

CREWS Proposal for The Gambia

Action Title	<i>The Gambia - Diagnosis and Modernization plan of Flood Forecasting and Early Warning Systems for Greater Banjul</i>
Country(ies)	<i>The Gambia</i>
Partner Country Entity / Entities	<p><i>Ministry/Agency/Entity within Partner Country/ies; main point(s) of contact and contact details]</i></p> <p><i>Ministry of Environment, Climate Change and Natural resources (MECCNAR) – Mrs Mariama Ndow Jarju</i> <i>National Disaster Management Agency – Executive Director Mr. Sanna Dahaba</i> <i>Department of Water Resources – Mr. Lamin M. Touray</i> <i>WACA ResIP 2 PIU, Project Coordinator - Dr. Muhammed Sanyang,</i></p>
Implementing Partner (if submission by Implementing Partner)	<p><i>[Implementing partner, including main point(s) of contact and contact details]</i></p> <p><i>World Bank,</i> <i>Cecile Lorillou, clorillou@worldbank.org</i></p>
Implementing Partner Requested (if submission by Partner Country)	<p><i>Select at least 1:</i></p> <p><input checked="" type="checkbox"/> World Bank/GFDRR</p> <p><input type="checkbox"/> WMO</p> <p><input type="checkbox"/> UNDRR</p> <p><input type="checkbox"/> No preference</p>
Action Type	<p><i>Select at least 1:</i></p> <p><input type="checkbox"/> Continued Assistance</p> <p><input checked="" type="checkbox"/> Analyses and Assessments</p> <p><input checked="" type="checkbox"/> Advisory Services</p>
Early Warning System Element(s) Supported	<p><i>Select at least 1:</i></p> <p><input checked="" type="checkbox"/> Monitoring, detection, analysis and forecasting of hydro-meteorological hazards providing lead-times for action</p> <p><input type="checkbox"/> Dissemination of timely and authoritative warnings</p> <p><input checked="" type="checkbox"/> Preparedness and response plans triggered by warnings and weather and climate predictions</p> <p><input checked="" type="checkbox"/> Disaster risk knowledge based on the systematic collection of data and disaster risk assessment</p>
Contributions to CREWS Programming Principles and Results Framework	<p>CREWS Programming Principles addressed:</p> <p><i>Select all relevant:</i></p> <p><input checked="" type="checkbox"/> People-centered</p> <p><input checked="" type="checkbox"/> Gender-responsive</p> <p><input checked="" type="checkbox"/> Promotes Coherence</p> <p><input checked="" type="checkbox"/> Leverage</p> <p>CREWS Results Framework Outputs to which the Action is expected to contribute to:</p> <p><i>Select at least one:</i></p>

	<input checked="" type="checkbox"/> NMHSs' service delivery improved, including the development of long-term service delivery strategies and development plans <input checked="" type="checkbox"/> Risk information to guide early warning systems and climate and weather services developed and accessible <input checked="" type="checkbox"/> Info. and comm. tech., including common alerting protocols, strengthened <input type="checkbox"/> Preparedness and response plans with operational procedures that outlines early warning dissemination processes strengthened and accessible <input type="checkbox"/> Knowledge products and awareness programmes on early warnings developed <input checked="" type="checkbox"/> Gender-responsive training, capacity building programmes provided CREWS Programme Indicators to which the Action is expected to contribute to: <i>Select at least one:</i> <input type="checkbox"/> Loss of life <input checked="" type="checkbox"/> Forecasting and warning capacity <input checked="" type="checkbox"/> Access to early warning <input checked="" type="checkbox"/> Use of risk information <input checked="" type="checkbox"/> Capacity to disseminate warnings <input type="checkbox"/> Capacity to prepare for and respond to warnings
Specific Action and Objectives	<p>The Actions:</p> <p>The purpose of this CREWS proposal is to enhance the flood monitoring, forecasting, and early warning capabilities of the Government of The Gambia by leveraging the planned outputs from the \$246 million World Bank West Africa Coastal Areas Resilience Investment Project (WACA ResIP 2-P175525). The proposed activities build on the needs identified in the National Disaster Risk Management Strategy Plan and policy developed through the project¹.</p> <p>The main objective of the grant is to strengthen the monitoring and data capabilities, enhance the capacity of Disaster Risk Management (DRM) functions, and address the fragmented governance structure and limited capacities of the Gambian Flood Early Warning System (EWS) by:</p> <ul style="list-style-type: none"> - Improving rainfall and water level data collection within the Kotu stream basin, and designing and implementing flood risk management solutions. - Facilitating stakeholder engagement for the co-development of district-level multi-hazard contingency plans. - Enhancing local disaster management structures with goals of stakeholder involvement, participatory planning, capacity building, and promoting gender-inclusive strategies.
Need and Rationale	<p>In the past years, there has been inadequate hydro-meteorological monitoring in the Gambia. This lack of high-quality data and historical records has emerged during the recent flood risk assessment studies, including the World Bank's assessment in 2021 for the Greater Banjul Area, which informed the ongoing WACA ResIP2 project. However, recent activities related to these projects have started to collect and generate flood risk information and knowledge, despite the limited data initially available. This newfound data can meet broader needs and assist in capacity development for ongoing disaster risk</p>

¹ National Disaster Management Agency. *National Disaster Management Strategy Plan: 2024-2032 and Medium Term Plan for Implementation of the Policy for the First Five Years of the Policy Period: 2024-2027*. Republic of The Gambia, April 2024

management initiatives.

Building upon these efforts, attempts have been made to develop contingency plans, beginning at the community level and extending to district, regional, and national levels. This commendable initiative requires refinement and continuity to ensure the existence and readiness of contingency plans for swift implementation during a disaster especially in the Greater Banjul area.

These activities aim to reduce flood risk in The Gambia, especially in low-income areas of the Kotu Stream basin, where flooding is common and severe. Currently, there is limited Early Warning (EW) capacity, relying mainly on weather forecasts and seasonal extreme weather bulletins. While these raise awareness and prompt low-cost preparatory measures, they lack the accuracy and reliability needed for actionable warnings and more expensive actions like evacuation.

The activities will create a baseline knowledge and favorable conditions which will be transferred and scaled up by the World Bank funded WACA ResIP 2 in The Gambia.

The project components align well with the activities proposed by the MECCNAR, with a few suggestions below to fine-tune them, including the following specific activities:

- **Component 1** - Assess the status of the national early warning system (EWS) and develop a road map and investment plan to build an effective EWS in Greater Banjul Areas (GBA) including upgrading infrastructure for improved forecast and dissemination, training, and improved coordination mechanisms. Whilst the effort from other hydro-met initiatives is currently focused on improving the National monitoring capacity (eg. UNESCO funded project), there is little focus on developing any monitoring or forecasting capacity within the main urban center of The Gambia, where the vast majority of flood risk within the country is concentrated. A recent study² carried out by the World Bank estimated that in The Gambia the current AAD (Annual Average Damages) due to flooding (from all sources) is approximately \$21.6 million, rising to \$28.6 million in the year 2040, and \$40.9 million by the year 2070. The single most flood prone area within The Gambia and contributing most to the overall flood damage figures is the Kotu Stream basin, with an estimated current AAD of \$4.2 million.
- **Component 2** – This component will support the improvement of the monitoring of rainfall, stream flow, and coastal parameters such as tide levels and wave climate. It will do so by developing a strategic monitoring network plan, which focuses on modernizing and sustainably expanding networks and data management. This plan will prioritize compatibility with local agency capacities while also considering user requirements for a broader spectrum of hydro-meteorological data and information needs. This component is dedicated to supporting strategic planning for hydro-meteorological activities, particularly in urban flood monitoring and forecasting through notably procuring and installing hydro-meteorological equipment. The initiative will offer technical and institutional support, including potential funding and knowledge sharing through the WACA ResIP 2. The initiative will follow the example of the so called “kick-start” approach being implemented in Sierra Leone under

² Flood and Coastal Risk Assessment and Priority Investment Planning for Greater Banjul, The World Bank, January 2021 (Royal Haskoning DHV)

	<p>CREWS. By coordinating efforts, sharing resources, and aligning with related activities, the impact of these activities in supporting Early warning systems can be maximized. The component will also focus on improving monitoring for rainfall, stream flow, and coastal parameters, developing a strategic network plan to modernize and expand data management systems while addressing user requirements.</p> <ul style="list-style-type: none"> • Component 3 – This component will help enhancing flood forecasting, early warning, and response capabilities by utilizing detailed flood risk assessment data from WACA ResIP 2. Specifically focusing on the Kotu stream basin within Greater Banjul, it will support the development of flood risk models based on local rainfall and water level measurements and real-time monitoring. Activities will also support the co-development of district-level multi-hazard contingency plans. These plans aim to strengthen disaster management structures, particularly at the local level, and improve preparedness and response capabilities in vulnerable communities. The current WACA ResIP 2, which started in May 2023, is actively engaged in sophisticated analysis and studies aimed at developing substantial flood and coastal risk data and knowledge. These efforts encompass the creation of numerical models and physical process simulations, not only enhancing the understanding of risks but also furnishing a comprehensive suite of information and tools to bolster flood Early Warning systems. Additionally, there's a focus on crafting district-level multi-hazard contingency plans, designed to fortify disaster management structures, particularly at the grassroots level. These plans seek to enhance preparedness and response capabilities within vulnerable communities. Achieving these goals necessitates parallel thinking and the seamless integration of actions, ensuring that synergies are maximized across the spectrum of studies being undertaken.
<p>Alignment</p>	<p>The Government of The Gambia has addressed climate change as a cross-cutting issue in its National Development Plan (NDP) 2018 – 2021 (extended until 2022) and updated in the Recovery-Focused National Development Plan (RF-NDP) 2023-2027 launched in 2024, including the promotion of environmental sustainability, climate resilient communities and appropriate land use as one of seven “critical enablers” that will facilitate the achievement of the nation's strategic priorities. The Government has also recognized that current early warning services are constrained by the weak technical capabilities and capacity of the hydromet service providers in The Gambia. The need for establishing an effective EWS is highlighted in The Gambia strategic documents including among others: the National Climate Change Policy (2016), the National Early Warning Strategy (2021-2026), The Gambia National Framework for Climate Services (NFCS-GAM).</p> <p>The intention of this proposed CREWS Grant will be to support the Government of The Gambia and help maximize the short-term benefits of hydro-met improvements whilst improving their long-term sustainability, improving resilience of the country, focusing on the main source of flood risk in The Gambia, and provide a coordination role leveraging the World Bank funded WACA ResIP 2.</p> <p>The ongoing WACA ResIP 2 is an investment project focused on enhancing the Gambian national flood risk management and strategy. It specifically aims to develop detailed feasibility and designs for flood risk management interventions within the Kotu stream basin, the primary source of flood risk in the Greater Banjul Area (GBA). This project</p>

	primarily emphasizes nature-based physical solutions, including greening riverside areas and implementing Sustainable Urban Drainage Systems as part of drainage enhancements to improve the safety of the Kotu Stream and its basin.
Timeframe	12 Months
Action Cost (To be completed by Implementing Partner)	\$247,500
Attachments	<i>[Country Endorsement Letter or similar³ if submission by Implementing Partner]</i> <i>[Detailed Activity List to be provided by Implementing Partner]</i> <i>[Detailed Budget to be provided by Implementing Partner]</i>

³ This can include existing Letters or Frameworks in place between the Implementing Partner and Partner Country or Countries in the event that the scope of engagement includes the specific early warning system Action being requested. For Regional Action requests, the Endorsement Letter or similar existing Letter or Framework can originate from relevant regional institutions.

Annex 2: Detailed Activity List

Task	1	2	3	4	5	6	7	8	9	10	11	12
Component 1: Assessment of the multi-risk EWS development												
Assessment of the EWS system in place	x	x										
Technical guidelines to provide a roadmap and investment plan			x	x	x	x						
Capacity building			x	x	x	x						
Component 2: Support the development and sustainability of monitoring of rainfall, steam flow and coastal parameters												
Development of rainfall monitoring system					x	x	x					
Development of stream flow monitoring system						x	x	x				
Development of coastal parameters monitoring system, including tide levels and wave climate							x	x	x			
Component 3: Develop more effective flood forecasting, early warning and response capabilities												
Development of a more effective flood forecasting, early warning and response capabilities										x	x	x
Design/development and integration of ICT systems for data management, processing, forecasting, warning and event management.										x	x	x

Attachment 3: Detailed estimated budget

Activity	Amount in US\$
Component 1: Assessment of the multi-risk EWS development	
Assessment of the EWS system in place	25,000
Technical guidelines to provide a roadmap and investment plan	45,000
Capacity building	20,000
Component 2: Support the development and sustainability of monitoring of rainfall, steam flow and coastal parameters	
Development of rainfall monitoring system	30,000
Development of stream flow monitoring system	30,000
Development of coastal parameters monitoring system, including tide levels and wave climate	30,000
Component 3: Develop more effective flood forecasting, early warning and response capabilities	
Development of a more effective flood forecasting, early warning and response capabilities	20,000
Design/development and integration of ICT systems for data management, processing, forecasting, warning and event management.	25,000
Total Components 1, 2 and 3	225,000
IP fee	22,500
Total grant amount request	247,500