

Annex 1 – Template for CREWS Action Presentation Note

Action Title	Strengthening Heat Early Warning Systems and Cross-sectoral Heat Governance
Country(ies)	Senegal
Partner Country Entity / Entities	<p><i>Principal:</i></p> <ul style="list-style-type: none"> ▫ Ministère de l’Environnement, et de la Transition écologique ▫ Direction de la Protection Civile (DPC) - Ministère de l’Intérieur ▫ Agence Nationale de l’Aviation Civile et de la Météorologie (ANACIM) ▫ Ministère de l’Énergie, du Pétrole et des Mines ▫ Ministère de la Santé et de l’Action Sociale <p><i>Others to be determined:</i></p> <ul style="list-style-type: none"> - Ministère de l’Urbanisme, des Collectivités territoriales et de l’Aménagement des Territoires - Ministère de l’Urbanisme, du Logement et de l’Hygiène publique - Ministère de l’Agriculture, de la Souveraineté Alimentaire et de l’Élevage - Ministère de l’Eau et de l’Assainissement - Ministère des Infrastructures, des Transports terrestres et aériens
Implementing Partner (if submission by Implementing Partner)	<p>UN Office for Disaster Risk Reduction (UNDRR)</p> <p>World Meteorological Organization (WMO)</p>
Implementing Partner Requested (if submission by Partner Country)	<p><i>Select at least 1:</i></p> <p><input type="checkbox"/> World Bank/GFDRR</p> <p><input checked="" type="checkbox"/> WMO</p> <p><input checked="" type="checkbox"/> UNDRR (reporting entity)</p> <p><input type="checkbox"/> No preference</p> <p><i>[Please note that the requested Implementing Partner is not guaranteed; the Secretariat will review the nature of the Action and determine the most appropriate Implementing Partner, and the Implementing Partner will also need to confirm interest and availability to proceed with the Action Presentation Note in partnership with the Partner Country]</i></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> <p><input checked="" type="checkbox"/> Support to Project Preparation</p>
Early Warning System Element(s) Supported	<p><i>Select at least 1:</i></p> <p><input 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> <p><i>[Optional: provide additional information as relevant]</i></p> <p>In addition to supporting heat early warning, this project will support the development of foundations for integrated heat governance, addressing needs for coordinated risk policy and planning for extreme heat, and enabling decision-support and leadership structures.</p>
Contributions to CREWS Programming	<p>CREWS Programming Principles addressed:</p> <p><i>Select all relevant:</i></p> <p><input checked="" type="checkbox"/> People-centered</p>

Principles and Results Framework	<input checked="" type="checkbox"/> Gender-responsive <input checked="" type="checkbox"/> Promotes Coherence <input checked="" type="checkbox"/> Leverage CREWS Results Framework Outputs to which the Action is expected to contribute to: <i>Select at least one:</i> <input checked="" type="checkbox"/> A country and/or region has developed or strengthened legislative and/or institutional frameworks to support and sustain multi-hazard early warning systems. <input checked="" type="checkbox"/> Multi-hazard needs, gaps and priority assessments, analyses, and related investment plans for early warning systems in a country or region are driven by CREWS financing. <input checked="" type="checkbox"/> Partnerships and cooperation frameworks developed for financing and scaling up support to multi-hazard early warning systems. <input type="checkbox"/> Risk information and tools generated by countries to enable the delivery of impact-based early warnings. <input type="checkbox"/> Monitoring, analysis and forecasting of hazards that threaten the country/region are improved and sustained by the countries. <input type="checkbox"/> Warnings are communicated by the countries based on common alerting protocols under agreed standard operational procedures (SOPs) <input type="checkbox"/> Warnings are received, understood and acted upon based on co-produced preparedness and response plans by the countries. <input type="checkbox"/> People of different backgrounds, gender, youth, older persons, people with disability, poor, marginalized, displaced and non-native, as well as related institutions have co-produced climate and weather information products tailored to their needs. <input type="checkbox"/> Private sector is engaged to foster innovation and sustainability in delivery of early warning services. CREWS Programme Indicators to which the Action is expected to contribute to: <i>Select at least one:</i> <input type="checkbox"/> Forecasting and warning capacity <input checked="" type="checkbox"/> Use of risk information <input type="checkbox"/> Capacity to disseminate warnings. <input checked="" type="checkbox"/> Capacity to prepare for and respond to warnings. <i>[Optional: provide additional information as relevant]</i>
Specific Action and Objectives	Engagement, Scoping and Planning Goal: This project seeks to establish a baseline of Senegal's extreme heat risk governance and heat early warning capacities, align leadership, and identify priority investments, actions to strengthen institutions and protect vulnerable populations, systems and domains, and at-risk groups identifying differentiated exposure, care roles, access to services and adaptive capacity. ¹ <ul style="list-style-type: none"> ▫ Assess and identify key actions to enhance heat risk governance and early warning. ▫ Secure political sponsorship from a lead ministerial champion and core institutions to ensure sustained engagement, visibility and accountability. ▫ Strengthen the capacity of key entities and empower them to lead subsequent scale-up and generate further investment. Core Activities:

¹ Actions will consider gender-, age- and disability-related differences in extreme heat exposure, access to information, and decision-making.

	<p>1. Project set-up – co-design and Phase I planning (Month 1-2)</p> <ul style="list-style-type: none"> - Inception meeting with partner country – having identified champion entity or entities – to discuss project approach and expected outcomes, identify initial cross-sectoral composition of inter-agency extreme heat governance mechanism² and leadership entities to drive Phase I and subsequent phases. - Define strategies and plans for stakeholder engagement, leadership empowerment and strengthening cross-sectoral networks (to be rolled out throughout Months 1-12), including initial interviews. - Support State-led identification, interaction and coordination with key international partners, including relevant IFIs, MDBs, DFIs, donors and investors. - Planning of State-led convening of first national extreme heat risk governance meeting and national project launch in month 8 or 9. <p>Deliverable: Inception report drafted with agreed workplans, governance structures, and national champions identified</p> <p>2. Scoping Heat Governance and Maturity Assessment (Months 3-8)</p> <ul style="list-style-type: none"> - Support the inter-agency mechanism in identifying key actors, institutions, processes, assets and strategies across key sectors – including health, meteorology, DRR, energy, urban planning, transportation, infrastructure, labour, agriculture, environment and water. - Conduct subsequent interviews. - Rapid assessment of use of climate services in decision-making. - Scoping and appraisal of risk & vulnerability assessments to be identified with the inter-agency mechanism. - Initiate heat governance maturity assessment - structured assessment and scoring of heat governance maturity (across the five governance dimensions: recognition, leadership, response, resources, collaboration), and develop maturity curve, gaps and opportunities. - Make available the extreme heat risk management scorecard for key cities as relevant, drawing on the urban extreme heat risk management - resource package developed by the Making Cities Resilient 2030 initiative. - Review and preliminary validation of scoping review and findings. <p>Deliverable: National scoping reports drafted outlining institutional landscapes, gaps, and opportunities for strengthened governance</p> <p>3. Review of Heat Warning System (Months 3-9)</p> <ul style="list-style-type: none"> - Examine current national heat early warning systems and identify performance gaps, including impact-based thresholds and reach to vulnerable populations. - Compile a rapid inventory of existing systems for climate, health and vulnerability data information as identified with the extreme heat inter-agency mechanism as required. - Assess seasonal, and short and mid-term climate projections, and identify key vulnerable domains.
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² The mechanism to be designed, composed, convened and led by core ministries and departments of national government (with other entities as deemed appropriate by national government), to design, drive and build the foundation for integrated extreme heat governance, programming and heat risk-informed investment. Mechanism to allow consultation with representatives from *inter alia* public health, labour, social protection, energy, agriculture, urban planning, transportation, finance, housing and infrastructure, as well as women's organizations and community-based groups working with older persons, organization of persons with disabilities (OPDs).

	<ul style="list-style-type: none"> - Host meeting at first inter-agency meeting – see below. <p>Deliverable: Heat early warning data information and system assessment report drafted outlining institutional outlining opportunities for enhanced heat early warning.</p> <p>4. Scoping validation, engagement, governance assessment and simulation.</p> <p>First meeting of inter-agency extreme heat governance stakeholder workshop, and national launch (Month 8 or 9):</p> <ul style="list-style-type: none"> - Planning and preparation of the first multi-sectoral, inter-agency meeting, including preparation of State convenors and presenters and engagement of key institutions and stakeholders. - Support the Government of Senegal to convene in-person multi-sectoral, multi-stakeholder meeting. <p>A. Validation and stakeholder engagement</p> <ul style="list-style-type: none"> - Pre-validation of scoping and review findings with members of the inter-agency extreme heat governance mechanism. - Inter-agency meeting – validate findings, report back on scoping results, showcase cross-sectoral linkages (health, energy, water, labour, agriculture, housing). <p>B. Heat Governance Maturity Assessment (Months 8-9)</p> <ul style="list-style-type: none"> - Visualize results on a maturity curve, identifying strengths, weaknesses, existing gaps and opportunities for strengthening heat risk governance. - Conduct a first tabletop integrated, multisectoral coordination and response exercise (scenario-based simulations), identifying systems’ exposures and vulnerabilities, and opportunities for strengthening extreme heat risk governance and heat risk-informed investments. <p>C. Extreme heat early warning systems review</p> <ul style="list-style-type: none"> - Conduct first national meeting on strengthening extreme heat early warning systems, identifying opportunities for strengthening extreme heat early warning. <p>Deliverable: Heat governance maturity profile produced.</p> <p>Deliverable: Planning, programming and research priorities identified for Phase II planning and coordination meeting.</p> <p>Deliverable: Report of the first inter-agency heat governance mechanism drafted.</p> <p>Deliverable: Preliminary priorities for enhanced extreme heat early warning identified.</p> <p>5. Heat Governance Priorities and Phase II Planning (Months 10-12)</p> <p>Meeting of the inter-agency extreme heat working group</p> <ul style="list-style-type: none"> - Drawing on the above, Phase II planning workshop led by inter-agency group with key partners, funders and investors. - Conduct second table-top coordination and response exercise (scenario-based simulations) as required, identify agency roles and responsibilities, and agree on preliminary actions for strengthening cross-sectoral, multi-scale heat risk governance and heat risk-informed investments.
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	<ul style="list-style-type: none"> - Inter-agency group to convene international and domestic financiers and investors, bilateral and multilateral donors, IFIs/DFIs to develop action roadmaps and financing strategies for pipeline funding and multi-sectoral, multi-scalar scale-up options in Phase II. <p>Deliverable: Draft Phase II roadmap and financing strategy submitted to project counterparts for consideration and endorsement.</p>
<p>Need and Rationale</p>	<p>Rising temperatures due to climate change are exposing countries in all continents to unprecedented high temperatures. Extreme and chronic heat conditions are compounding vulnerabilities of the poor, straining fragile public health, food, water and energy systems, critically affecting economic productivity as 2.41bn workers are exposed to excessive heat, and provoking over 489,000 deaths p.a. from heat-related causes. As in many countries, the scourge of extreme and chronic heat in Senegal poses a critical threat to its development aspirations.</p> <p>Senegal is already bearing the brunt of climate change impacts (World Bank, 2024) and projections indicate rising temperatures, erratic rainfall, and climate extreme events. According to the World Bank Climate Change Knowledge Portal, temperatures are predicted to increase in Senegal between 1.05°C and 1.15°C by 2050 and up to 1.85°C to 4.5°C by 2090 (in reference to 2005, comparing SSP1-2.6 and SSP5-8.5), with greater warming projected over southern and southeastern regions. In the more intense climate change scenario, this could include up to more than two months (65 more days than in 2005) of very hot days by 2050, and more than four months by 2090 (140 more days more days than in 2005).</p> <p>Increases in temperature and drought, combined with growing water demand, are causing a long-term decline in river flow in West Africa (WMO, 2022). Current warming is already associated with yield reduction with an 11 to 18 percent drop for millet and a 6 to 15 decline percent for sorghum (Sultan, Defrance, and Izumi, 2019). Worsening environmental conditions linked to climate change are also inducing populations to move, such as pastoralists leaving dry and depleted pastures or people relocating from flooded coastal settlements. Reflecting these pressures, the National Adaptation Plan for Climate Change in Agriculture (2025) identifies the increase in temperatures and prolonged heat episodes as its major climate risks, particularly in certain agro-ecological zones, as the extreme heat may result in soil degradation, crop failure and proliferation of pests.</p> <p>However, the country still lacks a comprehensive climate governance framework to drive adaptation across sectors. The Ministry of Interior, overseeing the Directorate of Civil Protection, assumes mandates for disaster risk management. High-level coordination mechanisms for disaster response and risk management (across ministries and agencies, including at the territorial level) have been established, and ad hoc institutions have been regularly created in the aftermath of the main flooding events to coordinate flood risk management and flood response. Effective heat risk governance and early warning systems will require a whole-system approach that aligns ministries, subnational governments, and non-government actors, across short-, mid- and long-term horizons.</p> <p>Constraints persist: resources and fragmented responsibilities, low human capacity, and lack of clarity on the operational and/or hierarchical links between these different actors have created inefficiencies. Although DRM</p>

	<p>budgets have grown overall, funding remains siloed, with sectoral ministries undertaking DRM within their own envelope and funding for disaster response undertaken by reserve funds (World Bank, 2024).</p> <p>Furthermore, USAID, through NOAA and other partners, piloted heat-health early warning bulletins in Fatick in 2023 with ANACIM and the Directorate General of Public Health, where long-term support and ownership among high-level decision makers emerged as one of key lessons learned.</p> <p>Building on progress to date, this proposal seeks to address Senegal’s critical gaps in structured assessment, institutional coordination, targeted policy instruments, financing pathways, and heat early warning systems. By doing so, it will establish the foundations for stronger governance, aligned leadership, and a clear action plan to protect communities from escalating heat risks, including in addressing public health and other socio-economic impacts.</p>
Alignment	<p>This proposal is aligned with:</p> <ul style="list-style-type: none"> ▫ The latest National Adaptation Program of Action (Plan d’Action National d’Adaptation, PANA) dates back to 2006, while sectoral national adaptation plans exist – for instance, the recent national adaption plan in the agriculture sector was launched in 2025, with support from FAO, UNDP, GEF, GIZ and AFD. The sectoral adaptation plan for climate change in the agriculture sector highlights the need for improving access to climate services including early warning systems as well as enhancing risk management related to extreme events in agriculture. Importantly, it underscores strengthening governance, strategic leadership and establishment of a coordination mechanism. ▫ The Projet de Gestion des Risques et Catastrophes et d’Adaptation au Changement Climatique (GRC-ACC) and the Programme national de réduction des risques de catastrophe of the Ministry of Interior. ▫ CREWS support to enhance the quality of warning services by building capacity of the Senegal Met Service (within ANACIM), as well as progress made on the CREWS West Africa project: Seamless Operational Forecast Systems and Technical Assistance for Capacity Building - which has enhanced the climate forecasting capacity and service quality of meteorological services in the region working with AGRHYMET (CILSS), the Regional Specialized Meteorological Centre (RSMC) Dakar (ANACIM), the Global Information System Centre (GISC) Casablanca and the NMHSs. ▫ The WISER programme that strengthens the production, delivery, and use of weather and climate information services in Senegal for early warning, disaster preparedness, agriculture, health, and climate resilience. ▫ Global heat early warning efforts, including efforts spearheaded through WMO and WHO collaborations through its Climate and Health Joint Programme have focused on providing guidance and good practices to support timely alerts to at-risk populations with preventive action to reduce health impacts of heat. Heat impact warning services still require scale-up. ▫ The UN Secretary-General’s Call to Action on Extreme Heat, which urges coordinated action in four key areas: care for the vulnerable, better protection of exposed workers, boosting resilience using data and science, and limiting the global temperature rise to the Paris target of 1.5°C. The Call to Action underscored the multi-sectoral drivers and impacts of extreme heat, and called for assistance to countries and communities scaling-up prevention, reduction, preparedness and response actions to tackle extreme heat.

	<p>▫ The UN Secretary General’s Early Warnings for All (EW4All) initiative. With UNDRR and WMO as global leads for EW4All’s Risk Knowledge and Detection, Observation, Monitoring, Analysis, and Forecasting pillars, the proposal leverages their technical expertise and convening power to accelerate implementation.</p> <p>This proposal led by UNDRR and WMO entails Phase 1 of a strategic initiative to support Senegal to establish enhanced extreme heat information services and integrated risk governance capabilities to tackle extreme heat. It builds on 5 years of collaborative work of the Global Heat Health Information Network (an implementing mechanism of WHO and WMO) and synthesis work led by WMO/GHHIN and UNDRR in 2023-2024 which surfaced and assessed “what works” in good governance and planning for extreme heat. Based on broad consultations the Extreme Heat Risk Governance Framework and Toolkit was launched at COP30 in Belem in November 2025.</p> <p>The Framework and Toolkit was developed by experts from Member States, and a number of multilateral development banks, international and civil society organizations, scientific and technical organizations (including the Heat Policy Innovation Hub at Duke University).</p> <p>This proposal aims to test the toolkit and accompany countries to build capacity through a series of self-assessments and inventories, consultative processes to establish common understanding of heat risks, and coordinated approaches and plans to address these risks, and create solid co-ownership and partnerships between government entities and key stakeholders.</p> <p>This proposal forms the basis of a proposed multi-annual engagement with the government of Senegal and key partners – including selected MDBs and international partners – to establish integrated multi-sectoral and multi-scale heat governance processes. The development and systematization of such governance approaches will require aligned, additional and sustained investment and funding at scale, including additional investments in and among targeted sectors, implementing partners, actions and processes. To this end, the engagement of a number of IFIs, DFIs and bilateral funding entities in throughout the development and testing of the Framework and Toolkit has been an essential to its relevance and sustained application. Consistent with the MDB <i>Action Agenda on Financing for Climate Resilience, with a Focus on Extreme Heat</i>, support for this proposal and subsequent phases is in discussion with the African Development Bank (IDB), the European Bank for Reconstruction and Development (EBRD), the World Bank, as well as the UK Foreign and Commonwealth Office.</p> <p>This proposal is also supported by the Rockefeller Foundation through development of a Heat Governance Learning Network by the Red Cross / Red Crescent Climate Centre (RCRCCC). The RCRCCC will work with the UNDRR, WMO, the government of Senegal and project partners to foster a community of practice and facilitate learning and knowledge management to 1) facilitate cross-country peer-to-peer learning and knowledge exchange, 2) document best practices, and 3) support wider dissemination and scaling of the heat governance toolkit and promising practices.</p> <p>All activities to consider equity, inclusion, and protection of at-risk groups</p>
Timeframe	12 months
Action Cost (To be completed by	USD 250,000

Commented [RC1]: Consider the addition to make this output demonstrably inclusive

Implementing Partner)	
Attachments	Forthcoming <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.

Attachment 3: Detailed estimated budget

	Total costs			Counterpart Funding (WMO/UNDRR/ RF/RCCC)
	TOTAL	UNDRR	WMO	
Action Area 1: Project set-up – co-design and Phase I planning	51,090	42,840	8,250	
Action Area 2: Scoping heat governance	31,590	27,840	3,750	
Action Area 3: Review of heat warning system	7,000	2,250	4,750	
Action Area 4: Scoping validation, engagement, governance assessment and simulation	65,809	52,809	13,000	
Action Area 5: Heat Governance Priorities and Phase II Planning	65,750	48,416	17,333	
Total Direct Implementation	221,239	174,156	47,083	
PSC (13%)	28,761	22,640	6,121	
GRAND TOTAL	250,000	196,796	53,204	291,272

