



ADAPTATION FUND

AFB/PPRC.37/Inf.19
16 March 2026

Adaptation Fund Board
Project and Programme Review Committee
Thirty-seventh Meeting
Bonn, Germany, 7-8 April 2026

PROPOSAL FOR GUINEA BISSAU



ADAPTATION FUND

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Regular-sized Project Concept

Country/Region:	Guinea-Bissau	
Project Title:	Towards Climate Resilience: Sustainable Waste Management Solutions in Guinea-Bissau	
Thematic Focal Area:	Climate Change Adaptation – Urban Resilience and Integrated Waste Management	
Implementing Entity:	UNDP	
Executing Entities:	Ministry of Environment, Biodiversity and Climate Action (MABAC)	
AF Project ID:		
IE Project ID:		Requested Financing from Adaptation Fund (US Dollars): 10,000,000
Reviewer and contact person:	Alexandra Munoz	Co-reviewer(s): Ahmad Ghosn
IE Contact Person:		

Technical Summary	<p>The project “Towards Climate Resilience: Sustainable Waste Management Solutions in Guinea-Bissau” aims to enhance climate change resilience and adaptive capacity of the waste management and infrastructure in Guinea-Bissau. This will be done through the five components below:</p> <p><u>Component 1:</u> Strengthened Adaptive Capacity for Climate-Resilient Waste Services (USD 700,000);</p> <p><u>Component 2:</u> Reduced Exposure to Flooding, Contamination, and Climate Hazards through Resilient Waste Infrastructure and Ecosystem Protection (USD 4,570,507);</p> <p><u>Component 3:</u> Strengthened Climate-Resilient Livelihoods and Service Continuity through Circular Economy Waste Systems (USD 1,670,507);</p> <p><u>Component 4:</u> Improved Public Health, Awareness, and Ecosystem Resilience under Climate Extremes (USD 700,000);</p> <p><u>Component 5:</u> Innovation, Learning, and Knowledge Systems for Climate-Resilient Waste Adaptation (USD 700,000).</p> <p><u>Requested financing overview:</u> Project/Programme Execution Cost: USD 875,576</p>
--------------------------	--

	<p>Total Project/Programme Cost: USD 9,216,590 Implementing Fee: USD 783,410 Financing Requested: USD 10,000,000</p> <p>The proposal includes a request for a project formulation grant of USD 149,188.</p> <p>The first technical review raises several issues, such as revising components financing table; ensuring consistency of the project components, outcomes and outputs across the CN; correcting the terminal evaluation date; providing initial gender assessment/ analysis; further demonstration of the project cost-effectiveness; providing a tabulated list of relevant national plans; inclusion of a summary table of the consultations; revising the AF RF alignment table; clarifying the sustainability arrangements for the O&M of the facilities/ infrastructures to be established by the project; among other Clarification Requests (CRs), Corrective Action Requests (CARs) and notes indicated in the review.</p>
Date:	3 March 2026

Review Criteria	Questions	First Technical Review Comments 3 March 2026
Country Eligibility	1. Is the country party to the Kyoto Protocol, and/or the Paris Agreement?	Yes. The country has ratified both the Kyoto Protocol (18 November 2005) and the Paris Agreement (22 October 2018).
	2. Is the country a developing country particularly vulnerable to the adverse effects of climate change?	Yes. Guinea-Bissau is highly vulnerable to the adverse effects of climate change including erratic heavy rainfall, recurrent flooding, rising temperatures, and accelerating sea-level rise, among others.
Project Eligibility	1. Has the designated government authority for the Adaptation Fund endorsed the project/programme?	Yes. As per the Endorsement letter dated 22 May 2025. CR1: Attach Endorsement letter to CN document.
	2. Does the length of the proposal amount to no more than Fifty pages for the project/programme concept, including its annexes?	Yes. The CN has a total of 47 pages in total. However, please address the issues below.

		<p>CR2: Please revise:</p> <ul style="list-style-type: none"> (i) terminal evaluation date in the project calendar table, p.15, to be within 9 months after project closure. (ii) section letter numbering sequence after Part II.F. Spell out abbreviations when first used and refer to figures, tables, annexes at related discussions. <p>CR3: Please include:</p> <ul style="list-style-type: none"> (i) captions in all tables and figures, including the tables of the AF CN template such as the Table “Project/Programme Components and Financing”. (ii) paragraph numbering to facilitate easier referencing and review. <p>CR4: Please remove:</p> <ul style="list-style-type: none"> (i) the instructions under each title, such as on page 14. (ii) letter number G (<i>Unique Contribution of the Adaptation Fund Project</i>) on p. 31.
	<p>3. Does the project / programme support concrete adaptation actions to assist the country in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience?</p>	<p>Yes. However, further information is required.</p> <p>Part II.A, pp. 16-20. Concrete actions include developing an early-warning and monitoring system; environmental closure of Antula dumpsite; rehabilitation of waste landfills; procurement of waste collection equipment/fleets; community-based waste collection micro-systems; community-based composting and eco-centers; among other as</p>

discussed in Part IIA. However, some clarifications are required.

CAR1:

1. Please revise the discussion in Part II.A, to include/ reflect activities (supported with relevant quantitative details) under each output. More importantly, please ensure the consistency of the listed components, outcomes, and outputs with those of the components financing table and theory of change, and/ or vice-versa.
2. It is noted that the project has mitigation co-benefits, however the climate change **adaptation rationale** needs to be strengthened as the focus of the adaptation fund is concrete adaptation projects.

CR5: Please ensure consistency of the Theory of Change components, outcomes, and outputs statements with those mentioned in the components financing table and Part II.A, and/ or vice-versa.

CR6: Under subsection 2.1 “Overall Objective”, p. 10, please address the following:

3. Revise the introductory paragraph to highlight/ focus on climate change adaptation aspects as the primary justification for the project (supporting national commitments under Basel, Rotterdam, etc. MEAs is a by-product/ outcome).

Add an overall objective statement. A proposed statement is: “to enhance climate change resilience and

		<p><u>adaptive capacity of the waste management and infrastructure in Guinea-Bissau”.</u></p> <p>CR7: Under Objectives (pp. 10-13), please address the following:</p> <ol style="list-style-type: none">4. Provide specific objectives statements, if any, followed by components list, AF outcomes supported by the project, and a brief paragraph referring to the Theory of Change (ToC) annex.5. Move the details on key activities, expected results, etc. and merge, as appropriate, in Part IIA “Components Description”. <p>CR8: At relevant sections (e.g., Part I, Part II.A), please further justify the CC adaptation/ mitigation aspects of the activities under component 3 (circular-economy systems waste reduction, waste collection trucks, dumpsters, etc.), as they sound “business-as-usual” development or environmental protection activities, which are not usually funded by AF.</p> <p>CR9: Please include a Theory of Change narrative to describe the vertical logic of the proposed project toward climate adaptation, following the same structure as the diagram.</p> <p>CR10: Please include risks in the Theory of Change diagram.</p>
--	--	--

	<p>4. Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?</p>	<p>Yes. However, further information is required.</p> <p>Part II.B, pp. 20-24. The proposal outlines economic, social and environmental benefits. However, it would be recommended to add further quantification of the economic and social benefits, if/ as available. Also, an initial gender assessment/ analysis is required in compliance with AF GP.</p> <p>CR11: Please provide, <u>if/ as available at this stage</u>, some dollar estimates of the economic benefits, and some estimates of the potential new jobs created under social benefits, if any, etc.</p> <p>CAR2: Please provide an initial gender analysis/ assessment that outlines the needs, capacities, roles, and knowledge resources of women and men, etc. in relation to the project scope. Include this assessment under a dedicated heading in Part I or attach as annex and refer to it at related CN sections.</p>
	<p>5. Is the project / programme cost effective?</p>	<p>Yes. However, further information is required.</p> <p>Part II.C, pp. 24-26. The CN states that the proposed project is a highly cost-effective investment in climate resilience. In addition, the project adopts the Fukuoka semi-aerobic landfill method, a low-cost, low-maintenance technology that is both technically robust and financially feasible for low-resource contexts. However, demonstrating the project interventions cost-effectiveness against no action and/ or other options is recommended.</p>

		<p>CAR3: Please provide a comparison table to demonstrate the project interventions cost-effectiveness analysis against no action/other options, supported with dollar estimates of the benefits gained/ losses avoided where/as possible.</p>
	<p>6. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments?</p>	<p>Unsure. Further information is required.</p> <p>Part II.D, pp. 26-28. The CN provides alignment information with Bissau 2030 Vision, NAP, NDC, among others.</p> <p>CAR4 Please provide a tabulated list of the mentioned plans in Part II.D including dates and key issues relevant to the project.</p>
	<p>7. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?</p>	<p>Unsure. Further information is required.</p> <p>Part II.E, pp. 28-30. Sufficient for CN stage. The CN provides information about compliance with national standards, laws, and regulations. However, details such as the compliance status, among others, are not provided.</p> <p>CAR5: Kindly include a table listing with all national and regional standards applicable to the activities of the proposed project. For <u>each identified standard</u>, please include:</p> <ol style="list-style-type: none"> 1. The scope and relevance should be described specifically.

		<ol style="list-style-type: none"> 2. How is it relating to the proposed project, clearly identifying the outputs/activities that will require compliance with the identified standard. 3. The project's compliance status. In the case that compliance is required, please include the <u>steps needed</u> to comply with it.
	<p>8. Is there duplication of project / programme with other funding sources?</p>	<p>No. Part II.F, 30-32. The proposal identified 8 projects that are related to the proposed project. However, the justification for no duplication is not included, nor is it explained how lessons learned were incorporated into the project's design.</p> <p>CR12: In Table 4, please:</p> <ol style="list-style-type: none"> 1. provide dates and status (completed, ongoing, planned) for all the listed projects/ programmes. 2. change title of the first column to read "Project/ Initiative". 3. revise table 4 heading to read "Complementarity of the Proposed Project with Related Completed, Ongoing and Planned Projects/ Initiatives in Guinea-Bissau". 4. include a new column for the specific and sound justifications for each no duplication. This may be justified, for example, by indicating the distinct geographic locations and/or types of interventions 5. expand Lessons learned, how they are considered/ reflected in the proposed project

		<p>design by indicating specifically the proposed project's outputs.</p>
	<p>9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?</p>	<p>Yes. However, further information is required.</p> <p>Part II.G, pp. 32-33. (Note: change section letter numbering from H to G). The proposal provides a detail description of the KM activities, including a Knowledge Management Hub and Peer-to-Peer leaning. However, some additional information is needed.</p> <p>CR13: Please clarify how the knowledge generated will be sustained after the project's completion and describe the arrangements required to ensure its long-term sustainability.</p>
	<p>10. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund?</p>	<p>Yes. However, further information is required.</p> <p>Part II.H, pp. 34-36 (Note: change section letter numbering from I to H). The proposal noted that a comprehensive and inclusive consultation process was conducted, involving national authorities, municipal governments, civil society, private operators, and vulnerable groups.</p> <p>However, it does not provide details on the consultations, such as how the views of women and other vulnerable groups were specifically incorporated into the project's design, the main topics discussed in each consultation, or a gender-disaggregated breakdown of participants.</p>

		<p>CR14: Include a summary table of the consultations conducted with key stakeholders and local communities, etc. The table should include for <u>each consultation</u>:</p> <ol style="list-style-type: none"> 1. consulted entity/ group, especially if they correspond to gender organizations. They should be specifically named, 2. number of participants disaggregated by gender, and other vulnerable groups, 3. expand on the key issues raised and how they were considered in project design (name specific outputs and outcomes currently in the proposal), 4. background information to verify whether marginalized and vulnerable groups have been consulted, 5. Moreover, please indicate if further future consultations will be conducted. <p>CAR6: Please provide summary of the Initial Gender Analysis to explain how gender perspectives were factored into the consultation process.</p>
	<p>11. Is the requested financing justified on the basis of full cost of adaptation reasoning?</p>	<p>Yes. As per information under Part II.I, pp. 37-39 (Note: change section letter numbering from J to I). The proposal provides a logic narrative to sustain the full cost of adaptation reasoning of the proposed project. This includes a baseline scenario and an adaptation increment scenario.</p> <p>CAR7: Please remove the following from the adaptation rationale section on page 38</p> <ol style="list-style-type: none"> 1. “incremental costs constitute the adaptation rationale for AF financing.”

		<p>2. “By financing these incremental, adaptation-driven elements, “</p> <p>The adaptation fund funds the full cost of adaptation of the proposal before it. This must be explicit in the proposal.</p>
	<p>12. Is the project / program aligned with AF’s results framework?</p>	<p>Yes. However, some amendments are required.</p> <p>Part III.A, pp. 45-47. The proposal includes the alignment of the proposed project with the AF’s Results Framework, specifically, through Fund Outcomes 1 and 4. However, some clarifications and amendments are required.</p> <p>CAR8: Please revise and amend the table in Part III.A as follows:</p> <ol style="list-style-type: none"> 1. All project’s outputs and outcomes indicators are SMART. 2. Please ensure consistency between the AF outcomes, outputs and indicators according to the updated AF Results Framework (Nov 2025). 3. Please ensure consistency in the wording and numbering of the Fund indicators. 4. According to the instructions in the updated AF Results Framework, the Table should contain the lines for “<i>Total outcome level grant amount</i>” in the upper part, and “<i>Total output level grant amount</i> “ in the lower part. <p>CR15: Please revise the AF RF alignment table to comply with the updated AF Results Framework. Also, ensure the consistency of the AF outcomes supported</p>

		by the project (mentioned in Part IIA, “Components Description”) with those indicated in the revised alignment table.
	13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	<p>Yes. However, further information is required.</p> <p>Part II.J, pp. 39-41 (Note: change section letter numbering from K to J). The proposal explains how results will be sustained from the economic, institutional, technical, social and gender and environmental perspectives. However, the sustainability of the O&M aspects for the facilities/ infrastructures to be established by the project needs to be addressed.</p> <p>CR16: Please provide a dedicated paragraph/ heading to explain to clarify the arrangements for the sustainability of the O&M of facilities/ infrastructures to be established by the project.</p> <p>CR17: Please describe how it will facilitate scaling up and replication.</p>
	14. Does the project / programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	<p>Yes. However, further information is required.</p> <p>Part II.K, pp. 41-44 (Note: change section letter numbering from L to K). The proposal includes a broad statement about the potential environmental and social risks identified, as well as the assessment against the 15 AF ESP principles. The project’s category from the screening process is A (substantial risk). However, further amendments and clarifications are required.</p>

		<p>CAR9: Please include an Initial Gender Analysis/Assessment to elaborate on gender-specific cultural and legal contexts and substantiate with qualitative and quantitative evidence. The information provided should inform and guide the identification of women’s specific needs and risks.</p> <p>CAR10: Please amend Table 6 to:</p> <ol style="list-style-type: none"> 1. Describe all potential impacts (direct, indirect, transboundary and cumulative) and risks that could result from the project. Descriptions must be specific rather than generic. 2. Risks should describe as: “<i>There is a risk</i>” and must be accompanied by mitigation plans as: “<i>Mitigation measures are</i>” or “<i>To mitigate this risk, the project</i>” 3. Kindly leave a <u>check</u> mark in the second column ‘No further assessment required for compliance’ if no further assessment is needed and <u>leave blank</u> if an assessment is to be conducted. No text should be included in the second column. 4. If no risk is identified for a given principle, a <u>sound justification</u> must be provided. 5. Please note that AF Principles 1, 4 and 6 always apply. For more information, please visit: AF’s ESP guidance and Environmental and Social Policy.
Resource Availability	1. Is the requested project / programme funding within the cap of the country?	Yes.
	2. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project/programme budget before the fee?	Yes.

		<p>As per information provided in Table “Project/Programme Components and Financing” and PFG Form. The figures add up and match across the tables – components table vs. budget. The figures are rounded to a whole number (i.e., no decimals).</p> <p>The Implementing Management Fee is exactly 8.5% (USD 783,410) of the Total Project/Programme Budget <u>before fee</u>. The requested PFG is correct in size (USD 149,188) and includes an Implementing Entity Management Fee of 7.8% of the PFG activities.</p> <p>CAR11</p> <ol style="list-style-type: none"> 1. Please remove monitoring and evaluation from the project components as it as this to be covered under IE fees and EE costs. 2. In the components financing table please present the grant amount at the output level. 3. Please note that docu-sign signature are not accepted for the AF submissions neither PFG nor proposal document.
	<p>3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?</p>	<p>Yes.</p> <p>As per information provided in Table “Project/Programme Components and Financing”. All the figures are rounded to a whole number. They add up and match across the tables. The Project Execution Cost is exactly 9.5% (USD 875,575 of the Total Project/programme Budget, including the fee).</p>
<p>Eligibility of IE</p>	<p>1. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?</p>	<p>Yes.</p> <p>UN Development Programme (UNDP) is an accredited Multilateral Implementing Entity (MIE).</p>

		<u>Accreditation Expiration Date:</u> 11 October 2029.
Implementation Arrangements	1. Is there adequate arrangement for project / programme management, in compliance with the Gender Policy of the Fund?	n/a at concept stage
	2. Are there measures for financial and project/programme risk management?	n/a at concept stage
	3. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy and Gender Policy of the Fund?	n/a at concept stage
	4. Is a budget on the Implementing Entity Management Fee use included?	n/a at concept stage
	5. Is an explanation and a breakdown of the execution costs included?	n/a at concept stage
	6. Is a detailed budget including budget notes included?	n/a at concept stage
	7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?	n/a at concept stage
	8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	n/a at concept stage
	9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	n/a at concept stage
	10. Is a disbursement schedule with time-bound milestones included?	n/a at concept stage



CONCEPT NOTE PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme:	Towards Climate Resilience: Sustainable Waste Management Solutions in Guinea-Bissau
Country:	Guinea-Bissau
Thematic Focal Area:	Climate Change Adaptation – Urban Resilience and Integrated Waste Management
Type of Implementing Entity:	Multilateral Implementing Entity
Implementing Entity:	UNDP
Executing Entities:	Ministry of Environment, Biodiversity and Climate Action (MABAC)
Amount of Financing Requested:	10,000,000 (in U.S Dollars Equivalent)
Project Formulation Grant Request (available to NIEs only):	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Amount of Requested financing for PFG:	149,188 USD (in U.S Dollars Equivalent)
Letter of Endorsement (LOE) signed:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<p><i>NOTE: LOEs should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page:</i> https://www.adaptation-fund.org/apply-funding/designated-authorities</p>	
Stage of Submission:	
<input type="checkbox"/> This concept has been submitted before	
<input checked="" type="checkbox"/> This is the first submission ever of the concept proposal	
In case of a resubmission, please indicate the last submission date: Click or tap here to enter text.	

Please note that concept note documents should not exceed 50 pages, including annexes.



ADAPTATION FUND

1. Project/Programme Background and Context:

Provide brief information on the problem the proposed project/programme is aiming to solve. Outline the economic, social, development and environmental context in which the project would operate.

Guinea-Bissau is one of the most climate-vulnerable countries in West Africa, increasingly affected by intensifying climate hazards, heavy rainfall, recurrent flooding, rising temperatures, and accelerating sea-level rise, that interact with an already fragile waste management system to produce severe environmental, health, and socioeconomic impacts. The absence of engineered landfills, inadequate drainage, insufficient collection capacity, and uncontrolled disposal practices turn waste into a major climate-risk amplifier: blocking drainage channels, worsening floods, spreading contaminated leachate, increasing disease incidence, and degrading agricultural and coastal ecosystems.

Urban floods mobilize uncollected waste, spread contaminated leachate into rivers and wetlands, and heighten the incidence of waterborne and vector-borne diseases. Extreme heat accelerates the decomposition of organic waste, increasing methane emissions and the proliferation of pests, while sea-level rise threatens low-lying coastal waste sites and the ecosystems that sustain fisheries and agriculture. These climate pressures expose significant weaknesses in the country's waste infrastructure, most notably the absence of engineered landfills, controlled disposal systems, and drainage or leachate management.

Over the past three decades, the country has experienced a temperature rise of approximately 0.8°C, a 15–20% increase in heavy rainfall events (>50 mm/day), sea-level rise of roughly 3.1 mm/year, and a doubling in the frequency of urban flooding. Projections under IPCC SSP2-4.5 and SSP5-8.5 scenarios anticipate further deterioration: mean annual temperatures increasing by 1.2–1.5°C by 2045, extreme rainfall events becoming 10–30% more frequent by mid-century, and sea-level rise of 30–60 cm by 2050, further amplifying flood depths, duration, and contamination risks. In this context, climate-resilient waste collection and disposal are not conventional service improvements but core flood-adaptation measures, directly reducing exposure to contaminated floodwaters and safeguarding public health under intensifying rainfall regimes, sufficient to cause near-annual overtopping of the Safim dumpsite.

Located on the west coast of Africa, Guinea-Bissau covers 36,125 km² and has a population of around two million. Socially, economically, and environmentally, it ranks among the world's most fragile countries, with a Human Development Index (HDI) of 0.514 (2025) and an average annual income of about US\$960. Its flat topography and roughly 350 km of coastline, comprising around 88 islands and islets, further heighten its exposure to climate and environmental risks.

The capital city, Bissau, home to approximately 500,000 inhabitants (about 25% of the national population), illustrates these challenges vividly. Urban commerce thrives along the city's few paved roads, yet solid waste collection remains inadequate, with only about 350 tonnes per day¹ being collected, 70% of which is organic. In unpaved inner neighborhoods, waste collection is virtually absent. Refuse is left on the ground or dumped into drainage ditches, causing blockages, exacerbating flooding, and spreading leachate through inundated areas. This situation reflects both systemic weaknesses and a general lack of environmental awareness.

The populations most affected by these combined climate and waste-related risks are low-income urban households living in flood-prone neighborhoods, informal waste pickers, particularly women and youth, who work in hazardous conditions without protection, and communities dependent on mangroves, wetlands, and rice fields for their livelihoods. Critical ecosystems such as the mangrove wetlands around Safim and the rice-growing zones adjacent to the Antula dump are increasingly contaminated during seasonal floods. Coastal communities relying on artisanal fisheries report declining catches and ecological degradation linked to waste pollution originating from vulnerable open dumps.

The consequences of inaction are profound. Flood-related contamination events will become more frequent,

¹ Source: UN-Habitat (2024). Waste Wise Cities Tool (WaCT) assessment, Bissau



ADAPTATION FUND

triggering disease outbreaks and worsening public health. Wetlands and mangroves, natural buffers against storms, will continue to degrade under the pressure of uncontrolled dumping and leachate discharge. Water and soil contamination will further undermine fisheries and rice production, deepening food insecurity. Methane emissions from decomposing waste will continue to rise, contributing both to local warming and broader climate impacts. Vulnerable groups, especially women, youth, and informal waste workers, will remain trapped in unsafe and low-income activities with heightened exposure to climate-induced shocks.

In this context, the proposed project will directly benefit **210,000 people**, including women, youth, female-headed households, informal waste pickers, and flood-prone communities, and indirectly benefit **more than 1.2 million people** across urban, peri-urban, and coastal areas. It will also protect critical ecosystems, including mangroves, rice fields, estuaries, and groundwater recharge zones.

With a requested investment of **USD 10 million**, the project prioritizes proven low-cost, high-impact adaptation solutions such as the Fukuoka method, decentralized collection systems, and strengthened institutional capacity, maximizing adaptation cost-effectiveness. The project delivers the “triple dividend of resilience”:

- (i) avoided losses from floods and contamination;
- (ii) economic and health co-benefits through improved services and green jobs; and
- (iii) strengthened ecological and institutional resilience.

By enhancing the climate resilience of waste management infrastructure, services, communities, and ecosystems, the project will substantially reduce climate-induced exposure, safeguard public health, support resilient livelihoods, and ensure that waste systems remain functional, safe, and adaptive under future climate conditions.

1.1. Climate change: historical trends and projected impacts

The project addresses the link between climate stressors and waste-related vulnerabilities such as drainage blockage, contamination, emissions, and vector proliferation. Over the past 30 years, Guinea-Bissau has experienced clear and measurable climate shifts that directly magnify weaknesses in the waste management sector, particularly at the Safim and Antula disposal sites. These trends include rising temperatures, more intense rainfall events, increased frequency of urban flooding, and rapid sea-level rise along the country’s low-lying coastline. By improving waste management, the project directly enhances urban resilience and adaptation to climate-induced risks affecting health and ecosystems.

- **Temperature:** Mean annual temperatures have already risen by about 0.8°C since 1990, with a 25% increase in days above 35°C. Projections indicate a further rise of 1.2–1.5°C by 2045 (World Bank, 2025). Higher temperatures accelerate waste decomposition, increase methane emissions and odours, and heighten pathogen and vector survival, intensifying health risks for nearby communities and unprotected informal waste workers.
- **Precipitation and Flooding:** Rainfall is becoming more intense and erratic, with a 15–20% increase in heavy rainfall days above 50 mm since the early 2000s. Events that were once 1-in-20-year storms now occur roughly every ten years. By mid-century, heavy rainfall events may increase by 10–30%, with RX1day intensity rising by 12–20%. These shifts increase drainage failures and flood-driven contamination.
- **Flood Exposure:** Low-lying topography combined with rising water levels is expanding flood-prone areas and increasing soil and water contamination from unmanaged waste. More intense monsoon storms (June–October) repeatedly flood Bissau, Safim, and the Bijagós islands, spreading leachate into wetlands, rice fields, and coastal ecosystems. UN-Habitat/WaCT data show that 60–70% of Bissau’s drainage network becomes obstructed during peak rainfall, and the city ranks among the twenty African capitals most frequently affected by urban floods (UN-Habitat, 2024).
- **Sea-level rise and coastal hazards:** The Safim dumpsite constitutes a critical climate-risk hotspot where sea-level rise, storm surge, and extreme rainfall converge with decades of accumulated unmanaged waste. Located only 1–2 meters above mean sea level and directly connected to the Geba River estuary and surrounding mangroves, Safim is already subject to seasonal flooding and leachate mobilization during intense rainfall events. Observed sea levels along the Guinea-Bissau



ADAPTATION FUND

coast have risen about 3.1 mm per year over the past three decades, with storm surges becoming more frequent. IPCC projections (SSP2-4.5 and SSP5-8.5) indicate rises of 10–18 cm by 2025, 30–60 cm by 2050, and up to 1 m by 2080. Under SSP2-4.5, a 30–50 cm rise by 2050 could make overtopping at Safim almost annual, eroding waste mounds and releasing toxins into mangroves and the Geba estuary. These ecosystems are vital natural buffers and fisheries nurseries, making dumpsite rehabilitation a key component of coastal protection. Without rehabilitation, rising water levels and stronger storm surges will erode waste mounds and release historically accumulated toxins into mangroves, fisheries nurseries, and rice fields. Rehabilitating Safim using the semi-aerobic Fukuoka method therefore functions as a coastal and public-health adaptation measure, stabilizing waste masses, controlling leachate under extreme rainfall, and protecting natural buffers essential for climate resilience.

The Safim dumpsite will be seriously affected and will further contaminate nearby mangroves, as we can see in Figure 1.

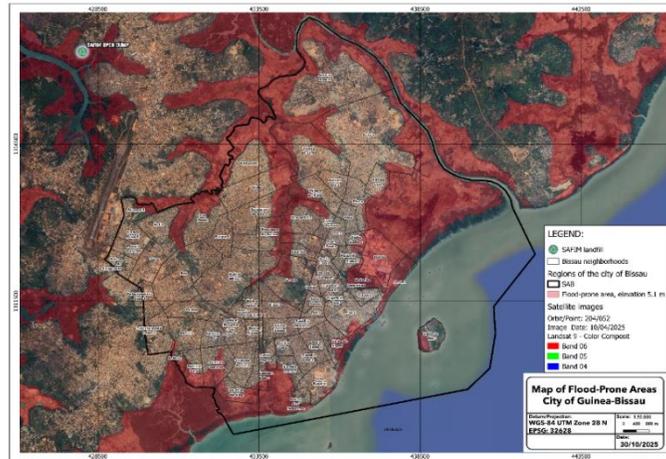


Figure 1 - Map of flood-prone areas, city of Guinea-Bissau

The chronic lack of waste management resources amplifies climate impacts, clogging drainage, worsening floods, spreading disease, and degrading protective wetlands and mangroves. Small-scale community initiatives, led by women and youth in recycling, composting, and urban gardening, show resilience but remain limited, unregulated, and exposed to risks. Without structural support and investment in climate-resilient, circular, and inclusive waste systems, Guinea-Bissau faces escalating pollution, food insecurity, and public health crises. Strengthening the waste sector is therefore a critical adaptation priority to safeguard lives, ecosystems, and livelihoods. Looking ahead, climate projections indicate that mean annual temperatures will rise by 1.6–1.8°C by 2050 under SSP2-4.5 and by more than 2°C under SSP5-8.5, with even sharper increases by 2080. Heavy rainfall events are expected to grow more intense by 10–30 per cent by mid-century, and one-in-twenty-year storms are projected to become one-in-five-year events by 2080. These trends will increase the frequency and severity of urban flooding in Bissau and other low-lying cities, where drainage channels are already obstructed by uncollected waste and where infrastructure is highly vulnerable to climate stress. As extreme rainfall increases, the spread of leachate, pathogens, and solid waste from dumpsites into residential areas will intensify, heightening risks of cholera, diarrhoea, and vector-borne diseases.

These climate hazards expose underlying social and infrastructural vulnerabilities. Most waste in Guinea-Bissau is dumped or burned openly due to the absence of engineered landfills, limited collection capacity, and insufficient environmental controls. Informal settlements, low-income neighbourhoods, and communities living near wetlands or waste sites are disproportionately affected. Informal waste pickers—many of them women and youth—work in unsafe conditions without protective equipment, facing rising heat stress, toxic fumes from open burning, and growing exposure to medical waste that is frequently mixed with household refuse. Recurring floods in these neighbourhoods disperse waste into homes and public spaces, disrupt livelihoods, and contaminate rice fields and fishing grounds.



ADAPTATION FUND

Safim, the main dumping site for Bissau, demonstrates these overlapping climate and environmental risks most acutely. Located adjacent to the Geba River and surrounded by mangroves, the site floods regularly during intense rainfall events. Leachate and contaminated waste enter waterways that local communities use for fishing, irrigation, and domestic water collection. Reports of declining fish stocks, fish die-offs, and changes in species behavior illustrate that contamination is already affecting ecosystem health. Under rising sea levels and increasing storm surges, the degradation of this site will accelerate, undermining coastal resilience and threatening food security.

In this context, the absence of a controlled, climate-resilient waste management system amplifies national vulnerability to climate change. Uncollected waste blocks drainage channels, turning heavy rainfall into destructive floods. Open dumps release methane that contributes to local warming trends and fire risks. Contaminated runoff and airborne toxins degrade public health and ecosystems. Degraded mangroves and wetlands lose their ability to buffer storm surges and stabilize coastlines. Without intervention, these combined impacts are expected to escalate significantly over the coming decades, leading to worsening pollution, higher disease burdens, ecosystem collapse, and deeper socioeconomic vulnerability, particularly among the poorest and most marginalized populations.

The proposed project responds directly to these climate-driven challenges by positioning waste management as a core adaptation measure. By rehabilitating the Safim and Antula sites using the semi-aerobic Fukuoka method, constructing climate-resilient landfill cells in flood-safe areas, strengthening drainage and leachate control, and restoring critical wetlands and mangroves, the project reduces contamination risks and enhances natural defenses against floods and coastal hazards. Through expanded composting, recycling, and source separation systems, it reduces waste loads and methane emissions while creating adaptive livelihood opportunities for women, youth, and informal waste workers. By improving institutional capacity, community awareness, and municipal planning, it strengthens the country's ability to manage climate risks in a sustainable and inclusive manner. Together, these interventions align with Guinea-Bissau's NDC, NAP roadmap, and national development priorities, transforming waste management from a driver of vulnerability into a strategic pillar of climate resilience.

1.2. Economic Context

Guinea-Bissau's economy is fragile and highly dependent on agriculture and commodity exports, particularly cashew nut production. Fiscal space is limited, and municipal cost-recovery for basic public services remains weak, leaving waste management severely underfunded. There are no sustainable financing mechanisms for solid waste management, and local governments lack both the technical and financial capacity to operate modern facilities.

In the capital Bissau, for instance, 350 tons of solid waste are generated daily, yet less than 35% to 65% is collected (depending on source), and only one of four collection trucks is functional, making regular waste collection nearly impossible, especially during the rainy season when many access roads become impassable. Recycling remains below 1%, and most waste is either dumped or burned in the open. Similar or worse conditions prevail in other urban centers, such as Bafatá, Gabú, Cacheu, Bolama, Bubaque, and Buba, where waste collection is sporadic or nonexistent.

The informal sector dominates waste collection and recycling, employing low-income workers, many of them women and youth, under unsafe and unregulated conditions. While they provide an essential service, they lack recognition, protection, and access to credit or training. As a result, the sector operates inefficiently, creating **economic losses, social inequities, and environmental degradation and unsustainability.**

1.3. Social and development context

Rapid urbanization (concentrated in Bissau and coastal towns), high youth dependency, large household sizes, widespread poverty and informality, combined with limited institutional capacity, have left cities unable to provide adequate waste management services. Less than half of the urban population benefits from regular waste collection, while peri-urban and island communities remain largely unserved. Uncollected waste is dumped in residential areas, wetlands, and drainage systems, worsening **pollution, flooding, and public health risks.**



ADAPTATION FUND

This not only worsens pollution and health risks but also undermines the productivity of key sectors such as fisheries and agriculture. Poor waste management directly affects livelihoods by contaminating rice fields, fisheries, and water resources, the foundations of the national economy.

Additionally, the social burden of poor waste management falls disproportionately on women and children. Women are primarily responsible for household waste handling and shoulder most waste-related tasks in the informal recycling chain, often without protection or fair compensation. Children, particularly in low-income areas, are exposed to hazardous waste and miss schooling opportunities due to involvement in waste picking.

Despite these challenges, women and youth have demonstrated resilience and innovation by leading small-scale recycling, composting, and reuse initiatives such as plastic crafts and urban gardening on degraded landfill sites. However, these efforts remain informal, under-resourced, and highly vulnerable to environmental and health hazards.

1.4. Environmental and climate context

Guinea-Bissau's geography amplifies its vulnerability: 65% of its territory is coastal, and over 80% of its population resides in low-lying coastal areas that are exposed to flooding, coastal erosion, storm surges, and saltwater intrusion. Two major uncontrolled dumpsites near wetlands, **Antula (3.5 ha)** and **Safim (10.77 ha)**, pose severe contamination risks to critical ecosystems that sustain fisheries, agriculture, and biodiversity. Lacking waterproofing or drainage, they leak **leachate into wetlands and rice fields**, the primary food source for surrounding communities, polluting soil and water and threatening food supplies.

Although the Antula dumpsite has been formally closed, it remains a significant residual climate risk due to the absence of containment or leachate and biogas control measures, resulting in soil, water, and air contamination that directly threatens food security and livelihoods. The environmental closure and ecological rehabilitation of Antula are therefore essential adaptation interventions, aimed at **eliminating long-term contamination pathways exacerbated by climate extremes**, reducing exposure of nearby communities, and restoring ecosystem functions that support flood regulation and food security.

Similarly, the Safim dumpsite, now overloaded, operates without waterproofing, leachate, and biogas drainage and treatment, further amplifying flood and contamination risks to adjacent wetlands and communities. During increasingly intense rainfall events, contaminated soils and residual waste are mobilised into adjacent urban areas, wetlands, and food-production zones. Climate projections indicate that **heavy rainfall events may increase by 10–30% by 2050**, substantially elevating the risk of contaminant dispersion from legacy waste sites.

Climate change further worsens these impacts:

- **Rising temperatures** and extreme rainfall accelerate waste decomposition (with organics comprising ~70% of the waste stream), increasing pathogen proliferation, odors, and health risks for nearby communities and waste workers. Uncollected and poorly managed waste blocks drainage systems, exacerbates flood impacts, and increases contaminated runoff during heavy rainfall events. Improving composting, recycling, and source separation reduces flood-related disruptions, limits the dispersion of contaminated leachate and the exposure of workers to hazardous conditions during heatwaves, and lowers fire risks at dumpsites under hotter and drier conditions, while also helping to reduce methane and black carbon emissions
- **Intense and erratic rainfall** floods dumpsites, mobilizes contaminated runoff, and damages access roads.
- **Sea-level rise and storm surges** threaten waste infrastructure in coastal and inland areas, reducing natural resilience. Environmental degradation from unmanaged waste reduces the capacity of mangroves, wetlands, and soils to buffer storm impacts.

As climate extremes intensify, the absence of climate-resilient waste systems threatens to deepen ecosystem collapse and human vulnerability. Protecting these natural buffers through improved waste management is therefore a core adaptation strategy.

1.5. The Case for Action: Waste Management and Climate Vulnerability



ADAPTATION FUND

Although Guinea-Bissau has ratified major international conventions such as the Basel, Rotterdam, Stockholm and Paris Agreements, the country still lacks a coherent, enforceable national legal framework for climate-resilient waste management. The 2011 Environmental Framework Law remains the country’s main legal, prohibiting hazardous waste imports but offering no comprehensive regulation for waste collection, treatment or disposal. Institutional responsibilities are fragmented across ministries, resulting in weak coordination, limited enforcement capacity, and unmanaged disposal practices that significantly amplify climate-related risks. In this context, climate hazards such as extreme rainfall, sea-level rise, and storm surges interact with systemic waste-sector vulnerabilities, creating escalating impact chains that threaten lives, ecosystems, and infrastructure.

Climate change is transforming unmanaged waste into a **direct public-health hazard** in Guinea-Bissau. Rising temperatures (already **+0.8°C since 1990**) accelerate organic waste decomposition—more than **70% of municipal waste is biodegradable**—increasing pathogen survival, vector proliferation, and odour emissions. Combined with flood events, uncontained waste leads to widespread contamination of surface water, shallow wells, and living areas. Under projected warming of **+1.2–1.5°C by 2045**, these risks will intensify, particularly for informal settlements, low-income neighbourhoods in floodplains, informal waste pickers, mangrove wetlands and rice fields. By home and community composting, recycling, and source separation, ensuring controlled disposal, reducing waste accumulation in flood-prone areas, and maintaining collection services during extreme events, the project directly enhances **adaptive capacity of the health system**, reducing climate-sensitive disease outbreaks such as cholera, diarrhoeal disease, malaria, and dengue.

If no action is taken, Guinea-Bissau faces a worsening cycle of vulnerability with cascading effects across sectors:

Table 1 - Climate impact chain

	Climate Hazard	Vulnerabilities	Risks	Project Responses
Urban flooding and health	<ul style="list-style-type: none"> Rising intensity and frequency of extreme rainfall events More frequent flash floods during the June–October rainy season 	<ul style="list-style-type: none"> Blocked drains due to uncollected waste Low-lying informal settlements (Bissau, Safim, Antula) Weak municipal collection capacity Contaminated floodwaters mixing with open waste and sewage 	<ul style="list-style-type: none"> Rapid urban flooding Leachate contamination of shallow wells and water points Cholera, diarrhoeal disease, malaria, dengue outbreaks Damage to homes, markets, and transport routes Disruption of waste collection during floods 	<ul style="list-style-type: none"> Climate-responsive collection routes and drainage-priority zones Deployment of cargo/e-cargo tricycles and decentralized ecopoints Fukuoka-method landfill rehabilitation reducing leachate generation Early clean-up triggers linked to rainfall forecasts Awareness campaigns on waste–flood–health risks
Sea-level rise, storm surge	<ul style="list-style-type: none"> Sea-level rise of ~0.3–0.5 m by 2050 (SSP2–4.5) Stronger storm surges along the Geba River estuary 	<ul style="list-style-type: none"> Safim and Antula dumpsites located near rivers, wetlands, mangrove No containment, drainage, or leachate management Coastal ecosystems already stressed by pollution 	<ul style="list-style-type: none"> Overtopping and inundation of dumpsites Release of accumulated toxins into mangroves, estuaries, rice fields Fish kills, reduced fish stocks, declining coastal livelihoods Loss of natural buffers, accelerating erosion 	<ul style="list-style-type: none"> Controlled closure of Antula and ecological restoration Climate-resilient rehabilitation of Safim with <ul style="list-style-type: none"> engineered leachate control drainage structures erosion protection Mangrove/ wetland restoration around vulnerable sites



ADAPTATION FUND

	Climate Hazard	Vulnerabilities	Risks	Project Responses
Rising temperatures and extreme heat	<ul style="list-style-type: none"> +1.2–1.5°C increase by 2045; more extreme-heat days 	<ul style="list-style-type: none"> Large proportion of organic waste decomposing in the open Informal recycling with no protective equipment High exposure of workers and nearby communities 	<ul style="list-style-type: none"> Rise methane emissions and spontaneous fires at dumps Rise vector proliferation (flies, rodents, mosquitoes) Rise respiratory diseases and occupational health risks Strong odors reducing habitability near dumpsites 	<ul style="list-style-type: none"> Siting/ design of new sanitary landfill outside flood-prone zones Adoption of semi-aerobic landfill operations (Fukuoka method) Establishment of composting hubs to divert biodegradable waste Expansion of recycling/composting cooperatives with PPE and training Public and worker health protocols integrated into O&M
Drought and Water scarcity	<ul style="list-style-type: none"> Increasing seasonal drought periods Reduced water table in urban/peri-urban zones 	<ul style="list-style-type: none"> Waste scattered in dry streambeds and wetlands Higher concentration of pollutants in water sources Dependence on shallow wells for drinking water 	<ul style="list-style-type: none"> Contaminated drinking water during low-flow periods Higher costs for water treatment/ extraction Increased conflict over scarce clean water 	<ul style="list-style-type: none"> Protection of wetlands and recharge areas through waste removal Leachate control systems to prevent groundwater contamination Community-level awareness on water safety and waste practices
Governance, capacity, and social vulnerability		<ul style="list-style-type: none"> Limited municipal capacity and only one operational truck High poverty, informal settlements, and weak enforcement Women, youth, and informal waste pickers exposed to hazards Lack of coherent national waste policy and climate integration 	<ul style="list-style-type: none"> Service collapse during climate shocks Social inequities and unsafe informal recovery activities Policy fragmentation and slow climate adaptation 	<ul style="list-style-type: none"> National Integrated Solid Waste Management Strategy Municipal training, O&M planning, and digital monitoring Gender Action Plan and inclusion of informal waste pickers Establishment of a national GRM and knowledge platform Policy reform aligning with NAP/NDC priorities Establish the foundations for implementing an Extended Producer Responsibility system

Without intervention, climate impacts will compound, driving Guinea-Bissau into deeper vulnerability. Floods will intensify pollution and disease risks, degrade ecosystems, and undermine livelihoods. Economic pressures and social inequalities will worsen as public services and at-risk groups face increasing strain, while blocked drainage and coastal erosion fuel more frequent disasters.

Left unaddressed, these trends will erode resilience, reverse development progress, and hinder Guinea-Bissau’s ability to meet its Paris Agreement commitments. By disrupting the links between climate hazards, waste-sector weaknesses, and cascading risks, the proposed project places adaptation at the centre of waste-management reform, turning a key vulnerability into a foundation for long-term resilience.

1.6. Adaptation rationale



ADAPTATION FUND

The project is designed around a clear climate logic: **climate change transforms unmanaged waste into a major hazard**, and therefore **resilient waste management becomes a critical tool for flood, coastal, and public-health adaptation**. As extreme rainfall, storm surges, and sea-level rise intensify across Guinea-Bissau, uncollected waste blocks drainage channels, increases urban flood depths, accelerates coastal erosion, releases contaminated leachate into wetlands and mangroves, and spreads waterborne and vector-borne diseases. Improving waste systems is therefore not a general development intervention; it is a **direct climate risk-reduction strategy** that reduces exposure, lowers sensitivity, and strengthens adaptive capacity.

The proposed Adaptation Fund Project **“Towards Climate Resilience: Sustainable Waste Management Solutions in Guinea-Bissau”** directly addresses climate vulnerability across the three dimensions, exposure to hazards, sensitivity of people and ecosystems, and adaptive capacity of institutions and communities, by combining resilient infrastructure, inclusive governance, and ecological restoration. The **“Towards Climate Resilience: Sustainable Waste Management Solutions in Guinea-Bissau”** project directly addresses these systemic adaptation needs by turning waste management from a source of vulnerability into a driver of climate resilience. Its core interventions include:

- Ensure climate-resilient containment and collection of waste, preventing waste from being washed into drainage channels during extreme rainfall events, and ensuring continuity of services even during floods.
- Rehabilitating and climate-proofing dumpsites using the Fukuoka semi-aerobic method, stabilizing slopes, improving drainage, and reducing methane emissions, erosion, and leachate discharge during heavy rains and storm surges.
- Strengthen the selective collection of recyclable materials through cooperatives of properly empowered collectors, with an emphasis on women and young people and establish community-based collection and composting systems (small-scale operational units), reducing organic waste in dumpsites and thus lowering leachate and pathogen loads mobilized by extreme rainfall.
- Build the governance, financing, and operational capacity of local/regional authorities to maintain waste services during climate shocks and plan long-term adaptation measures.
- Empower local communities, particularly women, youth and informal workers, to participate in climate-resilient circular economy initiatives that diversify climate-adaptive livelihoods.
- Conduct sustained climate-awareness and environmental education campaigns, engaging women’s associations, youth, religious entities, and traditional leaders to promote climate-informed waste practices.
- Protect and restore wetlands, mangroves, and coastal ecosystems, which serve as natural defences against storm surges, coastal flooding, and saline intrusion.
- Deliver specialized capacity-building and technical training on climate-resilient waste operations, landfill safety during floods, and adaptive planning models for municipal management.

By directly addressing the chain linking climate stressors, rising temperatures, irregular rainfall, urban flooding, storm surge, and sea-level rise, to waste-related vulnerabilities such as blocked drainage, dumpsite inundation, leachate contamination, vector proliferation, and ecosystem degradation, the project reduces exposure to climate-related hazards, safeguards ecosystems and natural buffers, strengthens the country’s resilience and builds local adaptive capacity. In doing so, this project positions waste management as a core adaptation measure, aligned with SDGs 11, 12, and 13, and advancing Guinea-Bissau’s Nationally Determined Contribution (NDC) and National Adaptation Plan (NAP) commitments to climate-resilient urban systems, sustainable resource use, and protection of coastal and wetland ecosystems.



ADAPTATION FUND

2. Project/Programme Objectives:

List the main objectives of the project/programme.

2.1. Overall Objective

The proposed project supports Guinea-Bissau's commitments under the Basel, Rotterdam, and Stockholm Conventions, as well as the ECOWAS Regulation on chemical and waste management (2023), by promoting environmentally sound practices and reducing transboundary pollution risks. It also operationalizes waste-related priorities set out in the country's Nationally Determined Contribution (NDC) under the Paris Agreement, which recognizes the waste sector as a growing source of GHG emissions.

The main benefits of climate change adaptation include:

- (i) reduced physical exposure to flooding through improved drainage and resilient waste infrastructure;
- (ii) increased ecological resilience through mangrove restoration and soil moisture capacity;
- (iii) strengthened community resilience and public health by reducing the risks of waste-related diseases, exacerbated by climate extremes.

Environmental and social improvements (job creation, circular economy, pollution reduction) are considered co-benefits that complement the objective of adaptation.

To establish a safe, climate-resilient, and inclusive national waste management framework that strengthens Guinea-Bissau's adaptive capacity to climate change by reducing vulnerability of people, infrastructure, and ecosystems to floods, contamination, and climate-induced hazards, the project will transform unmanaged dumps into resilient disposal systems, promote circular-economy livelihoods, and build institutional and community capacity to ensure long-term, climate-adaptive waste services that generate social, environmental, and economic co-benefits.

The absence of a coherent legal framework for waste management and the fragmentation of institutional mandates heighten Guinea-Bissau's exposure to climate-induced contamination and flooding. Although the 2011 Environmental Framework Law prohibits hazardous waste imports, there is still no comprehensive national legislation governing collection, treatment, or disposal. This institutional gap underlines the need for the project's integrated, climate-resilient approach.

2.2. Objectives

This project aligns with the **objectives of the Adaptation Fund** by reducing the vulnerability of people, livelihoods, and ecosystems to climate risks, particularly flooding, pollution, and coastal erosion already affecting Guinea-Bissau. It addresses additional adaptation costs to ensure that waste management systems, urban infrastructure, and ecosystem protection areas can withstand current and future climate stressors.

The intervention contributes directly to Adaptation Fund Outcomes 1 (reduced exposure to climate hazards), 3 (strengthened awareness and adaptive capacity), 4 (enhanced resilience of infrastructure and ecosystems), and 6 (strengthened livelihoods under climate variability).

A. Institutional Capacity, Governance, and Social Inclusion for Climate Adaptation: Strengthen institutional, technical, and social systems to enable sustainable, gender-responsive, and climate-resilient waste management across national and municipal levels, supporting coherent implementation of climate adaptation priorities.

Key activities:

- Mainstream climate adaptation and disaster risk reduction principles into national and municipal waste management policies and investment plans.
- Establish an inter-ministerial coordination platform linking waste, environment, health, and climate authorities for coherent national planning.
- Develop a National Waste Policy.



ADAPTATION FUND

- Train municipal officers, private operators, and community groups in climate-resilient waste management and maintenance practices.
- Empower women and informal workers through cooperative formalization, fair pay, access to protective equipment, and leadership roles.
- Protect vulnerable populations and livelihoods (schools, markets, rice fields, fisheries) from waste-related pollution and climate-exacerbated hazards.
- Implement a Grievance Redress Mechanism (GRM) and community monitoring to ensure inclusive and accountable governance.

Expected Results:

- Institutional roles clarified and coordination strengthened across sectors.
- More than 150 officials and operators trained in resilient waste operations and adaptive planning.
- Gender Action Plan implemented, ensuring equitable participation and benefits for women and youth.
- Reduced exposure of vulnerable communities to pollution, floods, and climate-related health risks.
- Improved social cohesion and empowerment of informal and community actors in local adaptation planning.

- B. Climate-Resilient Waste Infrastructure and Landfill Rehabilitation:** Rehabilitate and develop climate-resilient waste infrastructure that reduces exposure to flooding, contamination, and ecosystem degradation in urban and coastal zones, thereby reducing climate-induced flooding and pollution impacts through improved waste collection and disposal and aligning with climate strategies (SDGs 11.6, 13) and the Adaptation Fund's priorities.

Key activities:

- Provide the public sector (Council of Bissau) with the necessary means (equipment) and knowledge for effective waste collection, particularly in Bissau and the target cities.
- Incorporate climate-resilient planning into collection routes, vehicle selection, and ecopoint placement to ensure uninterrupted service during flooding, including elevated platforms for ecopoints, all-weather access, and pre-positioned equipment in flood-prone areas. Vehicles are essential for an efficient waste collection before and after rainfall, and for maintaining an effective climate-responsive waste management system. Without a resilient fleet of suitably equipped trucks, Safim would be unable to ensure proper drainage, safeguard public health, or achieve environmental recovery.
- Rehabilitate and climate-proof existing dumpsites (e.g., Antula, Safim) through improved drainage, leachate management, slope stabilization, and flood control measures.
- Convert unmanaged dumps into semi-aerobic (Fukuoka method) or controlled systems that limit methane generation and prevent groundwater contamination.
- Conduct feasibility and engineering studies for a new sanitary landfill located in a flood-safe area.
- Integrate waste infrastructure planning with urban drainage, flood risk, and coastal protection strategies to safeguard vulnerable communities and ecosystems.

Expected Results:

- Major disposal sites rehabilitated and protected from flood and erosion risks.
- Reduced contamination of adjacent wetlands, rice fields, and fisheries.
- Strengthened climate resilience of critical waste infrastructure and surrounding ecosystems.
- Improved protection of coastal and urban populations from climate-related hazards.
- Feasibility and engineering study report, including site analysis, preliminary design, environmental and social considerations, and cost estimates for the development of a Fukuoka sanitary landfill in a flood-safe area.



ADAPTATION FUND

- C. Climate-Adaptive Waste Collection and Circular Economy:** Promote a **climate-adaptive circular economy** that reduces waste generation, supports resilient livelihoods, and lessens pressure on natural resources while enhancing community adaptive capacity, in line with national climate commitments and SDG targets.

Key activities:

- Implement source separation, composting, and recycling systems in target municipalities to divert organic and recyclable waste from dumpsites.
- Establish community-based composting centers and recycling hubs, operated by women and youth cooperatives.
- Support waste reduction and value recovery initiatives that strengthen local economic resilience and resource efficiency.
- Integrate compost use in local agriculture and urban gardens to enhance soil fertility, food security, and climate adaptation in peri-urban areas.
- Establishment of a specialized laboratory for plastic-recycling processes and the development of new value-added products for community use.
- Small Grants mechanism for youth entrepreneurship in connection with innovation, given by the Environment Fund that is in MABAC.
- Gender Action Plan implemented, ensuring full and equitable participation of women and youth across all project stages, and guaranteeing their direct access to technical training, economic opportunities, and the benefits generated by the circular economy.
- A Small Grants Facility hosted by the Environment Fund (MABAC) will support youth-led circular entrepreneurship and innovation.
- Establish the foundations for implementing an Extended Producer Responsibility system.

Expected Results:

- At least 30% of organic waste is diverted from dumpsites through source separation and small community composting and recycling systems.
- More than 200,000 residents benefited directly.
- Creation of over 300 green jobs, with at least 60% benefiting women and youth.
- Improved soil fertility and food security through compost use in local agricultural systems.
- Enhanced community resilience through diversified and sustainable livelihoods.
- A structured basis for the successful implementation of EPR.

- D. Climate Awareness, Environmental Health and Risk, Early Warning, and Disaster Preparedness into Waste Management:** Integrating Climate Risk, Early Warning, and Disaster Preparedness into Waste Management.

Key activities:

- Develop climate-informed waste-risk management protocols for municipalities.
- Integrate waste management into local early-warning systems and flood-response mechanisms.
- Deploy climate-risk monitoring tools to support safe waste operations during heavy rainfall.
- Train municipal and community teams on emergency waste handling during climate events.
- Strengthen communication channels to alert communities to flood-related waste risks.

Expected Results:

- Municipalities using climate- and risk-informed waste management protocols.
- Early-warning tools integrated into waste services.
- Populations are better protected from pollution dispersal during climate events.
- Strengthened capacity of local authorities to anticipate, respond to, and manage waste-related climate hazards.

2.3. Cross-Cutting Outcomes and Long-Term Resilience Impacts



ADAPTATION FUND

- Enhanced **adaptive capacity and climate resilience** of urban and coastal communities through reliable, climate-proofed waste services.
- Strengthened **ecosystem integrity** by reducing waste-related contamination and restoring degraded wetland areas.
- Improved **gender equality and social inclusion**, embedding women and youth in circular economy value chains.
- Institutionalized **data, monitoring, and knowledge systems** for evidence-based climate adaptation and waste management policy.
- Generation of **economic co-benefits**, including cost savings from improved service efficiency and reduced health expenditures.

By integrating climate resilience into every stage of the waste management chain, from collection and recycling to disposal, the project will transform a major source of vulnerability into an adaptive asset for communities and ecosystems. It will safeguard livelihoods, reduce disaster risk, and lay the foundation for a **national climate-resilient waste management system** that supports Guinea-Bissau's National Adaptation Plan (NAP), Nationally Determined Contribution (NDC), and Sustainable Development Goals (SDGs 11, 12, and 13).



ADAPTATION FUND

3. Project/Programme Components and Financing:

Fill in the table presenting the relationships among project components, activities, expected concrete outputs, and the corresponding budgets. If necessary, please refer to the attached instructions for a detailed description of each term.

For the case of a programme, individual components are likely to refer to specific subsets of stakeholders, regions and/or sectors that can be addressed through a set of well-defined interventions/projects.

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US\$)
1. Strengthened Adaptive Capacity for Climate-Resilient Waste Services	1.1. Landfill personnel trained in MSW logistics, climate-resilient operations, and safety standards. 1.2. Operations & Maintenance (O&M) plans developed and validated for all target landfills. 1.3. Community engagement and education programmes implemented, reaching defined target groups with climate-related waste management messages.	Institutional and community capacity strengthened to plan, operate, and sustain climate-resilient waste management services.	700,000
2. Reduced Exposure to Flooding, Contamination, and Climate Hazards through Resilient Waste Infrastructure and Ecosystem Protection	2.1. Antula dumpsite safely closed in accordance with environmental and climate-risk criteria. 2.2. Safim and regional landfills rehabilitated using climate-resilient engineering solutions to reduce flood and contamination risks. 2.3. Detailed engineering designs produced for new or upgraded resilient disposal sites.	Waste infrastructure resilience improved, reducing climate-induced hazards (flooding, contamination) and ensuring continuity of safe disposal services under extreme weather events.	4,570,507
3. Strengthened Climate-Resilient Livelihoods and Service Continuity through Circular Economy Waste Systems	3.1. Climate-resilient collection vehicles, stationary containers, cargo/e-cargo tricycles, solar kits, and charging stations procured and operationalised. 3.2. Sorting and composting centres established, equipped, and functioning.	Climate-adaptive waste collection and circular economy systems strengthened, ensuring service continuity during climate shocks while increasing community adaptive capacity through recycling and composting.	1,670,507
4. Improved Public Health, Awareness, and Ecosystem Resilience under Climate Extremes	4.1. Environmental education and public awareness campaigns delivered to target communities on waste, climate risks, and health. 4.2. Urban sanitation and flood-reduction measures implemented in priority neighbourhoods.	Community awareness and adaptive behaviours increased, contributing to reduced climate-related health risks and improved environmental resilience.	700,000
5. Innovation, Learning, and Knowledge Systems for Climate-Resilient	5.1. Semi-aerobic landfill (Fukuoka-method) pilot designed, implemented, and monitored.	Uptake of innovative, low-cost, climate-resilient waste management models enhanced,	700,000



ADAPTATION FUND

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US\$)
Waste Adaptation	5.2. Replication roadmap produced for scale-up across regional hubs.	enabling replication and long-term learning.	
6. Project/Programme Execution cost			875,576
7. Total Project/Programme Cost (*)			9,216,590
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			783,410
Amount of Financing Requested			10,000,000

(*) - The total project cost amounts to USD 10,000,000, corresponding to the complete scope of technical components (1-5). Project execution and management costs are not presented as a separate budget line, as they are fully integrated within the component budgets, in line with Adaptation Fund budgeting practices. No co-financing is foreseen.

4. Projected Calendar:

Indicate the dates of the following milestones for the proposed project/programme

Milestones	Expected Dates
Start of Project/Programme Implementation	March 2027
Mid-term Review (if planned)	June 2029
Project/Programme Closing	September 2032
Terminal Evaluation	May 2032



ADAPTATION FUND

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Describe the project/programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience.

The proposed Adaptation Fund project “*Towards Climate Resilience: Sustainable Waste Management Solutions in Guinea-Bissau*” is designed to reduce climate-induced risks to urban and coastal populations by addressing waste-related drivers of flooding, environmental and runoff contamination, and climate-induced public-health vulnerability. In Guinea-Bissau, unmanaged waste significantly amplifies the impacts of intense rainfall, flooding, sea-level rise, and rising temperatures, increasing exposure to disease outbreaks, ecosystem degradation, and service disruption during climate shocks.

The project is structured around five mutually reinforcing adaptation components, each aligned with the Adaptation Fund Results Framework. Together, they strengthen adaptive capacity, reduce exposure to climate hazards, and increase the resilience of waste and sanitation services, ensuring continuity under extreme weather rainfall, flooding, and heat events. While basic waste management is a development necessity, this project specifically finances the additional costs of climate adaptation, ensuring that waste systems, infrastructure, livelihoods, and ecosystems can function safely and effectively under current and projected climate stressors.

By combining climate-resilient infrastructure, adaptive institutional capacity, risk-informed service delivery, livelihood diversification, and applied innovation, the project transforms waste management as a **frontline adaptation intervention** that safeguards public health, reduces disaster risk, and strengthens ecosystem resilience in the most climate-vulnerable urban and peri-urban areas of Guinea-Bissau.

Component 1: Strengthened Adaptive Capacity for Climate-Resilient Waste Services

Outcome: Strengthen institutional, technical, and community capacity for climate-adaptive waste governance and policy coherence at national and municipal levels.

Outputs:

- 1.1. National Guidelines for Climate-Resilient Waste Management.
- 1.2. Bissau City Climate-Resilient Solid Waste Management Plan.
- 1.3. On-the-job training for landfill operations and MSW logistics, climate-resilient operations, and safety standards.
- 1.4. Operations & Maintenance (O&M) plans developed and adopted.
- 1.5. Community engagement and environmental education campaigns implemented, reaching defined target groups with climate-related waste management messages.

Core Indicators:

- 150+ officials and operators trained (municipal + national)
- 20 institutions strengthened (10 national, 10 local).
- 500,000 people reached through awareness campaigns (52% women).
- 10 policies and plans integrating climate risk (5 municipal + 5 national).
- 10 operational tools / guidelines produced

Activities:

- Deliver on-the-job training for landfill operations, MSW logistics, adaptive planning, and safeguards implementation.
- Develop operational and maintenance (O&M) tools, manuals, and guidelines for climate-resilient waste infrastructure.
- Support the revision and alignment of national and municipal waste, climate, DRR, and circular-economy policies.



ADAPTATION FUND

- Establish and operationalise a national coordination mechanism across ministries (environment, municipalities, health, climate, interior).
- Strengthen governance structures for inclusive participation of women, youth, and informal waste pickers.
- Formalise informal waste pickers through cooperative development, provision of PPE, and integration into municipal systems.
- Operationalise safeguards instruments (ESMF, ESIA/ESMP, GRM, GBV prevention, child protection protocols).
- Conduct community engagement and education campaigns promoting adaptive and inclusive waste management, in local languages.

Contribution to Climate Resilience: This component builds the human and institutional foundations for adaptation by embedding climate risk management across the waste sector. It enhances coordination between national and local authorities, strengthens policy integration, and ensures communities are equipped to manage waste systems under increasing climatic variability.

» **Contribution to Adaptation Fund Outcomes 2, 3 and 7:** *Institutional capacity, awareness, and integration of climate risk.*

Component 2: Reduced Exposure to Flooding, Contamination, and Climate Hazards through Resilient Waste Infrastructure and Ecosystem Protection

Outcome: Urban communities reduce vulnerability to floods through strengthened waste services and resilient drainage. Reduce the exposure of urban and coastal populations to flooding, contamination, and climate-induced hazards through resilient waste infrastructure and ecosystem protection.

Outputs:

- 2.1. Resilient drainage infrastructure.
- 2.2. Early-warning and monitoring system.
- 2.3. Environmental closure of Antula dumpsite
- 2.4. Rehabilitation of Safim and regional landfills using Fukuoka method
- 2.5. Detailed landfill design and feasibility for new climate-safe facility

Core Indicators:

- 2 major dumpsites covered: Antula (3.5 ha); Safim (10.77 ha) full rehabilitation (semi-aerobic Fukuoka system).
- 6 regional landfill hubs improved/benefiting.
- ≥35% methane reduction from semi-aerobic operation.
- Flood risk reduced for >200,000 people in Bissau, Gabú, Bafatá, Cacheu, Tombali.
- 10,000 ha of ecosystems benefiting indirectly (60% mangroves, 40% forest).
- 1 detailed engineering design for a new climate-resilient sanitary landfill.
- 150,000 beneficiaries
- 40% reduction in drainage blockage

Activities:

- Conduct environmental closure of the Antula dumpsite and rehabilitation of the Safim and regional landfill sites using climate-resilient engineering standards.
- Construct and operationalise new landfill cells, leachate systems, and engineered drainage structures in flood-safe areas.
- Undertake detailed landfill design and feasibility studies incorporating climate-risk assessments for projected extremes.
- Implement soil protection, stormwater drainage.
- Prepare and apply site-specific ESIA/ESMPs, pollution control plans (dust, leachate, runoff), and emergency response protocols.
- Implement occupational health and safety programmes for infrastructure works.



ADAPTATION FUND

Contribution to Climate Resilience: These interventions reduce the physical vulnerability of urban systems to floods, leachate contamination, and disease outbreaks by converting open dumps into engineered, flood-resistant facilities. The infrastructure safeguards water resources, prevents ecosystem degradation, and ensures continuity of waste services under extreme weather conditions.

» **Contribution to Adaptation Fund Outcomes:** 4 and 5: *Climate-resilient infrastructure and ecosystem services.*

Component 3: Strengthened Climate-Resilient Livelihoods and Service Continuity through Circular Economy Waste Systems

Outcome: Strengthen adaptive capacity and climate-resilient livelihoods through circular-economy systems that promote waste reduction, resource efficiency, and social inclusion.

Outputs:

- 3.1. Procurement of climate-adapted collection equipment and fleets
- 3.2. Community-based waste collection micro-systems.
- 3.3. Community-based composting and eco-centres.

Core Indicators:

- 20 new waste collection trucks.
- Stationary containers installed.
- Cargo/e-cargo tricycles
- PV solar kits + charging stations
- ≥30% of organic waste diverted from dumpsites.
- 300+ green jobs created,
- ≥60% for women and youth.
- 10+ cooperatives formed or strengthened.
- 25000 households with increased or protected income (20% female-headed).

Activities:

- Procure and deploy climate-adapted waste collection fleets (trucks, stationary containers, e-cargo tricycles, PV kits, and charging stations).
- Establish sorting, recycling, and composting centres across target cities.
- Promote the use of locally produced compost in agriculture to enhance soil fertility, moisture retention, and food security under climate stress.
- Improve financial sustainability of municipal waste services through progressive user-fee systems and climate-responsive revenue models.
- Provide micro-grants, microfinance, and business support for women- and youth-led circular-economy enterprises.
- Formalise waste pickers into organised groups integrated into collection, sorting, and recycling chains.
- Implement health and safety measures to prevent work-related risks, child labour, and unsafe dumping practices.

Contribution to Climate Resilience: By diverting organic waste and recyclables from open dumps, this component reduces flood blockages of drains and damp, pathogen-rich piles sensitive to high temperatures / heavy rains, thus directly reducing climate-sensitive health and flood risks.

» **Contribution to Adaptation Fund Outcomes:** 6: Adaptive livelihoods and community resilience.

Component 4: Improved Public Health, Awareness, and Ecosystem Resilience under Climate Extremes

Outcome: Enhance public awareness, health, and ecosystem resilience through climate-informed waste management and environmental health systems.

Outputs:

- 4.1. Gender Action Plan and Youth Strategy.



ADAPTATION FUND

- 4.2. Knowledge platform.
- 4.3. Environmental and climate-adaptation awareness campaigns, including in schools
- 4.4. Improved urban sanitation reducing flood-related contamination

Core Indicators:

- 250.000 people reached with climate/environmental health awareness (52% women).
- 80% of healthcare waste managed safely through improved systems.
- 1.223.831 total beneficiaries (direct + indirect) benefiting from reduction of contamination sources.
- 10.000 hectares of ecosystems benefiting from reduced pollution and improved sanitation.

Activities:

- Implement national and municipal education and awareness campaigns on climate adaptation, hygiene, environmental health, and waste practices.
- Improve sanitation and drainage systems to limit flood-related contamination and disease outbreaks.
- Establish early-warning and community preparedness mechanisms for waste-related climate, environmental and health risks.
- Develop community-based emergency response structures and local risk-reduction committees.
- Conduct targeted campaigns on GBV prevention and child protection in waste-affected communities.
- Restore degraded ecosystems around waste sites to strengthen natural buffers against climate hazards (e.g., vegetation protection, riparian restoration).

Contribution to Climate Resilience: This component links climate adaptation to public and environmental health by preventing contamination and reducing disease vulnerability in flood-prone communities. It also restores vital ecosystems that buffer against climate hazards, promoting healthier, safer living environments.

» **Contribution to Adaptation Fund Outcomes 3 and 5:** *Awareness, health protection, and ecosystem services.*

Component 5: Innovation, Learning, and Knowledge Systems for Climate-Resilient Waste Adaptation

Outcome: Scale up innovation, applied research, and learning to advance adaptive, low-cost waste management solutions and strengthen Guinea-Bissau's national innovation ecosystem.

This component explicitly positions innovation as the testing and refinement of adaptation solutions under real climate stress. The first-ever application of the Fukuoka method in a flood-prone, low-income coastal context represents an adaptation innovation, as the method will be piloted, monitored, and adjusted to withstand seasonal flooding, high groundwater tables, and extreme rainfall. Also an innovation is the integration of waste operations with climate change early warning systems, enabling anticipatory actions (e.g. pre-storm waste clearance, leachate control, access protection) that are not currently practiced in Guinea-Bissau. The integration of women into waste management, collection and recycling activities is an innovation in the Circular Economy in the particular context of Guinea, as an adaptation mechanism.

Outputs:

- 5.1. Semi-aerobic (Fukuoka-method) pilot
- 5.2. Replication roadmap
- 5.3. Local innovators and institutions supported
- 5.4. Digital Monitoring, Evaluation and Learning (MEL)

Core Indicators:

- 3 innovative technologies piloted:
 - Fukuoka semi-aerobic landfill,
 - Community-based composting systems,
 - Digital MEL/monitoring.
- 15+ knowledge products (guides, manuals, videos, workshops).
- 5+ learning exchanges / peer-to-peer missions.



ADAPTATION FUND

- ≥10 innovators and institutions supported,
- ≥40% women and youth.

Activities:

- Pilot and validate at least three adaptation technologies (semi-aerobic Fukuoka landfills, decentralised composting, digital monitoring).
- Support at least five learning exchanges, technical publications, and knowledge events.
- Establish a National Knowledge Hub hosted by MABAC for data, research, and innovation coordination.
- Digitise MEL systems, conduct regular audits, and support evidence-based decision-making.
- Build partnerships with universities, research centres, and regional networks for applied studies.
- Support local innovators, including women and youth, to develop context-specific waste adaptation solutions.

Contribution to Climate Resilience: Through the generation and dissemination of practical knowledge, this component enables the continuous evolution and replication of climate-adaptive technologies. It enhances national innovation capacity, fosters evidence-based policymaking, and strengthens resilience through learning, experimentation, and technology transfer.

» **Contribution to Adaptation Fund Outcome:** 8: Adaptation innovation and learning ecosystems.

Contribution to Climate Change Adaptation and Resilience

The project “Towards Climate Resilience: Sustainable Waste Management Solutions in Guinea-Bissau” strengthens national and local adaptive capacity by transforming waste management into a pillar of climate resilience. Through its five interconnected components, it addresses the structural drivers of vulnerability, including flooding, contamination, and ecosystem degradation. By embedding climate risk management into governance systems, rehabilitating dumpsites to withstand extreme weather, and promoting sustainable livelihoods, the project directly reduces exposure to climate-related hazards and enhances resilience across communities and ecosystems.

The project is expected to directly benefit over 200,000 residents, particularly those living in flood-prone urban and peri-urban areas, by providing climate-resilient waste collection and disposal systems, secure composting and recycling operations, and improved urban sanitation. At the institutional level, more than 150 municipal and national officials will gain training in climate-resilient waste management, strengthening adaptive capacity and governance systems. Additionally, over 300 green jobs—targeting women and youth—will support community livelihoods while promoting resilience through a climate-adaptive circular economy.

Aligned with the Adaptation Fund’s outcomes, the project:

- Strengthens institutional and policy capacity (Outcomes 2, 3, and 7)
- Builds resilient infrastructure and services (Outcomes 4 and 5)
- Diversifies livelihoods and strengthens community adaptive capacity (Outcome 6)
- Protects ecosystems and reduces climate-related environmental risks (Outcome 3 and 5)
- Fosters innovation by introducing context-appropriate technologies, local solutions, and digital tools that enable continuous learning, flexibility, and scaling of adaptive practices (Outcome 8)

By integrating climate-resilience measures across infrastructure, governance, and livelihoods, the project will increase the adaptive capacity of urban and coastal communities, reduce disaster risk, and safeguard ecosystems, creating a measurable, long-term contribution to climate change adaptation in Guinea-Bissau.

B. Describe how the project/programme provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project/programme will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.



ADAPTATION FUND

The proposed project will generate tangible **economic, social, and environmental co-benefits**, with particular emphasis on enhancing resilience among vulnerable populations, including women, youth, informal waste workers, and low-income communities in flood-prone and coastal urban areas. Through the rehabilitation of waste infrastructure, promotion of circular economy models, and institutional strengthening, the project addresses both climate risks and structural inequalities that undermine adaptive capacity in Guinea-Bissau.

1. Economic and Livelihood Resilience Benefits

The project will support inclusive green growth while enhancing the climate resilience of beneficiaries' livelihoods by creating diversified, stable income sources, formal employment opportunities, and small-scale entrepreneurship, particularly for women and youth in flood-prone and vulnerable urban areas:

- **Green job creation across the waste value chain:** including formalized waste collection, compost production, recycling microenterprises, sorting and transport services, equipment maintenance, and biogas utilization.
- **Revenue generation from recycling and composting:** sale of recyclables, compost, and biogas will diversify municipal and community income, while circular economy measures will attract private-sector participation.
- **Improved municipal finances:** introduction of cost-recovery mechanisms and improved fee collection systems will enhance the financial sustainability of waste services.
- **Reduced public health expenditure:** lower pollution levels and elimination of open burning will decrease respiratory illnesses and waterborne diseases, reducing health costs.
- **Economic resilience for informal workers:** formalization and microfinance support will transform precarious livelihoods into dignified, climate-resilient employment.

2. Social benefits

The project directly addresses multiple social vulnerabilities linked to poor waste management, particularly in low-income and informal settlements, while advancing health, education, and gender equality:

- **Public health improvements** through reduced exposure to smoke, leachate, and contaminated water, benefiting communities near dumpsites, markets, and drainage channels.
- **Enhanced safety and dignity for women and children**, who are disproportionately exposed to hazardous waste through domestic tasks or informal recycling.
- **Formalization of informal waste pickers**, with provision of protective equipment (PPE), occupational health training, and inclusion in municipal service contracts.
- **Empowering women-led microenterprises** in recycling and circular production, driving income diversification, strengthening household economic resilience, and positioning women as leaders of local climate adaptation.
- **Improved urban services** (waste collection, flood protection, drainage) that reduce service inequities between high- and low-income neighborhoods.
- **Child protection and education**, reducing reliance on child labor in waste picking and improving attendance of girls in school through awareness and enforcement.

Table 2 – Proposed project indicators and beneficiaries

Indicator / Group	Unit	Estimated Value	Percentage / Proportion	Notes
Total direct beneficiaries	People	210 000	100%	Population directly engaged in project activities
Women	People	109 200	52%	High female participation in agriculture and informal trade
Men	People	100 800	48%	Participation in technical and management roles
Youth (15–35 years)	People	73 500	35%	Involved in capacity building and green entrepreneurship
Female-headed households	People	31 500	15%	Socially and economically vulnerable groups



ADAPTATION FUND

Persons with disabilities / displaced	People	10 500	5%	Social inclusion and accessibility
Indirect beneficiaries	People	1 013 831	48%	Population benefiting from policies, awareness and ecosystem restoration, including Bissau, Gabú, Bafatá, Cacheu, Buba, Bubaque and Bolama
Total beneficiaries (direct + indirect)	People	1 223 831	20% of population	Total expected coverage
Bissau (urban)	People	84 000	40% of direct	Urban drainage, waste management
Oio / Bafatá / Gabú (rural interior)	People	73 500	35% of direct	Climate-resilient agriculture and water management
Cacheu / Tombali (coastal)	People	52 500	25% of direct	Mangrove restoration and artisanal fishing support
Institutions with strengthened capacity	Number	20	—	10 national and 10 local institutions
People reached through climate awareness activities	People	500 000	52% woman	Radio campaigns, schools and community events, specialy Bissau
Ecosystems protected	Hectares	10 000		60% mangroves, 40% forest
Households with increased income	Households	25 000	20% female-headed	Resilient agriculture and fisheries. importance of women
Policies/plans integrating climate risk	Number	10	—	5 municipal + 5 national/sectoral
Pilot innovations implemented	Number	10	—	E.g., house/comunitary composting, solar panels (e-trycicles), micro-hauling,
Knowledge products/learning events	Number	15	—	Guides, videos, regional workshops

These measures are particularly critical in Guinea-Bissau's low-governance and high-poverty context, where over 60% of women are in informal, vulnerable employment and urban poverty rates exceed 50%.

3. Environmental benefits

Mangroves, wetlands, and rice fields surrounding Bissau and SAFIM play a critical role in buffering floods, stabilizing coastlines, and sustaining food security. However, unmanaged waste and leachate release during climate-driven floods are degrading these ecosystems, reducing their adaptive capacity. With projected sea-level rise of 0.3–0.6 m by 2050 and increasing storm surges, continued contamination would accelerate ecosystem collapse, undermining fisheries and rice production relied upon by vulnerable communities. By rehabilitating dumpsites, restoring wetlands, and preventing waste leakage during extreme events, the project strengthens ecosystem-based adaptation, protecting natural infrastructure that reduces climate impacts on livelihoods and nutrition.

The project will substantially improve Guinea-Bissau's environmental quality and reduce climate-induced vulnerabilities through ecosystem-based waste management approaches:

- **Protection of groundwater, rivers, and wetlands** via proper landfill siting, engineered containment, and leachate management systems.
- **Coastal and ecosystem protection** by relocating or appropriate environmental improvement of waste activities away from mangroves and flood-prone areas, the project preserves key natural buffers that reduce storm surge and coastal erosion.
- **Increased material recovery and circularity**, reducing the extraction of virgin materials and supporting sustainable production and consumption (SDG 12).
- **Enhanced urban resilience** through cleaner drainage, reduced flood risk, and improved disaster



ADAPTATION FUND

waste management capacity.

- **Reduction of GHG emissions** by diverting organic waste from open dumps, stopping open burning, and converting existing landfills to semi-aerobic (Fukuoka) operation, directly reducing methane emissions.

4. Gender and social inclusion measures

The project is fully aligned with the Adaptation Fund Gender Policy (2021) and Guinea-Bissau's Parity Law (Law No. 4/2018), embedding gender-responsive design, implementation, and monitoring as a core driver of effective climate adaptation outcomes. By strengthening women's formal participation and leadership in waste services, economic security, the project enhances adaptive capacity, community-level preparedness, accelerates response to climate shocks, reduces post-disaster vulnerability, and improves the sustainability of adaptation investments:

- Gender-disaggregated baseline data and indicators will be established across all components to ensure adaptive benefits are equitably distributed and monitored.
- Gender quotas for training, leadership roles, and microgrant beneficiaries will strengthen women's leadership in waste management and climate-resilient service delivery, supporting faster and more coordinated community responses to flooding and extreme weather events.
- Targeted microfinance lines and business grants for women-led recycling and composting cooperatives will formalize livelihoods, increase income stability, and reduce reliance on negative post-disaster coping strategies such as unsafe waste picking, child labour, or distress asset sales after floods.
- Adapted training schedules and childcare provisions will enable sustained women's participation, ensuring continuity of essential waste services during climate stresses such as heatwaves and floods.
- Mobile civil-registration campaigns will enable women to obtain the legal documentation required to access cooperatives, financial services, and formal economic opportunities, directly strengthening household adaptive capacity and access to recovery resources.
- Health screenings and PPE distribution for women in waste-handling roles will reduce climate-exacerbated occupational risks, lowering health-related vulnerabilities during heat extremes and post-flood sanitation crises.
- Child labour prevention measures, including fencing and restricted access to waste sites near schools, community education, and enforcement in collaboration with social protection agencies, will reduce household vulnerability and prevent intergenerational exposure to climate-related health risks.

Collectively, these measures address Guinea-Bissau's high gender inequality index (0.632; UNDP, 2023) and ensure that women and girls, who are currently overrepresented in informal recycling and disproportionately affected by climate-related sanitation risks, become central agents of enhanced adaptive capacity, resilience, and climate-responsive service delivery.

5. Avoiding/mitigating negative impacts (Environmental & Social Policy compliance)

All project activities will be designed and implemented in compliance with the Adaptation Fund Environmental and Social Policy (ESP), including the principles of "do no harm," participation, and equity. The project will adopt a **Category A (substantial risk)** safeguard classification, with specific instruments and measures as follows:

Environmental Safeguards

- Environmental and Social Impact Assessments (ESIAs) and Environmental and Social Management Plans (ESMPs) will be conducted for all construction and rehabilitation works.
- Site selection criteria will exclude critical habitats, wetlands, cultural heritage, and high biodiversity zones.
- Pollution control measures will include engineered leachate management, prohibition of open burning, and dust suppression during works.



ADAPTATION FUND

- Erosion and drainage controls will protect nearby agricultural lands and waterways.
- Emergency response plans for chemical spills or accidents will be established for all sites.

Social Safeguards

- Land and tenure safeguards enforced: prevent all involuntary resettlement; where absolutely unavoidable, ensure transparent processes, fair and timely compensation, and full compliance with national legislation and Adaptation Fund safeguard standards.
- Labour rights: All workers, including subcontracted staff, will be protected by occupational safety standards and labour laws.
- Occupational Health and Safety (OHS): Training, PPE, and emergency response procedures will be mandatory.
- Stakeholder engagement: Continuous, inclusive consultation with affected groups, including women, youth, and informal workers, throughout the project cycle.
- Grievance Redress Mechanism (GRM): Accessible, gender-sensitive system at community and national levels, allowing anonymous submissions and independent resolution.

Gender and Protection Safeguards

- Prevention of gender-based violence (GBV) and sexual exploitation through mandatory codes of conduct, awareness training, and confidential reporting mechanisms.
- Child protection protocols for all project sites and contractors.
- Monitoring of gender-related risks and corrective actions through a dedicated Gender and Social Safeguards Officer in the Project Management Unit.

By coupling **infrastructure resilience** with **social inclusion and gender empowerment**, the project creates a **triple dividend of adaptation**:

- Reduced exposure and vulnerability: cleaner, safer environments and resilient waste systems reduce health and disaster risks.
- Strengthened adaptive capacity: empowered municipalities, women, and youth-led enterprises to enhance local preparedness and income stability.
- Environmental co-benefits: emissions reduction and ecosystem protection deliver mitigation synergies and long-term sustainability.

In sum, this project will not only safeguard communities from the physical impacts of climate change but also promote inclusive economic recovery and gender-responsive resilience, consistent with the Adaptation Fund's mandate and Guinea-Bissau's national adaptation priorities.

C. Describe or provide an analysis of the cost-effectiveness of the proposed project/programme.

The proposed USD 10 million "Towards Climate Resilience: Sustainable Waste Management Solutions in Guinea-Bissau" project represents a highly cost-effective investment in climate resilience, designed to deliver measurable adaptation, social, and environmental benefits at minimal lifecycle cost. The project's structure, combining infrastructure upgrades, circular-economy measures, and institutional strengthening, ensures that each dollar invested contributes to multiple adaptation outcomes, including reduced vulnerability, improved public health, and long-term service sustainability.

1. Appropriate, Low-Cost, and Proven Technology Choice

The project adopts the **Fukuoka semi-aerobic landfill method**, a low-cost, low-maintenance technology that is both technically robust and financially feasible for low-resource contexts, because open dumps are low in height (<10 meters), making the method very efficient and safe. By preventing waste from blocking drainage channels, this approach avoids millions of dollars in potential flood damages to housing, infrastructure, and critical service, far outweighing the investment cost.

- The semi-aerobic design accelerates waste stabilization, allows rapid leachate drainage, and stabilizes the waste pile structure, preventing landslides and structural failure during the intense rainfall events projected for Guinea-Bissau. It also substantially reduces methane emissions, which,



ADAPTATION FUND

beyond climate mitigation, helps maintain hydraulic stability and reduces local health hazards associated with waste decomposition.

- Implementation and maintenance costs are typically 40-60% lower than fully engineered sanitary landfills, while delivering comparable environmental and health benefits.
- The method has been successfully deployed across developing countries (e.g., Cambodia, Sri Lanka, Indonesia) under UN-Habitat and JICA programmes, demonstrating proven reliability in humid, tropical conditions similar to Guinea-Bissau's.
- For each dollar invested, the Fukuoka approach yields significant avoided disaster losses, reduced contamination risks, and GHG mitigation co-benefits, while strengthening community resilience to climate-induced flooding and extreme rainfall.

2. Integrated and Synergistic Investment Design

The project's integrated approach, addressing the entire waste chain from collection and recycling to final disposal and capacity building, maximizes returns on investment by ensuring complementarity between components:

- Organics diversion through composting reduces solid waste entering landfills or dumpsites, lowering the cost and frequency of landfill rehabilitation and prolonging operational lifetimes.
- Improved collection efficiency prevents waste accumulation and flood blockage, avoiding costly emergency clean-ups and infrastructure damage.
- Institutional capacity-building and training reduce long-term dependency on external technical assistance and improve cost recovery through better planning and budgeting.
- By combining infrastructure, circular economy measures, and governance strengthening under a single investment framework, the project avoids the duplication of efforts that often occur in fragmented municipal interventions, delivering higher marginal adaptation benefits per dollar spent.

3. Long-Term Financial Sustainability and Leverage Potential

The project is explicitly designed to strengthen the financial sustainability of Guinea-Bissau's waste management system:

- Circular economy activities, such as recyclable material recovery, compost production, and biogas utilization, will generate local revenues that offset operational costs and reduce reliance on municipal subsidies.
- The introduction of progressive user fee systems (phased and equitable) and improved billing/collection mechanisms will gradually enhance municipal cost recovery capacity.
- Micro-grants for small enterprises, particularly women-led recycling cooperatives, will catalyze local entrepreneurship and value-chain development, creating ongoing economic returns and reducing future public expenditure needs.

These measures together establish a self-reinforcing financing loop that sustains adaptation outcomes beyond the project's lifetime.

4. High Social and Environmental Return on Investment

- Rehabilitating Antula and Safim dumpsites to the semi-aerobic Fukuoka method will reduce leachate contamination, respiratory illness, and flood-related waste dispersal, delivering immediate public health savings.
- Small recycling and composting grants create sustainable livelihood pathways and local economic multipliers, while reducing municipal service costs.
- Avoiding methane emissions and improving drainage in flood-prone urban zones provides quantifiable benefits for both mitigation and adaptation, aligning with the triple dividend of resilience framework: avoided losses, development co-benefits, and ecosystem protection.

5. Maximizing Resilience per Dollar Invested

The proposed USD 10 million investment is **strategically structured for maximum cost-effectiveness** by:



ADAPTATION FUND

- Using proven, low-cost technical solutions adapted to Guinea-Bissau’s resource constraints.
- Combining infrastructure resilience with livelihood creation and institutional strengthening, producing compounding resilience gains.
- Generating revenue streams and local ownership ensure financial and operational sustainability.
- Delivering gender-responsive and socially inclusive benefits, expanding the economic base and reducing vulnerability of marginalized populations.

In sum, the project delivers high-value adaptation at low implementation and maintenance costs, making it an efficient, replicable, and sustainable model for climate-resilient waste management in low-income coastal countries.

D. Describe how the project/programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national adaptation plan (NAP), national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.

The proposed project, “Towards Climate Resilience: Sustainable Waste Management Solutions in Guinea-Bissau,” is fully aligned with the country’s overarching sustainable development, climate adaptation, and poverty reduction frameworks. It directly supports national objectives for environmental protection, public health, disaster risk reduction, gender equality, and inclusive green growth, as articulated in key national and local policy instruments. The project directly supports Guinea-Bissau’s National Solid Waste Management Strategy, contributes to SDG, and operationalizes adaptation priorities under the National Adaptation Plan (NAP) and Nationally Determined Contributions (NDCs).

1. Alignment with National Development and Climate Strategies

The project contributes directly to the *Bissau 2030 Vision*, which prioritizes sustainable urban growth, efficient sanitation services, transforming waste management into an engine of environmental resilience and green employment.

- The Vision calls for universal access to reliable waste collection, source separation, recycling, composting, and the rehabilitation of the Antula dumpsite in favor of a controlled and sustainable landfill system at Safim.
- The project’s investment in climate-resilient infrastructure, waste valorization, and community inclusion operationalizes these priorities while improving public health and reducing flood-related vulnerability.
- It also supports the *National Development Plan’s* goals of improving municipal service delivery, strengthening local governance, and promoting economic diversification through circular economy enterprises.

2. National Adaptation Plan (NAP) and Nationally Determined Contribution (NDC) commitments

The project is consistent with Guinea-Bissau’s *National Adaptation Plan (NAP)*, which prioritizes climate-resilient infrastructure, disaster risk reduction, and protection of water and ecosystem services.

- The NAP highlights the need to address flooding, drainage obstruction, and pollution in urban areas, challenges directly targeted by the project through the rehabilitation of dumpsites, improvement of drainage, and resilient waste collection systems.
- It also advances the *Nationally Determined Contribution (NDC)* under the Paris Agreement by integrating both adaptation and mitigation actions:
 - **Adaptation:** Strengthening municipal and landfill infrastructure to withstand extreme rainfall, protecting coastal and agricultural ecosystems, and reducing disaster exposure for vulnerable populations.
 - **Mitigation:** Reducing methane and black carbon emissions through semi-aerobic landfill operation and elimination of open burning, supporting low-carbon urban development and improved air quality.

By embedding waste-sector adaptation and mitigation within national and municipal planning frameworks,



ADAPTATION FUND

the project contributes to Guinea-Bissau's transition toward a climate-resilient, low-emission economy.

3. Contribution to Sustainable Development Goals (SDGs)

The project contributes directly to several SDGs and their national implementation, including:

Table 3 - Project contribution to SDGs

Relevant SDG	Project Contribution
SDG 11 – Sustainable Cities and Communities	Establishes resilient and inclusive waste systems, reduces urban pollution, and enhances municipal governance capacity.
SDG 12 – Responsible Consumption and Production	Promotes waste reduction, recycling, and the valorization of organic waste through circular economy models.
SDG 13 – Climate Action	Reduces vulnerability to floods and other climate hazards, while cutting GHG emissions from unmanaged waste.
SDG 5 – Gender Equality	Empowers women through formal participation in waste governance, access to micro-grants, and safe working conditions.
SDG 3 – Good Health and Well-being	Reduces disease vectors, respiratory illnesses, and contamination of water and food systems.

4. Alignment with Environmental, Poverty Reduction, and Urban Resilience Strategies

The project supports Guinea-Bissau's *National Environmental Strategy and National Biodiversity Strategy and Action Plan (NBSAP)* by reducing waste leakage into wetlands and mangroves, protecting critical habitats, and restoring degraded ecosystems, including Antula and Safim.

It supports the *Poverty Reduction Strategy (PRSP III)* by improving environmental health, creating inclusive employment in recycling and composting, and strengthening resilience in low-income and informal settlements.

By improving waste collection and drainage management in flood-prone zones, the project also contributes to the *National Disaster Risk Reduction Strategy (2020–2030)*, thereby enhancing preparedness and protecting livelihoods that depend on fisheries and agriculture.

At the sub-national level, the project aligns with the *Bissau Solid Waste Management Plan* and similar initiatives in Gabú, Mansoa, and Bubaque, supported by the UNDP and other partners. It reinforces ongoing municipal and community efforts to enhance waste collection, recycling, and environmental education.

5. Institutional Coordination and Endorsement

During project preparation, formal alignment and endorsement will be secured from:

- The Ministry of Environment and Biodiversity, as the national climate focal institution;
- The Ministry of Urbanism, Public Works and Local Government, responsible for municipal waste service oversight; and
- The Municipal Councils of Bissau, Gabú, Bafatá, Cacheu, Buba, and Bolama/Bubaque, ensuring coherence between national adaptation objectives and local urban resilience plans.

This inter-ministerial coordination will ensure that the *National Integrated Solid Waste Management Strategy* developed under the project becomes a binding policy instrument linking waste-sector reform to national adaptation, public health, and poverty reduction priorities.

Implementation arrangements

The implementation arrangements for this project designate the Ministry of Environment, Biodiversity and Climate Action (MABAC) as the Implementing Partner, with UNDP providing overall oversight, quality assurance, and compliance with Adaptation Fund standards. UN-Habitat will serve as the Responsible Party, supporting the execution of key project components in line with its technical mandate and operational capacity. This collaborative arrangement ensures strong national ownership, robust fiduciary and safeguard oversight, and the efficient delivery of adaptation results on the ground.



ADAPTATION FUND

6. Sustainability and Long-Term Policy Alignment

The project ensures long-term sustainability and alignment with national strategies by:

- Establishing financially viable and climate-resilient service models, based on revenues from recyclables, compost, and equitable cost recovery, capable of maintaining operations during extreme weather events and flood conditions;
- Integrating circular economy principles into national and municipal development plans, ensuring that resource efficiency and waste diversion support both economic and climate-adaptive objectives;
- Strengthening local governance and institutional capacity for durable, shock-resistant service delivery, including the ability to respond and adapt to climate hazards without disruption; and
- Creating a national framework for climate-resilient waste management that guides future Adaptation Fund, GCF, or bilateral investments, enabling the system to withstand climate shocks while maintaining safe, continuous waste services.

In summary, the project is firmly anchored within Guinea-Bissau's sustainable development and climate adaptation architecture. It operationalizes the objectives of the *Bissau 2030 Vision*, *NAP*, *NDC*, and *PRSP III*, while contributing to multiple SDGs. By transforming the waste sector into a driver of resilience, inclusion, and green growth, the project serves as a cornerstone for Guinea-Bissau's transition toward climate-resilient and sustainable urban development.

E. Describe how the project/programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund.

The proposed project will be fully implemented in compliance with Guinea-Bissau's national technical, environmental, and construction regulations, as well as with the Environmental and Social Policy (ESP) and Gender Policy of the Adaptation Fund. Where national standards are limited or outdated, the project will apply internationally recognized engineering and environmental benchmarks, including those of the World Bank Environmental, Health and Safety (EHS) Guidelines and UN-Habitat's Fukuoka Method Technical Standards, to ensure the highest levels of safety, resilience, and environmental integrity.

1. Compliance with National Technical and Environmental Standards

All project activities will adhere to the legal and regulatory framework governing environmental management, construction, and waste operations in Guinea-Bissau, including but not limited to:

- Decree-Law No. 1/2011: Environmental Framework Law, which establishes the obligation to conduct Environmental and Social Impact Assessments (ESIAs) for infrastructure projects.
- Decree No. 5/2014: Regulation on Environmental Licensing, which mandates the preparation of Environmental and Social Management Plans (ESMPs) for projects with potential environmental impacts.
- Law No. 4/2010: Municipal Environmental Management Law, defining municipal responsibilities for waste collection and disposal.
- Public Works and Construction Code (2009): establishing technical standards for engineering design, slope stability, and drainage.
- Labor Code (Law No. 2/1986): establishing occupational health and safety (OHS) requirements and labour protections.

All infrastructure-related activities will be undertaken in full compliance with these regulations, ensuring that design, construction, and operational phases conform to national permitting and inspection procedures managed by the Ministry of Environment, Biodiversity and Climate Change (MABAC).

2. Technical Standards for Design and Construction

The project will ensure that all landfill rehabilitation, new construction, and associated civil works follow both national engineering norms and internationally recognized best practices, particularly in areas where national standards are still under development.



ADAPTATION FUND

Key technical provisions include:

- **Site selection and planning:**
 - Avoidance of floodplains, wetlands, food production areas, and critical habitats.
 - Strict enforcement of minimum buffer zones from water bodies, residential areas, and ecologically sensitive habitats, ensuring full protection of environmental and community health. Incorporation of climate risk assessments (sea-level rise, extreme rainfall) into siting and design.
- **Landfill and containment design:**
 - Application of the Fukuoka semi-aerobic method, ensuring passive aeration, leachate drainage, and controlled waste layering for accelerated stabilization and methane reduction.
 - Implementation of robust drainage and erosion-control systems to prevent flood damage, stabilize soil structures and safeguard communities and infrastructure.
 - Advanced leachate management through lined collection ponds or controlled infiltration trenches, designed in accordance with internationally recognised semi-aerobic standards to minimise groundwater contamination and environmental risk.
- **Construction and operational safety:**
 - Compliance with national construction codes, contractor OHS protocols, and quality assurance procedures.
 - Use of protective equipment, signage, and safety barriers during works to prevent accidents.
 - Engineering supervision by qualified national and international experts to ensure compliance with approved technical drawings and environmental measures.

3. Environmental and Social Policy (ESP) Compliance

The project is fully aligned with the **Adaptation Fund Environmental and Social Policy (2016, amended 2021)**, ensuring that all activities adhere to the principles of “do no harm,” **participation, equity, gender equality, and human rights**.

To ensure compliance:

- A comprehensive Environmental and Social Management Framework (ESMF) will be prepared at project inception, guiding risk screening, mitigation, and monitoring across all components.
- Environmental and Social Impact Assessments (ESIAs) will be carried out for all major civil works (e.g., landfill rehabilitation, construction of controlled cells, transfer stations).
- Each ESIA will include public consultations, gender-sensitive participatory assessments, and cumulative impact evaluations, ensuring transparency and inclusivity.
- Environmental and Social Management Plans (ESMPs) will be developed and implemented for all relevant subprojects, detailing mitigation measures, roles, responsibilities, and monitoring indicators.
- The project will be subject to periodic environmental and social audits, with reports disclosed publicly in Portuguese and local languages.

4. Permitting, Procurement, and Oversight

- All construction and operational activities will obtain the required environmental permits, construction authorizations, and municipal approvals prior to initiation.
- The Project Management Unit (PMU), hosted by the Ministry of Environment, Biodiversity and Climate Action, will oversee compliance with all **procurement, labor, and safety standards**, ensuring transparency and adherence to **national procurement regulations** and Adaptation Fund fiduciary requirements.
- Where national standards are absent, international benchmarks (e.g., World Bank/IFC EHS Guidelines, ISO 14001 Environmental Management) will serve as default reference standards to guarantee technical quality and environmental protection.

5. Monitoring, Grievance, and Accountability Mechanisms



ADAPTATION FUND

To maintain continuous compliance with the Adaptation Fund ESP:

- A **Grievance Redress Mechanism (GRM)** will be established at both community and national levels, providing safe, accessible channels for complaints from affected individuals or groups, including women and vulnerable populations.
- The PMU will designate an Environmental and Social Safeguards Specialist and a Gender and Inclusion Officer responsible for oversight, reporting, and coordination with the National Designated Authority (NDA).
- Annual environmental and social monitoring reports will be prepared and submitted to the Adaptation Fund Secretariat.

6. Summary of Compliance Commitments

The project fully complies with national technical standards and the Adaptation Fund Environmental and Social Policy, ensuring that all interventions are environmentally sound, socially inclusive, and technically appropriate for Guinea-Bissau’s context.

Through robust safeguard instruments (ESMF, ESMPs, GRM), adherence to national codes and international benchmarks, and a gender-responsive implementation approach, the project ensures that no adverse impacts occur and that positive adaptation, health, and resilience outcomes are maximized for all communities, particularly women, youth, and vulnerable groups.

F. Describe if there is duplication of project/programme with other funding sources, if any.

The proposed project has been carefully designed to avoid duplication with existing or planned initiatives financed by other development partners. Instead, it fills critical investment, institutional, and climate resilience gaps that remain unaddressed in the waste and environmental management sectors, while strengthening coordination and complementarity across national and international programs.

At the **national level**, the project builds upon the Ministry of Environment, Biodiversity and Climate Action’s ongoing campaign to eliminate single-use plastic bags and the ten-year Solid Waste Management Plan and landfill feasibility study led by the Bissau City Council. These efforts provide a policy and technical foundation that the project will operationalize through investments in **climate-resilient infrastructure, institutional capacity-building, and community-level adaptation measures.**

At the **international and donor level**, the project complements, rather than overlaps with, ongoing and recently completed initiatives, including:

Table 4 - Complementarity of the Proposed Project with Ongoing and Planned Donor and Partner Initiatives in Guinea-Bissau

Programme / Source	Focus	Complementarity with Proposed Project
UN-Habitat – “Waste Wise Cities Tool Project”	Urban waste characterization and data collection.	The project will use this baseline to design evidence-based infrastructure investments and establish a national waste monitoring system.
UNDP – “Co-Vida” Project and related UN-Habitat initiatives	Training, provision of cleaning equipment, and improved sanitation in municipalities.	The project will expand from cleaning and awareness to systemic waste management reform, including circular economy and landfill rehabilitation.
UNICEF – Open Defecation Elimination Project	Improved sanitation and hygiene practices in peri-urban communities.	The project complements this by addressing solid waste contamination that undermines sanitation gains, reinforcing health co-benefits.
European Union – Green Cities Programme (ACRA/Engineers Without Borders)	Waste management pilots in five Bissau neighborhoods, community education, and environmental manuals.	The project scales these local experiences into a national adaptation framework, institutionalizing lessons in municipal planning.



ADAPTATION FUND

World Bank – Bissau Urban Development and Sanitation Project (2020–2025)	Drainage, road rehabilitation, and basic sanitation infrastructure.	The proposed project is complementary to the World Bank investment, focusing on solid waste management and climate-resilient landfill infrastructure. By strengthening waste collection and disposal systems, the project protects and enhances the value of the WB-funded urban drainage and sanitation works, reducing the risk of blockages, flood damage, and associated maintenance costs.
UN-Habitat / GCF – Coastal Cities Adaptation Project (under preparation)	Protection of coastal infrastructure from erosion and sea-level rise.	The project complements this by reducing solid waste discharge into wetlands and coastal areas, protecting natural buffers.
EU – PAGPE Project (2021–2024)	Governance and public sector performance.	The project will apply governance and financial management reforms within the waste sector, aligning municipal accountability with PAGPE principles.
Local NGOs and private sector initiatives (WasteAid, CEEDA, DJU, INOVDEVGB, BLUFU)	Small-scale recycling, awareness campaigns, private waste collection, and circular economy start-ups.	The project will integrate and formalize these initiatives into city-level systems, providing technical and financial support rather than competing with them.

No existing initiative in Guinea-Bissau provides a comprehensive, climate-resilient approach to solid waste management that covers the full value chain, from waste reduction and recycling to landfill rehabilitation and institutional strengthening. Existing programs have been fragmented, short-term, and sectoral, with limited focus on long-term adaptation, climate risk reduction, or gender-responsive governance.

G. Unique Contribution of the Adaptation Fund Project

The Adaptation Fund’s investment provides distinct added value by:

- Introducing **climate adaptation** as a central objective of waste management rather than a secondary environmental concern;
- Implementing **low-cost, proven technologies** (Fukuoka semi-aerobic system) suited to low-resource coastal countries;
- Embedding **gender equality, livelihood resilience, and inclusion of informal waste workers** into the waste management system; and
- Creating a **replicable national framework** for climate-resilient waste management that can guide future investments from the **Green Climate Fund (GCF)**, **African Development Bank (AfDB)**, or bilateral donors.

1. Coordination and Synergy Mechanisms

To ensure full coherence and transparency, the project will establish structured coordination mechanisms:

- A **National Steering Committee**, chaired by the Ministry of Environment, Biodiversity and Climate Action (MABAC), will oversee alignment with national and donor-supported programs.
- A **Donor Coordination Matrix** will be developed during project inception to map all ongoing activities, financing flows, and potential overlaps.
- **Regular joint progress reviews** will be conducted with key partners (UNDP, World Bank, EU, UN-Habitat, UNICEF, NGOs, and private actors) to harmonize schedules, share data, and leverage synergies.
- The project will also coordinate with the **National Climate Change Committee** and the **Water and Sanitation Thematic Group (GAS)**, ensuring cross-sectoral integration.

The project provides strategic complementarity, transforming fragmented interventions into a coherent national framework for climate-resilient waste management. It leverages existing donor investments,



ADAPTATION FUND

strengthens local governance, and establishes a scalable, gender-responsive model for sustainable waste management and adaptation, ensuring the most effective use of international climate finance in alignment with Guinea-Bissau's development and environmental priorities.

H. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.

The proposed project integrates an intentional Learning and Knowledge Management (LKM) component designed to systematically generate, apply, and disseminate adaptation-relevant evidence to strengthen long-term resilience, inform decision-making, enable replication and scale-up of climate-resilient waste management solutions in Guinea-Bissau and climate-vulnerable contexts.

Through systematic monitoring, applied learning, and adaptive management, the project will generate practical adaptation lessons in three core areas: (i) how climate-resilient waste collection, source separation, composting, and drainage protection reduce flood impacts and contaminated runoff during extreme rainfall; (ii) how formalization of waste services and worker protections, and heat-adaptive operations improve service continuity and reduce vulnerability during heatwaves and climate shocks; and (iii) how gender-responsive and community-led approaches strengthen local adaptive capacity and speed up post-disaster response.

These lessons will be used by local authorities and service providers to improve operational planning, by national institutions to inform policy reform and budget allocation, and by other coastal cities and LDCs facing similar climate-waste-flood nexus challenges. Knowledge products, including operational guidelines, policy briefs, and case studies, will be embedded within national and local systems to strengthen institutional learning and continuity.

Learning outputs will inform national scale-up within Guinea-Bissau and regional replication by demonstrating how climate-adaptive waste systems can be integrated into urban resilience, flood risk reduction, and coastal protection strategies. In this way, the LKM component ensures that project learning translates into sustained adaptation impact beyond the project footprint, consistent with the Adaptation Fund's mandate to catalyze long-term, scalable climate resilience.

1. Key Knowledge Management Activities

A. Establishment of a National Knowledge Management Hub

A central **Knowledge Management (KM) Hub** will be created within the Ministry of Environment, Biodiversity and Climate Action (MABAC), serving as a repository and coordination center for all project-related knowledge.

- The Hub will compile data, tools, and experiences from pilot cities, landfill rehabilitations, and recycling initiatives.
- It will generate technical notes, manuals, and case studies on the Fukuoka semi-aerobic landfill method, community-based waste collection, and circular economy models adapted to West African coastal conditions.
- The Hub will coordinate with the *National Climate Change Committee* and relevant academic institutions to ensure integration into broader climate learning frameworks.

B. Participatory and Peer-to-Peer Learning

The project will promote **horizontal learning and cross-city exchange** to ensure that innovations are locally owned and widely disseminated.

- Annual national learning workshops will bring together municipal authorities, CSOs, private operators, and community groups to share implementation experiences, discuss challenges, and jointly identify adaptive improvements.
- Peer-to-peer exchange visits will be organized among the seven participating municipalities (Bissau, Gabú, Bafatá, Cacheu, Buba, Bubaque, and Bolama), allowing local engineers and operators to observe operational practices and maintenance routines.



ADAPTATION FUND

- Local knowledge from informal waste workers and women’s cooperatives will be documented as part of a participatory learning cycle to inform policy and training materials.

C. Development of Training Curricula and Manuals

The project will produce **training curricula and open-access manuals**, written in Portuguese and relevant local languages, on:

- Climate-resilient landfill operation and maintenance;
- Community engagement and behavioral change;
- Gender-responsive circular economy entrepreneurship and cooperative management;
- Occupational health, safety, and environmental safeguards.

These resources will be freely available online and through printed versions for municipal and academic use, contributing to long-term capacity retention.

D. Monitoring, Evaluation, and Learning Products (MEL)

The project will establish an integrated **Monitoring, Evaluation, and Learning (MEL)** system linked to the KM hub, producing:

- Quarterly progress dashboards summarizing performance indicators (collection coverage, recycling rates, landfill rehabilitation progress).
- Mid-term review and lessons report identifying adaptive adjustments.
- Final knowledge synthesis report, gender and social inclusion results, and cost-effectiveness analysis.
- All data and lessons will be uploaded to a national database and shared with regional partners through online platforms and webinars.

E. National and Regional Dissemination

Knowledge products will be actively disseminated to **national decision-makers and regional partners** through:

- National policy dialogues and seminars, informing the revision of waste management legislation and NDC implementation.
- Policy briefs and technical summaries for ministries and municipal councils.
- Participation in regional conferences and learning networks, such as ECOWAS environmental forums, C40 knowledge hubs, and the West African Coastal Adaptation Network.
- Collaboration with UN-Habitat, WasteAid, and other technical agencies to scale the Fukuoka method and circular economy practices across similar coastal settings.

The KM system will be fully integrated into project execution and sustainability planning:

- The Project Management Unit (PMU) will include a dedicated Knowledge and Communications Officer, responsible for coordinating documentation, learning events, and knowledge dissemination.
- Municipal focal points will collect and validate data at the local level to ensure accuracy and ownership.
- The KM Hub will remain institutionalized within the Ministry after project closure, forming the basis for a National Waste and Climate Knowledge Platform, sustained through partnerships with universities and ongoing donor programmes.

By the end of the project, the Knowledge Management component will deliver:

- A nationally recognized repository of tested approaches for resilient waste management;
- A cadre of trained professionals and community leaders across seven municipalities with practical expertise in circular economy and Fukuoka operations;
- A set of documented adaptation models and case studies ready for replication and upscaling;
- Strengthened integration of waste management in national adaptation planning and sectoral strategies.

This component ensures that the project’s innovations, from semi-aerobic landfill rehabilitation to women-led recycling enterprises, are not one-time interventions, but become shared national assets embedded in Guinea-Bissau’s institutional, technical, and policy frameworks.



ADAPTATION FUND

I. Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

The proposed project was prepared through a **comprehensive and inclusive consultation process** that reflects the realities of waste management and climate vulnerability across Guinea-Bissau. The process ensured that diverse stakeholders, including national authorities, municipal governments, civil society, private operators, and vulnerable groups, were meaningfully engaged.

Project preparation involved extensive, inclusive, and gender-sensitive consultations at national, municipal, and community levels to ensure that the design responds to real needs and capacities. Consultations were conducted between September and October 2025, combining national, municipal, and community levels, complemented by direct field visits to the Antula, Safim, and Mansoa landfills, community meetings in surrounding neighborhoods, and interviews with institutions, NGOs, and informal sector actors. These inputs directly informed the project's design, priorities, and safeguards framework.

The project adopted a multi-tiered and inclusive engagement approach, designed to reflect the diverse perspectives of stakeholders across the institutional, technical, and community levels, and to **devolve decision-making and resource allocation** to local actors.

- **Inclusive participation:** Consultations targeted groups directly affected by poor waste management, including informal recyclers, and residents near high-risk dumpsites. Discussions focused on health impacts, livelihoods, and adaptation priorities.
- **Accessible and context-appropriate formats:** Participatory tools were adapted to local literacy levels and languages (Portuguese, Crioulo), ensuring meaningful participation. Visual aids and oral discussions were used to gather input in a culturally sensitive and respectful manner.
- **Evidence-based engagement:** Field assessments and stakeholder interviews were combined with data from UN-Habitat, UNDP and national ministries to ground consultations in factual site conditions.
- **Feedback integration:** All inputs from consultations were documented and synthesized into a stakeholder feedback report, which directly informed the project's design, particularly on landfill rehabilitation methods (Fukuoka approach), circular economy opportunities, and community health safeguards.

Consultations were conducted through interviews, focus groups, and participatory assessments in accessible and inclusive formats, with translations into local languages where necessary. The process identified key concerns, such as pollution, health risks, inadequate equipment, and poor coordination, which directly informed the project design.

1. Stakeholders consulted at the National Level

- **Ministry of Environment, Biodiversity and Climate Action (MABAC):** National coordination authority for climate adaptation and environmental management. Confirmed the absence of a dedicated waste management law, ongoing work on single-use plastic bags, and the need for a national waste strategy integrating circular economy and climate resilience.
- **Ministry of Natural Resources:** Highlighted coordination challenges among ministries, the role of the Water and Sanitation Thematic Group (GAS), and the need to prevent waste-related contamination of rivers and wetlands. Highlighted coordination challenges among ministries, the role of the Water and Sanitation Thematic Group (GAS), and the need to prevent waste-related contamination of rivers and wetlands.
- **Ministry of Health:** Highlighted public health risks from waste burning and leachate, emphasizing links between waste management, vector-borne diseases, and community well-being. Documented direct health risks from open dumping, especially from hospital waste. Confirmed that only ~15% of hospital waste is hazardous and suitable for incineration, if separation at source is ensured.



ADAPTATION FUND

2. Municipal Level

- **Bissau City Council:** Exposed critical capacity and financing constraints: only one operational collection truck and one motorbike, limited staff (36 collectors), and unreliable fee transfers. Confirmed that collection fees often do not reach the CMB budget. Supported project investments in new vehicles, decentralized transfer points, and landfill access roads.
- **Local administrations in Mansoa:** Reported minimal collection services, reliance on open dumping or burning, and low awareness of waste recovery. Welcomed support for awareness campaigns, composting pilots, and technical training.

3. International and UN Partners

- **UN-Habitat:** Provided technical input based on its ongoing *Bissau 2030* programme and previous experience with the Fukuoka semi-aerobic landfill method in other developing countries.
- **UNICEF-WASH, UNDP,** and other UN agencies contributed insights on community engagement, health linkages, and policy alignment with ongoing climate and sanitation programmes.
- **Engineers Without Borders (Italy) and the European Union's Green Cities Programme.**

4. Civil Society and NGOs

- **Safim Environmental Association (ATA):** Raised alarm over contamination of water bodies, toxic smoke, insect infestation, and unsafe reuse of discarded food. Advocated for urgent rehabilitation using the Fukuoka method and for environmental education campaigns.
- **Local NGOs (ACRA):** Implementing a five-year project in five Bissau neighborhoods with school-based environmental education and technical collaboration with Engineers Without Borders. Shared lessons on community mobilization and reinforced the need to institutionalize education in schools.
- **Community leaders, youth and women's associations:** Emphasized opportunities for women in recycling micro-enterprises and composting, but highlighted the absence of credit and training.

5. Informal Sector and Waste Pickers

- Waste pickers in Safim and Bissau described unsafe conditions, dependency on intermediaries, and lack of cooperatives.
- Metals (copper, aluminium, iron) are exported unprocessed to Senegal; low-value plastics and glass have no local market.
- Residents living near dumps, Antula and Safim, confirmed air pollution from burning, vector proliferation, and use of unsafe water sources.
- Informal recyclers, and women engaged in food production at the former Antula site.

6. Private Sector Actors

- **Private waste collection company (BLUFU):** confirmed willingness to cooperate under formal municipal frameworks but cited high costs from poor access to Safim.
- **Entrepreneurs (GARBAGE TENÉ BALUR)** producing construction blocks from crushed glass and reusing plastics demonstrated local innovation potential.
- **Incubator initiatives (INOVDEVGB):** Support youth and women-led circular economy start-ups, six of which are female-led.

7. Key Field Observations (Antula and Safim)

Antula (former landfill):

- Functioned as an open dump receiving mixed urban and hospital waste with no treatment or protection.
- Access was unrestricted; local women now cultivate vegetables (e.g., chives) on the site, highlighting both economic dependence and health risks from contaminated soils.
- Encroaching urbanization has reduced the distance between residential areas and the dump.

Safim (active dump):



ADAPTATION FUND

- Originally designed as a sanitary landfill but now operating as an uncontrolled open dump located in a **wetland** area connected to the Safim and Mansoa rivers, which drain into the Atlantic.
- Waste is dumped without spreading, compaction, or leachate and biogas treatment.
- Frequent open burning of cables to extract copper produces toxic smoke (Dioxins and furans, polycyclic aromatic hydrocarbons, extremely toxic, carcinogenic, bioaccumulative and persistent in the environment).
- Access roads are severely degraded, particularly in the rainy season, leading to frequent truck breakdowns, irregular collection, and illegal dumping elsewhere.

Both sites pose **acute risks** to health and the environment, including methane emissions, air and water pollution, disease vectors, and direct human exposure to hazardous waste.

8. Key Findings from the Consultations

- **Health and safety:** Open dumping of urban and hospital waste exposes workers and residents to infection, toxic smoke, and contamination, risks that are exacerbated during climate-related events such as heavy rainfall and flooding, which can spread pollutants, block drainage, and increase disease transmission.
- **Gender and vulnerability:** Women dominate informal recycling but face unsafe work, low pay, and exclusion from decision-making.
- **Institutional fragmentation:** Waste management responsibilities are split among ministries and municipalities with limited coordination and no dedicated funding mechanism.
- **Infrastructure and logistics:** Poor roads and lack of machinery undermine collection and landfill access, leading to illegal dumping.
- **Circular economy potential:** Emerging private and community initiatives prove that waste can create jobs and reduce poverty if supported by equipment and training.
- **Education and awareness:** Environmental education has largely disappeared from schools, but NGOs and municipalities are reviving it through pilot projects.

These findings directly shaped the project's structure, ensuring that each component responds to the lived realities of communities and institutions facing climate and waste-related pressures. The consultation process not only highlighted systemic gaps, such as institutional fragmentation, inadequate financing, and unsafe disposal practices, but also revealed significant opportunities in women's economic leadership, local innovation, and the development of a circular economy. As a result, the project emerges as a nationally owned, community-informed adaptation framework.

9. Localised Decision-Making and Control of Adaptation Resources

Building on the consultation process, the project design promotes localized decision-making in the implementation of selected adaptation activities, with municipalities and community structures playing a defined role in shaping and prioritizing site-level actions.

- At the operational level, municipal councils, community waste committees, and cooperatives will be involved in identifying priority service areas, advising on collection routes and transfer points, and supporting the operation of composting and sorting activities, including adjustments during periods of flooding or extreme rainfall. These functions will be carried out within agreed project procedures and safeguards frameworks.
- The project will also support decentralized use of limited adaptation resources, including small-scale equipment and livelihood-related investments. Community committees and cooperatives will participate in proposing and validating the use of such resources, with financial management, oversight, and reporting retained within the project's established management arrangements.
- Women's groups and women-led cooperatives will be supported to participate in community-level decision-making structures and to contribute to discussions on service design, working conditions, and livelihood priorities. This approach is intended to strengthen the consideration of women's needs and perspectives in implementation while remaining consistent with national policies and project safeguards.



ADAPTATION FUND

J. Provide justification for funding requested, focusing on the full cost of adaptation reasoning.

Without climate change, Guinea-Bissau would require basic waste collection and disposal services to address environmental sanitation needs. However, intensified rainfall, more frequent urban flooding, rising temperatures, and accelerating sea-level rise necessitate additional design features, siting decisions, and operational protocols that substantially increase costs. These include flood-safe dumping sites rehabilitation, leachate and drainage systems dimensioned for future rainfall extremes. These incremental investments constitute the full cost of adaptation financed by the Adaptation Fund. They are essential to ensure that waste management infrastructure remains functional during climate shocks and does not itself become a driver of flood, health, and ecosystem impacts under future climate conditions. Without these adaptation measures, standard waste investments would be rapidly undermined by climate impacts, resulting in escalating social, environmental, and economic losses.

The proposed USD 10 million investment requested to the Adaptation Fund financing represents the **full incremental cost** in a highly cost-effective approach to climate adaptation in a low-resource, high-vulnerability context such as Guinea-Bissau. The project prioritizes technically proven, low-cost, and scalable climate-resilient waste management interventions that deliver significant reductions in climate-related exposure, contamination, public health risks, and ecosystem degradation. The design maximizes climate adaptation benefits while minimizing long-term operational and maintenance costs, to transform the country's fragile, unsafe, and climate-exposed waste management system into a resilient, inclusive, and adaptive service that protects human health, livelihoods, and ecosystems.

This investment will safeguard human health, livelihoods, and natural ecosystems under current and future climate conditions, fully aligning with the Adaptation Fund's mandate to finance concrete, cost-effective, and scalable climate adaptation in highly vulnerable countries.

1. A Highly Vulnerable and Unsustainable System

Guinea-Bissau's waste system is already stretched beyond its limits, and climate change is rapidly magnifying these pressures. With no sanitary landfill, unsafe open dumps in flood-prone wetlands, inadequate collection capacity, and widespread contamination during heavy rains, unmanaged waste has become a direct driver of climate vulnerability. Limited infrastructure, insufficient equipment, and gaps in healthcare waste management expose communities, especially women and youth, to escalating health and environmental risks. As rainfall variability, extreme storms, and coastal hazards intensify, these weaknesses will deepen, accelerating disease outbreaks, food insecurity, and the degradation of vital ecosystems.

This baseline demonstrates that the proposed interventions are not development upgrades but essential adaptation measures. Only climate-resilient infrastructure, improved waste governance, and strengthened community systems can break the cycle in which unmanaged waste multiplies climate hazards. The project, therefore, addresses the full cost of adaptation required to reduce climate-induced risks and protect vulnerable populations in a context where existing systems cannot withstand the impacts of a changing climate.

2. Rationale for Adaptation Fund Support

The Adaptation Fund's financing is required to cover the full cost of climate adaptation in Guinea-Bissau's waste management sector—investments that cannot be met through domestic budgets or existing donor support. While the government and partners may finance basic waste management activities, such as minimal waste collection, partial dumpsite closures, or preliminary regulatory reforms, these measures are insufficient to address climate-driven risks. They do not incorporate infrastructure or operational features designed to withstand increasing climate stress, and the benefits of adaptation—such as reduced contamination, flood prevention, and public health protection—are public goods with no direct financial return.

Without climate change, Guinea-Bissau would require only basic waste collection and disposal. However, intensified rainfall, flooding, sea-level rise, and heat extremes necessitate **additional design features, siting decisions, operational protocols, and ecosystem protections** that significantly increase costs. These



ADAPTATION FUND

incremental costs constitute the adaptation rationale for AF financing.

The Adaptation Fund investment therefore focuses on **climate-specific, incremental measures** that transform standard waste management interventions into genuine adaptation solutions, including:

- Elevation and lining of landfill facilities in flood-prone areas, ensuring stability and leachate containment under extreme rainfall events.
- Implementation of the Fukuoka semi-aerobic landfill method, designed to reduce leachate risks under projected climate extremes. Drainage-linked waste collection triggers, ensuring rapid removal of waste from flood-prone zones during heavy rainfall events;
- Mangrove and wetland buffer zones around legacy dumpsites, functioning as ecosystem-based adaptation measures to reduce pollutant dispersion during floods and storm surges;
- Climate-informed operation and maintenance protocols, including integration with early warning systems to adjust waste management operations during extreme weather events.
- Climate-stress-tested access roads and drainage systems to maintain safe operations during floods and storms.
- Integration of climate risk screening and adaptation priorities into national and municipal waste strategies.
- Development of community early-warning protocols for waste and flooding, enabling rapid response to extreme events and reducing exposure of vulnerable populations.

By financing these incremental, adaptation-driven elements, the Adaptation Fund ensures that Guinea-Bissau’s waste management system is not merely upgraded, but **fully resilient to current and future climate hazards**, enabling long-term protection of communities and ecosystems. Without AF support, the country would remain reliant on short-term, fragmented responses, unable to build the resilient infrastructure, governance, and operational systems required to reduce climate exposure and enhance adaptive capacity.

3. Full-Cost Adaptation Logic

The proposed project finances the full set of interventions necessary to transform a high-risk baseline into a climate-resilient, sustainable system:

Table 5 - Baseline Vulnerabilities and Adaptation Fund–Financed Responses

Challenge / Vulnerability (Baseline)	Adaptation Fund-financed Response (Full Cost of Adaptation)
Open dumpsites in flood-prone wetlands without drainage or containment	Rehabilitation using Fukuoka semi-aerobic method , including leachate control, slope stabilization, flood-safe siting, and climate-proof access roads sized for projected extreme rainfall, preventing contamination and slope failure.
Waste collection is interrupted during storms due to impassable roads	Climate-resilient logistics : covered trucks, elevated ecopoints, and flood-safe collection routes , ensuring continuity during heavy rainfall and extreme flooding.
Unregulated dumping and open burning contributing to health crises	Establishment of controlled disposal, composting, and decentralized recycling systems , eliminating open burning, reducing disease vectors, and integrating climate-triggered operational protocols.
Weak institutional and legal framework	Development of a National Integrated Solid Waste Management Strategy embedding climate adaptation, circular economy, disaster risk management , and community governance into law and policy.
Absence of technical and operational capacity	Training and mentorship for municipal engineers, landfill operators, and informal worker cooperatives on adaptive waste practices, emergency response, and climate-resilient operations.
Low public awareness and weak gender inclusion	Targeted education, women-led recycling microenterprises , school and market campaigns, and a gender action plan to ensure equitable participation and adaptive capacity at the local level.
Marginalization of informal and women workers	Formalization and empowerment of waste pickers and women’s cooperatives with PPE, training, and access to finance for climate-resilient recycling and composting enterprises.



ADAPTATION FUND

Ecosystem degradation from waste leachate and erosion

Formalization and empowerment of **waste pickers and women's cooperatives** with PPE, training, and access to finance for climate-resilient recycling and composting enterprises.

Key logic of full-cost adaptation:

- **Baseline interventions** would include conventional landfill rehabilitation, waste collection, basic regulatory measures, and training.
- **Adaptation increment**, financed by the Adaptation Fund, includes all climate-driven enhancements: flood-safe siting, higher-capacity stormwater and leachate systems designed for future extremes, elevated access roads, mangrove and wetland buffers, and climate-triggered operational protocols.

These adaptation measures go beyond basic urban improvement; they address the root causes of climate vulnerability by integrating risk reduction, ecosystem restoration, and inclusive governance into the waste management system. The Adaptation Fund enables Guinea-Bissau to undertake critical investments that exceed national fiscal capacity but are indispensable for safeguarding communities and ecosystems.

Expected adaptation and co-benefits include:

- **Reduced flood risk** through drainage rehabilitation, elevated collection routes, and elimination of waste blockages.
- **Lower contamination of water and soil**, protecting agriculture, fisheries, and human health.
- **Improved public health** via reduced disease outbreaks (respiratory and waterborne diseases) and safer waste handling.
- **Enhanced ecosystem resilience** through reforestation and wetland protection.
- **Improved urban resilience**, drainage is kept functional, and waste no longer exacerbates floods.
- **Inclusive livelihoods** and empowerment for women and informal workers.
- **Institutionalized adaptive capacity** through policy reform, technical training, and monitoring systems.

By financing the full cost of climate-resilient interventions, the Adaptation Fund enables Guinea-Bissau to break the cycle where unmanaged waste amplifies climate hazards. Without this support, infrastructure and operations would remain vulnerable, and social and environmental risks would continue to escalate. With it, the country can transition to a resilient, inclusive, and climate-adaptive waste management model, aligned with NAP and NDC priorities and the SDGs.

K. Describe how the sustainability of the project/programme outcomes has been taken into account when designing the project/programme.

Sustainability has been a central principle in the design of the *Towards Climate Resilience: Sustainable Waste Management Solutions in Guinea-Bissau* project. Each component has been structured to ensure that the adaptation benefits, such as enhanced resilience, reduced exposure to climate risks, and improved environmental and social conditions, are sustained and expanded well beyond the project's lifetime. The project embeds mechanisms for **institutional continuity, financial autonomy, technical durability, and private sector engagement**, enabling long-term adaptive capacity at national and municipal levels.

1. Institutional and Governance Sustainability

The project establishes a durable institutional and policy framework that embeds climate adaptation within the waste management system:

- A National Integrated Solid Waste Management Strategy will be adopted, defining institutional mandates, climate-resilient technical standards, and a long-term financing mechanism.
- Municipal authorities will receive intensive capacity-building, operational manuals, and on-the-job mentoring, allowing them to plan, manage, and maintain waste systems autonomously.
- A National Coordination Platform will formalize collaboration among the Ministries of Environment, Health, Natural Resources, and Territorial Administration, ensuring policy coherence and continuity of adaptation measures.



ADAPTATION FUND

- Community Waste Committees and women's leadership quotas will institutionalize inclusive governance and accountability at the local level.

These reforms ensure that project outcomes, improved waste services, reduced pollution, and strengthened resilience, become integral parts of national and municipal systems, rather than temporary interventions.

2. Financial sustainability and role of banks and private sector

The project embeds financial mechanisms and partnerships to ensure the long-term operation and maintenance (O&M) of climate-resilient waste infrastructure:

- A **financial reform and tariff study** will establish equitable cost-recovery mechanisms such as user fees and market levies, balancing affordability and sustainability.
- **Commercial banks and microfinance institutions** will be mobilized to offer tailored financial instruments, including microcredit and green loans, specifically designed for waste cooperatives, recycling SMEs, and women-led enterprises, unlocking private capital and accelerating investment in circular-economy ventures. **Revenue generation from recycling, composting, and biogas recovery** will create local income streams that offset O&M costs and reduce dependence on external subsidies.
- **Public-private partnerships (PPPs)** will be promoted for waste collection, transport, and materials recovery, leveraging private sector efficiency and innovation for long-term service continuity.
- Councils will strengthen financial management capacities to improve budgeting, transparent fee collection, and reinvestment of sanitation revenues into adaptation infrastructure.

These financial and institutional linkages create a self-sustaining economic model where waste becomes a resource, private actors become adaptation partners, and banks act as enablers of green enterprise development.

3. Technical Sustainability

The project employs robust, locally maintainable technologies that are appropriate for Guinea-Bissau's technical and economic context:

- The **Fukuoka semi-aerobic landfill** method is selected for its proven low-cost, low-maintenance design suitable for tropical climates and limited-resource settings.
- **Decentralized composting and recycling facilities** will use modular systems that communities can manage and scale independently.
- **Equipment procurement packages** will include spare parts, maintenance training, and local service contracts to ensure functionality and minimize downtime.
- **Continuous capacity-building** for engineers, operators, and waste cooperatives will maintain technical proficiency and enable adaptive management.

This approach ensures that all infrastructure remains operable within local capabilities and resilient to future climate stressors.

4. Social and Gender Sustainability

The project embeds inclusive participation and gender-responsive approaches to ensure that benefits are equitably shared, community ownership is maintained and secured continuity of adaptive outcomes:

- **Waste picker cooperatives**, women's associations, and youth groups will be integrated into formal recycling and composting systems, ensuring sustained income and safer working conditions.
- **Women and youth-led circular economy enterprises** will receive access to training, start-up capital, and business incubation support in collaboration with local financial institutions.
- Continuous **awareness campaigns and environmental education**, including integration into school curricula, will foster behavioral change and long-term community engagement.
- The **Gender Action Plan** institutionalizes equality measures, ensuring equitable access to resources, leadership roles, and benefits throughout the waste value chain.

These actions transform vulnerable groups from beneficiaries into active agents of adaptation and resilience.



ADAPTATION FUND

5. Environmental Sustainability

Environmental protection and ecosystem resilience are core objectives of the project's design:

- **Rehabilitation of Antula and Safim dumpsites** and construction of new, climate-resilient landfill cells will mitigate contamination risks, protect groundwater, and restore degraded ecosystems.
- **Diversion of organic waste to composting and biogas systems** will reduce methane emissions supports soil restoration and enhance soil fertility, strengthening local food systems under changing climate conditions.
- **Nature-based solutions**, such as vegetated drainage buffers and ecological erosion-control structures, will stabilize landfill areas, restore and enhance local biodiversity, and deliver critical co-benefits for flood regulation and climate resilience. **Continuous environmental monitoring** of leachate, gas emissions, and erosion will ensure compliance with national regulations and Adaptation Fund safeguards.

By restoring degraded areas and protecting critical natural buffers, the project strengthens the ecological foundations of urban climate resilience.

6. Knowledge retention and Adaptive management

The project's sustainability is ensured through continuous learning, strong governance, and long-term institutionalization of climate-resilient practices. A National Knowledge Management Hub, supported by peer-to-peer exchanges and annual learning workshops, will consolidate and disseminate lessons across municipalities, civil society, and private operators. An integrated Monitoring, Evaluation, and Learning framework and a functioning Grievance Redress Mechanism provide accountability and enable evidence-based adjustments over time.

By combining policy reform, private-sector participation, financial innovation, and inclusive decision-making, the project establishes a viable foundation for sustained climate-resilient waste management. These measures ensure that safer waste practices, reduced flood and contamination risks, and improved public health continue well beyond Adaptation Fund financing, supported by a system that generates enduring economic and environmental benefits for Guinea-Bissau.

L. Provide an overview of the environmental and social impacts and risks identified as being relevant to the project/programme.

The proposed project has been classified as **Category A (Substantial Risk)** under the Adaptation Fund Environmental and Social Policy (ESP). Potential adverse impacts are expected to be site-specific, reversible, and manageable through appropriate mitigation and monitoring measures. Significant potential impacts are anticipated, though they are site-specific, reversible, and manageable through targeted mitigation and monitoring measures. The screening assessed all potential direct, indirect, cumulative, and transboundary impacts arising from infrastructure rehabilitation, landfill construction, and solid waste operations.

The project operates in a fragile ecological and social context, with major dumpsites located in flood-prone wetlands that pose risks of contamination to water, soil, and fisheries. Informal waste workers, particularly women and children, face unsafe conditions and limited inclusion in decision-making. To address these substantial risks, the project incorporates robust environmental and social safeguards. Key risks and their corresponding mitigation measures are summarized in Table 8 – Overview of Key Environmental and Social



ADAPTATION FUND

Risks and Mitigation.

Table 6 - Overview of Key Environmental and Social Risks and Mitigation

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
<i>Compliance with the Law</i>		<p>Potential Impacts and Risks: Potential non-compliance with national environmental regulations, waste-handling, and construction codes during landfill rehabilitation.</p> <p>Risk Rating: Substantial.</p> <p>Management & Further Assessment: Obtain permits, ensure licensed supervision, align with national/international standards, and implement adaptive monitoring.</p>
<i>Access and Equity</i>		<p>Potential Impacts and Risks: Unequal access to improved waste services in urban vs. peri-urban/island areas.</p> <p>Risk Rating: Substantial.</p> <p>Management & Further Assessment: Conduct baseline equity assessment and Social Impact Assessments (SIA); map service gaps; consult diverse communities; implement inclusive policies and adaptive pricing; support community-led initiatives; Monitor service access and satisfaction; run awareness and capacity-building programs.</p>
<i>Marginalized and Vulnerable Groups</i>		<p>Potential Impacts and Risks: Exclusion of female informal waste pickers, women-headed households, persons with disabilities, and island communities from consultations and project benefits.</p> <p>Risk Rating: Moderate.</p> <p>Management & Further Assessment: Conduct gender-sensitive SIA and baseline assessments; implement a Gender Action Plan (GAP) with targets and monitoring; ensure inclusive consultations and safe participation; provide targeted livelihoods, training, and empowerment; build institutional gender capacity; collaborate with NGOs; track gender-disaggregated results; advocate for formal inclusion and protection of vulnerable groups.</p>
<i>Human Rights</i>		<p>Potential Impacts and Risks: Potential non-compliance with national labour regulations, discrimination in hiring, unsafe work conditions, or limited access to information and participation.</p> <p>Risk Rating: Moderate.</p> <p>Management & Further Assessment: Review employment policies and baseline conditions; engage stakeholders; implement equitable hiring and safety measures; provide training; ensure accessible information and grievance channels; monitor compliance; partner with rights organizations and labour unions.</p>
<i>Gender Equality and Women's Empowerment</i>		<p>Potential Impacts and Risks: Women overburdened by informal waste roles may face exclusion or exposure to GBV.</p> <p>Risk Rating: Substantial.</p> <p>Management & Further Assessment: Conduct baseline GBV risk assessment and site safety audits; map existing GBV services; hold women-only consultations; establish sex-disaggregated monitoring; implement a survivor-centered GBV mitigation plan and a Gender Action Plan (GAP); improve site safety; provide safe reporting and referral mechanisms; run awareness campaigns; build capacity of staff and partners; support economic empowerment; engage women's organizations; allocate budget and define roles for accountability; adapt measures based on</p>



ADAPTATION FUND

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
		monitoring and feedback.
<i>Core Labour Rights</i>		<p>Potential Impacts and Risks: Child labor and unsafe working conditions in informal recycling sectors. Risk Rating: Substantial. Management & Further Assessment: Assess labour and child labour risks; engage stakeholders; collect baseline data; enforce policies; provide training; ensure safe workplaces; implement child protection; partner with NGOs/authorities; monitor compliance.</p>
<i>Indigenous Peoples</i>		<p>Potential Impacts and Risks: NA Risk Rating: NA. Management & Further Assessment: NA</p>
<i>Involuntary Resettlement</i>		<p>Potential Impacts and Risks: Possible land acquisition for landfill expansion or buffer zones may affect communities. Risk Rating: Substantial Management & Further Assessment: Assess socio-economic and land tenure impacts; consult stakeholders; inventory losses; review legal frameworks; define entitlements; prepare and implement Resettlement Action Plan (RAP) with compensation, livelihood restoration, grievance mechanisms, FPIC, grievance mechanism, monitoring, and post-resettlement support.</p>
<i>Protection of Natural Habitats</i>		<p>Potential Impacts and Risks: Potential encroachment on wetlands or mangrove habitats, particularly near Safim and coastal/island sites. Risk Rating: Substantial Management & Further Assessment: Conduct biodiversity screening; Environmental and Social Impact Assessment (ESIA); avoid critical habitats; maintain buffers; restore ecosystems post-construction.</p>
<i>Conservation of Biological Diversity</i>		<p>Potential Impacts and Risks: Disturbance to species or breeding habitats during works. Risk Rating: Substantial Management & Further Assessment: Conduct biodiversity baselines; time works outside breeding seasons; replant native vegetation after rehabilitation.</p>
<i>Climate Change</i>		<p>Potential Impacts and Risks: Improper landfill design could increase GHG emissions or exposure to flooding/sea-level rise Risk Rating: Substantial. Management & Further Assessment: Apply the Fukuoka semi-aerobic landfill method to reduce methane; design elevated, flood-resilient infrastructure with proper drainage; monitor methane and GHG emissions periodically; and integrate climate-proofing.</p>
<i>Pollution Prevention and Resource Efficiency</i>		<p>Potential Impacts and Risks: Leachate contamination, accidental burning, dust emissions, and inefficient resource use. Risk Rating: Substantial Management & Further Assessment: Conduct environmental and leachate risk assessments, dust and resource use audits; engage stakeholders; implement leachate management systems, dust controls, fire prevention measures, and resource efficiency practices; provide training and capacity building; establish monitoring, reporting, emergency response plans, and policy integration; apply adaptive management to ensure</p>



ADAPTATION FUND

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
		sustainability.
<i>Public Health</i>		<p>Potential Impacts and Risks: Exposure to pathogens, vectors, and pollutants affects adjacent communities and workers, leading to public health issues, increased disease transmission, respiratory or other health impacts, reduced worker safety, and heightened community concerns about operations.</p> <p>Risk Rating: Substantial</p> <p>Management & Further Assessment: Conduct baseline health assessments and risk analysis; monitor environmental indicators and community exposure; engage stakeholders; implement improved waste management practices, public health education, vector control, protective equipment, health surveillance, emergency response planning, collaboration with health services, and community involvement to reduce risks and protect health.</p>
<i>Physical and Cultural Heritage</i>		<p>Potential Impacts and Risks: Possible disturbance near cemeteries or cultural sites, particularly near Antula.</p> <p>Risk Rating: Moderate</p> <p>Management & Further Assessment: Conduct cultural heritage assessments prior to works; integrate chance-find procedures in construction contracts; engage local authorities and communities in mitigation.</p>
<i>Lands and Soil Conservation</i>		<p>Potential Impacts and Risks: Erosion, contamination, or instability from excavation and landfill leachate.</p> <p>Risk Rating: Substantial</p> <p>Management & Further Assessment: Assess heritage sites with GIS; consult communities and experts; set buffers and avoidance measures; mitigate unavoidable impacts; monitor and engage communities; provide awareness and emergency protocols.</p>

Safeguard Instruments and Management Frameworks

To ensure compliance with the Adaptation Fund’s Environmental and Social Policy and Gender Policy, the project will implement the following instruments:

- Site-Specific Environmental and Social Management Plans (ESMP): To address localized risks at landfill rehabilitation and construction sites.
- Gender Action Plan (GAP): To ensure equitable participation, benefits, and gender-responsive decision-making.
- Grievance Redress Mechanism (GRM): Accessible, confidential, and responsive, enabling communities, especially women and vulnerable groups, to raise concerns.

Based on the screening process, the project presents potential impacts that are significant but site-specific, reversible, and manageable with robust environmental, social, and gender safeguards. Continuous monitoring, public disclosure, and adaptive management will ensure compliance with the Adaptation Fund’s Environmental, Social, and Gender Policies throughout implementation.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Demonstrate how the project/programme aligns with the Results Framework of the Adaptation Fund²

The proposed project meets the Adaptation Fund’s objectives by reducing exposure to climate-induced hazards and strengthening the adaptive capacity of essential urban services and infrastructure, particularly in relation to flooding, contamination, and coastal risks. It finances the additional costs of climate adaptation, ensuring that waste management systems, drainage, and associated ecosystem buffers remain functional under current and projected climate stressors, thereby reducing vulnerability among the most climate-affected urban and coastal populations.

The project’s core adaptation objective is to reduce climate-related risk and ensure continuity of waste and sanitation services during extreme weather events, while complementary components strengthen institutional capacity, livelihoods, ecosystems, policy frameworks, and innovation to sustain long-term resilience.

Project Objective(s) ¹	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
To reduce climate-induced flood, contamination, and coastal erosion risks by transforming Guinea-Bissau’s waste management system into a climate-resilient, inclusive, and nature-based adaptation solution for vulnerable urban and coastal communities.	<ul style="list-style-type: none"> • % reduction in flood-related disruption of waste collection and sanitation services during extreme rainfall events • Number of households with reduced exposure to waste-related flood risks • Area (ha) of wetlands/mangroves protected from contamination during floods 	<ul style="list-style-type: none"> • Outcome 1: Reduced exposure to climate-related hazards and threats • Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets 	<ul style="list-style-type: none"> • Indicator 1: People using improved climate-related hazard information • Indicator 4: Physical assets improved or constructed to withstand climate variability and change 	10,000,000
Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator	Grant Amount (USD)
<p>Component 1: Strengthened Adaptive Capacity and Governance for Climate-Resilient Waste Services</p> <p>Institutions at national and municipal levels have strengthened</p>	<ul style="list-style-type: none"> • Number of institutions with strengthened capacity to address flood and climate risks in the waste sector • Number of people with improved awareness of climate- and flood-related risks linked to waste • Number of policies/strategies/plan 	<ul style="list-style-type: none"> • Output 2.1: Strengthened capacity of institutions to understand and better address climate risks. • Output 3.1: Targeted population groups participating in adaptation and risk reduction awareness 	<ul style="list-style-type: none"> • Indicator 2.1.1: Institutions supported • Indicator 3.1.1: People participating in awareness activities • Indicator 7.1.1: Policies, strategies, and/or plans developed or adjusted to integrate climate risk considerations • Indicator 7.1.2: Policies formulated with the 	700,000

² The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

<p>capacity to plan, manage, and finance climate-adaptive waste services, including for maintaining service continuity during flooding and extreme rainfall events.</p>	<p>s integrating climate and flood risk considerations</p>	<p>activities</p> <ul style="list-style-type: none"> • Output 7.1: Improved integration of climate-resilience strategies into country development plans 	<p>participation of vulnerable groups</p>	
<p>Component 2: Reduced Exposure to Flooding, Contamination, and Climate Hazards through Resilient Waste Infrastructure and Ecosystem Protection</p> <p>Urban and coastal populations experience reduced exposure to climate-induced flooding and contamination through waste infrastructure and ecosystem buffers designed to remain operational during flood events.</p>	<ul style="list-style-type: none"> • Number of physical assets improved or constructed to withstand climate variability and flooding • Number of development sector services strengthened to operate during climate shocks • Number of ecosystems with reduced contamination from flood-related waste dispersal 	<ul style="list-style-type: none"> • Output 4.1: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability • Output 5.1: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability 	<ul style="list-style-type: none"> • Indicator 4.1.1: Development sector services strengthened to respond to climate variability and change • Indicator 5.1.1: Ecosystems and natural resources targeted by activities to improve protection, restoration, and/or management 	4,570,507
<p>Component 3: Strengthened Climate-Resilient Livelihoods and Service Continuity through Circular Economy Waste Systems</p> <p>Livelihoods and household resilience are strengthened through climate-adaptive circular-economy practices that reduce vulnerability to flood- and climate-related income disruption while supporting service continuity.</p>	<ul style="list-style-type: none"> • Number of people adopting improved climate-resilient and flood-adaptivelivelihood practices <ul style="list-style-type: none"> • Number of households with increased/maintained income • Number of people protected from waste-driven flood risks due to improved collection coverage 	<ul style="list-style-type: none"> • Output 6.1: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability 	<ul style="list-style-type: none"> • Indicator 6.1.1: People receiving targeted support for new and/or improved livelihoods to manage climate risk 	1,670,507
<p>Component 4:</p>	<ul style="list-style-type: none"> • Number of people with 	<ul style="list-style-type: none"> • Output 3.1: Targeted 	<ul style="list-style-type: none"> • Indicator 3.1.1: Number 	700,000

<p>Improved Public Health, Awareness, and Ecosystem Resilience under Climate Extremes</p> <p>Communities are better protected from flood-related contamination, climate-sensitive health risks, and extreme rainfall events through climate-informed environmental health and ecosystem management systems.</p>	<p>strengthened awareness of flood- and climate-related health risks</p> <ul style="list-style-type: none"> • Number of people covered by improved early-warning systems • Number of ecosystems under improved management to reduce climate-linked contamination 	<p>population groups participating in adaptation and risk reduction awareness activities</p> <ul style="list-style-type: none"> • Output 3.2: Strengthened the capacity of national and subnational stakeholders and entities to capture and disseminate • Output 5.1: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability. 	<p>of people participating in awareness activities</p> <ul style="list-style-type: none"> • Indicator 3.2.1: Number of climate resilience knowledge products/tools developed and disseminated • Indicator 5.1.1: Ecosystems and natural resources targeted by activities to improve protection, restoration, and/or management 	
<p>Component 5: Innovation, Learning, and Knowledge Systems for Climate-Resilient Waste Adaptation</p> <p>Innovative adaptation solutions for climate-resilient waste management in flood-prone and coastal locations are piloted, tested, and scaled.</p>	<ul style="list-style-type: none"> • Number of innovations successfully scaled for climate- and flood-risk contexts • Number of institutions enabled to lead climate adaptation and innovation in waste management 	<ul style="list-style-type: none"> • Output 8.1: Innovations identified and piloted which collectively enhance local innovation capacity & contribute to the development of local, national and regional adaptation innovation ecosystems • Output 8.2: Innovations identified and piloted, which build the adaptation innovation, evidence-based and institutional capacity 	<ul style="list-style-type: none"> • Indicator 8.1.1: Innovations identified that demonstrate local participation and/or local innovation benefit • Indicator 8.1.2: Innovations piloted that demonstrate local participation and/or local innovation benefit. • Indicator 8.2.1: Innovation-focused knowledge products disseminated and/or learning events facilitated that support and enable innovation capacity at a local, national, and/or regional level 	<p>700,000</p>

The “**Towards Climate Resilience: Sustainable Waste Management Solutions in Guinea-Bissau**” project is fully aligned with the **Adaptation Fund Results Framework**, addressing multiple outcomes and outputs that strengthen climate resilience across infrastructure, institutions, ecosystems, and communities.

Together, these components transform Guinea-Bissau’s waste management sector into a **driver of national adaptation**, improving health, livelihoods, and environmental resilience in one of the world’s most climate-vulnerable nations.

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government³

Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:

<p><i>Viriato Luís Soares Cassamá</i> <i>Minister of Environment,</i> <i>Biodiversity and Climate Action</i></p>	<p>Date: May 22, 2025</p>
--	---------------------------

B. Implementing Entity certification

Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person’s name, telephone number and email address.

<p>I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans and subject to the approval by the Adaptation Fund Board, <u>commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund</u> and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.</p>	
<p><i>Nancy Bennet</i> <i>Executive Coordinator</i> <i>Vertical Funds Programming Support, Oversight and Compliance Hub</i> <i>Bureau for Policy and Programme Support (BPPS)</i> <i>United Nations Development Programme</i></p>	
<p>Date: February 9, 2026</p>	<p>Tel. and email: nancy.bennet@undp.org</p>
<p>Project Contact Person: Julien Simery</p>	
<p>Tel. And Email: julien.simery@undp.org</p>	
<p> </p>	

DocuSigned by:
Nancy Bennet
 4EEADA5A5FE9433...

³ Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.



GOVERNO DA
GUINÉ-BISSAU

MINISTÉRIO DO AMBIENTE, BIODIVERSIDADE
E AÇÃO CLIMÁTICA



ADAPTATION FUND

Bissau, 22/05/2025

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: ***Endorsement for Solid Waste Management Project***

In my capacity as designated authority for the Adaptation Fund in Guinea Bissau, I confirm that the above national project proposal is in accordance with the Guinea Bissau government's priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Guinea Bissau.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund.

If approved, the project will be implemented by UNDP and executed by the Ministry of Environment, Biodiversity and Climate Action.

Sincerely yours,

Viriato Luís Soares Cassamá
Minister of Environment, Biodiversity and Climate Action



Project Formulation Grant (PFG)

Submission Date: 4 February 2026

Adaptation Fund Project ID:
Country/ies: Republic of Guinea-Bissau
Title of Project/Programme: Towards Climate Resilience: Sustainable Waste Management Solutions in Guinea-Bissau
Type of IE (NIE/RIE/MIE): MIE
Implementing Entity: UNDP
Executing Entity/ies: UNDP

A. Project Preparation Timeframe

Start date of PFG	May 2026
Completion date of PFG	October 2026

B. Proposed Project Preparation Activities (\$)

List of Proposed Project Preparation Activities	Output of the PFG Activities	US\$ Amount	Budget note ¹
<p>Lead International Consultant – Project Design and Development</p> <p>Scope includes:</p> <ul style="list-style-type: none"> Overseeing and guiding the situation analysis Developing a feasibility study, incorporating inputs from the National Consultant Providing technical oversight for the gender assessment and Gender Action Plan conducted by the Gender and Social Inclusion Specialist Leading project strategy development (theory of change, component structuring) Developing the project logframe and results framework Designing the Monitoring & Evaluation (M&E) strategy Developing the detailed project budget Ensuring coherence across all analytical inputs and integrating them into the full proposal 	<p>Mission report capturing on-the-ground conditions</p> <p>Draft project strategy including logframe outline, M&E plan, results framework, KM plan, and budget structure</p> <p>Feasibility study reports with technical options analysis and costing</p>	35,000	Lead International Consultant to serve as penholder for developing for the full Project Design and Development

¹ The proposal should include a detailed budget with budget notes indicating the break-down of costs at the activity level. It should also include a budget on the Implementing Entity management fee use.

<p>National Consultant(s) – Adaptation specialist to support project design and development</p> <p>Scope includes:</p> <ul style="list-style-type: none"> • Conducting research and data gathering for the situation analysis • Preparing background documentation and local inputs for pre-feasibility assessments • Supporting the organisation and logistics of field missions for international and national experts • Providing contextual information and facilitating local-level coordination • Provide inputs for budget development • Assisting the lead consultant with compilation of documents and information validation <p>National Consultant – Economic & financial analysis (cost–benefit, cost-effectiveness)</p>	<p>Situation analysis report</p> <p>Feasibility Study</p> <p>Project budget</p> <p>Full economic & financial analysis required for AF submission</p>	<p>20,000</p> <p>6,500</p>	<p>National consultant (s) – Adaptation specialist (s) to support project design and development</p> <p>Economist + desk work</p>
<p>3. Gender and Social Inclusion Specialist</p> <p>Scope includes:</p> <ul style="list-style-type: none"> • Conducting the gender assessment, including field consultations and data collection • Analysing gender-differentiated vulnerabilities and capacities, including GBV risks • Preparing the Gender Assessment Report and the Gender Action Plan • Ensuring alignment with the Adaptation Fund Gender Policy and UNDP SES Principles on gender and accountability • Collaborating closely with the ESS Specialist and lead consultant to integrate findings into the proposal 	<p>Gender Assessment</p> <p>Gender Action Plan</p>	<p>11,500</p>	<p>Gender and Social Inclusion (GESI) Specialist to develop Gender Assessment and the GAP</p>
<p>4. Environmental & Social Safeguards Specialist (ESS Specialist)</p> <p>Scope includes:</p> <ul style="list-style-type: none"> • Conducting the environmental and social risk screening (AF ESS screening and UNDP SESP) • Preparing safeguards documents required by the AF (screening report, risk register, disclosure notes) and the UNDP SESP • Leading the targeted Environmental and Social Impact Assessment (ESIA) where required • Developing the Environmental and Social Management Plan (ESMP) • Supporting stakeholder consultations related to safeguards and developing a Stakeholder Engagement Plan for the project <p>Ensuring compliance with national regulations, AF Environmental and Social Policy and UNDP Social and Environmental Safeguards</p>	<p>ESIA report, ESMP, clearance certificate, Resettlement Action Plan, Stakeholder Engagement Plan, Grievance Redress Mechanism</p>	<p>25,000</p>	<p>Environmental & Social Safeguards Consultant (ESS) Specialist to deliver ESS reports and conduct field surveys</p>

Field missions to project areas (site verification, vulnerability assessment, local consultations) Scope includes: <ul style="list-style-type: none"> • Site visits to verify site information and identify specific climate change vulnerabilities and appropriate local-level responses at these sites. • Meetings with local beneficiaries and stakeholders to identify local issues, concerns and priorities and obtain support for the project. • Identification of indicative project concepts. • Compilation of stakeholder and beneficiary inputs for the implementation plan. 	Pre-feasibility Study Field mission report	20,500	Field missions to project target areas
Institutional capacity assessment of executing partners	Capacity assessment report and recommendations	2,000	Institutional capacity assessment of executing partners
Translation, editing, design & formatting of proposal package	English/Portuguese versions of the full proposal and annexes	2,000	Translation, editing, design & formatting of proposal package
Stakeholders' meetings for collecting stakeholder inputs and validating the project design	Validated elements of project design, improved proposal structure	15,000	Stakeholders' meetings for collecting stakeholder inputs and validating the project design
Implementing Entity Fee		11,688	
Total Project Formulation Grant		149,188	

Please describe below each of the PFG activities and provide justifications for their need and for the amount of funding required:

The Project Formulation Grant (PFG) will enable the Government of Guinea-Bissau, through MABAC, UN-Habitat and UNDP, to prepare a technically robust, climate-risk-informed, evidence-based and fully compliant Adaptation Fund full project proposal focused on urban waste management as a priority adaptation measure. Given the country's high exposure to flooding, sea-level rise, and extreme rainfall, the fragility of existing waste infrastructure, and the complex interactions between unmanaged waste, public health, and coastal and urban ecosystems, substantial preparatory work is required to ensure the project is firmly anchored in climate risk reduction rather than general service improvement.

PFG funding is therefore essential to undertake detailed feasibility studies for flood-resilient landfill rehabilitation and collection systems, social and environmental safeguards assessments, including displacement and gender analyses, inclusive stakeholder consultations with local authorities, waste workers, women's groups, and vulnerable urban communities. The grant will also support institutional and financial analyses to ensure that proposed adaptation measures are operationally sustainable and capable of maintaining service continuity during climate shocks. These preparatory activities cannot be financed through regular programme resources, yet they are critical to ensure that the final project proposal accurately reflects climate vulnerabilities, identifies the full cost of adaptation, and complies with Adaptation Fund policies and results frameworks. These activities will collectively ensure that the final proposal is credible, implementable, scalable, and capable of delivering measurable reductions in flood risk, climate-related health impacts, and ecosystem degradation for vulnerable urban and coastal populations in Guinea-Bissau.

These preparatory activities cannot be financed through regular programme resources, yet they are critical to ensure that the final project proposal accurately reflects climate vulnerabilities, identifies the full cost of adaptation, and complies with Adaptation Fund policies and results frameworks. Collectively, the PFG will ensure that the resulting project is credible, implementable, and scalable, and capable of delivering measurable reductions in flood risk, climate-related health impacts, and ecosystem degradation for vulnerable urban and coastal populations in Guinea-Bissau.

Lead Consultant – Project Design and Development

This consultancy will provide overall technical leadership for the preparation of the Adaptation Fund's full project proposal. Responsibilities include overseeing the situation and risk analysis, leading the pre-feasibility assessment, and guiding the development of the project strategy, theory of change, and component structure. The consultant will design the monitoring, evaluation, and learning (MEL) approach, prepare the multi-year budget, and ensure technical coherence and compliance across all sections of the proposal. This role is essential to delivering a technically robust, coherent, and fully Adaptation Fund-compliant proposal.

National Consultant(s) – Adaptation Specialist to Support Project Design and Development

The Adaptation Specialist for Project Design and Development will provide technical support to the proposal preparation through local research and data collection for the situation analysis, context-specific inputs to the pre-feasibility study, and coordination and facilitation of field missions. The specialist will liaise with local authorities, organizations, and community structures to strengthen the assessment of baseline conditions and localized climate risks. They will also contribute to costing, budget justification, and technical inputs, and support the compilation and validation of deliverables under the guidance of the Lead Consultant.

Gender and Social Inclusion Specialist

The Gender and Social Inclusion Specialist will lead a comprehensive gender analysis, including field consultations, interviews, and the collection of sex-disaggregated data across target areas. The analysis will identify gender-specific vulnerabilities, climate-related impacts, and participation barriers. The specialist will produce a Gender Assessment Report and provide substantive inputs to the Gender Action Plan under the supervision of the Lead Consultant, ensuring full compliance with the Adaptation Fund Gender Policy and the effective integration of gender-responsive measures into the project design.

Field Missions to Project Areas

Extensive field missions will be undertaken to validate project design assumptions, collect site-specific data, and engage authorities and communities in proposal development. Activities will include site inspections, vulnerability assessments, identification of feasible adaptation measures, and consultations with beneficiaries and local stakeholders. These missions will generate critical operational inputs—local priorities, environmental constraints, and preliminary intervention concepts—and inform the refinement of implementation arrangements. Costs cover transport, per diem, local coordination, and community consultations.

Stakeholder Meetings for Collecting Inputs and Validating the Project Design

Meetings at the national level and in the target areas will be organized to gather stakeholder inputs, validate key design elements, and refine proposed activities. These consultations will ensure the full proposal reflects community priorities, incorporates technical inputs from government and civil society, and aligns with local development and climate planning. The meetings will also verify climate vulnerabilities, implementation feasibility, and sustainability considerations.

Environmental & Social Safeguards Consultant (ESS Specialist)

The ESS Specialist will conduct the environmental and social risk screening (ESS), prepare the full safeguards documentation required by the Adaptation Fund, and lead the Environmental Impact Assessment (EIA) where applicable. This includes preparation of the screening report, risk register, stakeholder disclosure records and supporting documentation, as well as the Environmental and Social Management Plan (ESMP). The ESS Specialist will support safeguards-related consultations, and ensure compliance with national regulations and the Adaptation Fund Environmental and Social Policy. This role is critical to risk identification, mitigation planning and safeguards compliance.

Institutional Capacity Assessment of Executing Partners

This assessment will review the mandates, governance structures, operational capacity, and resource needs of proposed executing entities. It will identify strengths, gaps and opportunities to strengthen execution arrangements, ensuring the project is realistic, implementable and aligned with institutional capabilities. Outputs will directly inform implementation and capacity-building strategies.

Economic and Financial Analysis

A cost-benefit and/or cost-effectiveness analysis will be undertaken to demonstrate the economic rationale and value for money of proposed adaptation interventions, in line with Adaptation Fund guidelines. This will include comparison of adaptation options, arrangements of long-term economic benefits, and justification of major investment areas.

Translation, Editing, Design and Formatting of the Proposal Package

The final project proposal and annexes will be translated between Portuguese and English, professionally edited and formatted to ensure accessibility for national stakeholders and full compliance with Adaptation Fund submission standards.

Implementing Entity Management Fee

UNDP, as the Implementing Entity, will provide overall oversight, technical backstopping, quality assurance and fiduciary management throughout the PFG process. The management fee covers these responsibilities in accordance with the Adaptation Fund policy.

C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board’s procedures and meets the Adaptation Fund’s criteria for project identification and formulation

Implementing Entity Coordinator, IE Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Nancy Bennet		February 9 2026	Julien Simery		julien.simery@undp.org

ANNEXES

I. LIST OF ACRONYMS

- AF – Adaptation Fund
- AfDB – African Development Bank
- CMB – Bissau City Council (Câmara Municipal de Bissau)
- ECOWAS – Economic Community of West African States
- EHS – Environmental, Health and Safety Guidelines (World Bank/IFC)
- ESIA – Environmental and Social Impact Assessment
- ESMF – Environmental and Social Management Framework
- ESMP – Environmental and Social Management Plan
- ESP – Environmental and Social Policy (Adaptation Fund)
- FPIC – Free, Prior and Informed Consent
- Fukuoka Method – Semi-Aerobic Landfill System
- GAP – Gender Action Plan
- GAS – Water and Sanitation Thematic Group
- GCF – Green Climate Fund
- GHG – Greenhouse Gas
- GRM – Grievance Redress Mechanism
- HDI – Human Development Index
- MABAC – Ministry of Environment, Biodiversity and Climate Action
- MSW – Municipal Solid Waste
- NAP – National Adaptation Plan
- NDC – Nationally Determined Contribution
- NGO – Non-Governmental Organization
- O&M – Operations and Maintenance
- OHS – Occupational Health and Safety
- PFG – Project Formulation Grant
- PMU – Project Management Unit
- PPE – Personal Protective Equipment
- PRSP III – Poverty Reduction Strategy Paper III
- PV – Photovoltaic
- RAP – Resettlement Action Plan
- SDGs – Sustainable Development Goals
- UNDP – United Nations Development Programme
- UN-Habitat – United Nations Human Settlements Programme

II. PROJECT THEORY OF CHANGE

