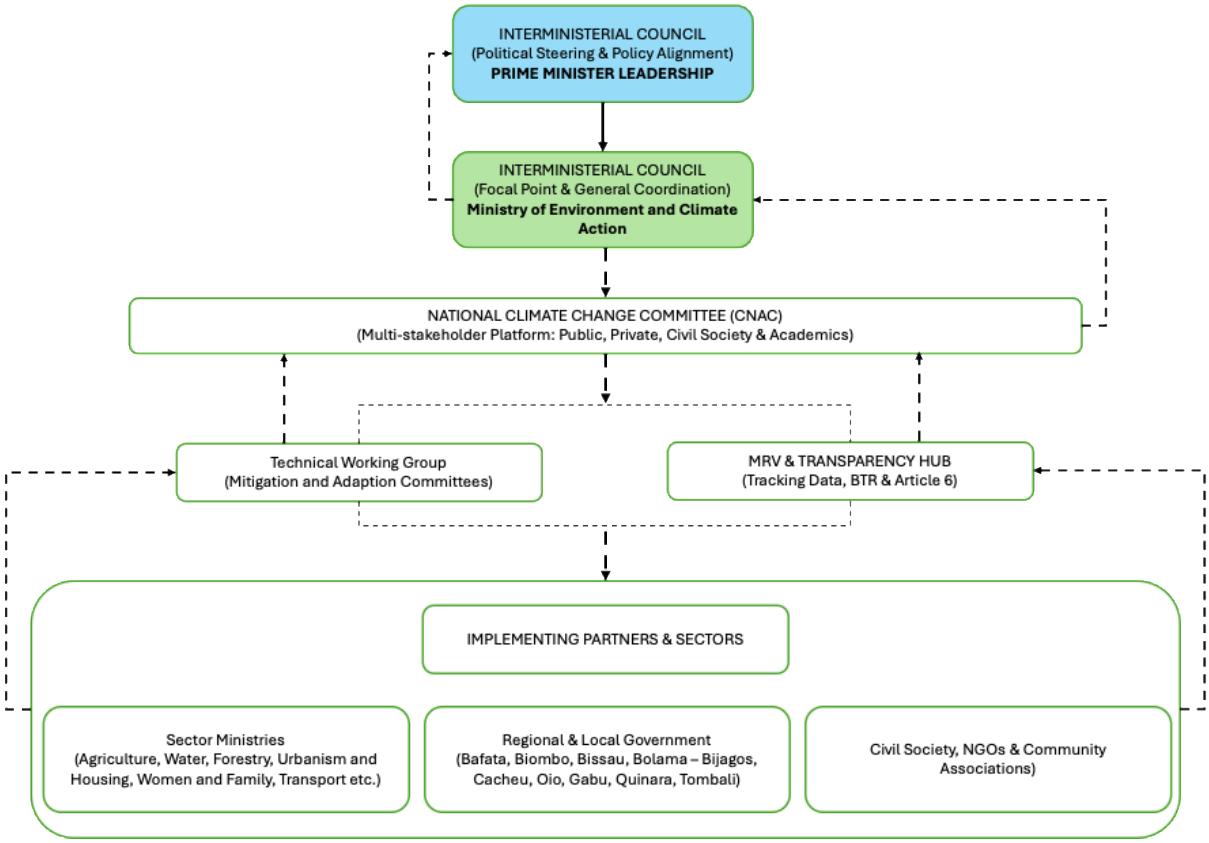


Figure 5: Overview of the NDC 3.0 Organizational and Institutional Framework

The framework operates through three interconnected levels:

(i) Political and strategical leadership coordinated by the Prime Minister implicating bilateral and multilateral framework

(ii) Institutional leadership and policy coordination led by the Ministry of Environment and Climate Action (MAAC)

(iii) Sectoral implementation carried out by line ministries, with financial coordination supported by the Ministry of Economy and Finance (MEF) (Technical analysis, data generation and validation undertaken by specialised technical institutes)

This structure ensures that climate actions are aligned with national priorities, informed by technical evidence and supported through domestic and international financing mechanisms.

The Prime Minister's Office is the main institutional body of the NDC 3.0. It coordinates and oversees all intergovernmental synergies and complementarities, as well as the support and contributions provided by the various development partners. The Prime Minister's Office oversees the implementation of the NDC 3.0 and ensures its consistency and alignment with national priorities. The government is therefore responsible for defining the legal framework of the NDC 3.0.

It also oversees the framework for partnerships with international and regional organisations to implement an effective NDC 3.0. It builds strategic partnerships for training, capacity-building, equipment and access to climate data and information, funding. Finally, the Prime Minister's

Office is responsible for monitoring the NDC 3.0 and sharing achieved results with the general public.

The Ministry of Environment and Climate Action (MAAC) serves as the national focal ministry for engagement with the UNFCCC and the Paris Agreement. It coordinates national climate policy and oversees reporting obligations, including the Nationally Determined Contribution (NDC), National Communications and Biennial Transparency Reports. The MAAC responsible for Environment and Climate Change, through the national climate governance mechanism, should oversee NDC implementation and ensure coordination with the institutions responsible for biodiversity, land degradation, disaster risk management, national planning, and sustainable development. Existing inter-ministerial coordination mechanisms should be leveraged to facilitate integrated planning, monitoring, reporting and resource mobilization. This integrated approach will enable Guinea-Bissau to streamline reporting under the Paris Agreement, the Convention on Biological Diversity (UNCBD), the UN Convention to Combat Desertification (UNCCD), and the 2030 Agenda for Sustainable Development, while maximizing synergies among climate, biodiversity, land restoration and sustainable development objectives.

The technical institutes such as the National Environment Institute (INA), the Biodiversity and Protected Areas Institute (IBAP) and the National Institute of Meteorology of Guinea-Bissau (INM-GB), provide the technical foundation for implementation and reporting. These institutions generate climate data, conduct technical assessments and support greenhouse gas inventories, vulnerability assessments and monitoring activities. They work closely with sectoral ministries to collect activity data and monitor implementation progress while also providing technical inputs to MAAC for policy development and reporting. Technical outputs and assessments are submitted to MAAC for institutional validation before inclusion in official national submissions.

Sectoral ministries, including the Ministry of Agriculture and Rural Development (MADR), Ministry of Energy (ME), Ministry of Public Health (MINSAP), Ministry of Natural Resources (MRN), Transport, Telecommunications and Digital Economy (MTTED), Ministry of Fisheries and Maritime Economy (MPEM) and the Ministry of Public Works, Housing and Urban Planning, are responsible for implementing sector-specific mitigation and adaptation actions, Ministry of family, women and national solidarity. These ministries integrate climate objectives into sectoral policies, plans and budgets. Also, provide implementation and activity data to the technical institutes. They also coordinate with MAAC to ensure alignment with national climate priorities and reporting requirements.

The Ministry of Economy and Finance (MEF) plays a central role in climate finance coordination. MEF manages domestic budget allocations and facilitates access to international climate finance, including multilateral and bilateral funding, donor support and private sector investment. MEF works in coordination with related ministry to align financing flows with the NDC priorities, national development priorities and the Sustainable Development Goals (SDGs), while integrating climate-related expenditures into the national budgeting framework.

This institutional arrangement supports integrated implementation of Guinea-Bissau's NDC 3.0 by linking policy coordination, technical support, sectoral execution and financial mobilisation within a unified governance structure. The specific roles and responsibilities for each mentioned stakeholder are mentioned in Table 2 for the proper implementation of NDC targets.

Table 2: Institutional Roles and Responsibilities

Institution	Role in NDC Framework	Key Responsibilities
Ministry of Environment and Climate Action (MAAC)	Nodal Ministry & UNFCCC Focal Point	○ Lead coordination of NDC implementation, monitoring and reporting to UNFCCC, UNCCD, UNCBD and SDG/VNR process ○ oversee GHG inventory ○ validate technical findings from institutes and facilitate inter-ministerial coordination ○ Facilitate access to climate finance (GCF, Adaptation Fund) ○ Improve institutional coordination with the DGFF and IBAP ○ Ensure alignment between the NDC 3.0 and national priorities.
National Environment Institute (INA)	Technical Institute – Environmental Data & Statistics	○ Drives the daily execution of the NDC roadmap ○ acts as the primary interface between sectoral task forces and national decision-makers ○ compiles state-level communications and provide technical support for reports intended for the UNFCC, UNCBD and UNCCD. ○ Coordinate and compile national socioeconomic and environmental statistics; support GHG inventory data collection ○ provide disaggregated datasets for MRV reporting ○ coordinate with sectoral ministries to collect activity data ○ support MAAC in technical review and validation of climate reports.
Biodiversity & Protected Areas Institute (IBAP)	Technical Institute – Biodiversity & Ecosystems	○ Monitor and manage protected areas ○ support ecosystem-based adaptation actions (mangrove restoration, LULUCF) ○ provide biodiversity data for GHG inventory ○ coordinate with MADR and MPEM on forest and coastal ecosystem management. ○ Strengthen surveillance and ensure autonomous financing of protected areas. ○ Promoted climate resilient

Institution	Role in NDC Framework	Key Responsibilities
		activities in protected areas ○ Implement REED+ strategy and contribute to Guinea-Bissau low emission ○ Provide technical leadership for the implementation, coordination, monitoring and periodic revision of the National Biodiversity Strategy and Action Plan (NBSAP), in collaboration with MAAC and other relevant institutions
National Institute of Meteorology of Guinea-Bissau (INM-GB)	Technical Institute – Meteorology & Climate Data	Collect, process and archive meteorological and climatological data; issue weather forecasts and climate advisories; support early warning systems; provide hydro-meteorological inputs for GHG inventory and climate vulnerability assessments; operate national weather observation network; contribute to disaster risk management data infrastructure.
Ministry of Agriculture and Rural Development (MADR)	Sectoral Ministry – Agriculture, Forestry & Livestock	○ Implement climate-smart agriculture measures, including rice cultivation improvements and livestock management; supply agricultural activity data to INA for GHG inventory; lead reforestation and land-use management ○ coordinate with IBAP on forest sector interventions ○ engage MEF for funding access. ○ Promote forest/agroforestry integration within agricultural policies ○ Strengthen intersectoral coordination among agriculture, forests, and water ○ Develop a comprehensive vision linking agriculture, forests and rangelands
Ministry of Energy (ME)	Sectoral Ministry – Energy & Electrification	Lead expansion of renewable energy (solar, hydropower) and energy efficiency programmes; manage clean cooking transition; oversee EAGB operations; provide energy sector data for GHG inventory; coordinate with ECOWAS and multilateral partners on grid connectivity (OMVG hydropower);

Institution	Role in NDC Framework	Key Responsibilities
		engage MEF for energy investment financing.
Ministry of Public Health (MINSAP)	Sectoral Ministry – Public Health & Climate-Health Resilience	Establish climate-sensitive disease surveillance systems; strengthen health infrastructure resilience; train health workers on climate-related disease response; integrate climate adaptation into national health development plans; coordinate WASH improvements; provide health data to INA for vulnerability assessments.
Ministry of Natural Resources (MRN)	Sectoral Ministry – Natural Resources & Mining	Manage land, water and mineral resources in alignment with climate objectives; supply natural resource data to technical institutes; enforce environmental compliance in resource extraction; support integrated water resources management; coordinate with IBAP on ecosystem protection where resource use intersects with protected areas.
Ministry of Public Works, Housing and Urban Planning	Sectoral Ministry – Infrastructure & Urban Resilience	Climate-proof road corridors, bridges, and drainage systems; enforce climate-resilient building codes and land-use standards; upgrade coastal ports and public utilities; lead urban flood risk management; provide infrastructure data for vulnerability assessments; engage MEF for climate-proofing investment funding.
Ministry of Transport, Telecommunications and Digital Economy (MTTED)	Sectoral Ministry – Transport & Digital Infrastructure	Promote low-emission transport solutions; oversee digital infrastructure development that supports climate data systems; provide transport sector emissions data to INA; facilitate communication networks for climate early warning dissemination.
Ministry of Fisheries and Maritime Economy (MPEM)	Sectoral Ministry – Fisheries, Coasts & Marine Economy	Manage coastal zone protection and marine resource sustainability; combat illegal, unreported, and unregulated (IUU) fishing; coordinate with IBAP on mangrove and coastal ecosystem restoration; provide fisheries data to INA;

Institution	Role in NDC Framework	Key Responsibilities
		develop climate-resilient fish handling infrastructure; engage MEF for blue economy financing.
Ministry of Economy and Finance (MEF)	Funding Landscape Coordinator	Integrate NDC priorities into national budgets and public investment programmes; coordinate domestic and public funding allocations for climate actions; serve as primary national access point for international multilateral and bilateral climate finance (GCF, GEF, World Bank, AfDB); mobilise donor grants and private sector/CSR climate investments; coordinate aid effectiveness in line with the Paris Declaration; track climate-related public expenditures.

2.6 NDC 3.0 Preparation and Stakeholder Engagement Process

The preparation of NDC 3.0 followed a participatory and evidence-based approach involving national institutions, sectoral ministries, technical experts and development partners. The process combined stakeholder consultations with analytical assessments to ensure that mitigation and adaptation priorities are both technically robust and aligned with national development objectives.

For the mitigation assessment, the Greenhouse Gas Abatement Cost Model (GACMO), developed by UNEP Copenhagen Climate Centre[10], was applied as a core analytical tool. The model was used to evaluate sector-specific mitigation options, estimate potential emission reductions and assess the relative cost-effectiveness of different interventions.

The modelling process incorporated available national data, including greenhouse gas inventory information, sectoral statistics and policy inputs, complemented by default and regional parameters where necessary. Stakeholder consultations played a key role in validating assumptions related to technology adoption, implementation feasibility and sectoral priorities, ensuring that the mitigation scenarios reflect national circumstances and practical implementation conditions.

[10] GACMO - GACMO (Greenhouse Gas Abatement Cost Model) is a greenhouse gas emissions projections tool developed over more than twenty years by the UNEP Copenhagen Climate Centre. It allows countries to carry out rapid but accurate scenario analysis of how a variety of mitigation options impact emissions.

This integrated approach strengthens the transparency, consistency and credibility of the NDC, aligning it with the requirements of the Enhanced Transparency Framework under the Paris Agreement.

2.7 Limitations and Challenges

Guinea-Bissau faced several structural, technical and institutional challenges during the implementation of NDC 2021. Key limitations included insufficient sectoral data, limited GHG inventory systems, weak institutional coordination mechanism and inadequate technical capacity for climate modelling, monitoring and reporting. The implementation process was further constrained by limited infrastructure, insufficient waste management systems and low access to modern technologies. Dependence on project-based institutional arrangements and limited continuity in technical capacity development also affected long-term implementation and reporting processes.

The preparation of the national documents such as Forth National Communication (NC4), Biennial Transparency Report (BTR1) and National Inventory Report (NIR) contributed to gradual improvement in national climate reporting and data systems. These processes strengthened the application of IPCC methodologies, improved sectoral data collection and enhanced national experience in GHG inventory preparation and transparency reporting. The progress has been made in institutional coordination, stakeholder engagement and integration of climate consideration. Despite these improvements, several challenges remain. Limitations persist in the availability and consistency of sectoral activity data, particularly in sectors such as waste and IPPU. Climate observation systems, hydrological monitoring networks and data archiving systems remain limited, while institutional coordination and technical capacity constraints continue to affect implementation, monitoring and reporting processes.

NDC 3.0 builds on previous national climate processes through a more structured and evidence-based approach to mitigation, adaptation and transparency. The preparation process incorporated updated national data, stakeholder consultations and analytical tools, including the GACMO model for mitigation assessment, while maintaining consistency with national capacities and available data systems. The document further strengthens focus on institutional coordination, data management and monitoring systems under a phased implementation approach, while recognizing that continued progress will depend on sustained capacity-building, technology transfer and climate finance support.

The observed limitations stem from a lack of an integrated institutional approach to coordination, as well as from weak technical and scientific capacity, limited financial resources, and inadequate infrastructure and mechanisms for monitoring, measurement, and evaluation. In other words, the limitations are as follows:

- **Fragmented coordination:** Several actors and institutions operate independently, and sometimes in competition with each other. This leads to overlaps and duplication, as well as gaps in the identification, monitoring and management of climate risks. This fragmentation demonstrates the lack of a robust institutional framework for responding to climate hazards, as coordination between government agencies, NGOs and other partners is insufficient[11]).

[11] Green Climate Fund

- **Lack of resources**: The mechanisms for warning and responding to climate hazards suffer from a lack of human, financial and technological resources, which limits their effectiveness. Budgets for crisis monitoring and prevention are insufficient and dependent on development aid[12].
- **Communication problems**: The communication and dissemination of climate-related risks is limited by inadequate infrastructure, language barriers, and low literacy rates. The most vulnerable and affected groups are the least engaged with communication channels.
- **Limited response capacity**: Due to the fragility of institutions and infrastructure, the capacity to predict and respond to/to climate hazards is limited. Without external support, forecasts are approximate, late and insufficient, which undermines the ability to effectively prevent crises or mitigate their effects.
- **Lack of monitoring and evaluation**: Insufficient human and financial resources have a strong impact on the ability to monitor and evaluate climate hazards and risks, and make the responses inadequate.

Finally, the limitations observed in the mechanisms for forecasting, warning and responding to climate hazards demonstrate the need for a paradigm shift in the governance of climate crises in Guinea-Bissau. The shift consists in coupling actions before, during and after climate crises. The NDC 3.0 will fill the gaps in institutional, human and financial, and scientific and technical resources in the governance of climate crises.

[12] IFAD

3. NATIONAL NDC TARGETS

3.1 Mitigation NDC Targets

The Guinea-Bissau is a low-emitting country whose national greenhouse gas balance remains net negative due to the significant carbon sequestration capacity of its forests and land-use systems. In this context, NDC 3.0 seeks to limit the growth of future emissions and avoid carbon-intensive development pathways while maintaining the country's net carbon sink status.

The mitigation component of NDC 3.0 focuses on sector-specific actions aimed at reducing emissions growth across key sectors, while supporting sustainable development priorities and improving resilience. An overview of the mitigation targets and priority measures is presented in Table 3, while detailed sectoral targets, assumptions and mitigation measures are discussed in the subsequent sections.

Table 3: Overview of Mitigation Target

Sectors	Emissions ($ktCO_2e$) in BAU Scenario (2035)	Emissions ($ktCO_2e$) in Mitigation Scenario (2035)	Reduction (%)
Agriculture	3,196	2,252	**30%**
Energy	592	61	**90%**
LULUCF	-28,142	-29,059	**3%**
Waste	424	197	**54%**
Total (including LULUCF)	-23,928	-26,546	**11%**
Total (excluding LULUCF)	4,214	2,512	**40%**

3.2 Adaptation NDC Targets

By 2035, Guinea-Bissau's sectoral targets are designed to systematically build adaptive capacity and resilience across its most climate-exposed systems. Across all sectors, the deliberate prioritization of women, youth, and children in governance, training, and service delivery ensures that resilience-building is inclusive and reaches the most at-risk populations. Together, these interconnected targets position Guinea-Bissau to transition from reactive crisis response to a proactive, systems-level approach to climate resilience by 2035.

Guinea-Bissau's NDC 3.0 establishes a comprehensive high-level vision for climate adaptation with Gender and Social Inclusion mainstreamed as a cross-cutting component. The National Adaptation Plan (NAP 2027) currently under development will build upon this foundation of NDC 3.0 through detailed studies and assessments, including Risk and Vulnerability Assessments, to further refine the sectoral scope and priorities.

In agriculture and water, targets spanning seed banks, watershed rehabilitation, rainwater harvesting, and expanded potable water access will shield communities from drought and food insecurity. Reforestation, mangrove restoration, and ecosystem-based adaptation will rebuild the natural buffers that protect livelihoods, while climate-proofed infrastructure and strengthened disaster risk management frameworks will reduce physical and institutional vulnerability to climate shocks.

Table 4: Overview of Adaptation Target

Sector	Targets (by 2035)	Targets for Priority Groups (Women/Children/Youth)
Food, Agriculture & Livestock	○ 15% farmers by 2030, 25% by 2035 covered by community seed banks & emergency reserves ○ 100% transition from invasive crops by 2035 ○ 50% of agricultural lands covered under water-control infrastructure and water saving techniques by 2035 ○ 60% farmers trained on water management techniques by 2035 ○ 30% households/farmlands adopting rainwater harvesting (RwH) systems by 2035 ○ 50% rehabilitation of watershed areas by 2035 ○ 40% livestock coverage by veterinary services by 2035 ○ 20% breeding stock resilient by 2035 ○ 50% farmers, youth, women and cooperatives trained by 2035 on resilient mechanization practices ○ 30% farm mechanization by 2035 ○ 50% restoration of river length by 2035 ○ 60% mangrove restoration by 2035 ○ 70% reduction in post-harvest losses by 2035 ○ Pilot parametric insurance in 5 at-risk agricultural regions by 2035 ○ 40% vulnerable households under safety nets by 2035 ○ Pilot 8 digital agricultural monitoring systems by 2035	○ At least 40% of total 2035 seed bank/nursery access target: Women Farmers ○ 60% women and youth farmers by 2035 for climate resilient cropping capacity building ○ At least 50% of total 2035 target for water management training: Women Farmers ○ 50% of total mechanization training target: Youth and Women ○ 50% of total vulnerable household safety net target: Women-headed/run households ○ Extension of land ownership rights to 30% eligible women by 2035 ○ 70% women and youth coverage for capacity building and subsidy benefit by 2035
Water Access, Resource Management & Sanitation	○ Monitoring of 50% water resources by 2035 ○ 50% restoration of river length by 2035 ○ 80% population with potable	○ Prioritize areas with high female drudgery for new catchments, wells and boreholes ○ 100% children and

Sector	Targets (by 2035)	Targets for Priority Groups (Women/Children/Youth)
	water access in urban areas by 2035 (disaggregate by gender and age) ○ 68% population with basic service access in rural areas by 2035 ○ 30% households adopting RwH systems by 2035 ○ 70% population coverage through awareness campaigns by 2035 ○ 50% monitoring of river basins by 2035 ○ Quarterly checks (quality/quantity) of water resources ○ Setting up 1 localized water committee/institution in every administrative region ○ Regional Ministry of Natural Resources offices established and operational in all administrative regions by 2035. ○ Community-based climate-resilient WASH management mechanisms operational in all administrative regions by 2035 ○ Functional water governance and WASH monitoring system established and operational in all administrative regions by 2035 ○ Drainage and sewerage coverage of 70% by 2035 ○ 50% population using safe sanitation in urban and 30% in rural areas by 2035 (disaggregated by gender, age and disability) ○ 1 WTE pilot in Bissau city by 2030 ○ 45% organic waste sustainably treated by 2030; 80% by 2035 ○ 70% households, schools and markets reached through behaviour change campaign by 2035	schools with access to basic solar water service by 2035 ○ 70% schools/institutes covered by water safety awareness by 2035 ○ Priority coverage: 50% of targeted potable water access population to be women (urban and rural) ○ At least 30% women and 30% youth representation in water committees/institutions ○ 100% schools with access to gender responsive basic sanitation and hygiene by 2035 disaggregated by gender, age and disability ○ Prioritize safe sanitation in women-dominant households and areas ○ Gender-sensitive WASH facilities in 70% critical infrastructure/public buildings by 2035 ○ 80% training coverage (starting with women and girl community leaders) ○ 30% women representation in water management, sanitation & health committees by 2035
Forests, Biodiversity & Protected Areas	○ Reforestation of 25% forests by 2035	○ Establish key role of women and youth in

Sector	Targets (by 2035)	Targets for Priority Groups (Women/Children/Youth)
	○ Set up Community Forest Management Framework ○ Demarcate 100% of sensitive areas as protected areas zone by 2035 ○ National protected areas system reached 30% of national territory by 2035 ○ Update 40% of Integrated Land Management Plans ○ Integrate 30% Local Development Plans (LDPs) with Ecosystem-based Adaptation (EbA) ○ 70% community participation in land-use governance ○ 50% local institutions implement land-use and EbA measures ○ Institutionalise periodic (biannual) monitoring systems in protected areas ○ Quarterly training programme mechanism ○ 1 community-level committee in every administrative unit ○ Quarterly capacity-building meetings	Community Forest Management Framework ○ 40% of total reforestation initiatives by 2035 to be led by women and youth groups ○ 50% representation / participation of women and youth in land-use governance by 2035 ○ Majority community-level committees to be women/youth-led or 40% women and youth members by 2035
Coastal Zones & Marine Ecosystems	○ Annual Risk & Vulnerability Assessment in high-risk areas ○ 50 km of coastal and riverine anti-salt dykes constructed, elevated, or optimized by 2035 ○ 70% coastal area covered with NbS/grey infrastructure by 2035 ○ 25,000 hectares degraded mangrove restoration by 2035 (targeting priority length of 50 km for mangrove restoration) ○ Integrity of low-lying agricultural basins secured against projected 2035 sea-level rise lines ○ Coastal shoreline erosion halted and down-river channel sedimentation (enablement) reduced by 75%	○ Prioritize vulnerable/high-risk areas with dominant women population for coastal protection ○ Women-led livelihood promotion (oyster farming, horticulture, vegetable gardens) ○ 25% women cooperatives engaged in cold-chain infrastructure by 2035 ○ Women and youth-led training programmes with at least 50% women and youth representation as coastal community, fishermen or cooperatives by 2035 ○ 40% school engagement in outreach and dissemination activities

Sector	Targets (by 2035)	Targets for Priority Groups (Women/Children/Youth)
	○ Integrated coastal and ocean early warning systems cover 80% of high-risk coastal and marine areas by 2035. ○ MCS (Monitoring, Control & Surveillance) in place by 2035 ○ Biannual training cum dissemination programme - community/women/youth-led discussion	
Public Health Infrastructure & Services	○ 40% population coverage with disease surveillance and warning systems by 2035 ○ 1 specialized hospital in Bissau city by 2030 ○ 1 specialized hospital in other major cities by 2035 ○ 70% health practitioners covered by capacity building by 2035 ○ Equip 80% of primary healthcare facilities and hospitals with solar power and climate-resilient water supply by 2035. ○ 1 health centre for every 25,000 people by 2035 ○ Reduction in climate-sensitive infectious diseases by 50% by 2035 ○ Integration of Climate responsiveness and epidemic preparedness in national health development plan by 2030	○ 50% of disease surveillance/early warning coverage target: women and children-dominant areas ○ At least 50% of total health practitioner capacity building target: Women and Youth practitioners ○ Prioritize serviceability of community health systems in women and children-dominant areas ○ 70% of health monitoring systems use age, gender and disability disaggregated data at national and subnational level by 2035
Climate Resilient Infrastructure	○ 80% of ecological connectivity restored in main roads like Safim-Mpak) ○ 100% ecological fragmentation resolved on major roads by 2035 ○ 100% access to critical and social services by 2035 in Guinea-Bissau ○ Climate-proof building code standards for all building types by 2032 ○ 40% public buildings with climate-proof codes by 2035 ○ Pilot incentive model for	○ 60% enhanced access of women to markets, water points and health services by 2035 ○ 60% enhanced access of children to schools, water points and health services by 2035 ○ Integration of gender and child-sensitive design in 100% of access routes, lighting, sanitation and emergency shelters by 2035

Sector	Targets (by 2035)	Targets for Priority Groups (Women/Children/Youth)
	residential buildings starting 2035 ○ 1 main port (Bissau) climate-proofed by 2035 ○ 60% of critical water and sanitation infrastructure made climate-proof by 2035	
Disaster Risk Management	○ 80% coverage in high-risk regions with emergency equipment, logistics and shelter measures by 2035 ○ Set up 1 early warning committee and disaster preparedness committee supported by SBC activities in each high-risk community by 2035 ○ Formalized National Strategic Plan and Emergency Preparedness by 2030 ○ Set mandate and framework for City/Village Disaster Management (DM) Plans by 2030 ○ 30% administrative units with City/Village DM Plans and sectoral DM Plans by 2035 ○ Pilot parametric insurance in 5 at-risk agricultural regions by 2035 ○ 40% vulnerable households under safety nets by 2035 ○ National warning plan adopted and fully functioning by 2030 ○ Strengthening national meteorological system with full national cover by 2030 ○ 50% high-risk regions covered by early warning & impact-based forecasting by 2035 ○ Annual data collection and mapping	○ Prioritization of high-risk regions with women and children-dominant populations ○ 50% of total 2035 vulnerable group targets: Women, Youth or Children groups ○ Integration of Farmer Groups and Women Communities

4. MITIGATION

The Business-as-Usual (BAU) scenario represents projected emission growth based on current practices, using the 2019 GHG inventory as a base year and sectoral activity trends. The sector wise, BAU trajectory is explained below

For the agriculture sector, the BAU scenario emissions driven primarily by enteric fermentation and manure management, along with contributions from rice cultivation and crop residue burning[13]. Livestock-related emissions are projected using growth trends in animal populations, while emissions from rice cultivation and crop burning are linked to changes in cultivated area. This results in a gradual increase in emissions over time, reflecting the expansion of agricultural activities under existing practices.

For the energy sector, the BAU trajectory is developed using sector-wise fuel consumption patterns and energy balance data provided by the National Technical Team and other relevant stakeholders. The emissions are projected based on the increasing energy demand, continued reliance on the diesel generators and rising energy use across households, services and transport. The limited penetration of renewable energy and efficiency measures under the BAU scenario results in a steady increase in emissions, consistent with current development trends.

For the LULUCF sector, the BAU projection is based on land-use patterns and forest cover[14]. The sector remains a net carbon sink under BAU due to the country's high forest cover, while gradual changes in land use, including agricultural expansion and biomass extraction, influence the level of net removals over time. For the waste sector, the BAU trajectory is developed based on waste generation trends, population growth and current waste management practices. The emissions are primarily driven by methane released from unmanaged solid waste disposal and limited wastewater treatment.

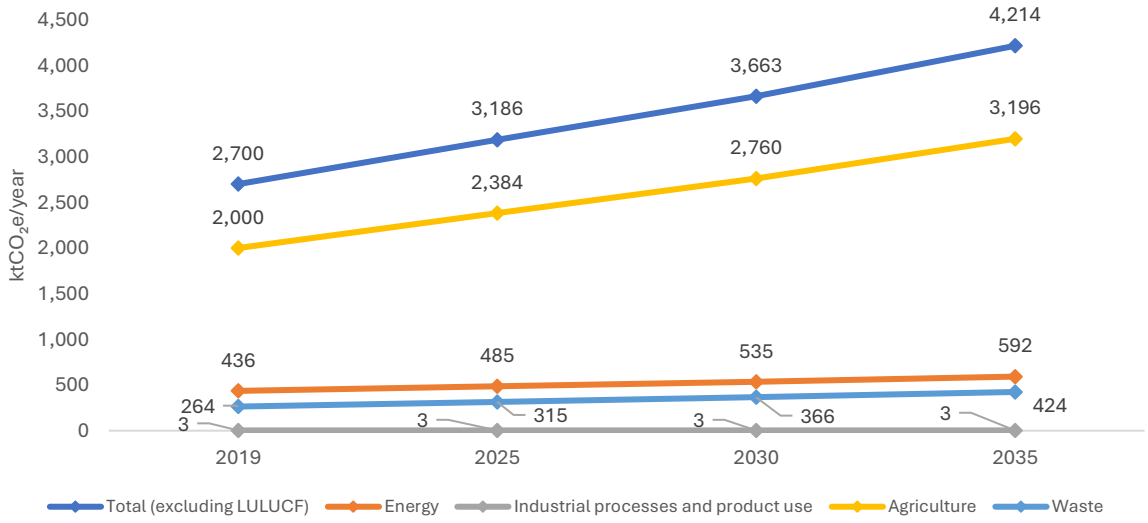


Figure 6: BAU Scenario by Sector – excluding LULUCF

The Baseline Scenario (BAU) scenario serves as an important reference point for the mitigation vision as shown in Figure 6. Under the BAU scenario, emissions excluding LULUCF increase steadily, driven by agriculture, energy demand and waste generation, highlighting the need for

[13] Fourth National Communication
[14] BTR 1

mitigation action.

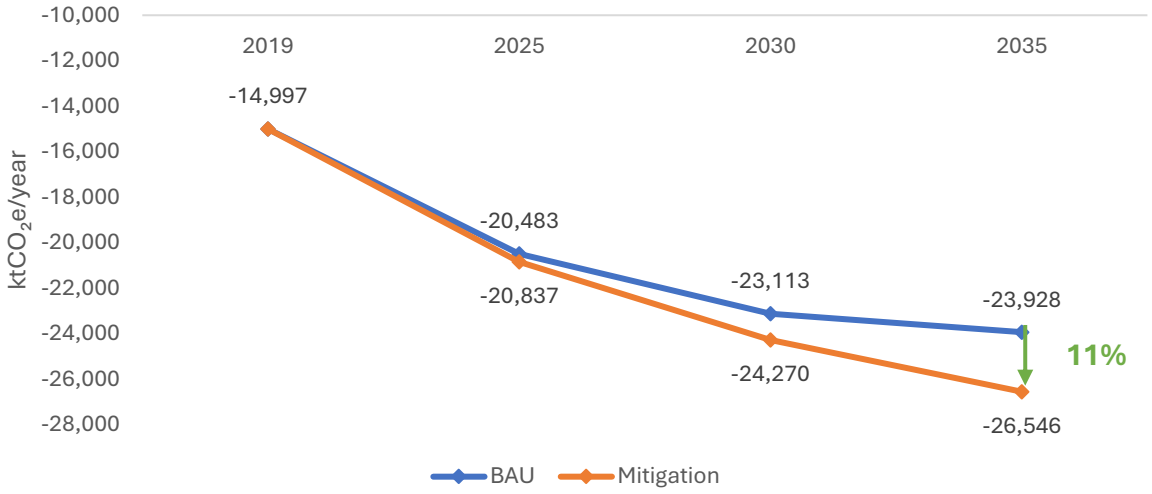


Figure 7: Total GHG Emissions in BAU and in Mitigation Scenario (including LULUCF)

The projected trajectory of total GHG emissions under the BAU and mitigation scenarios includes emissions and removals from the LULUCF sector as shown in Figure 7. Total emissions remain net negative under both scenarios due to forest carbon sinks, with mitigation reducing net emissions further by 11% by 2035.

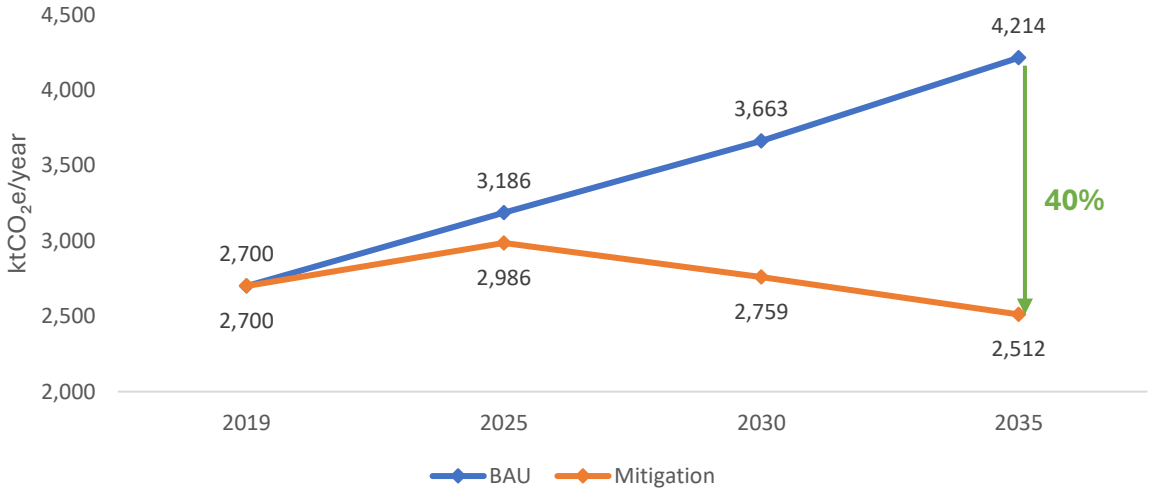
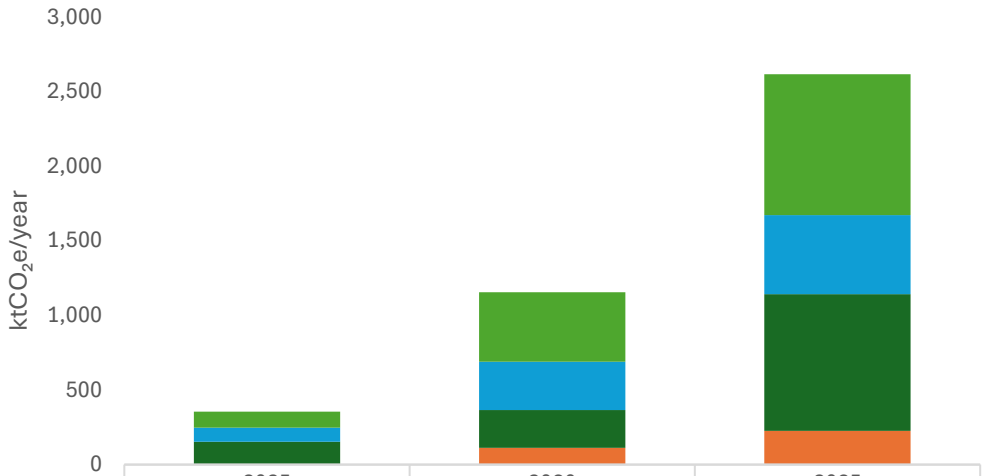


Figure 8: Total GHG Emissions in BAU and in Mitigation Scenario (excluding LULUCF)

The total GHG emissions excluding LULUCF focus only on emissions from sectors such as agriculture, energy, waste and IPPU as shown in Figure 8. Compared to the BAU trajectory, the mitigation scenario follows a lower emissions pathway from 2025 onwards, resulting in a 40% reduction in emissions by 2035 relative to the BAU scenario. This enhanced ambition is consistent with the outcomes of the first Global Stocktake[15], which calls on Parties to accelerate emissions reductions to keep the 1.5°C goal of the Paris Agreement within reach.

[15] Global Stocktake



	2025	2030	2035
Agriculture	107	466	944
Energy	94	324	531
LULUCF	154	253	917
Waste	0	113	227
IPPU	0	0	0

Figure 9: GHG Emission Reduction by Sectors

The sectoral contribution to the GHG emission reductions achieved under the mitigation scenario is significant as shown in Figure 9. Most reductions come from the agriculture sector, followed by the energy sector. This reflects their role in national emissions and the mitigation potential found in national assessments.

Mitigation estimates presented in this section are derived from a scenario-based analysis comparing Business-as-Usual (BAU) and mitigation pathways across key sectors. The quantification of emission reductions is based on the application of the GACMO analytical framework which enables the estimation of mitigation potential by assessing the impact of transitioning from baseline practices to improved technologies and management interventions.

Emission reductions are calculated as the difference between baseline and mitigation scenarios, considering changes in activity levels, emission intensities and the scale and timing of adoption of mitigation measures. This approach ensures consistency in estimating sectoral mitigation contributions and provides a structured basis for aggregating national emission reduction potential.

4.1 Agriculture

The agriculture sector is the primary focus for mitigation under NDC 3.0 because it is the largest source of greenhouse gas emissions when LULUCF is excluded. These emissions are produced by methane from rice cultivation and livestock fermentation, along with nitrous oxide from soil and nutrient management.

The quantification of mitigation potential in the agriculture sector is based on assumptions regarding the scale of implementation, adoption rates and emission reduction factors derived from the GACMO model. These estimates consider the extent of land coverage (hectares), livestock population affected and expected uptake of improved practices over time. The mitigation potential reflects gradual adoption. The strategic objective of this mitigation measure is to reduce the methane and nitrous oxide emission while maximizing soil carbon sequestration.

The key mitigation measures focus on better crop and livestock management are identified in Table 5.

Table 5: Mitigation Measures (2035) - Agriculture

Code	Mitigation Measures	Target	Indicator
M1	Improved Rice Water management reduces methane emissions.	Achieve improved water management across 200,000 ha, resulting in an estimated emissions reduction of 684 $ktCO_2e$.	Area under improved rice water management (ha); CH_4 emissions reduced ($ktCO_2e$)
M2	Cover cropping improves soil nutrient retention and reduces fertiliser use.	Promote cover cropping on 100,000 ha, contributing to an estimated reduction of 149 $ktCO_2e$.	Area under cover cropping (ha); GHG reduced ($ktCO_2e$)
M3	Nitrification inhibitors[16] improve nitrogen use efficiency	Introduce nitrification inhibitors across 100,000 ha of fertilized agricultural land, achieving an estimated emissions reduction of 80 $ktCO_2e$ by reducing nitrous oxide (N_2O) emissions.	Area applying nitrification inhibitors (ha); N_2O/GHG reduced ($ktCO_2e$)
M4	Livestock feed improvement reduces enteric methane	Introduce oilseed supplementation at 10% of ruminant dry matter intake, delivering an estimated emissions reduction of 9 $ktCO_2e$.	Fat supplement uptake (% DM in ruminant diet); enteric CH_4 reduced ($ktCO_2e$)
M5	Biogas systems in pig farming	Install biogas systems for 5,000 pigs across four locations, reducing 22.47 $ktCO_2e$ from manure methane.	Biogas systems installed (no. of sites; herd capacity in pigs); manure CH_4 reduced ($ktCO_2e$)

These measures reduce emissions by 944 $ktCO_2e$ in 2035 which is 30% reduction from BAU as shown in Figure 10.

[16] Compounds such as dicyandiamide (DCD), nitrapyrin and 3,4-dimethylpyrazole phosphate (DMPP). These compounds reduce nitrogen losses through leaching and nitrous oxide emission, improving fertilizer efficiency.

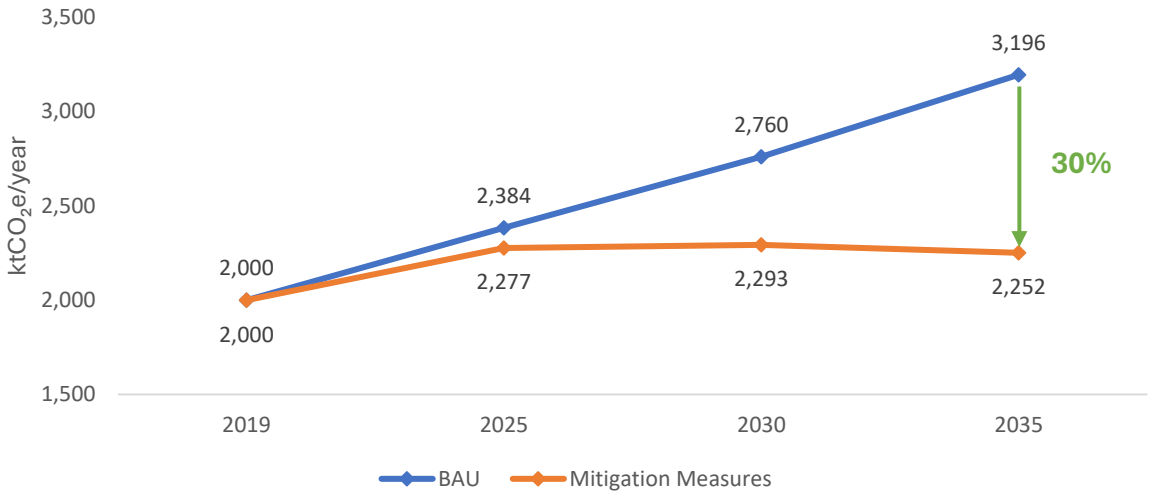


Figure 10: GHG Reduction - BAU vs Mitigation Scenario for Agriculture

The mitigation pathway includes early adoption (2025–2030) to stabilise emissions, followed by scale-up (2030–2035) to achieve significant reductions through expanded implementation of key measures.

In addition to the key measures mentioned above, Guinea-Bissau can implement the following sustainable agricultural practices:

- **Zero Tillage**: It is farming practice in which crops are planted without ploughing or disturbing the soil. The practice retains crop residues on the soil surface, helping to reduce erosion and improve soil moisture retention. Reduced soil disturbance increases soil organic matter and enhances microbial activity involved in nutrient cycling. Over time, this improves soil nitrogen retention and availability for crop growth.
- **Agroforestry**: Integration of trees with crop and livestock systems improves carbon sequestration, enhances soil fertility and reduces vulnerability to drought and erosion.
- **Crop Rotation**: Alternating different crops across planting seasons improves soil fertility, reduces pest pressure and enhances nutrient cycling.
- **Organic Farming**: Organic farming improves soil health, enhances soil carbon storage and reduces dependence on synthetic fertilizers, thereby contributing to lower greenhouse gas emissions and improved resilience of agricultural systems.

4.2 Energy

The energy sector is a priority for mitigation under NDC 3.0 due to its growing contribution to GHG emissions, driven by increasing demand for electricity, cooking energy and transport services, while also offering significant mitigation potential through renewable energy expansion and energy efficiency improvements. Mitigation measures are structured across four key sub-sectors. Energy efficiency represents a cost-effective opportunity to reduce emissions through improvements in lighting, appliances and grid systems, particularly given the country's reliance on diesel generation and a developing electricity network. Clean cooking is another high-priority area, as the heavy dependence on biomass contributes to deforestation, indoor air pollution and emissions, making the transition to improved cookstoves and alternative technologies critical. Renewable energy development, especially solar and hydropower, is central to enhancing energy security, reducing reliance on imported fossil fuels and expanding access to electricity. In the transport sector, transitioning towards cleaner mobility solutions and improving system efficiency can reduce emissions while addressing the challenges of an aging and inefficient vehicle fleet. Together, these interventions aim to reduce emissions, improve energy access and

support sustainable development. The key mitigation measures are presented in Table 6.

Table 6: Mitigation Measures (2035) - Energy Sector

Code	Mitigation Measures	Target	Indicator
M6	Efficient appliances and lighting (LEDs, ACs, refrigerators, street lighting) reduce electricity demand.	Deploy energy-efficient lighting and appliances, including: ○ Efficient household LED lighting – 200,000 units (21.4 $ktCO_2e$ reduction) ○ Replacement of CFLs with LEDs – 125,000 units (1.6 $ktCO_2e$ reduction) ○ Efficient office LED lighting – 50,000 units (3.1 $ktCO_2e$ reduction) ○ Efficient Street lighting – 50,000 units (27 $ktCO_2e$ reduction) ○ Efficient air conditioners – 10,000 units (7.7 $ktCO_2e$ reduction) ○ Efficient refrigerators – 10,000 units (13 $ktCO_2e$ reduction) Total estimated emissions reduction: 74.7 $ktCO_2e$.	Efficient units deployed by type (no. of units); electricity demand/GHG reduced ($ktCO_2e$)
M7	Grid and system efficiency improvements (loss reduction, power factor correction, HVAC optimisation) reduce energy waste.	Improve grid and system efficiency including: ○ Electric grid efficiency improvements – 10 GWh electricity savings (5.8 $ktCO_2e$ reduction) ○ Power factor correction – 1,000 commercial buildings (112 $ktCO_2e$ reduction) ○ HVAC system	Grid losses reduced (GWh); power-factor-correction coverage (buildings); HVAC floor area optimised (m^2); GHG reduced ($ktCO_2e$)

Code	Mitigation Measures	Target	Indicator
		optimization – 200,000 m^2 of floor area (10.8 $ktCO_2e$ reduction) Total estimated emissions reduction: 129 $ktCO_2e$.	
M8	Clean cooking transition (efficient wood and charcoal stoves, LPG, electric and induction) reduces biomass use.	Accelerate the transition to clean cooking through efficient biomass, LPG, electric and induction stoves, as follows: ○ Efficient wood stoves – 100,000 units (133.8 $ktCO_2e$ reduction) ○ Efficient charcoal stoves – 20,000 units (5.9 $ktCO_2e$ reduction) ○ LPG stoves replacing traditional wood stoves – 2,000 units (4 $ktCO_2e$ reduction) ○ Efficient electric and induction stoves – 4,000 units (1 $ktCO_2e$ reduction) Total estimated emissions reduction: 144.3 $ktCO_2e$.	Improved/clean cookstoves deployed by type (units); biomass use/GHG reduced ($ktCO_2e$)
M9	OMVG hydropower grid connection	Connect 40 MW of OMVG hydropower to the national grid, displacing diesel-based electricity generation and delivering an estimated emissions reduction of 91.48 $ktCO_2e$	OMVG Hydropower capacity connected to grid (MW); diesel generation displaced/GHG reduced ($ktCO_2e$)
M10	Solar deployment (utility-scale PV, mini-grids, street lighting) expands clean energy access.	Expand solar energy deployment through utility-scale PV, off-grid systems and solar street lighting as follows:	Solar capacity installed (MW); solar street lights (units); GHG reduced ($ktCO_2e$)

Code	Mitigation Measures	Target	Indicator
		○ Utility-scale solar PV – 40 MW (50 $ktCO_2e$ reduction) ○ Rural electrification Off-grid solar PV – 24 MW (31.5 $ktCO_2e$ reduction) ○ Solar street lighting – 20,000 units (9.7 $ktCO_2e$ reduction) Total estimated emissions reduction: 91.4 $ktCO_2e$.	

These measures reduce emissions by 531 $ktCO_2e$ in 2035 which is 90% reduction from BAU as shown in Figure 11.

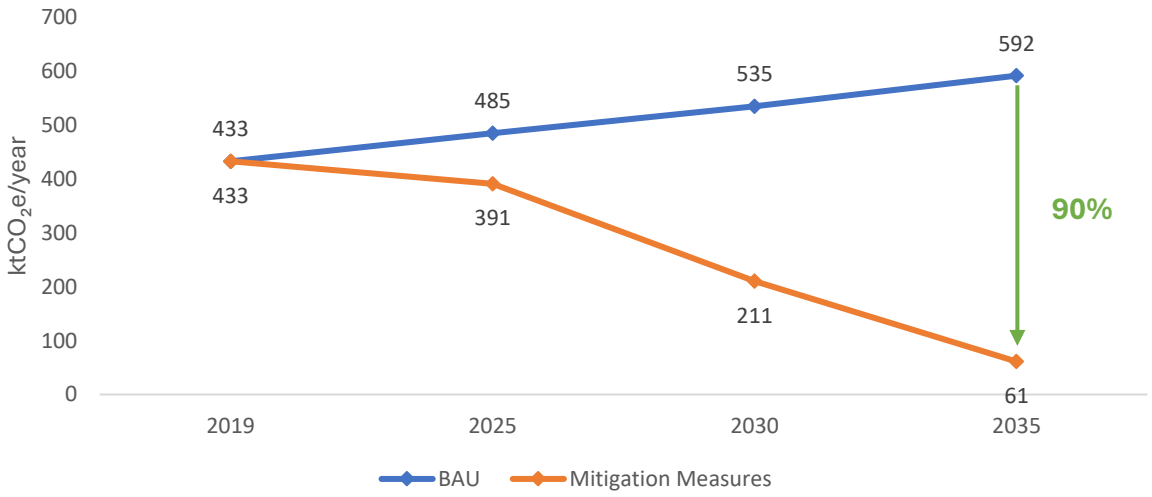


Figure 11: GHG Reduction - BAU vs Mitigation Scenario for Energy

The mitigation pathway includes initial deployment (2025–2030) followed by scale-up (2030 - 2035), driven by renewable energy expansion and efficiency improvements.

In addition to the key mitigation measures mentioned above, Guinea-Bissau, through its National Energy Policy Horizon **2026-2035** aligns with the global transition towards sustainable transport by promoting the adoption of electric vehicles (EVs) and low-emission mobility solutions. Expanding e-mobility can contribute to reducing greenhouse gas emissions from the transport sector, improving air quality and lowering dependence on fossil fuels over the long term.

Adaptation Co-benefit – Energy Access & Reliability (to vulnerable & in remote areas)

Guinea-Bissau's electrification rate remains low at around 45%, with significant disparities between urban areas (61%) and rural areas (less than 16%). Energy consumption is dominated by traditional biomass, which accounts for about 80% of total energy use. Limited access to

reliable electricity constrains essential services, including health, education and security.

Guinea-Bissau has strong solar energy potential, providing opportunities to expand clean energy access, particularly in rural areas. Increasing the use of renewable energy can reduce reliance on biomass while improving energy access, resilience and sustainability. The proposed measures are outlined in Table 7**Error! Reference source not found.**.

Table 7: Adaptation Priority - Energy Access and Reliability

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
MA1	**Universal energy access and round-the-clock reliability in urban and rural areas:** MA1.1: Enhance the electricity coverage to cover all urban and rural households and utilities, prioritizing vulnerable groups	○ ~80-100% population with reliable energy access by 2035	○ Prioritizing women and children dominant households and localities with ~50% target coverage by 2035
MA2	**Promote clean energy solutions to strengthen rural and remote energy resilience:** MA2.1: Promote renewable energy solutions for irrigation, agro-processing etc. MA2.2: Encourage low-carbon bioenergy solutions (cashew shells, biogas from livestock waste like cow dung) where locally available and economically viable MA2.3: Deploy solar mini-grids and stand-alone systems in rural, island and remote communities to increase electricity access MA2.4: Promote and incentivize improved/solar cookstoves to reduce firewood consumption, improve household energy security and air quality and reduce pressure on forests and mangroves MA2.5: Organize regular awareness campaigns and training at community level on clean energy solutions (solar, bioenergy, clean cooking) and green skilling of local community/youth groups in repair and maintenance	○ Reducing biomass consumption by 60-70% by 2035 ○ Quarterly campaigns/awareness at community level ○ Pilot 1 mini grid in critical (energy deprived) remote/rural areas by 2035	○ Awareness and capacity building of 70% women, youth and children on clean energy solutions at household and community level ○ Transition of 65-70% households to clean cooking solutions (targeting vulnerable women groups)

Initiatives like Solar Programme for Resilience (Financiers – UNDP, Ministry of Energy) promotes solar panels in rural areas as an energy resilience strategy. Women in Guinea-Bissau are also

involved in renewable energy projects, including the installation and maintenance of solar mini grids, promoting access to clean energy in rural communities and strengthening local energy resilience. Additionally, UNDP-GEF project, "Modern energy services through mini-grids and low carbon bioenergy techniques" explicitly consider gender aspects in the proposed adaptation activities and have developed gender action plans and gender-sensitive budget activities.

4.3 Land Use, Land Use Change and Forestry (LULUCF)

The LULUCF sector remains the foundation of Guinea-Bissau's net negative GHG balance, driven by the carbon sequestration capacity of its forests, mangroves and land-use systems. Mitigation efforts under NDC 3.0 focus on maintaining and enhancing existing carbon sinks through reforestation and sustainable land management measures. Reforestation remains the primary quantified mitigation measure in the sector due to its direct contribution to enhancing carbon sequestration, as presented in the Table 8.

Table 8: Mitigation Measures (2035) - LULUCF

Code	Mitigation Measures	Target	Indicator
M11	Reforestation[17] enhances carbon sequestration	Implement reforestation across 150,000 ha to enhance carbon sequestration, delivering an estimated emissions reduction of 550 $ktCO_2e$.	Area reforested (ha); carbon sequestration enhanced ($ktCO_2e$)
M12	REDD+: Avoided Deforestation	Protect 100,000 ha of forests through REDD+, delivering an estimated emissions reduction of 366.67 $ktCO_2e$.	Forest area protected(ha); Carbon stock conserved ($ktCO_2e$)

These measures enhance sequestration by 917 $ktCO_2e$, which is 3% improvement in 2035 compared to BAU scenario as shown in Figure 12.

[17] The reforestation target includes both terrestrial forest restoration and mangrove restoration activities, recognizing their contribution to carbon sequestration

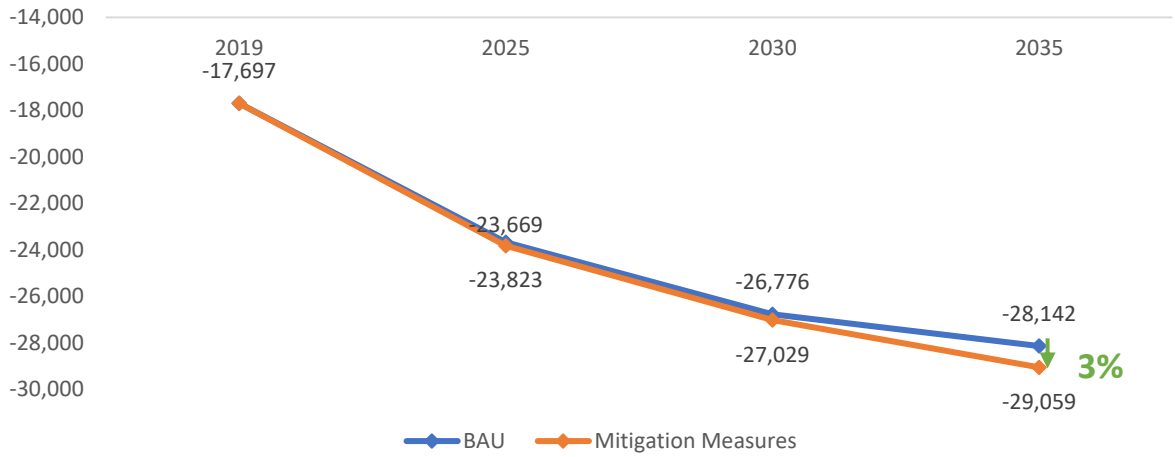


Figure 12: GHG Reduction - BAU vs Mitigation Scenario for LULUCF

Guinea-Bissau's extensive forest and mangrove ecosystems provide significant opportunities to generate climate and socioeconomic benefits through REDD+ implementation while positioning the country to participate in results-based climate finance and voluntary carbon market mechanisms under Article 6 of the Paris Agreement. Realizing this potential will require strengthening forest monitoring systems, land-use information, carbon accounting, safeguard frameworks and institutional coordination to ensure robust measurement, reporting and verification of emission reductions.

4.4 Waste

Waste management in Guinea-Bissau remains at an early stage of development, with most municipal solid waste disposed of in open and unmanaged dumping sites, limited collection and treatment systems and inadequate wastewater infrastructure. This results in significant methane emissions from the decomposition of organic waste, making the sector an important contributor to GHG emissions. The city of Bissau generates approximately 355 tonnes of municipal solid waste (MSW) per day, of which only about 66% is collected, while a significant share remains unmanaged and released into the environment. Organic waste constitutes a major share of the waste stream, with an estimated recovery potential of around 126 tonnes/day, while plastic waste generation is estimated at about 9,000 tonnes/year with significant leakage into land and water bodies[18]. Addressing these challenges, the Mitigation measures are proposed in Table 9 which focus on reducing emissions through improved waste treatment practices.

Table 9: Mitigation Measures (2035) - Waste

Code	Mitigation Measure	Target	Indicator
M13	Plastic waste recycling plant	Expand plastic waste recycling through a 5,000 t/year facility, delivering an estimated emissions reduction of 2.6 $ktCO_2e$ by displacing virgin plastic	Plastic recycling capacity (tonnes/year); GHG avoided vs virgin-plastic production ($ktCO_2e$)

[18] Waste Wise Cities Tool (WaCT) assessment of Bissau

Code	Mitigation Measure	Target	Indicator
		production[19].	
M14	Municipal solid waste composting plant	Establish a 100 t/day municipal solid waste composting plant, diverting organic waste from disposal and delivering an estimated emissions reduction of 224.23 $ktCO_2e$.	Composting capacity (tonnes/day); organic waste diverted; CH_4/GHG reduced ($ktCO_2e$)

Under the BAU scenario, waste sector emissions are projected to increase steadily due to population growth and continued reliance on open dumping. In contrast, the mitigation scenario reflects a substantial reduction in emissions following the implementation of a plastic waste treatment facility, with impacts becoming evident after 2030 as the facility becomes operational as shown in Figure 13.

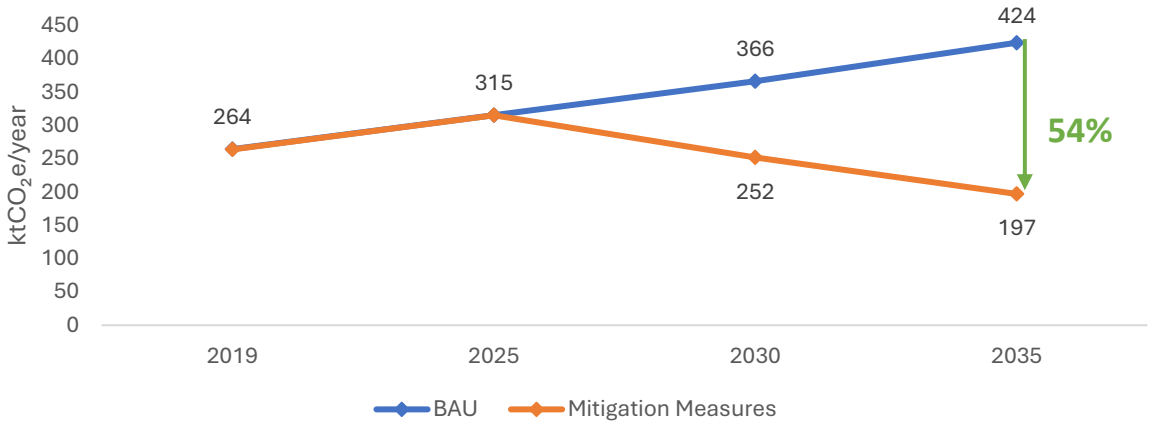


Figure 13: GHG Reduction - BAU vs Mitigation Scenario for Waste

The reduction in waste sector emissions from 366 $ktCO_2e$ under the BAU scenario to 252 $ktCO_2e$ in 2030 and further to 197 $ktCO_2e$ in 2035 (54% reduction) is driven by the phased implementation of waste management measures focused on plastic recycling and organic waste composting. Under the mitigation scenario, Guinea-Bissau proposes the establishment of a plastic recycling facility with an initial treatment capacity of 2,000 tonnes/year by 2030, which will be expanded to 5,000 tonnes/year by 2035. Similarly, a municipal solid waste composting plant with a treatment capacity of 50 tonnes/day is proposed by 2030 and further scaled up to 100 tonnes/day by 2035. These measures reduce methane emissions from unmanaged organic waste decomposition while also reducing open dumping and uncontrolled burning of waste.

The successful implementation of these measures will require gradual strengthening of municipal waste collection and segregation systems across urban areas, particularly in Bissau. Guinea-Bissau can adopt a phased waste management strategy focused on improving waste collection coverage, establishing designated collection points and promoting source segregation of dry and wet waste at household and community levels. Public awareness

[19] The emission reduction is calculated based on the difference in emissions between the cradle-to-gate production of virgin plastic and recycled plastic

campaigns through schools, local communities and municipalities can support behavioural change and improve participation in waste segregation practices. Strengthening coordination between municipalities, local communities and private sector actors will also be important to support collection, transportation and treatment of recyclable and organic waste streams.

4.5 Industrial Process and Product Use (IPPU)

Guinea-Bissau has a relatively low level of industrialisation, with a focus on cement production and small-scale food and beverage processing. As a result, the IPPU sector is not considered a major contributor to national GHG emissions at present. A review of national climate reports shows limited information on industrial processes, with existing documents highlighting challenges related to data availability, activity statistics and methodological application. While recent reporting efforts have included estimates for the IPPU sector, the level of detail on sources and activity data remains insufficient. Similarly, national inventory reporting continues to focus primarily on key sectors such as energy, agriculture, waste and LULUCF, reflecting current data and institutional priorities.

With these constraints, the current understanding of IPPU emissions is still being refined and there is limited clarity on sectoral trends and emission drivers. In this context, NDC 3.0 adopts a cautious and transparent approach by not including specific mitigation measures or quantified targets for the IPPU sector at this stage, while recognising the importance of strengthening data systems and reporting frameworks. This sector will be further assessed and progressively integrated in subsequent NDC cycles as data availability and methodological structure improve.

5. ADAPTATION

Guinea-Bissau is highly exposed to climate risks, including sea level rise, rainfall variability, coastal erosion and rising temperatures. These risks have significant impacts across key sectors, particularly for vulnerable communities. Key impacts are observed in agriculture, water resources, ecosystems, energy systems, health and infrastructure.

Additionally, existing constraints include a lack of specialized technical capacity, insufficient financial resources and institutional challenges. For successful on-ground implementation, NDC 3.0 strongly mentions importance of enhancing the technical capabilities of national institutions to plan, implement and monitor adaptation actions through training of professionals and the strengthening of governance (intersectoral/interministerial coordination). Further, it is imperative to enhance country's access to international finance by extending assistance and support transfer of sustainable and locally adapted technologies, especially in vulnerable sectors such as agriculture and water management. Community engagement in the adaptation process and public awareness on adaptive practices and localized implementation is essential to drive community ownership and buy-ins.

5.1 Broad Vision and Objectives

Guinea-Bissau aims to become a climate-resilient country by protecting its people, ecosystems and economy from climate risks. NDC 3.0 integrates climate resilience into national development planning and prioritises vulnerable sectors and communities.

Objectives:

- Strengthen resilience of climate-sensitive sectors to protect livelihoods and food security
- Strengthen institutional and technical capacity for planning, implementation and monitoring
- Enhance access to climate finance and promote transfer of locally appropriate technologies
- Mainstream climate adaptation into national policies, budgets and development plans through robust intersectoral and interministerial coordination mechanisms
- Foster community engagement and public awareness to drive local ownership of adaptive practices and ensure that the most socio-economically marginalized groups are reached and prioritized

5.2 Approach to National Adaptation Plan (NAP) and NDC 3.0 Alignment

Guinea-Bissau's NDC 3.0 establishes a comprehensive high-level vision for climate adaptation, articulating sector-specific measures, concrete action points, and measurable targets across all seven adaptation sectors, with Gender and Social Inclusion mainstreamed as a cross-cutting component throughout.

Recognizing that effective adaptation requires deeper analytical grounding, the **National Adaptation Plan (NAP 2027) currently under development will build upon this foundation of NDC 3.0 through detailed studies and assessments, including Risk and Vulnerability Assessments, to further refine the sectoral scope and priorities**. The alignment framework of NDC 3.0 and NAP 2027 is shown in Figure 14.

The NAP will:

- **Adopt and align with** the sectoral measures and targets outlined in NDC 3.0, ensuring

policy coherence and avoiding duplication of efforts;

- **Elaborate specific, actionable items** under each sector with a strong focus on implementation pathways, moving from high-level vision to on-the-ground delivery;

- **Develop a rigorous, science-based prioritization methodology** to rank sectoral measures and actions based on urgency, feasibility, impact, etc.; and

- **Undertake comprehensive cost estimation** of all prioritized actions to identify funding requirements and guide resource mobilization strategies.

To ensure long-term coherence between the two complementary frameworks, NDC 3.0 and the NAP are deliberately aligned across their respective planning horizons. **NDC 3.0 sets targets through 2035, while the NAP extends its planning horizon to 2050, reflecting the longer-term nature of structural adaptation**.

To bridge these timelines seamlessly:

- **The NAP will fully align with NDC 3.0 targets through 2035**, treating this period as the foundational phase of adaptation action, before developing additional targets for the medium- to long-term period through 2050;

- **NDC 3.0, in turn, frames its current targets and actions (through 2035) as short-term milestones**, with progress and actions beyond 2035 designated as mid-term and long-term, consistent with the NAP's extended timeline; and

- **This dual alignment ensures a unified implementation architecture**, where near-term NDC commitments seamlessly feed into and are tracked within the broader NAP framework, enabling efficient planning, monitoring, and reporting across both instruments.

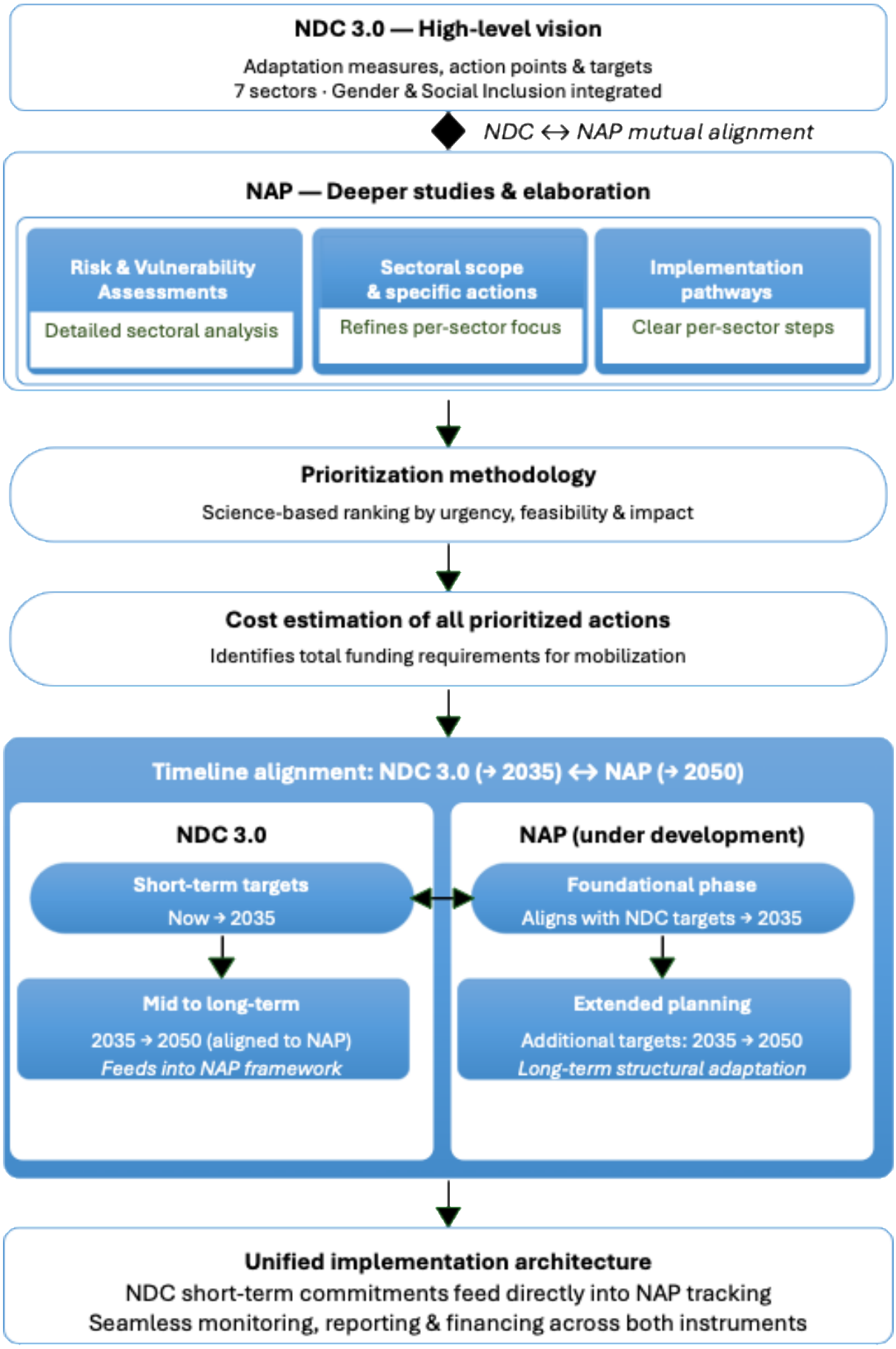


Figure 14: NDC 3.0 & NAP (2027) Alignment Framework

5.3 Food, Agriculture & Livestock

The agricultural sector is the backbone of Guinea-Bissau's economy, providing a source of income for 85% of the population. Major crops include rice, cashew and vegetables. Rice is a staple food, while cashew is the main export crop, accounting for more than 90% of the country's exports. However, agriculture faces challenges due to climate change impacts, lack of infrastructure and limited access to modern technologies.

The sector is highly vulnerable to climate change, including droughts, heat stress, irregular rainfall and flooding. Around 11 to 51% of population (depending on the year and region) suffer chronically from food insecurity. Small farmers in rural areas are most affected due to their direct dependence on climatic conditions for subsistence, commercial cultivation (over-reliance on cashew) and lack of crop diversity. Additionally, saltwater intrusion, especially in rice fields in mangroves due to high tides and the consequent destruction of floodplains and anti-salt dikes, acidification (due to lack of rainfall), significant drop in the water table and increase in groundwater salinity directly impacts yields output, productivity and soil suitability. For instance, reduction of crop yields by about 20-30% has been observed (vegetables, cereals (rice and basil maize), peanuts and cashew nuts), due to drought, high temperatures, poor rainfall distribution and/or floods from lowlands for prolonged periods; pushing 33% of the population towards food insecurity. This has direct and disproportionate impacts on children, particularly in poor rural households, by reducing dietary diversity, increasing the risk of acute and chronic malnutrition, weakening immunity and heightening exposure to illness. Food insecurity also affects children's learning and protection outcomes, as household income losses can reduce school attendance, increase caregiving burdens and limit access to health, nutrition and WASH services that are essential for child growth and development.

Livestock sector contributes 17% to the national GDP and 32% to the GDP of the agricultural sector, but public investment in the sector remains low. Issues like the lack of sufficient technical resources to support shepherds, infrastructure for water supply, poor animal health control, increase in temperature and decrease in rainfall leads to lack of water for pastures, the decrease in grazing areas and hence severe reduction in the productivity. The proposed measures are outlines in Table 10.

Table 10: Adaptation Priority Area – Food, Agriculture and Livestock

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
A1	**Adopt climate-resilient seeds, crops and production systems:** A1.1: Operate community-level seed banks, emergency reserves and community nurseries A1.2: Ensure access to cheaper and short-cycle, heat/drought-resistant seeds, rice and staples and salt-tolerant crops for coastal lowlands A1.3: Promote climate-resilient crop diversification, crop rotation and organic fertilizers/waste-to-manure	○ 15% farmers by 2030, 25% by 2035 covered by community seed banks & emergency reserves ○ 100% transition from invasive crops by 2035	○ Prioritizing Women Farmers (at least 40% of total 2035 target) in providing access to seed banks and nurseries for climate resilient crops ○ Capacity Building of 60% women and youth farmers by 2035 in adopting climate resilient cropping patterns

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
	A1.4: Enhance soil fertility and erosion control through mulching and composting; bunds and walls; and rehabilitation of degraded soils in cashew & rice zones A1.5: Promote biodiversity-friendly rice production systems through natural pest control and biological pest management in rice paddies and crop rotation methods A1.6 Implement sustainable and climate-smart livestock farming practices by providing fair access to funding and training for livestock farmers A1.7 Gradually ban the open-air burning of agricultural waste, restrict the use of fire in agriculture and convert agricultural waste into eco-friendly charcoal.		
A2	**Enhance water management and watershed protection:** A2.1: Expand irrigation & water-control infrastructure through low-cost mini-reservoirs, solar-powered irrigation pumps, micro dams, water-control gates and barriers and large-scale hydro-agricultural development (wherever needed) A2.2: Promote rainwater harvesting through community storage tanks and household and farm-level rainwater catchment systems A2.3: Rehabilitate degraded watershed areas to protect freshwater lenses A2.4: Improve water efficiency through water-saving techniques like drip, micro-sprinklers and climate-smart irrigation timing and water-use	○ 50% of agricultural lands covered under water-control infrastructure and water saving techniques by 2035 ○ 60% farmers trained on various water management techniques by 2035 ○ 30% households and farmlands adopting RwH systems by 2035 ○ 50% rehabilitation of watershed	○ Prioritizing women farmers (at least 50% of total 2035 target) for training on various water management techniques

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
		areas by 2035 (prioritizing regions/rivers like Geba River, Corubal River, Balana River, Cumbija River for fresh waters, Cacheu River, Mansoa River, Tombali River, Cacine River, Rio Grande de Buba for salt water)	
A3	**Strengthen animal health and climate-resilient livestock systems:** A3.1: Strengthen veterinary services, vaccination, diagnostics to improve animal health impacted due to climate change A3.2: Maintain climate-resilient breeding stock to improve disease resistance, heat tolerance and productivity A3.3: Establish and manage designated transhumance corridors with watering points and grazing reserves to facilitate safe livestock mobility and prevent farmer–herder conflicts	○ 40% livestock coverage by veterinary services by 2035 ○ 20% breeding stock resilient by 2035	
A4	**Promote Climate-Resilient Mechanization for Food Production:** A4.1: Expand access to climate-appropriate agricultural machinery and energy-efficient technologies A4.2: Build technical capacity for operation and maintenance by training farmers, youth and women and cooperatives and support creation of decentralized repair and	○ 50% farmers, youth, women and cooperatives trained by 2035 on resilient mechanization practices ○ 30% farm mechanization by 2035	○ Prioritizing youth and women (50% of total trained by 2035) for training on resilient mechanization practices

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
	spare-parts supply networks A4.3: Integrate mechanization with traditional & agroecological (e.g.- mulching, green manure) farming practices A4.4: Reduce barriers to machinery acquisition with respect to credit schemes, reduced import duties and bulk purchase		
A5	**Enable land-use management and reforestation:** A5.1: Ensure proper land-use management through agroforestry systems A5.2: Restore riverbanks along the vulnerable and at-risk rivers A5.3: Scale mangrove restoration through natural and modern regeneration processes and rice field rehabilitation A5.4: Operationalize Agroecological Zoning (AEZ) for climate-resilient land-use planning by implementing national AEZ map and preventing expansion of cashew monoculture and helping in agricultural diversification (horizontally and vertically)	○ 50% restoration of river length by 2035 (prioritizing Geba River, Corubal River, Balana River, Cumbija River for fresh waters, Cacheu River, Mansoa River, Tombali River, Cacine River, Rio Grande de Buba for salt water) ○ 60% mangroves restoration by 2035 (prioritizing mangroves in regions like Cacheu, Oio, Quinara, Tombali, Bijagos Archipelago, Biombo)	
A6	**Strengthen rural markets and value chain and reduce post-harvest losses:** A6.1: Improve market linkages through better storage, logistics and sales infrastructure (digital and	○ 70% reduction in post-harvest losses by 2035	

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
	physical market information systems) A6.2: Reduce post-harvest losses through solar-powered cold storage, warehouse management, efficient drying technologies and food loss reduction training		
A7	**Ensure risk management and social protection:** A7.1: Adopt and Operationalize agricultural insurance products; pilot parametric insurance solutions (weather-indexed, impact on productivity-based, etc.) A7.2: Link insurance with agricultural credit and climate-resilient investment support A7.3: Provide safety nets for vulnerable households especially families with children, during climate shocks (seeds, tools, fertilizers, cash transfers)	○ Pilot parametric insurance in 5 at-risk agricultural regions by 2035 ○ 40% vulnerable households under safety nets by 2035 (priority to 2-3 most vulnerable regions like Oio, Gabu, Bafata)	○ 50% of the total 2035 targeted Vulnerable households to be women-headed or run by women farmers
A8	**Enable policy implementation, monitoring systems and capacity building to unlock climate-smart agriculture (CSA) investment:** A8.1: Develop a national CSA policy framework for implementation A8.2: Deploy digital agriculture monitoring systems for crops, livestock and climate stress A8.3: Build national capacity to access climate finance	○ Pilot digital agricultural monitoring systems - start with 8 pilots till 2035	
Gender-responsiveness			
A9	**Enable policy gender-responsiveness to unlock climate-smart agriculture (CSA) investment:** A9.1: Strengthen CSA extension services for women and youth inclusion, extending land ownership		○ Extension of land ownership rights to 30% eligible women by 2035 ○ 70% women and youth coverage by 2035 for capacity building and subsidy benefit

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
	rights to women to avail benefits (subsidies, capacity building, insurance, etc.)		

The proposed measures aim to strengthen food security by increasing the resilience of agricultural systems and promoting crop diversification. Ecosystem-based approaches, including mangrove restoration and watershed management, help reduce saltwater intrusion, erosion and land degradation. Climate-resilient farming practices and soil management improve productivity and reduce vulnerability to climate extremes. Community nurseries, decentralized seed banks and livestock broodstock will ensure that farmers can quickly recover production after disasters. Rainwater harvesting and micro-reservoirs provide critical buffers against drought and water security.

These measures are aligned with national strategies, including the Agricultural and Rural Sector Master Plan, which promotes climate-resilient agriculture and food security. Ongoing initiatives support irrigation development, coastal management and sustainable agriculture, while national policies increasingly prioritise value-added and climate-resilient agricultural systems. In the livestock sector, policy measures focus on improving water access, supporting small-scale production and strengthening resilience.

5.4 Water Access, Resource Management & Sanitation

In Guinea-Bissau, water availability and quality are under increasing pressure due to reduced precipitation, salinisation and watershed degradation. Irregular rainfall and rising temperatures lead to a decrease in river flow and groundwater table. These risks undermine the supply of drinking water, agricultural irrigation and the ecological balance of aquatic ecosystems. Only 10% of the population has access to piped water, 28% use protected wells and 18% use pumps or makeshift sources. About 13% of the population walks 30 minutes or more to reach drinking water and 6% have access to inadequate sources, leading to women and girl drudgery[20]. The rate of access to improved water sources is 65% (84% in urban areas and 53% in rural areas)[21].

Climate change is likely to impact current service levels and future conditions for WASH development. Higher temperatures will lead to higher demand for water, aggravating seasonal scarcity and conflicts over rare resources. Hazards such as drought and sea level rise that tend to become more intense in the future might have consequences over water sources, both in terms of availability and quality. More frequent floods will also affect water quality but especially infrastructure. Further, lack of adequate sanitation infrastructure and treatment systems and release of wastewater in water bodies contaminate the water resources. Damaged latrines for instance contaminate the environment and contribute to the outbreak of epidemics that are particularly severe among the most vulnerable, the poor, children, the elderly and pregnant women. Poor water and sanitation quality is responsible for many infectious diseases (diarrhea, dysentery, enteric fever). This also leads to chronic malnutrition affecting more than 25% children[22].

[20] Fourth National Communication (NC4), 2025
[21] MICS4, 2011
[22] MICS5, 2014, major causes include food insecurity, inadequate health services, poor water and sanitation, inadequate child feeding practices and high illiteracy rates among women.

It is key to clearly identify specific climate risks for water, sanitation and hygiene in rural and urban settings. Policies should address such risks and at the same time prioritize the most vulnerable groups. Strengthening the institutional component and creation of alternative funding mechanisms are some operational challenges and hence needs operationalization of the National Water Fund; the completion of the review process of the sector's main strategy and policy instruments; and improving the state of knowledge on water resources, through the rehabilitation of national hydrometric and piezometric observation networks. The Directorate-General for Water Resources, in cooperation with international partners, has promoted the modernization of the hydrological observation network, although financial and technical challenges remain. The proposed measures are outlines in Table 11 below.

Table 11: Adaptation Priority Area- Water Resource and Sanitation

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
A10	**Expand climate-resilient drinking water sources and safeguard existing ones** A10.1: Develop new catchments, wells and boreholes in underserved areas A10.2: Map and monitor aquifers for pollution, salinity and over-extraction A10.3: Restore riverbanks along rivers to reduce erosion A10.4: Expand watershed rehabilitation A10.5: Build groundwater monitoring systems and implement integrated groundwater and aquifer management	○ Monitoring of 50% water resources by 2035 ○ 50% restoration of river length by 2035 (prioritizing Geba River, Corubal River, Balana River, Cumbija River for fresh waters, Cacheu River, Mansoa River, Tombali River, Cacine River, Rio Grande de Buba for salt water)	○ Prioritizing areas/zones with high female drudgery (observed for fetching water from distances) for develping new catchments, wells and bo`reholes
A11	**Universal water access and ensure drinking water safety** A11.1: Expand and rehabilitate water infrastructure (pipelines, tanks, pumps, boreholes) A11.2: Encourage household and community level water capture through Rainwater Harvesting systems A11.3: Standardize chlorination & disinfection across all piped systems	○ 80% population with potable water access in urban areas by 2035 (disaggregate by gender and age) ○ 68% population with basic service access in rural areas by 2035 ○ 30% households adopting RwH systems by 2035	○ 100% children and schools have access to basic solar water service by 2035 ○ Coverage of awareness and training on water safety and quality in 70% schools/institutes by 2035 ○ Priority coverage of potable water

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
	A11.4: Enhance public awareness of households and schools on water disinfection methods like boiling, chlorine, moringa etc. A11.5: Promote climate-resilient water supply technologies including solar-powered water pumps and decentralized solar-based water purification systems in household and institutions (schools and (Health Care Facilities) HCF))	○ 70% population coverage through academia and local govt. led campaigns and workshops by 2035	access to women community (50% of total targeted population in urban and rural areas by 2035)
A12	**Enhance monitoring systems & integrated river basin management** A12.1: Strengthen hydro-meteorological monitoring systems like gauges, rainfall stations, groundwater sensors etc. for water forecasting A12.2: Implement integrated river basin management (IRBM) plans for basins like Geba, Corubal through watershed management, riverbank restoration, pollution monitoring and sediment and erosion control A12.3: Establish nationwide norms for periodic quantitative & qualitative monitoring of water resources	○ 50% monitoring of river basins by 2035 (initiate with Geba and Corubal rivers) ○ Quarterly checks (quality/quantity) of water resources	
A13	**Strengthen water governance and institutional reforms including Transboundary Governance** A13.1: Strengthen institutional capacity for integrated water resources management (IWRM), localized Water	○ Setting up localized water committee/institution (1 in every administrative region) ○ Regional representations of the Ministry of	○ Target representation by women and youth local water committees and institution with at least 30% women representatives and 30% youth

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
	Security Plans and Water Budgets to increase water use efficiency A13.2: Implement the existing water code with the implication of all relevant institutions and establish mechanisms for monitoring, enforcement and incentivizing best practices A13.3: Decide formal roles & budgets of community water committees A13.4: Strengthen international cooperations like transboundary water cooperation A13.5 Elaborate common tools, laws and mechanism for the use and access to freshwater resources of the Corubal and Gêba rivers A13.6 Strengthen transboundary governance of the Maastrichtian aquifer (vital deep-seated groundwater resource for Guinea-Bissau) to enable strong joint monitoring and data-sharing arrangements with Senegal, Gambia, and Mauritania A13.7: Strengthen the regional presence of the Ministry of Natural Resources to improve local water governance, institutional coordination, monitoring, enforcement and support to decentralized water management structures. A13.8: Strengthen community-based management for the operation, maintenance and	Natural Resources established and functional in all administrative regions by 2035 ○ Community-based management mechanisms established and functional for climate-resilient WASH infrastructure in all administrative regions by 2035 ○ Functional water governance and WASH infrastructure monitoring system established at national level and operational in all administrative regions by 2035	representatives by 2035

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
	sustainable use of climate-resilient water and sanitation infrastructure. A13.9: Strengthen national and regional monitoring systems for water governance, infrastructure functionality, water quality, service delivery and climate-related risks, including regular data collection, reporting and use of digital monitoring tools.		
A14	**Safe and reliable sanitation systems (stormwater, wastewater and fecal sludge) and solid waste management** A14.1: Implement ways to treat wastewater, hospital, biomedical and other hazardous waste entering water resources A14.2: Expand drainage and sewerage network coverage and build relevant sewage and fecal sludge management systems A14.3: Institutionalize and Set up sustainable methods for organic waste treatment (like composting, Waste-to-Energy (WTE) units) A14.4: Pilot and scale up business models for recycling waste (Material Recovery Facilities) into usable products with market access A14.5 Strengthen municipal waste collection and treatment system A14.6 Implement recent	○ Drainage and sewerage coverage (for wastewater and fecal sludge) of 70% by 2035 ○ 50% population using safe and resilient sanitation services in urban areas and 30% in rural areas by 2035 (disaggregate by gender, age and disability) ○ 1 WTE as a pilot in Bissau city by 2030 ○ 45% organic waste sustainably treated by 2030, 80% by 2035 ○ 70% of households, schools and markets reached through behavior change campaigns on sanitation, hygiene, waste segregation and plastic reduction by 2035	○ 100% schools with access to gender - responsive basic sanitation and hygiene service by 2035 (disaggregate by gender, age and disability) ○ Prioritize development of safe sanitation services in women dominant households and areas

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
	elaborated national action plan to tackle plastic pollution with a strong focus on waste management A14.7: Implement a national efficient and spread collection system of waste A14.8: Households, schools and markets reached through behavior change campaigns on sanitation, hygiene, waste segregation and plastic reduction by 2035		
	Gender-responsiveness		
A15	**Gender-responsive and women-led water, sanitation and waste management systems** A15.1: Arrange for extended network coverage and increased number of water points A15.2: Provide gender-responsive Water, Sanitation and Hygiene (WASH) facilities in public institutions including schools and hospitals/health care facilities (HCF) A15.3: Train women and girls in climate-resilient WASH practices, water safety, household water treatment and the operation and maintenance of community water systems, strengthening their adaptive capacities A15.4: Engage an increased number of women in water management committees and decision-making bodies to represent their expectations and needs		○ Gender-sensitive WASH Facilities in 70% critical infrastructure and public buildings by 2035 ○ Training coverage - 80% by 2035 (start with women and girl community leaders/working women and extend to homemakers) ○ 30% women representation in water management, sanitation & health committees by 2035

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
	A15.5: Setting up women-led community level business opportunity for waste recycling and waste-to-product making for local markets A15.6: Implement gender sensitive circular economy on water, sanitation and waste. A15.7: Consider the presence of gender considerations in funding, national policies and other frameworks A15.8: Invest in capacity building of staff to conduct gender analyses, implement gender policies and foster equitable partnerships A15.9: Ensure alignment with national gender policies, strategies and international commitments A15.10: Enable leadership opportunities and decision-making authority for women within institutions, programs		

The above measures aim to significantly strengthen Guinea-Bissau's water resource management and water security by extending universal access, protecting freshwater sources, enhancing groundwater recharge, watershed protection and rainwater harvesting. Safeguarding water quality through upgrading wastewater treatment and solid waste management ensures stable public health and ecosystems.

These measures are aligned with national strategies, including NDC 2021, the National Adaptation Plan and the Integrated Water Resources Management Plan, which prioritise sustainable water management and improved water quality. Ongoing initiatives focus on strengthening water infrastructure, groundwater management, solar-powered water systems and low-cost water treatment solutions, particularly in rural areas.

5.5 Forests, Biodiversity & Protected Areas

Guinea-Bissau hosts globally significant coastal and terrestrial ecosystems, including mangroves, savannas, wetlands and island biodiversity that underpin fisheries, climate regulation, food systems and rural livelihoods. Guinea-Bissau is endowed with rich biodiversity with a large share of its natural resources still remaining unexplored. The country hosts vast ecosystems of mangroves, dry forests, savannas, islands and wetlands that constitute habitats

of for endangered species, fisheries resources and migratory birds. Protected areas such as the Orango National Park, the Lagoas de Cufada Natural Park and the João Vieira and Poilão National Park account for ~26% of the country's national territory[23] and play a vital role in conserving biodiversity while also contributing to carbon sequestration. Forests account for ~55% of the total national territory area in Guinea-Bissau[24], indicating their ecological and climate significance.

Despite this strong natural baseline, forest and ecosystem degradation has accelerated in recent decades. There has been substantial decline in forest cover, of the order of ~5,075 hectares, between 2001 and 2021, with savanna forests in the Oio, Bafatá and Gabú regions accounting for more than 57% of total losses[25]. This decline is a result of human activities including charcoal and firewood production, timber extraction for construction and the expansion of livestock and agriculture. Protected areas and their biodiversity are also under pressure from illegal logging and unregulated settlement, although degradation rates are generally lower within protected areas compared to unregulated landscapes.

Forest conservation and sustainable management are national priorities due to their role in climate regulation, biodiversity and livelihoods. Adaptation efforts focus on ecosystem restoration, strengthening protected area management and promoting sustainable land-use practices. Key actions include reforestation, community-based forest management and improved ecosystem monitoring, supported by strengthened institutional capacity. Gender-inclusive and community-driven initiatives further support sustainable livelihoods, biodiversity conservation and long-term ecosystem resilience. The proposed measures are outlines in Table 12.

Table 12: Adaptation Priority -Forest, Biodiversity and Protected Area

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
A16	**Restore degraded forests and climate-sensitive terrestrial ecosystems** A16.1: Reforest degraded lands using endogenic species A16.2: Scale up community reforestation initiatives like community-managed nurseries for producing endogenic forest seedlings A16.3 Establish a national guiding framework for Community Forest Management (emphasizing on traditional knowledge and ownership to indigenous/local communities)	○ Reforestation of 25% forests by 2035 ○ Set up Community Forest Management Framework	○ Establish key role of women and youth in Community Forest Management Framework ○ Enable 40% of total reforestation inititaives by 2035 to be led by women and youth groups

[23] UNDP Guinea-Bissau - Environment & Climate Change Resilience Webpage
[24] Forth National Communication (NC4)
[25] Forth National Communication (NC4), Page 45

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
A17	**Strengthen and manage protected areas (PAs) for climate resilience** A17.1: Update Protected Area Management Plans (PAMPs) to adopt integrated and participative approach and to address issues related to fire risks, floods, drought-sensitive habitats and invasive species and increase the expanse of national parks and community reserves A17.2: Strengthen institutional capacity of IBAP and PA staff through training and equipment to ensure climate-resilient ecosystem management A17.3: Reinforce initiatives for illegal logging and poaching A17.4: Reach the 30x30 objectives by 2035	○ Demarcate 100% of sensitive areas as protected areas zone by 2035 ○ National protected areas system reached 30% of national territory by 2035	
A18	**Promote sustainable land-use planning and ecosystem-based adaptation** A18.1: Develop and update Integrated Land Management Plans (ILMPs) A18.2: Integrate ecosystem-based adaptation into Local Development Plans (LDPs) A18.3: Align sectoral and national planning frameworks with ecosystem-based adaptation and land management principles A18.4: Promote community participation in land-use governance A18.5: Support local institutions to implement land-use and ecosystem adaptation measures	○ Update 40% of Integrated Land Management Plans ○ Integrate 30% LDPs with EbA ○ 70% community participation in land-use governance ○ 50% local institutions implement LU & EbA measures	○ 50% representation / participation of women and youth groups in land use governance by 2035
A19	**Establish a national biodiversity, forests and ecosystem monitoring system** A19.1: Develop an integrated national biodiversity database that combines data of forest cover, species and ecosystem	○ Institutionalise periodic (biannual) monitoring systems in protected areas	

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
	health. Link this database with regional and global biodiversity observation networks A19.2: Strengthen periodic and long-term monitoring using remote sensing, drones, local ecological knowledge and field surveys A19.3: Capacity Building and Training Programmes for local officers, surveyors and standard methods for inventorization and monitoring	○ Quarterly mechanism for training Programme	
Community Inclusion & Gender-responsiveness			
A20	**Promote community-based and gender-inclusive initiatives** A20.1: Build community-based committees, including youth- led initiatives for climate-resilient forest management, biodiversity protection and terrestrial ecosystem restoration A20.2: Offer gender-responsive training for women and girls in ecosystem monitoring, restoration and management practices for seed collection, nursery upkeep and non-timber processing A20.3: Explore sustainable livelihood models for communities based on non-timber forest produce	○ 1 community-level committee in every administrative unit ○ Quarterly meeting/capacity building	○ Majority community-level committee to be women/youth led or 40% women and youth members by 2035

Strengthening climate-resilient forest management, restoring degraded ecosystems and improving governance of protected areas are critical to maintaining ecosystem services, enhancing carbon sinks and supporting community livelihoods. These priorities are reflected in Guinea-Bissau's Strategy and National Action Plan for Biodiversity (NBSAP 2015–2020), developed under the Basic Law on the Environment (2011), which emphasizes conservation, sustainable use and community participation.

Guinea-Bissau has strengthened institutional frameworks for biodiversity and protected area management. As a REDD+ partner country, efforts are underway to access climate finance and carbon market opportunities, while improving biodiversity monitoring and data systems to support effective management.

5.6 Coastal Zones & Marine Ecosystems

Coastal areas account for ~50% of the national territory[26] and include a nutrient-rich marine coastline that supports diverse fish species. Large expanses of mangroves, concentrated in the coastal zone, account for ~22% of the country's surface[27] making Guinea-Bissau one of the most significant mangrove countries globally despite its small geographic size. These mangrove ecosystems provide essential nursery grounds for fish and other marine species and support the livelihoods of a large share of the population.

Coastal and marine ecosystems are increasingly exposed to climate change impacts, including tropical storms, flooding, coastal erosion and sea-level rise, which are expected to have long-lasting effects on coastal zones. These changes contribute to ocean acidification and increasing aridity of coastal areas, leading to growing scarcity of freshwater resources and declining marine productivity, with cascading impacts on the marine food chain. Mangrove ecosystems, which are central to coastal protection and fisheries, have declined by approximately ~19% between the years 2001 and 2021[28]. Guinea-Bissau's economy and livelihoods are highly dependent on coastal and marine ecosystems, making it particularly people's livelihoods and income extremely vulnerable to climate impacts. For instance, mangrove ecosystems provide essential nursery grounds for fish and other marine species and support the livelihoods of a large share of the population.

In highly vulnerable countries like Guinea-Bissau's, first category of resilient infrastructure must be based on natural green infrastructure acting as the primary frontline buffer like high-density mangrove root systems (*Rhizophora* and *Avicennia*) absorb and dissipate wave energy, significantly lowering physical stress on inner defensive walls, complex root networks anchor and secure unstable coastal mudflats, preventing shoreline collapse and the vegetation naturally traps floating sediment particles, slowing down tidal currents.

Guinea-Bissau has initiated several best practices to address these challenges, including mangrove reforestation, community-based natural resource management and the construction of adapted coastal ramps to improve resilience and access. A Strategic Coastal Management Plan is already in place, providing a framework for coordinated action across coastal zones. Together, these measures aim to strengthen ecosystem resilience, safeguard biodiversity and protect livelihoods dependent on coastal and marine resources. The proposed measures are outlines in Table 13.

Table 13: Adaptation Priority – Coastal Zones, Oceans and Marine Ecosystems

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
A21	**Strengthen coastal protection to reduce the impact of erosion, flooding and saltwater intrusion:** A21.1: Build/upgrade (rehabilitation and elevation) of coastal protection measures	○ Annual Risk & Vulnerability Assessment (high-risk areas) ○ 50 km of coastal and riverine anti-salt dykes constructed, elevated, or optimized by 2035	○ Prioritize vulnerable and high-risk areas with dominant women

[26] Fourth National Communication (NC4), 2025
[27] Updated NDC 2022 – Guinea-Bissau
[28] BUR1

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
	including dykes and salt barriers and expand nature-based solutions such as coastal buffers like sand, vegetative belt A21.2: Implement an integrated coastal management plan through enforcement of increased participation and strengthening of the Office of Coastal Planning (GPC) and community A21.3: Conduct coastal risk and vulnerability assessments using drones, GIS and remote sensing; include socio-economic exposure and vulnerabilities	○ 70% coastal area covered with NbS/grey infrastructure by 2035 (prioritize vulnerable and high-risk areas like Cacheu, Bijagos Archipelago, Tombali, Biombo, Bissau Autonome district and Quinara Regions)	population and groups
A22	**Restore and protect mangroves and wetlands:** A22.1: Reduce deforestation of mangroves associated with agriculture, charcoal, fuelwood etc. A22.2: Scale mangrove restoration through assisted natural regeneration and selective dyke flattening in abandoned rice fields A22.3: Strengthen co-management of mangrove ecosystem (IBAP and community surveillance committees for better enforcement of monitoring, patrolling and preventing illegal clearing and logging) A22.4: Promote sustainable mangrove-based and women-led livelihoods such as oyster farming, vegetable gardens, horticulture and provide requisite equipment, training and market linkages A22.5: Pass and implement the mangrove law that clearly states rules on use, restoration and penalties	○ 25,000 hectares degraded mangrove restoration by 2035 (targeting priority length of 50 km for mangrove restoration) ○ Integrity of low-lying agricultural basins secured against projected 2035 sea-level rise lines ○ Coastal shoreline erosion halted and down-river channel sedimentation (enablement) reduced by 75%	○ Women-led livelihood promotion

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
A23	**Build a unified and improvised system of coastal and ocean monitoring:** A23.1: Maintain continuous monitoring and combine hydromet, coastal, oceanographic and ecological data A23.2: Install more gauges, hydromet stations, salinity monitors and ocean sensors and train technicians for equipment operation and data management A23.3: Establish early monitoring systems for fisheries' hazards, coastal flooding, storm surge etc. and disseminate alerts through SMS, community radios and fishermen networks, considering accessibility	○ Integrated coastal and ocean monitoring and early warning systems coverage in 80% of high-risk coastal and marine areas by 2035	
A24	**Promote fisheries' protection and marine resource management:** A24.1: Build a robust Monitoring, Control & Surveillance (MCS) system to combat IUU (illegal, unreported and unregulated) fishing and conduct joint surveillance operations with neighbouring states (Senegal and Guinea) A24.2: Enforce strict controls on foreign industrial fleets and eliminate destructive practices like bottom trawling A24.3: Implement strict rules on waste discharge and fuel spills from industrial vessels A24.4: Support climate-resilient artisanal and subsistence fisheries, prioritizing women cooperatives with cold-chain infrastructure of ice-making units, solar-powered freezers, fish drying units and storage facilities. Upgrade artisanal	○ MCS in place by 2035	○ Engaging 25% women cooperatives in cold-chain infrastructure of ice-making units by 2035

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
	fisheries through insulated pirogues, improved gear and safety equipment		
A25	**Enhance integrated governance, community participation and legal frameworks:** A25.1: Create a formal coordination mechanism among IBAP, Ministry of Fisheries & Maritime Economy and local governments A25.2: Align the mangrove restoration strategies, fisheries management plans and coastal zone management plans together to resolve conflicting interpretations and for a better outcome A25.3: Update and implement coastal regulations, mangrove law, marine spatial planning rules and land-use and shoreline norms A25.4: Build local capacity, implement training programmes for coastal communities, fishermen associations, women's cooperatives, youth groups and enhance outreach through community radio, schools and local facilitators A25.5: Promote low-impact blue ecotourism in vulnerable island and coastal ecosystems like in Bijagós	○ Biannual Training cum dissemination Programme - community/women/youth led discussion	○ Women and youth led training programmes with at least 50% women and youth representation as coastal community, fishermen or cooperatives by 2035 ○ 40% school engagement in outreach and dissemination activities

Guinea-Bissau is advancing climate-resilient coastal and ecosystem restoration through national and partner-supported initiatives. These efforts focus on restoring mangrove ecosystems, rehabilitating degraded coastal systems and strengthening community-based resource management. Actions also include strengthening legal and institutional frameworks for mangrove conservation and restoration, supported by improved monitoring systems and data-driven planning. Participation in international initiatives further supports knowledge exchange and the application of science-based approaches to ecosystem management.

5.7 Public Health Infrastructure & Services

The public health sector in Guinea-Bissau remains fragile, strongly affected by socio-political

instability, poor sanitation, water quality and the limited capacity of the health system to deal with health crises. Only 38% of the urban population has access to clean water and less than 20% to adequate sanitation systems, with risks to public health and the environment. Additionally, variability of the rains and the increase in the temperature affect prevalence of disease vectors, such as the mosquitoes that transmit malaria, dengue and schistosomiasis. Heavy rains favor the proliferation of mosquitoes and contaminate water sources. The inadequate health system infrastructure and capacity with severe limitations in testing capacity, underfunded hospitals and a shortage of qualified personnel, makes the system vulnerable to outbreaks.

Hence, these conditions contribute to the spread of various infectious diseases, including malaria, respiratory diseases, diarrhea and cholera. Malaria is the leading cause of hospital mortality, representing ~50% of national hospitalizations, with a higher incidence among children, which constitute approximately 65% of pediatric cases[29]. Chronic malnutrition affects more than 25% of children in the country[30] due to food insecurity, inadequate health services, poor water and sanitation, inadequate child feeding practices and high illiteracy rates among women.

Addressing these challenges requires a cross-sectoral approach integrating health, water, sanitation and climate adaptation, with particular focus on vulnerable populations, children and gender considerations. The proposed measures are outlines in Table 14.

Table 14: Adaptation Priority - Public Health Infrastructure and Services

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
A26	**Establish disease surveillance and early warning systems:** A26.1: Upgrade laboratory diagnostic capacity and community-level surveillance system to detect and monitor vector-borne, water-borne and food-borne diseases attributed to climate change A26.2: Integrate climate, hydrological and meteorological data into the national disease surveillance system to anticipate outbreaks linked to rainfall, flooding and heat	○ 40% population coverage with surveillance and warning systems by 2035	○ Prioritize coverage of disease surveillance and early warning in women and children-dominant areas or localities (50% of total 2035 target)
A27	**Minimize disruption of health services and provide workforce training:** A27.1: Develop specialized and digitally-enabled hospitals for enhanced quality health services (both nationally and regionally)	○ 1 specialized hospitals in Bissau city by 2030 ○ 1 specialized hospital in other major cities by 2035	○ Capacity building on priority of women and youth practitioners (at least 50% of total 2035 target)

[29] Fourth National Communication (NC4), 2025
[30] MICS5, 2014

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
	A27.2: Deploy solar power systems and resilient water supply for continued services A27.3: Train health workers and medical personnel on climate-sensitive diseases and emergency response preparedness, including for children and youth and other at-risk groups A27.4: Support employment retention strategies for health personnel in climate-vulnerable and rural areas	○ Capacity Building - 70% health practitioners covered by 2035 ○ Equip 80% of primary healthcare facilities and hospitals with solar power systems and climate-resilient water supply by 2035	
A28	**Strengthen community health systems:** A28.1: Expand serviceability in remote areas through community health centres and integrated network across country for unified database/operation A28.2: Expand the community health worker (CHW) network to ensure continuity of care during floods, heatwaves and epidemics A28.3: Equip CHWs with digital tools and mobile health solutions for emergency reporting and tele-consultation during climate extremes A28.4: Health Camps for periodic check-ups and training on climate-sensitive health issues	○ 1 health center each for 25,000 people (prioritizing susceptible population groups) by 2035 ○ Reduction in climate sensitive infectious diseases by 50% by 2035	○ Prioritize serviceability of community health systems in areas (localities) with dominant women and children population
A29	**Develop climate-responsive health governance, planning and financing solutions:** A29.1: Integrate climate responsiveness and epidemic preparedness into national health development plan A29.2: Increase coordination among health, water, environment and disaster risk management ministries/institutions	Integration of climate responsiveness and epidemic preparedness in the national health development plan by 2030	70% of health monitoring systems (national & subnational) use age, gender and disability disaggregated data by 2035

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
	A29.3: Develop dedicated financing mechanisms for health adaptation measures A29.4 Equip national and subnational climate and health monitoring systems with age, gender and disability disaggregated data		

Resilience in public health in Guinea-Bissau can be achieved through strong public health systems and the capacity to respond to outbreaks and epidemics; periodic education, training and health camps for knowledge and awareness building; disease prevention and access to clean water and adequate sanitation; increasing serviceability at community level in remote areas and adopting health policies to climate change, considering seasonal and geographical vulnerabilities.

The National Climate Change Adaptation Plan (NAP) which aims to improve public health, with targeted strategies like health education, minimum sanitation conditions, increase in the number of latrines and sanitation centers and improved the quality of drinking water, especially in the capital

5.8 Climate Resilient Infrastructure

Guinea-Bissau's transport infrastructure is highly vulnerable to climate risks, including floods, storms, sea-level rise and salinisation. The road network remains underdeveloped with only 453km of paved roads out of a total 4,400km[31] as of 2018 and is further weakened by suboptimal maintenance of road corridors, bridges and rural feeder roads. These constraints reduce mobility and access to services in rural areas and contribute to road safety risks including fatal crashes in urban settings. Limited financing, lack of reliable data and institutional instability hinder regular maintenance and effective investment planning, compounded by non-existent inventory of bridges and feeder roads.

The limited reach and poor condition of transport infrastructure in rural areas isolate communities from urban centres and the capital and makes it difficult to integrate rural areas into the national economy. These challenges are exacerbated during the five-month rainy season from June to October when flooding and poor drainage render many roads impassable, even for non-motorized transport. Poor road conditions also lead to significant post-harvest losses, as agricultural produce is damaged or wasted while being transported to markets, reducing incomes for farmers. These infrastructure gaps have pronounced gender dimensions with women and children facing longer travel times to reach markets, collect potable water and access education and health services.

Disruptions in mobility and access to basic services are expected to intensify in the near future when instances of increased precipitation increase. Investing in climate-resilient transport and related infrastructure is therefore an urgent priority for Guinea-Bissau and represents a critical adaptation opportunity to strengthen connectivity, protect livelihoods and enhance inclusive

[31] CIA Factbook – Guinea-Bissau

access to services.

Adaptation measures include climate-proofing roads, bridges and drainage systems, promoting climate-resilient housing and strengthening land-use planning. Enhancing the resilience of ports, coastal infrastructure and public utilities is also critical. The proposed measures are outlines in Table 15.

Table 15: Adaptation Priority -Climate Resilient Infrastructure

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
A30	**Maintain year-round connectivity by climate proofing road transport corridors and access roads:** A30.1: Improve priority connecting roads and rural feeder roads, ensure ecological connectivity in all ecological sensitive zones crossed by main roads like Safim-Mpak A30.2: Rehabilitate climate-vulnerable bridges, culverts and river crossings A30.3: Elevate low-lying road sections, reinforce embankments and improve urban drainage systems A30.4: Prioritise road connectivity that improves women's and children's access to markets, maternal and child health services, schools and water points, particularly during the rainy season A30.5: Use satellite imagery, drones and GIS to map infrastructure vulnerability and devise climate-resilient infrastructure planning accordingly	○ 80% of ecological connectivity restored in main roads like Safim-Mpak) ○ 100% ecological fragmentation resolved on major roads by 2035 ○ Achieve 100% access to critical and social services by 2035 in Guinea-Bissau	○ Enhanced access of women to markets, water points and health services by 60% by 2035 ○ Enhanced access of children to schools, water points and health services by 60% by 2035
A31	**Promote climate-resilient housing and public buildings:** A31.1: Promote affordable, climate-resilient housing using local, low-impact materials against the currently used materials like adobe, zinc and straw which are highly susceptible to damage from water, wind and fire A31.2: Integrate infrastructure vulnerability assessment and devise climate-adaptive zoning and land-use planning to safeguard settlements and public buildings in	○ Development of flood-proof, heat-mitigative, disaster-resilient (climate proof) building code standards for all building types by 2032 ○ Implementation of climate proof building codes in 40% public buildings by 2035 (retrofitting existing,	○ Integration of gender and child sensitive design in 100% of access routes and lighting, sanitation, safe emergency shelters, etc. by 2035

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
	flood-prone or heat-risk areas A31.3: Development and enforcement of national building guidelines incorporating raised foundations, reinforced roof-to-wall ties, and local climate-resilient materials. A31.4: Deployment of decentralized, storm-resistant housing units featuring integrated rainwater harvesting systems and passive cooling.A30.5: Integrate gender and disability inclusive design standards in terms of safe access routes, lighting, sanitation, shelter during floods, etc.	○ incorporation in new construction) ○ Pilot incentive model for implementation in residential buildings - starting 2035	
A32	**Enhance resilience of ports, coastal infrastructure and public utility systems:** A32.1: Climate-proof ports, airports including aerodromes and runways and river wharves against erosion and storm surges A32.2: Upgrade cold storage and fish-handling infrastructure with resilient designs A32.3: Repair and upgrade public utility systems including electricity, communication, water and sanitation and public transportation	○ 1 main port (Bissau) to be climate-proof by 2035 ○ 60% of critical water and sanitation infrastructure made climate proof by 2035	

Guinea-Bissau is advancing climate-resilient transport investments through national and partner-supported initiatives. These efforts focus on rehabilitating road corridors and feeder roads and strengthening bridges and drainage systems. These investments improve resilience to climate impacts while enhancing access to markets, services and infrastructure, including for vulnerable populations.

5.9 Disaster Risk Management

Intergovernmental Panel on Climate Change (IPCC) in its global and regional assessment reports[32] and the new climate scenarios for Guinea-Bissau 2016 - 2045, by the National Institute of Meteorology, showcases a gradual increase in temperatures and an increasing variability in precipitation. The IPCC climate models suggest significant increase in average annual temperature in the country, ranging from 1.5 °C to 3 °C by 2100[33], depending on the emissions scenario considered. This is accompanied by a higher frequency and intensity of extreme events

[32] IPCC, 2014; IPCC, 2021
[33] IPCC 2021

(heat wave-related illnesses and deaths, droughts, intense rainfall, floods, storms, etc.)

Sectoral impacts and vulnerabilities due to climate variability and extreme events can be particularly observed on agricultural sector, with prolonged droughts, irregular rainfall and frequent flooding reducing productivity, affecting food security and declining income especially for small farmers. The coastal zone of Guinea-Bissau (more than 50% of the national territory), having extensive mangroves and low-lying islands, is particularly vulnerable to sea level rise, coastal erosion, saline intrusion and loss of coastal ecosystems, affecting infrastructure, riverine communities and livelihoods based on fishing and floodplain farming. Urban areas (particularly Bissau) are increasingly vulnerable to frequent flooding, impacting critical infrastructure, housing and public health services (with women, children and marginalized communities facing disproportionate impacts). In rural areas, vulnerable social groups, especially women and children, face additional challenges due to direct exposure to extreme events and limited adaptability. The resulting losses and damages are already felt in several regions. Coastal communities face forced displacement due to loss of land and housing; farmers suffer from unpredictable rainfall and crop failure; and unique ecosystems such as the Bijagós Archipelago are threatened. The proposed measures are outlines in Table 16.

Table 16: Adaptation Priority - Disaster Risk Management

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
A33	**Strengthen Disaster Preparedness and Response Capacity:** A33.1: Upgrade and equip rescue boats, riverine and coastal vessels for flood, storm and maritime emergencies A33.2: Strengthen emergency logistics and safe shelters for hard-to-reach coastal and island communities A33.3: Pre-position essential emergency equipment and supplies in high-risk regions (like emergency kits for informal/gig workers during heatwaves/heat stress) A33.4: Equip national and local emergency units with emergency communication systems and search and rescue equipment A33.5: Establish community-based early warning committees in high-risk areas and train communities in disaster preparedness and evacuation planning (considering needs of women, children and people with disabilities) A33.6: Strengthen community-based Disaster Preparedness Committees, supported by Social and Behavior Change approaches,	○ 80% coverage in high-risk regions with emergency equipment, logistics, relocation/shelter measures (prioritize regions like Cacheu, Oio, Bolama Bijagos, Tombali, Quinara) and in all Geba and Corubal river basins by 2035 ○ Set up one early warning and Disaster Preparedness Committee in each high-risk community, supported by SBC activities for preparedness, early warning and local response by 2035	○ Prioritization of high-risk regions with women and children-dominant population, fishing communities, traders

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
	for disaster preparedness, early warning and local response in high-risk communities		
A34	**Develop institutional and legal frameworks:** A34.1: Formalize the National Strategic Plan for Disaster Risk Reduction and Emergency Preparedness in line with the Sendai Framework for Disaster Risk Reduction 2015–2030 A34.2: Develop sector-specific disaster risk management action plans e.g. for health, infrastructure, agriculture and fisheries A34.3: Formalize development of city and village level Disaster management plan and committee for preparedness and response A34.4: Systemized social protection measure including provision of Climate-Risk Insurance (e.g., Parametric Insurance) for vulnerable families, communities and groups (farmers, women, daily wage workers, etc.) A34.5: Synchronised national risk plans with regional risk management framework (e.g., additional protocol to Abidjan Convention on risk related to marine and coastal areas)	○ Formalized National Strategic Plan for Disaster Risk Reduction and Emergency Preparedness by 2030 ○ Set out mandate and framework for City/Village DM Plans, Local Committees and sectoral DM Plans by 2030 ○ Ensure 30% administrative units in country have City/Village DM Plans, Local Committees and sectoral DM Plans by 2035 ○ Pilot parametric insurance in 5 at-risk agricultural regions by 2035 ○ 40% vulnerable households under safety nets by 2035	○ 50% of the total 2035 targeted Vulnerable groups to be women, youth or children's groups
A35	**Enhance multi-hazard early warning systems and hydro-meteorological services:** A35.1: Expand weather, hydro-meteorological and tidal observation networks through automatic weather stations, rain gauges and tide monitoring sensors A35.2: Invest in development of centralized climate data dashboard	○ National warning plan adopted and fully functioning by 2030 ○ Strengthening national meteorological system with full national cover by 2030	○ Farmers groups, Women communities

Code	Measures with Sub-measures/Action Points	Targets (by 2035)	Priority Groups (Women/Youth/ Children)
	based on comprehensive national climate data A35.3: Creation of community communication mechanisms for early warnings A35.4: Undertake drone and GIS-based vulnerability mapping A35.5: Training of national technicians to: operate and maintain technologies, for climate modelling and develop data repository	○ 50% High risk regions covered by early warning & impact-based forecasting by 2035 ○ Annual data collection and mapping	

Guinea-Bissau is strengthening climate risk management through national and partner-supported initiatives focused on coastal protection, ecosystem restoration and the development of early warning systems to reduce vulnerability to flooding and erosion. Investments are underway to improve meteorological infrastructure, data systems and technical capacity, enhancing climate monitoring and forecasting. Strengthened hydro-meteorological networks and early warning systems support improved risk assessment and response to extreme events. However, coverage remains limited, and further investment is required to ensure effective operation, maintenance and nationwide service delivery. Adaptation efforts also integrate gender considerations, ensuring that climate actions are inclusive and responsive to the needs of vulnerable populations.

6. SOCIAL INCLUSION (GENDER, YOUTH & CHILDREN)

6.1 Women and Girls

Guinea-Bissau, **women and girls** face specific and disproportionate vulnerabilities due to climate change, reflecting the interaction between social, economic and environmental factors. Work overload increases in climate stress contexts, as women and girls take on greater responsibilities in agriculture, water management, family care and productive activities, which reinforces existing inequalities. Women and girls engaged in agriculture, suffer loss of income and livelihood due to irregular rainfall, prolonged droughts and salinization of coastal soils directly affecting agricultural production; similarly, women and girls dependent on fishing and fish processing face additional challenges due to coastal erosion, rising sea levels and depletion of marine resources, compromising food security and livelihoods. Transition to resilience becomes challenging in Guinea-Bissau as many women and girls lack formal land rights or access to credit, which limits their ability to invest in resilient farming techniques or small green-economy businesses.

Scarcity or contamination of water sources increases the time and effort required in accessing water since women and girls are traditionally responsible for collecting and managing water at home, thus reducing the time available for education, health and other productive activities. Further, women and girls play a central role in the collection of firewood and the use of forest products, travelling longer distances and exposing them to physical and social risks, including accidents, violence, and insecurity. Women and children experience heightened vulnerability to waterborne and vector-borne diseases such as malaria and diarrhoea. Children's naive immune systems and their developing bodies make them more prone to these diseases.In extreme climate crises, such as floods, prolonged droughts or population displacement, women and girls face higher risks of gender-based violence, social exclusion and loss of livelihoods, making them particularly vulnerable and requiring specific attention in adaptation and social protection policies.

Structural constraints, such as lack formal land rights, restricted access to productive resources, credit, education and training on climate risks, adaptation technologies and climate finance opportunities, reduce women and girls resilience, directly affecting the resilience of entire communities, given women and girls strategic role in food production, health and family well-being. Additionally, low participation in decision-making also contributes to vulnerability as women and girls continue remain under-represented in local governance and management bodies, making it difficult to integrate their needs and priorities into climate adaptation plans/strategy making and projects. These inequalities highlight the need for gender-sensitive climate interventions that promote equitable access to resources, decent employment opportunities, participation in decision-making, technical training and social protection.

6.2 Children and Young people

Climate change is an imminent threat to **children**[34] in Guinea-Bissau, not only because of the frequency of climate impacts but also because of the country's low human development index and fragility. According to UNICEF Children's Climate Risk report which analyses children's exposure and vulnerability to climate; related hazards, more than half of . children in Guinea-

[34] UNICEF, Guinea-Bissau

Bissau are exposed to at least three climate hazards. Children in Guinea-Bissau experience heightened risk to the impacts of climate change, given the combination of their exposure to hazards, physical and psychosocial vulnerability and disruption or lack of access to services essential for their development. Over 860,000 children in Guinea-Bissau (86% of the under-18 population) are currently exposed to extreme heatwaves and over 850,000 children (85% of the child population) are exposed to extreme heat (exceeding 35°C).[35] Flooding currently threatens almost half of Guinea-Bissau's children; 47 percent, or 470,000 children live in areas with high coastal flood risk. In addition, around 70,000 children in Guinea-Bissau are at high risk of riverine flooding[36].Over 500,000 children, more than half of the child population are exposed to droughts.

The country's unsustainable reliance on wood and charcoal for cooking, combined with inefficient cooking methods, including traditional stoves, are accelerating forest degradation and deforestation. This, in turn, is undermining agricultural productivity, food security and water security and leaving the country's children more vulnerable to climate shocks. In Guinea-Bissau, diesel generators, for both electricity and water supply, remain unobtainable for many families and an unnecessary financial burden to others. Diesel generators also create localised air and noise pollution, impacting children's and youth's health and overall wellbeing. In education poor construction of schools with a lack of water and sanitation services is also a challenge for children in Guinea-Bissau, especially girls and children with disabilities

Around 65% of Guinea-Bissau's population currently live below the international poverty line. Children living in these families are among the country's most vulnerable. Poverty means that these children have the worst access to water, sanitation, healthcare, nutritious foods and education and live in the poorest quality housing. This intersects with exposure to climate-related hazards to further reduce children's adaptive capacities and development outcomes.

Children with disabilities are identified as one of the most acutely vulnerable groups to climate change due to compounded physical, psychosocial and social risks. These children typically face severe pre-existing deprivations, including limited access to healthcare, safe housing and essential WASH services, all of which are disproportionately disrupted during extreme weather events like flooding, storms and extreme heat. Furthermore, children with mental and physical disabilities frequently experience deep social ostracization, meaning they are structurally excluded from formal decision-making and are left with drastically weaker social safety nets when climate-driven disasters, water scarcity and food insecurity strike their communities[37]. These children are more likely to experience violence or be left behind during disasters, face barriers to protection and aid, and experience heightened psychosocial impacts during a disaster. Measures in the NDC should strive to systematically consider people and children with disabilities in climate-resilient and disaster response measures.

Recognizing children's rights to a clean, healthy and sustainable environment, Guinea-Bissau aims to integrate the needs and capacities of children and young people throughout climate policy and action.[38]

The role of women and children in climate action

Existing national institutions like The Institute for Women and Children (IMC) are responsible for

[35] United Nations Children's Fund. (2026). *Global Child Hazard Database (GCHD)*.[UNICEF: Children Climate Risk Report]
[36] Guinea-Bissau, UNICEF
[37] UNICEF CLAC Report (Climate Landscape Analysis for Children)
[38] UN Convention on the Rights of the Child, General Comment no. 26 on children's rights and the environment, with a special focus on climate change

the promotion of gender equality and women's empowerment directly linked to climate and monitor environmental and climate initiatives considering the specific needs of women and children. The Ministry of Environment and Climate Action (MAAC) plays a central role in the implementation of adaptation and mitigation programmes with integration of the gender dimension into community projects. CSOs like The Women's Network, women's community associations and other local organizations contribute to social mobilization by promoting sustainable natural resource management practices, empowering women and girls for climate adaptation initiatives and advocating for women and girls rights in vulnerable contexts.

Guinea-Bissau incorporates the gender dimension in climate policies through instruments such as the National Plan for Gender Equality and the National Plan for Adaptation to Climate Change (PANA) and National Poverty Reduction Strategy and National Environmental Policy. While women and children face heightened impacts of climate change, they are also powerful agents of change in supporting climate action and governance Women and children ,including girls, in Guinea-Bissau play an active role in community projects and environmental initiatives like reforestation, fruit tree planting and mangrove restoration, supporting carbon sequestration and the protection of vulnerable ecosystems, renewable energy projects, including the installation and maintenance of solar mini-grids, promoting access to clean energy in rural communities and strengthening local energy resilience. Women also excel as leaders in environmental awareness, organizing workshops, campaigns and educational events that disseminate sustainable practices and climate warnings, strengthening community knowledge and responsiveness to the impacts of climate change.

Implemented Initiatives :

- Inclusion of climate change issues in the curriculum of 32 pilot primary schools
- Support to 135 women in climate cooperatives with access to microfinance for resilient activities
- Functional Literacy Project: education for women and youth focusing on sustainable agriculture and adaptation to climate change
- Awareness-raising campaigns promoted by NGOs and the Institute for Women and Children (IMC) (workshops, community debates and educational activities)
- Community-based training programmes focusing on resilient agriculture, water management and reforestation techniques, sustainable management of natural resources, female leadership in conservation
- Microcredit and green entrepreneurship initiatives to develop small income-generating activities linked to sustainable practices, such as solar fish drying or climate-friendly horticulture

Strategies for Gender, Children and Youth Inclusion

- **Formalization of gendered and child/youth responsive perspectives into national institutional frameworks:** Formally incorporating the gender considerations and children and youth into national climate change policies, plans and programmes and creation of institutional monitoring mechanisms will strengthen mitigation and adaptation action establish women and youth advisory councils or other formalized participation methods to ensure their voices are represented; mandate consultations with communities, including women and children, for all climate and environmental policies by 2030.

- **Active participation in decision-making and local governance systems:** To ensure that climate policies, plans and localized initiatives/programmes reflect the needs and

experiences of all social groups. It is crucial that women and girls and youth organizations participate in national and international forums on climate change, contributing their perspectives to policymaking and strategies. Moreover, representation and consultation mechanisms should be promoted, enabling women and girls to influence decisions related to natural resource management, sustainable development and climate adaptation measures, enhancing gender equity and the effectiveness of climate action in the country.

- **Gender Budgeting and Children/Youth-centred Budgeting:** Pilot adoption of Gender and Children/Youth-centred Budgeting as a fiscal strategy for budget process from planning to execution to ensure that public resources are distributed equitably to address the specific needs of women and girls and rights and development of young people, ensuring policy commitments for education, WASH, nutrition, health and protection to bridge gaps in their early and adolescent years. 40% of national and sub national line departments and ministries using gender and child-responsive budgeting approaches by 2030, scaled up to 70% by 2035.

- **Digital Platforms for gender, age and disability disaggregated data and transparent access:** This is crucial to understand the differentiated impacts of climate change and guiding inclusive policies by building digital systems (dashboards) for collecting and analyzing gender, age and disability disaggregated climate and socioeconomic data. Further, social networks for meaningful engagement and interaction enables participation and ensures voices are heard. By 2030, implement an accessible national platform for climate and socioeconomic data, including disaggregation

- **Continued Training and Capacity Building:** Frequent and more structured education (with climate change in curriculum), vocational training and skilling programmes based on contextually local needs in areas such as science, technology, resilient agricultural practices, natural resource management, diversified green livelihood opportunities and access to credit and financing. Additionally, creation of knowledge networks and platforms for exchange of experiences, allowing women and girls and youth to become agents of innovation and local adaptation. By 2035, integrate climate change into the national curricula, beginning with primary and secondary schools. Establish dedicated training programmes for women, children and youth.

- **Platform for Youth Climate Voices, Climate-oriented education systems & Localized Implementation:** Although local youth training and mobilisation initiatives are underway, such as mobilization of 90 young people from 9 all regions of the country under the coordination of the Min. of Environment for the 2nd National Workshop of the Youth Climate Action Network to prepare their 2025-2026 workplan in Canchungo[39]. The systematic inclusion of environmental issues through university-led youth engagement, climate envoys movement and youth action manual on climate change guiding youth groups/activists to drive actionable items from NDCs is needed. The active participation of young people in promoting sustainability and climate adaptation is essential to strengthen the resilience of communities and ensure the continuity of education in a context increasingly affected by climate change. Guinea-Bissau therefore needs to move forward with the implementation of structured strategies that ensure a more resilient education system adapted to environmental changes.

- **Women and Child Sensitive WASH, Nutrition, critical Social Services (health, education, etc.) and social protection:** Increase access to climate-resilient WASH services for children

[39] UNICEF – Guinea-Bissau, Youth Leading Climate Action

living in the most hazard-prone areas of Guinea-Bissau. This includes prioritizing WASH access for the poorest and the most hazard-prone communities, including schools and healthcare centers, with particular focus on those that have yet to gain access and accounting for gender and disability needs Further, improve solid waste management in communities, healthcare centres and schools, to ensure improved recycling and safe disposal of waste. Increase access to social protection measures for families with children.

- **Environmental education and climate literacy in schools and communities:** Strengthen environmental education and climate literacy through schools, youth groups and community learning spaces, including practical learning on climate change, biodiversity conservation, waste reduction, water protection, disaster preparedness and sustainable resource use. Integrating environmental education and climate literacy into primary and secondary school curricula and community learning programmes.

- **Streamlined Access to finance and technologies:** Easy access to climate funds, microcredit and productive resources must be facilitated, enabling women, children and youth, including girls to implement adaptive solutions in vulnerable communities. By 2035, at least 40% of the population has improved access to climate financing, disaggregated by gender, age and disability, to ensure 25% reaches women, children and young people.

6.3 Just Transition and Green Job Creation

Just transition and green job creation is integral to the credibility and durability of climate action, ensuring that resilience-building translates into decent employment, sustainable livelihoods and equitable opportunities for all. This is particularly relevant for Guinea-Bissau, where raw cashew exports account for nearly 90% of export value and support the livelihoods of approximately 80% of the population, leaving rural workers, women and youth highly exposed to climate-related shocks. Further, limited livelihood diversification has also increased pressure on natural resources, reinforcing the need for climate-resilient and inclusive economic opportunities. Building on ongoing efforts, including community-based natural resource management and REDD+ readiness initiatives, NDC 3.0 integrates just transition principles across actions to promote green job creation, strengthen local capacities, and ensure that the benefits of climate action are shared equitably across society.

Strategic Measures:

1. **Sustainable Livelihoods and Green Jobs**

- Expand employment-generating public works in ecosystem restoration, mangrove rehabilitation, and watershed management to generate green jobs and strengthen community resilience.
- Promote women-led livelihood diversification in mangrove and coastal areas through oyster farming, horticulture, and vegetable cultivation, integrated with the 25,000-ha mangrove restoration programme by 2035.
- Support women's cooperatives like AMAE (Association of Women Engaged in Economic Activities) [40] in artisanal fisheries through cold-chain infrastructure of ice making, covering 25% of women cooperatives by 2035.
- Promote green jobs, sustainable enterprises and MSMEs in cashew processing, non-timber forest products, ecotourism, and blue economy value chains to create sustainable employment and livelihoods.[41]

[40] IFAD
[41] FAO: Green Jobs

2. Workforce Skilling and Capacity Building

- Train farmers, women, youth and cooperatives in climate-resilient mechanisation, repair, and maintenance with women and youth comprising at least 50% of trainees by 2035.
- Expand climate-smart agriculture extension and capacity building for women and youth, reaching 60% of farmers and extending land ownership rights to 30% of eligible women.
- Provide formal employment in the agriculture sector to the women and youth under regional cooperatives and other institutions like Agricultural Cooperative of Young Executives/Professionals (COAJOQ) and Association of Producers and Self-Promotion for the Fight Against Hunger (APALCOF).
- Establish a national green skills certification programme to build workforce capacity in agroecology, ecosystem restoration, renewable energy, climate-smart agriculture, and climate-resilient construction.
- Strengthen institutional capacity to mobilize climate finance, expand market access, and deploy digital technologies that support green jobs, climate-resilient enterprises and sustainable livelihoods.

These measures strengthen green jobs, resilient livelihoods, and institutional capacity to support an inclusive and climate-resilient transition.

7. LOSS AND DAMAGE

Loss and Damage has emerged as a critical dimension of climate action for Guinea-Bissau, where increasing climate impacts are exceeding the limits of adaptation and placing growing pressure on lives, livelihoods, ecosystems, and public infrastructure. Guinea-Bissau is ranked 7th most vulnerable country globally on the ND-GAIN Index[42] and 31st on the Fragile States Index, indicating greater fragility. Further, country faces a combination of high climate exposure and limited adaptive capacity, with approximately 70–80%[43] of its population living in low-lying coastal areas highly exposed to floods, storm surges, sea-level rise, coastal erosion and saltwater intrusion resulting in significant economic and non-economic losses across the country.

The country's heavy dependence on climate-sensitive sectors, particularly agriculture, fisheries, and forestry, further amplifies the economic and social consequences of climate-related disasters. Beyond physical damage to homes, transport networks, schools, and productive assets, climate change is also contributing to biodiversity loss, ecosystem degradation, displacement and the erosion of traditional livelihoods and cultural heritage. Addressing Loss and Damage is therefore an essential pillar of Guinea-Bissau's NDC 3.0, requiring strengthened national systems and enhanced international support to respond to climate impacts that cannot be avoided through mitigation and adaptation alone.

Floods remain the most recurrent climate-related disaster in Guinea-Bissau, with recent events causing widespread damage to housing, public infrastructure, agricultural land, and livelihoods. Together with recurring storms and strong winds, these disasters demonstrate the country's increasing exposure to climate-related risks. Table 17 summarizes the major climate-related disasters and their documented impacts.

Table 17: Major Climate Disasters Profile, Guinea-Bissau, 1990–2025

Year	Hazard Type	Region(s)	Damage
2008–2014	Flood (2 disaster events)	National	2,800 internally displaced [44]
2015–2022	Flood (2 disaster events)	National	4,100+ internally displaced [45]
2018	Storm / strong wind	Bissau (Autonomous Sector)	2,000 families (11,541 people) affected; [46] 420 homes destroyed; 800 people displaced; 37 Schools destroyed; 3 reported deaths

[42]Notre Dame Global Adaptation Initiative (ND-GAIN), *ND-GAIN Country Index Rankings*, University of Notre Dame, [NO-GAIN Index]

[43] World Bank, *Guinea-Bissau Reform Advancement Development Policy Financing*, World Bank, 2025 [World Bank (Program Document)]

[44] Internal Displacement Monitoring Centre (IDMC), *Guinea-Bissau Country Profile* [Guinea-Bissau | IDMC - Internal Displacement Monitoring Centre]

[45] Othering & Belonging Institute, University of California, Berkeley, *Guinea-Bissau Case Study*, Climate Crisis, Displacement, and the Right to Stay[Guinea-Bissau Case Study]

[46] International Federation of Red Cross and Red Crescent Societies (IFRC), Guinea-Bissau: Storm Emergency Plan of Action (EPoA) Final Report, Operation No. MDRGW003, ReliefWeb, [Guinea-Bissau: Storm Emergency Plan of Action (EPoA0]

Year	Hazard Type	Region(s)	Damage
2020	Flood + strong wind	National — Oio, Cacheu, Tombali, Quinara, Bafatá, Bissau (SAB)	Total approx. 6000 human victims[47]; 4,617 people affected by flood; 1,374 people affected by strong wind
2024	Flood	Gabu, Tombali, Bafatá, Quinara, Biombo, Oio, Bissau (7 regions)	45,000 impacted (35,707 identified as vulnerable)[48]

7.1 Economic Damages

Climate-related disasters are imposing growing economic costs across multiple sectors, although comprehensive national loss assessments remain limited. Available evidence indicates that transport infrastructure alone incurs estimated annual economic losses of approximately US$22 million,[49] reflecting the country's vulnerability to climate-related disruptions and inadequate infrastructure resilience. Following the 2020 floods and strong winds, the Government allocated 100 million CFA francs[50] in emergency relief to affected households, further the humanitarian partner like the World Food Programme (WFP) provided temporary cash assistance to support household recovery.[51] This illustrates the fiscal burden of responding to climate-related disasters while highlighting the need for more systematic assessment of sectoral losses and recovery needs.

Slow-onset climate impacts are becoming equally significant. Rising sea levels, coastal erosion, changing rainfall patterns, and prolonged droughts continue to reduce agricultural productivity, degrade mangrove ecosystems, increase salinization of freshwater resources and agricultural land and threaten fisheries that support rural livelihoods and food security. Beyond measurable economic losses, these impacts are contributing to the displacement of vulnerable communities, degradation of biodiversity, and the gradual erosion of traditional knowledge, cultural heritage, and ecosystem services that underpin the country's long-term resilience. Beyond these impacts, climate change is projected to reduce real GDP per capita by -7.3% by 2050 under a no-additional-adaptation scenario, with more than 200,000 additional people at risk of falling into poverty.[52] These trends underscore the increasing economic and social costs of climate change and reinforce the need for strengthened Loss and Damage assessment, recovery planning, and long-term resilience investments.

[47] Orlando Mendes and Marcelo Fragoso, "Assessment of the Record-Breaking 2020 Rainfall in Guinea-Bissau and Impacts of Associated Floods," *Geosciences* 13, no. 2 (2023): Article 25, section 3.4.1 and 3.4.2 [geosciences (MDPI)]

[48] World Food Programme (WFP), *Guinea-Bissau Country Brief: October 2024*, ReliefWeb, 2024 [WFP October 2024 - Guinea-Bissau]

[49] World Bank. [Country Climate and Development Report]. Washington, DC: World Bank, 2024. P.18 [World Bank Report]

[50] Orlando Mendes and Marcelo Fragoso, "Assessment of the Record-Breaking 2020 Rainfall in Guinea-Bissau and Impacts of Associated Floods," *Geosciences* 13, no. 2 (2023): Article 25 [geosciences (MDPI)]

[51] World Food Programme (WFP), *Guinea-Bissau Country Brief: April 2021*, ReliefWeb, 2021[WFP report-april 2021]

[52] World Bank, Guinea-Bissau Country Climate and Development Report, World Bank, 2024, p 09 [Guinea-Bissau climate and Development Report]

Guinea-Bissau has taken important steps to strengthen climate resilience and disaster risk management through the National Strategic Plan for Disaster Risk Reduction and Emergency Preparedness and investments in early warning systems, community-based adaptation and emergency response. These efforts have enhanced national preparedness and strengthened coordination among government institutions, humanitarian partners and development agencies in responding to climate-related disasters.

7.2 Strategic Interventions

Despite this progress, significant gaps remain in addressing Loss and Damage. Institutional arrangements for systematically assessing, monitoring and reporting climate-related losses are still evolving while standardized post-disaster damage assessments and comprehensive national disaster loss databases have yet to be fully established.[53] Mechanisms to quantify non-economic losses which includes biodiversity loss, ecosystem degradation, cultural heritage and community displacement also remain limited. Strengthening institutional coordination, data systems, and financing mechanisms will therefore be essential to improve recovery planning, inform investment decisions and build a more comprehensive national approach to Loss and Damage.

To strengthen national capacities for addressing Loss and Damage and improve resilience to unavoidable climate impacts, Guinea-Bissau will pursue the following strategic priorities:

- Institutionalize standardized post-disaster damage and loss assessments and establish a national disaster loss database to systematically monitor climate-related impacts and inform recovery planning.
- Integrate Loss and Damage considerations into national climate, disaster risk reduction, and development planning processes to support resilient recovery and long-term adaptation.
- Strengthen institutional coordination and technical capacities across relevant ministries and agencies to assess, monitor and report economic and non-economic losses in a consistent and integrated manner.
- Enhance national financing arrangements for Loss and Damage, including climate risk financing and social protection measures for vulnerable communities affected by climate-related disasters.
- Mobilize financial and technical support through the Fund for Responding to Loss and Damage, the Santiago Network, and other bilateral and multilateral partners to strengthen national implementation capacity.
- Develop a national monitoring and reporting framework for Loss and Damage to track climate impacts, monitor recovery outcomes and support evidence-based decision-making under NDC implementation.

[53] GFDRR, *Post-Disaster Needs Assessment (PDNA)*. [PDNA]

8. CROSS-CUTTING MEASURES

8.1 Strengthening Governance and Capacity Building

The effective governance and institutional capacity are critical for implementing Guinea-Bissau's NDC 3.0. While existing institutional arrangements provide a foundation for climate action, challenges related to coordination, technical capacity and resource availability continue to affect implementation. The MAAC leads climate policy and coordination, supported by relevant institutions and sectoral ministries responsible for implementation, data management and reporting. Strengthening coordination mechanisms and clarifying institutional roles will be essential to improve efficiency and ensure consistency across sectors.

Capacity constraints in areas such as data management, technical analysis and project development limit the effective design and implementation of climate actions. Targeted capacity-building efforts will focus on strengthening technical skills in GHG accounting, climate risk assessment, data systems and access to climate finance. Strengthening linkages between national and subnational institutions is also critical to ensure effective implementation at the local level. Enhancing stakeholder engagement, transparency and data-sharing mechanisms will further support inclusive and coordinated climate action. Continued investment in institutional strengthening, technical capacity and coordination systems will be necessary to support effective implementation of NDC 3.0.

8.2 Cross-Cutting Enablement

Guinea-Bissau will strengthen cross-cutting enablers to support coordinated implementation of NDC 3.0. Climate action will be integrated into national development planning through alignment with sectoral policies, budget processes and public investment frameworks. Institutional coordination will be reinforced through existing national mechanisms to ensure consistency across ministries and implementation levels.

The stakeholder engagement will be formalised through structured consultation processes involving government institutions, civil society, private sector actors and local communities. Participation at subnational levels will be strengthened to support implementation of climate actions in line with local priorities. Public awareness programmes will be expanded to improve understanding of climate risks and promote adoption of adaptation and mitigation practices. The technology development and transfer will focus on priority sectors including agriculture, energy, water and coastal management. Key actions include strengthening national data systems, improving access to climate information, supporting applied research and facilitating deployment of locally appropriate technologies. Partnerships with international institutions and the private sector will be used to improve access to technical solutions and support knowledge exchange. Efforts will also focus on strengthening national systems for knowledge management, including the collection, analysis and dissemination of climate-related data. Integration of local knowledge with technical solutions will support context-specific implementation. These measures will improve the effectiveness, scalability and sustainability of climate actions across sectors.

9. MEANS OF IMPLEMENTATION

9.1 Summary – Measures, Conditionality and SDG Alignment

The summary of the mitigation measures is presented in Table 18. These measures are categorised based on their conditionality Conditional measures depend on the availability of international finance, technology transfer and capacity-building support for their implementation.

Guinea-Bissau recognizes Article 4.6 of the Paris Agreement[54], which acknowledges the special circumstances and limited capacities of Least Developed Countries (LDCs) in implementing mitigation actions. Guinea-Bissau will pursue the mitigation measures outlined in this NDC in line with its national development priorities. However, the country requires international support to implement and scale up these actions effectively. The implementation of these measures depends on the provision of adequate and predictable financial resources, access to sustainable sound technologies, technology transfer and capacity-building support to strengthen institutional, technical and operational capacities across sectors.

Table 18: Measures & Conditionality - Mitigation

Code	Measures	Conditionality	SDG Alignment
	Agriculture		
M1	Rice crop CH4 reduction	Conditional	
M2	Cover crops	Conditional	
M3	Nitrification inhibitors	Conditional	
M4	Fat supplementation in ruminants' diets	Conditional	
M5	Biogas at pig farms	Conditional	
	Energy		
M6	Efficient Appliance	Conditional	
M7	Grid and System efficiency improvement	Conditional	
M8	Clean cooking transition	Conditional	
M9	OMVG Hydropower gird connection	Conditional	

[54] Paris Agreement - 2015

Code	Measures	Conditionality	SDG Alignment
M10	Solar energy installation	Conditional	
	LULUCF		
M11	Reforestation	Conditional	
M12	REDD+: Avoid Deforestation	Conditional	
	Waste		
M13	Plastic Recycling plant	Conditional	
M14	MSW composite system	Conditional	

Similarly, the summary of adaptation measures is presented in Table 19.

Table 19: Measures & Conditionality – Adaptation

Code	Measures	Conditionality	SDG Alignment
Food, Agriculture & Livestock			
A1	Adopt climate-resilient seeds, crops and production systems	Conditional	
A2	Enhance water management and watershed protection	Conditional	
A3	Strengthen animal health and climate-resilient livestock systems	Conditional	
A4	Promote Climate-Resilient Mechanization for Food Production	Conditional	
A5	Enable land-use management and reforestation	Conditional	
A6	Strengthen rural markets and value chain and reduce post-harvest losses	Conditional	
A7	Ensure risk management and social protection	Conditional	
A8	Enable policy implementation, monitoring systems, capacity building to unlock climate-smart agriculture (CSA) investment	Conditional	
A9	Enable policy gender-responsiveness to unlock climate-smart agriculture (CSA) investment	Conditional	
Water Access, Resource Management and Sanitation			
A10	Expand climate-resilient drinking water sources and safeguard existing ones	Conditional	
A11	Universal water access and ensure drinking water safety	Conditional	
A12	Enhance monitoring systems & integrated river basin management	Conditional	

Code	Measures	Conditionality	SDG Alignment
A13	Strengthen water governance and institutional reforms	Conditional	
A14	Safe and reliable sanitation systems, wastewater and solid waste management	Conditional	
A15	Gender-responsive and women-led water, sanitation and waste management systems	Conditional	
Forests, Biodiversity and Protected Areas			
A16	Restore degraded forests and climate-sensitive terrestrial ecosystems	Conditional	
A17	Strengthen and manage protected areas (PAs) for climate resilience	Conditional	
A18	Promote sustainable land-use planning and ecosystem-based adaptation	Conditional	
A19	Establish a national biodiversity, forests and ecosystem monitoring system	Conditional	
A20	Promote community-based and gender-inclusive initiatives	Conditional	
Coastal Zones and Ecosystems			
A21	Strengthen coastal protection to reduce the impact of erosion, flooding and saltwater intrusion	Conditional	
A22	Restore and protect mangroves and wetlands	Conditional	
A23	Build a unified and improvised system of coastal and ocean monitoring	Conditional	

Code	Measures	Conditionality	SDG Alignment
A24	Promote fisheries' protection and marine resource management	Conditional	
A25	Enhance integrated governance, community participation and legal frameworks	Conditional	
Public Health Infrastructure & Services			
A26	Establish disease surveillance and early warning systems	Conditional	
A27	Minimize disruption of health services and provide workforce training	Conditional	
A28	Strengthen community health systems	Conditional	
A29	Develop climate-responsive health governance, planning and financing solutions	Conditional	
Climate Resilient Infrastructure			
A30	Maintain year-round connectivity by climate proofing road transport corridors and access roads	Conditional	
A31	Promote climate-resilient housing and public buildings	Conditional	

Code	Measures	Conditionality	SDG Alignment
A32	Enhance resilience of ports, coastal infrastructure and public utility systems	Conditional	
Disaster Risk Management			
A33	Strengthen Disaster Preparedness and Response Capacity	Conditional	
A34	Develop institutional and legal frameworks	Conditional	
A35	Enhance multi-hazard early warning systems and hydro-meteorological services	Conditional	

9.2 Resource Requirements

Guinea-Bissau's NDC 3.0 implementation faces distinct structural hurdles. The country's high vulnerability to coastal erosion, saltwater intrusion in rice paddies and unpredictable rainfall patterns necessitates a robust financial response that current domestic budgets cannot sustain. Institutional and technical gaps, particularly in greenhouse gas (GHG) inventory tracking and sectoral data collection, further constrain the ability to execute large-scale mitigation and adaptation projects.

Mitigation Component – Investment Requirement

The total investment required to implement the NDC 3.0 mitigation measures and achieve the targets is estimated at USD ~ 684 million which is ~23% of Guinea-Bissau GDP[55], with a sector-wise breakdown presented in Figure 15. These estimates are based on previous and ongoing projects and aligned with relevant global benchmarks.

[55] Guinea-Bissau GDP

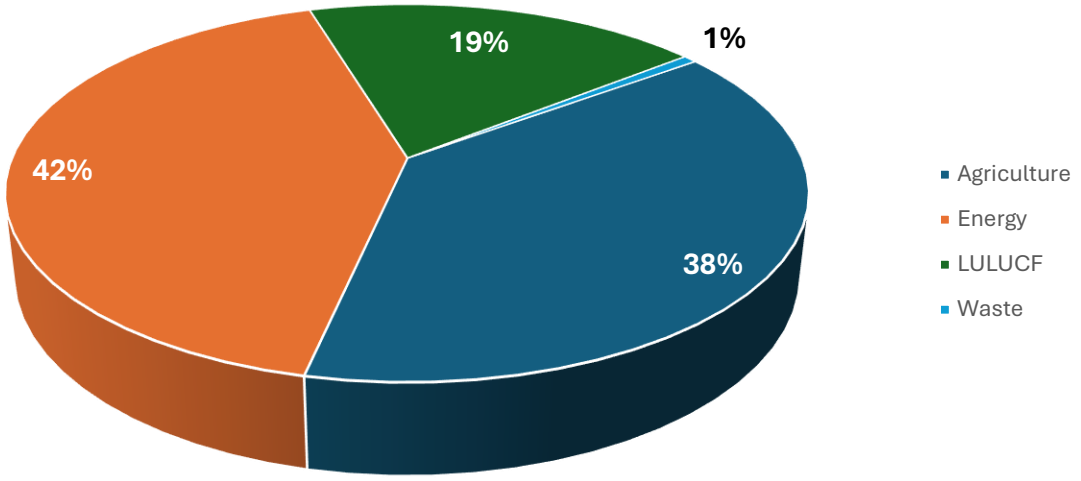


Figure 15: Share of Sector Wise Investment Required

The energy sector accounts for the largest share (42%), requiring USD 287 million, driven by investments in energy-efficient appliances, clean cooking solutions and renewable energy expansion. The agriculture sector (38%) requires USD 263 million to support the adoption of sustainable practices such as improved rice cultivation, use of nitrification inhibitors and biogas systems in livestock management. The LULUCF sector (19%) requires USD 130 million for reforestation, while the waste sector (1%) requires USD 5 million for the development of waste management infrastructure.

The estimation of the financial requirements for implementing Guinea-Bissau's NDC 3.0 is based on a combination of national evidence, stakeholder consultations and internationally recognized cost benchmarks. The investment requirements were first informed through consultations with relevant government ministries, technical institutions and sectoral stakeholders to validate the proposed interventions, implementation scale and indicative resource needs. Where available, cost information from existing and planned national projects and programmes was used as the primary reference for estimating investment requirements. For interventions where country-specific cost data were limited, internationally available benchmark costs for comparable technologies and activities were adopted to reflect the national context. These cost assumptions were subsequently calibrated within the GACMO to derive representative unit investment costs for each intervention. The total resource requirement was then estimated by applying these calibrated unit costs to the projected scale of implementation over the NDC period, resulting in the aggregate requirements.

Adaptation Component – Ongoing & In-pipeline Projects in Guinea-Bissau[56]

The various ongoing and in-pipeline initiatives[57] (detailed in Table 20) in the country can be leveraged to allow easy and effective implementation and funding of adaptation measures and actions identified under Adaptation Component as shown in Figure 16. .

[56] This is list of some prominent projects in Guinea-Bissau across sectors and not holistic in nature and may not include all ongoing/in-pipeline projects in the country.
[57] This is list of some prominent projects in Guinea-Bissau across sectors and not holistic in nature and may not include all ongoing/in-pipeline projects in the country.

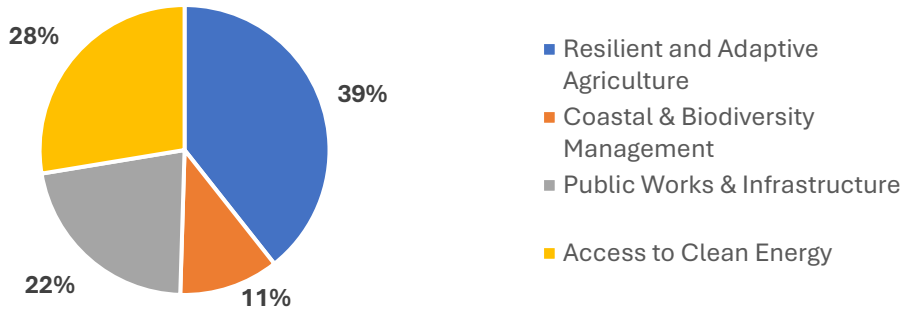


Figure 16: Sectoral Investment – Verifiable Projects Pipeline in Guinea-Bissau

Table 20: Sectoral Investment - Verifiable Projects Pipeline in Guinea-Bissau

Name of Initiative	Status	Implementing Entity	Budget / Financing
Resilient and Adaptive Agriculture			
Scaling up Climate-Smart Agriculture (East Guinea Bissau)[58]	Ongoing (2020-2026)	BOAD / Adaptation Fund	USD 9.98 million (Grant)
Adaptation of Agricultural Systems (Northwest)[59]	Ongoing (2023-2028)	OSS / Green Climate Fund	USD 9.95 million (Total: USD 9.8M GCF grant + USD 150k co-finance)
Sustainable Agriculture & Rural Development	Planned (2026-2031)	World Bank	USD 40 million (Proposed IBRD/IDA financing)
Family Farming Diversification, Integrated Markets, Nutrition and Climate Resilience[60]	Ongoing (2020-2027)	IFAD	USD 65.77 million
New Aquatic Food Value Chains for Sustainable Healthy Diets in Fragile Contexts (NAVAC) Countries: Chad, Colombia, Guinea-Bissau, Mauritania and South Sudan[61]	Ongoing (2025-2030)	Food and Agriculture Organization of the United Nations (FAO) and the European Union (EU)	EUR 20 million
Coastal & Biodiversity Management			
West Africa Coastal Areas (WACA) - ResIP 2[62]	Ongoing (2022-2028)	World Bank / IBAP	USD 30 million - USD 45 million (Portion of regional USD 246M)
Blue Bijagós Project[63]	Ongoing	MAVA / IBAP	USD 5.5 million (Strategic

[58] Adaptation Fund – Guinea Bissau
[59] Green Climate Fund – Guinea Bissau
[60] IFAD
[61] FAO
[62] WACA
[63] PRCM

Name of Initiative	Status	Implementing Entity	Budget / Financing
	(2023-2028)		conservation grant)
Urban Resilience			
Towards Climate Resilience: Sustainable Waste Management Solutions in Guinea-Bissau[64]	Feb 2026 Submission	Adaptation Fund/UNDP	USD 10 million (requested, awaiting approval)
Green and Inclusive Cities (Bissau and 5 other cities)[65]	Ongoing (2023-2028)	European Union (EU) & UN-HABITAT	EUR 9.85 million
Infrastructure			
Enhancing Connectivity in Northern Guinea Bissau[66]	Ongoing (2022-2029)	World Bank	USD 70 million (Original: USD 35M + 2025 Additional: USD 35M)

Adaptation - Prioritization & Funding Requirements:

Guinea-Bissau's NDC 3.0 establishes a high-level vision for adaptation, outlining key measures and targets across critical sectors. The **prioritization of these sectoral measures, identification of specific action points, and corresponding cost estimations** will be addressed through the **National Adaptation Plan (NAP), currently under development**. The NAP will provide a comprehensive methodology for prioritization and cost estimation, ensuring a clear picture of the country's funding requirements for effective climate adaptation.

[64] Adaptation Fund – Guinea Bissau
[65] Guinea Bissau Country Brief 2023, UN HABITAT
[66] World Bank Group – Guinea Bissau

10. MONITORING FRAMEWORK

The effective implementation of Guinea-Bissau's NDC 3.0 requires a robust Monitoring Framework to ensure that climate actions are implemented as planned, progress is systematically tracked and results are transparently reported. Monitoring Framework serves as a critical tool for measuring the effectiveness of mitigation and adaptation measures, assessing progress towards national climate targets, identifying implementation gaps and informing evidence-based decision-making. It also strengthens institutional accountability by clearly defining roles and responsibilities across sectors and supports compliance with the Enhanced Transparency Framework (ETF) under the Paris Agreement. Furthermore, a well-functioning Monitoring Framework enhances the country's ability to mobilise climate finance, attract investment and demonstrate the effectiveness of climate actions to national and international stakeholders.

Sector-specific framework has been developed to operationalise the monitoring for the mitigation component and adaptation component of NDC 3.0. The framework identifies key indicators, targets, responsible institutions and reporting arrangements for each proposed measure. The indicators represent the measurable parameters used to monitor implementation progress and outcomes, such as hectares under improved agricultural practices, renewable energy capacity installed, number of energy-efficient technologies deployed, area reforested or waste treatment capacity established. The targets define the expected level of achievement by a specified year and include both physical implementation milestones and estimated greenhouse gas emission reductions for mitigation measures. Responsible entities are designated to coordinate implementation, data collection, monitoring and reporting activities, thereby ensuring institutional ownership and accountability. Reporting frequency will be determined during implementation and will establish the periodicity for data collection and progress reporting. Collectively, this Monitoring Framework provides a structured mechanism to track mitigation performance, evaluate impacts and support transparent reporting of Guinea-Bissau's climate commitments. The snapshot of the Monitoring Framework[67] is shown in Figure 17.

[67] The original MRV framework for mitigation and adaptation has been shared in the separate Excel file, to prevent report structural complication

Sector	Measure (Code)	Description	Target		Monitoring Indicator	Implementing Entities	Monitoring Entities	Reporting Frequency
			2030	2035				
Agriculture	M1	Rice crop CH4 reduction	100,000 ha; reduction of 342 $ktCO_2e$	200,000 ha; reduction of 273 $ktCO_2e$	Area under improved rice water management (ha); CH_4 emissions reduced ($ktCO_2e$)	Ministry of Agriculture and Rural Development (MADR)	- National Environment Institute (INA) - National Institute of Meteorology of Guinea Bissau (INM-GB) - Ministry of Environmental, Biodiversity and Climate Action (MABAC)	Annual
	M2	Cover crops	50,000 ha; reduction of 76 $ktCO_2e$	100,000 ha; reduction of 149 $ktCO_2e$	Area under cover cropping (ha); GHG reduced ($ktCO_2e$)	Ministry of Agriculture and Rural Development (MADR)	- National Environment Institute (INA) - Ministry of Environmental, Biodiversity and Climate Action (MABAC)	Biennial
	M3	Nitrification inhibitors	50,000 ha; reduction of 40 $ktCO_2e$	100,000 ha; reduction of 80 $ktCO_2e$	Area applying nitrification inhibitors (ha); N_2O/GHG reduced ($ktCO_2e$)	Ministry of Agriculture and Rural Development (MADR)	- National Environment Institute (INA) - Biodiversity & Protected Areas Institute (IBAP) - Ministry of Environmental, Biodiversity and Climate Action (MABAC)	Biennial
	M4	Fat supplementation in ruminants' diet	5% DM in ruminant diet; reduction of 4.5 $ktCO_2e$	10% DM in ruminant diet; reduction of 9 $ktCO_2e$	Fat supplement uptake (% DM in ruminant diet); enteric CH_4 reduced ($ktCO_2e$)	Ministry of Agriculture and Rural Development (MADR)	- Biodiversity & Protected Areas Institute (IBAP) - Ministry of Environmental, Biodiversity and Climate Action (MABAC)	Annual
	M5	Biogas at pig farms	5,000 pigs across 1 location; reduction of 5 $ktCO_2e$	5,000 pigs across 4 locations; reduction of 23 $ktCO_2e$	Biogas systems installed (no. of sites; herd capacity in pigs); manure CH_4 reduced ($ktCO_2e$)	Ministry of Agriculture and Rural Development (MADR)	- National Environment Institute (INA) - Biodiversity & Protected Areas Institute (IBAP) - Ministry of Environmental, Biodiversity and Climate Action (MABAC) - Local Goverance	Annual
Energy	M6	Efficient appliance	250,000 household LEDs; 30,000 office LEDs; 30,000 efficient street lights; 1000 ACs; 5,000 refrigerators; 30,000 efficient LED office lights; 20% reduction in industry energy demand;reduction of 41 $ktCO_2e$	325,000 household LEDs; 50,000 office LEDs; 50,000 street lights; 10,000 ACs; 10,000 refrigerators; 50,000 efficient LED office lights; 20% reduction in industry energy demand;reduction of 75 $ktCO_2e$	Efficient units deployed by type (no. of units); electricity demand/GHG reduced ($ktCO_2e$)	Ministry of Energy (ME)	- Electricidade e Aguas da Guine-Bissau (EAGB) - National Environmental Institute (INA) - Local Governance - Ministry of Environmental, Biodiversity and Climate Action (MABAC)	Annual
	M7	Grid and system efficiency improvement	6 GWh saved; 1,000 commercial buildings (Power Factor Correction); 100,000 m^2 HVAC; reduction of 121 $ktCO_2e$	10 GWh saved; 1,000 commercial buildings (Power Factor Correction); 200,000 m^2 HVAC; reduction of 129 $ktCO_2e$	Grid losses reduced (GWh); power-factor-correction coverage (buildings); HVAC floor area optimised (m^2); GHG reduced ($ktCO_2e$)	Ministry of Energy (ME)	- Electricidade e Aguas da Guine-Bissau (EAGB) - National Environmental Institute (INA) - Ministry of Environmental, Biodiversity and Climate Action (MABAC)	Annual
	M8	Clean cooking transition	50,000 efficient wood stoves; 5,000 efficient carcoal stoves; 1,000 LPG stoves; 1,000 electric stoves; 1000 induction based cooking; reduction of 71 $ktCO_2e$	100,000 efficient wood stoves; 20,000 efficient carcoal stoves; 2,000 LPG stoves; 2,000 electric stoves; 2,000 induction based cooking;reduction of 144 $ktCO_2e$	Improved/clean cookstoves deployed by type (units); biomass use/GHG reduced ($ktCO_2e$)	Ministry of Energy (ME)	- Ministry of Agriculture and Rural Development (MADR), - Ministry of Public Health (MINSAP) - National Environmental Institute (INA) - Ministry of Environmental, Biodiversity and Climate Action (MABAC)	Annual
	M9	OMVG Hydropower grid connection	30 MW; reduction of 69 $ktCO_2e$	40 MW; reduction of 92 $ktCO_2e$	OMVG Hydropower capacity connected to grid (MW); diesel generation displaced/GHG reduced ($ktCO_2e$)	Ministry of Energy (ME)	- Electricidade e Aguas da Guine-Bissau (EAGB) - National Environmental Institute (INA) - Ministry of Environmental, Biodiversity and Climate Action (MABAC)	Annual
	M10	Solar energy installation	10 MW utility PV; 2 MW off-grid PV; 10,000 solar street lights; reduction of 23 $ktCO_2e$	40 MW utility PV; 24 MW off-grid PV; 15,000 solar street lights; reduction of 91 $ktCO_2e$	Solar capacity installed (MW); solar street lights (units); GHG reduced ($ktCO_2e$)	Ministry of Energy (ME)	- Electricidade e Aguas da Guine-Bissau (EAGB) - National Environmental Institute (INA) - Ministry of Environmental, Biodiversity and Climate Action (MABAC)	Annual
LULUCF	M11	Reforestation	75,000 ha; enhanced sequestration of 275 $ktCO_2e$	150,000 ha; enhanced sequestration of 550 $ktCO_2e$	Area reforested (ha); carbon sequestration enhanced ($ktCO_2e$)	Ministry of Agriculture and Rural Development (MADR), in coordination with Biodiversity & Protected Areas Institute (IBAP)	- Ministry of Natural Resource (MRN) - National Environment Institute (INA) - Ministry of Fisheries and Maritime Economy (MPEM), - National Institute of Meteorology of Guinea Bissau (INM-GB) - Ministry of Environmental, Biodiversity and Climate Action (MABAC)	Biennial
	M12	REDD+: Avoid Deforestation	50,000 ha; enhanced sequestration of 183 $ktCO_2e$	100,000 ha; enhanced sequestration of 367 $ktCO_2e$	Area under protection (ha); carbon sequestration ($ktCO_2e$)	Ministry of Agriculture and Rural Development (MADR), in coordination with Biodiversity & Protected Areas Institute (IBAP)	- Ministry of Natural Resource (MRN) - National Environment Institute (INA) - Ministry of Fisheries and Maritime Economy (MPEM), - National Institute of Meteorology of Guinea Bissau (INM-GB) - Ministry of Environmental, Biodiversity and Climate Action (MABAC)	Biennial
Waste	M13	Plastic Recycling Plant	2,000 t/year ; reduction of 1 $ktCO_2e$	5,000 t/year ; reduction of 2.6 $ktCO_2e$	Plastic recycling capacity (tonnes/year); GHG avoided vs virgin-plastic production ($ktCO_2e$)	Ministry of Environment, Biodiversity and Climate Action (MABAC)	- National Environmental Institute (INA) - Local Governance	Biennial
	M14	MSW composite system	50 t/day ; reduction of 112 $ktCO_2e$	100 t/day ; reduction of 224.23 $ktCO_2e$	Composting capacity (tonnes/day); organic waste diverted; CH_4/GHG reduced ($ktCO_2e$)	Ministry of Environment, Biodiversity and Climate Action (MABAC)	- National Environmental Institute (INA) - Local Governance	Biennial

Figure 17: Snapshot of MRV Framework

11. ANNEXURE

11.1 Global Targets

As part of the development of the NDC, a review of global mitigation and adaptation targets was undertaken to identify relevant international practices and measurable indicators that could inform Guinea-Bissau's monitoring system. The review focused on countries that have recently submitted updated NDCs under the Paris Agreement and exhibit characteristics that are broadly comparable to Guinea-Bissau in terms of climate vulnerability, economic structure, development challenges and institutional capacity.

The following countries were selected as reference countries for the benchmarking exercise:

- Central African Republic
- Comoros
- Eritrea
- Gabon
- Georgia
- Kyrgyzstan
- Maldives
- Uruguay

The selection was guided by the following considerations:

- Availability of recently updated NDCs containing measurable mitigation and adaptation targets.
- Similar socio-economic and development contexts, including dependence on agriculture, fisheries, forestry, and natural resources.
- Comparable climate vulnerabilities such as coastal impacts, changing rainfall patterns, ecosystem degradation, food security concerns, and water resource challenges.
- Representation of diverse regional experiences and good practices that can provide useful lessons for Guinea-Bissau.
- Availability of quantifiable indicators and targets that can be integrated into a national monitoring framework.
- The review of these NDCs enabled the identification of a broad range of mitigation and adaptation targets, indicators, and reporting approaches that can serve as useful reference points for monitoring progress and strengthening climate action implementation in Guinea-Bissau.

The detailed mitigation and adaptation targets of globally benchmark countries based is provided separately in the accompanying Excel workbook.

11.2 Information to Facilitate Clarity, Transparency and Understanding (ICTU)

<table>
<tr><th colspan="2">1. Quantifiable information on the reference point (including, as appropriate, a base year)</th></tr>
<tr><td>(a) Reference year(s), base year(s), reference period(s) or other starting point(s)</td><td>The reference year for Guinea-Bissau's NDC 3.0 is 2019. This year serves as the baseline for constructing the Business-as-Usual (BAU) scenario and assessing mitigation impacts.</td></tr>
<tr><td>(b) Quantifiable information on the reference indicators, their values in the reference year(s), base year(s), reference period(s) or other starting point(s) and, as applicable, in the target year</td><td>The reference indicator is total national GHG emissions, expressed in $ktCO_2e$, both including and excluding the LULUCF sector.
In 2019, emissions are derived from the national GHG inventories present in the National Inventory Report (NIR) and other datasets, form the basis for sectoral projections. Under the BAU scenario, the following sectoral emission in 2019 and projected emission by 2035 are shown in table:
<table>
<tr><td>Sector</td><td>Emission in 2019</td><td>Emission in 2035</td></tr>
<tr><td>Agriculture</td><td>2,000</td><td>3,196</td></tr>
<tr><td>Energy</td><td>436</td><td>592</td></tr>
<tr><td>Waste</td><td>264</td><td>424</td></tr>
<tr><td>IPPU</td><td>3</td><td>3</td></tr>
<tr><td>Total (excluding LULUCF)</td><td>2,700</td><td>4,214</td></tr>
</table>
</td></tr>
<tr><td>(c) Target relative to the reference indicator, expressed numerically, for example in percentage or amount of reduction</td><td>The mitigation target is expressed as a deviation from the BAU scenario by 2035. Guinea-Bissau aims to achieve a reduction of 24% by 2030 and 40% by 2035 in total GHG emissions (excluding LULUCF) compared to the BAU trajectory. When including LULUCF, the mitigation scenario results in an improvement of the net carbon sink by 5% by 2030 and 11% by 2035 relative to BAU.</td></tr>
<tr><td>(d) Information on sources of data used in quantifying the reference point</td><td>The reference point is based on the national GHG inventory (2019) and sectoral data used in the preparation of NDC 3.0. This includes data from national communications, biennial transparency report (BTR) and inputs from national technical teams and sectoral stakeholders. Sectoral projections and</td></tr>
</table>

	mitigation potentials were developed using national data and the GACMO modelling framework, consistent with the 2006 IPCC Guidelines.
(e) Information on the circumstances under which the Party may update the values of the reference indicators	The reference indicators and their values may be updated in future NDC cycles based on improved data availability, methodological refinements and enhanced institutional capacity. Updates will be undertaken in line with national reporting processes and transparency requirements under the Paris Agreement.
2. Time frames and/or periods for implementation	
(a) Time frame and period of implementation	Guinea-Bissau's NDC 3.0 covers the implementation period from **January 1, 2026 to December 31, 2035**. This time frame aligns with national development planning cycles and allows for phased implementation of mitigation and adaptation measures, including initial deployment and subsequent scale-up across key sectors.
(b) Whether it is a single-year or multi-year target, as applicable	The NDC 3.0 represents a multi-year target, with mitigation outcomes assessed over the period 2025–2035 and a defined target year of 2035. This approach enables tracking of progress over time while achieving the overall emission reduction target relative to the BAU scenario by the end of the implementation period.
3. Scope and Coverage	
(a) General description of the target	Guinea-Bissau's NDC 3.0 sets a mitigation target to reduce greenhouse gas (GHG) emissions relative to the Business-as-Usual (BAU) scenario by 2035, while maintaining its net carbon sink position. The target is achieved through a combination of sector-specific mitigation measures covering energy, agriculture, waste and LULUCF, aligned with national development priorities and capacities.
(b) Sectors, gases, categories and pools covered by the nationally determined contribution, including, as applicable, consistent with Intergovernmental Panel on Climate Change (IPCC) guidelines;	The NDC covers key sectors including energy, agriculture, waste and land use, land-use change and forestry (LULUCF), consistent with latest IPCC guidelines. The main greenhouse gases covered are carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). Sectoral coverage includes energy production and consumption, livestock and agricultural practices, waste management and forest

	carbon stocks. For the LULUCF sector, the contribution includes carbon sequestration and emissions associated with land-use changes and forest management.
(c) How the Party has taken into consideration paragraphs 31 (c) and (d) of decision 1/CP.21:	The NDC is developed to ensure clarity, transparency and understanding by providing a clear reference year, defined target year, sectoral coverage and methodological consistency with national GHG inventories. The target is quantifiable and expressed relative to a BAU scenario, supported by sectoral assumptions and data derived from national reports. The approach ensures completeness and comparability over time, while reflecting national circumstances and capacities.
(d) Mitigation co-benefits resulting from Parties' adaptation actions and/or economic diversification plans, including a description of specific projects, measures and initiatives of Parties' adaptation actions and/or economic diversification plans.	Mitigation co-benefits of adaptation actions is mostly important for countries that have only adaptation of economic diversification plans in their NDCs and want to describe the respective mitigation co-benefits. In the agriculture sector, practices such as improved water management in rice cultivation, zero tillage and cover cropping enhance soil health and resilience to climate variability while reducing emissions.
4. Planning Processes	
(a) Information on the planning processes that the Party undertook to prepare its NDC and implementation plans, including:	
(i) Domestic institutional arrangements, public participation and engagement with local communities and Indigenous peoples, in a gender-responsive manner;	The preparation of Guinea-Bissau's NDC 3.0 was coordinated at the national level by the Ministry of Environment and Climate Action (MAAC), with support from technical institute such as National Environment Institute (INA), Biodiversity & Protected Areas Institute (IBAP) and National Institute of Meteorology of Guinea-Bissau (INM-GB) and development agencies. The process included consultations with government ministries, local authorities, civil society, private sector and development partners. Engagement with local communities was undertaken to reflect national and local priorities. Gender considerations were integrated through inclusive participation, ensuring representation of women, youth

		and vulnerable groups in the consultation process.
(ii) Contextual matters, including, inter alia, as appropriate: National circumstances, such as geography, climate, economy, sustainable development and poverty eradication	a. National circumstances, such as geography, climate, economy, sustainable development and poverty eradication	Guinea-Bissau is a least developed country **and** Small Island Developing State (SIDS)[68] with a low-emissions profile and high exposure to climate risks. The country is characterized by a coastal geography and reliance on climate-sensitive sectors such as agriculture, fisheries and forestry. Climate variability, including changes in rainfall patterns, sea-level rise and coastal erosion, affects livelihoods and economic activities.
	b. Best practices and experience related to the preparation of the nationally determined contribution	The preparation of the NDC 3.0 builds on experience from previous national communications, biennial transparency reporting and earlier NDC submissions. The process reflects lessons learned in data collection, sectoral analysis, stakeholder engagement and integration of mitigation and adaptation planning. It also incorporates improved coordination across institutions and enhanced use of available national data and technical inputs.
	c. Other contextual aspirations and priorities acknowledged when joining the Paris Agreement	Guinea-Bissau reaffirms its commitment to the objectives of the Paris Agreement, including limiting global temperature increase and strengthening resilience to climate change impacts. The country's NDC reflects its aspiration to pursue low-emission development pathways while addressing national development needs, enhancing energy access, protecting natural ecosystems and improving livelihoods. Implementation of the NDC is dependent on the availability of international support, including climate finance, technology transfer and capacity building.
(b) Specific information applicable to Parties, including regional economic integration organizations and their member States, that have reached an agreement to act jointly under Article 4, paragraph 2, of the Paris Agreement including the Parties that agreed to act jointly and the terms of the agreement, in accordance with Article 4, paragraphs 16–		Not Applicable

[68] SIDS

18, of the Paris Agreement;	
(c) How the Party's preparation of its nationally determined contribution has been informed by the outcomes of the global stock take, in accordance with Article 4, paragraph 9, of the Paris Agreement;	The preparation of Guinea-Bissau's NDC 3.0 has been informed by the outcomes of the global stocktake, which highlight the need for enhanced ambition, accelerated mitigation efforts and strengthened adaptation actions. The NDC reflects progression beyond previous submissions through expanded sectoral coverage, updated targets and strengthened integration of mitigation and adaptation measures. It also recognizes the importance of aligning national efforts with global climate goals and enhancing implementation support.
(d) Each Party with a nationally determined contribution under Article 4 of the Paris Agreement that consists of adaptation action and/or economic diversification plans resulting in mitigation co-benefits consistent with Article 4, paragraph 7, of the Paris Agreement to submit information on:	Not Applicable
5. Assumptions and methodological approaches, including those for estimating and accounting for anthropogenic greenhouse gas emissions and, as appropriate, removals:	
(a) Assumptions and methodological approaches used for accounting for anthropogenic greenhouse gas emissions and removals corresponding to the Party's nationally determined contribution, consistent with decision 1/CP.21, paragraph 31 and accounting guidance adopted by the CMA.	Guinea-Bissau's NDC 3.0 applies methodologies consistent with the national GHG inventory (2019) and sectoral assessments. Emissions and removals are estimated using activity data and emission factors aligned with IPCC guidance, as reflected in the national reporting documents such as Biennial Transparency Report 1, Forth National Communication and National Inventory Report. The accounting framework is based on the comparison of a Business-as-Usual (BAU) scenario and a mitigation scenario, ensuring consistency with decision 1/CP.21 and CMA guidance.
(b) Assumptions and methodological approaches used for accounting for the implementation of policies and measures or strategies in the nationally determined contribution	The mitigation impact of policies and measures is estimated using the GACMO (Greenhouse gas Abatement Cost Model). The model evaluates the emission reduction potential of identified measures by comparing baseline emissions with mitigation scenarios over the implementation period. Key inputs include

	sectoral activity data, technology-specific assumptions, implementation timelines and adoption levels. The results represent the aggregated mitigation potential across sectors.
(c) If applicable, information on how the Party will take into account existing methods and guidance under the Convention to account for anthropogenic emissions and removals, in accordance with Article 4, paragraph 14, of the Paris Agreement, as appropriate	The impact of mitigation measures is estimated by comparing the Business-as-Usual (BAU) scenario with the mitigation scenario over the implementation period. Sector-specific assumptions are applied based on projected activity levels, technology adoption rates and implementation timelines. The mitigation impact is calculated as the difference in emissions between the BAU and mitigation pathways.
(d) IPCC methodologies and metrics used for estimating anthropogenic greenhouse gas emissions and removals	Emissions are estimated using methodologies consistent with the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Emissions are expressed in CO_2 equivalent (CO_2e) using global warming potentials applied in national reporting.
(e) Sector-, category- or activity-specific assumptions, methodologies and approaches consistent with IPCC guidance, as appropriate, including, as applicable:	• Energy: Emissions are projected based on fuel consumption trends, electricity demand growth and continued reliance on existing energy systems under BAU. • Agriculture: Emissions are driven by livestock population growth (enteric fermentation and manure management) and expansion of agricultural land (rice cultivation and crop residue burning). • Waste: Emissions are estimated based on population growth, waste generation rates and prevailing disposal practices, primarily unmanaged dumping. • LULUCF: Emissions and removals are based on existing land-use patterns, forest cover and carbon stock trends, reflecting the sector's role as a net carbon sink.
(f) Other assumptions and methodological approaches used for understanding the nationally determined contribution and, if applicable, estimating corresponding emissions and removals, including:	

(i) How the reference indicators, baseline(s) and/or reference level(s), including, where applicable, sector-, category- or activity-specific reference levels, are constructed, including, for example, key parameters, assumptions, definitions, methodologies, data sources and models used	The BAU scenario is constructed using the 2019 national GHG inventory as the base year. Projections are developed using sector-specific drivers, including livestock population growth, agricultural expansion, energy demand, fuel consumption, population growth and land-use trends. The mitigation scenario is developed by applying identified measures using the GACMO model, with results expressed as the difference from the BAU pathway.
(ii) For Parties with nationally determined contributions that contain non-greenhouse-gas components, information on assumptions and methodological approaches used in relation to those components, as applicable	Not Applicable
(iii) For climate forcers included in nationally determined contributions not covered by IPCC guidelines, information on how the climate forcers is estimated	Not Applicable
(iv) Further technical information, as necessary	The analysis is based on available national data and assumptions derived from national reports, with limitations addressed with consistent methodologies across sectors.
(g) The intention to use voluntary cooperation under Article 6 of the Paris Agreement, if applicable	Guinea-Bissau intends to explore voluntary cooperation under Article 6 of the Paris Agreement to support implementation of mitigation measures. This includes potential participation in carbon markets, subject to the development of national frameworks and institutional capacity.
6. How the Party considers that its nationally determined contribution is fair and ambitious in the light of its national circumstances	
(a) How the Party considers that its nationally determined contribution is fair and ambitious in the light of its national circumstances;	Guinea-Bissau is a Least Developed Country & SIDS with low historical greenhouse gas emissions and high vulnerability to climate change. Despite limited financial, technical and institutional capacity, the country has committed to reducing emissions relative to the Business-as-Usual scenario by 2035 across key sectors including energy, agriculture, waste and LULUCF. The NDC reflects a balance between national development priorities and climate action, ensuring that mitigation efforts are aligned with sustainable development, energy access and livelihood improvement. The

	inclusion of conditional targets reflects the country's capacity constraints and need for international support.
(b) Fairness considerations, including reflecting on equity;	The NDC is guided by the principle of common but differentiated responsibilities and respective capabilities (CBDR-RC). Guinea-Bissau's contribution reflects its low contribution to global emissions and its development needs, while still undertaking mitigation actions within its national capacity. Equity is reflected through the prioritization of actions that support vulnerable populations, enhance resilience and improve access to basic services such as energy and sustainable livelihoods.
(c) How the Party has addressed Article 4, paragraph 3, of the Paris Agreement;	Guinea-Bissau's NDC 3.0 represents a progression beyond its previous NDC through the extension of the target period to 2035, inclusion of additional mitigation measures and improved sectoral coverage. The NDC reflects enhanced ambition while maintaining consistency with national circumstances and available data
(d) How the Party has addressed Article 4, paragraph 4, of the Paris Agreement;	As a Least Developed Country and SIDS, Guinea-Bissau communicates mitigation targets in line with its national capabilities and circumstances. The NDC includes sectoral mitigation actions that contribute to emission reductions while recognizing the country's limited capacity to undertake economy-wide absolute emission reduction targets. Implementation of the NDC is dependent on international support, particularly for conditional measures.
(e) How the Party has addressed Article 4, paragraph 6, of the Paris Agreement.	In accordance with Article 4, paragraph 6, Guinea-Bissau, as a Least Developed Country and SIDS, has communicated its NDC in a manner that reflects its national circumstances and capacity constraints. The NDC includes flexible approaches to mitigation, with targets expressed relative to a BAU scenario and supported by conditional measures, allowing for progressive enhancement over time.
7. How does the nationally determined contribution contribute towards achieving the objective of the Convention as set out in Article 2	

(a) How the nationally determined contribution contributes towards achieving the objective of the Convention as set out in Article 2;	Guinea-Bissau's NDC 3.0 contributes to the objective of the Convention by implementing mitigation and adaptation actions that support the stabilization of greenhouse gas concentrations in the atmosphere. The NDC promotes low-emission development through measures in energy, agriculture, waste and LULUCF, while maintaining and enhancing the country's net carbon sink. It also strengthens resilience to climate impacts, ensuring that development pathways are sustainable and climate responsive.
(b) How the nationally determined contribution contributes towards Article 2, paragraph 2(a) and Article 4, paragraph 1, of the Paris Agreement.	The NDC contributes to Article 2, paragraph 2(a), by aligning national climate actions with sustainable development priorities, including poverty reduction, energy access and livelihood improvement. It contributes to Article 4, paragraph 1, by undertaking mitigation efforts aimed at reducing emissions relative to the BAU scenario and enhancing removals through the LULUCF sector. The NDC reflects Guinea-Bissau's commitment to participate in global efforts to limit temperature increase while recognizing its national circumstances and capacity constraints.

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