

## TOGO Project Proposal

<b>Project Title</b>				<b>Togo Hydromet and Early Warning Services</b>				
<b>Project Reference</b>				CREWS/CProj/12/Togo				
<b>Geographic coverage</b>				Togo				
<b>LDC and/or SIDS profile</b>	Level of Disaster Risk	High	Average annual loss to disasters	AAL Flood: US\$10.94M	Access to information & communications (ICT index)	Ranked 156 <sup>th</sup> in the ITU's ICT Development index	Capacity of NMHS	Low
	Status of hydromet and EWS	Poor	Disaster loss and risk data to inform early warning	Flooding in 2010 affected 83,000 people and causes US\$38M in damages and losses	Demand/Priority	High	Leveraging potential	High from WBG and GCF
<b>Timeframe</b>				5 years				
<b>Total cost of CREWS Contribution</b>				<b>US\$ 2,365,000</b>				
<b>Lead Implementing Partner (World Bank)</b>				<i>[The Lead Implementing Partner is identified by the CREWS Steering Committee]</i>				
				Allocation requested for execution by Government			Only in kind	
				Allocation requested for execution by Partner			US\$ 1,150,000	
				Fees of Implementing Partner			115,000	
				Total			USD 1,265,000	
<b>Additional Implementing Partner (WMO)</b>				<i>[Implementing Partners receiving funds for the project]</i>				
				Allocation requested for execution by Partner			US\$ 973,000	
				Fees of Implementing Partner			US\$ 127,000	
				Total			USD 1,100,000	
<b>Other Partners</b>				<i>[Other partners involved in the project implementation and/or contributing funds]</i>				
				Financial Contribution				
				Form of Contribution				
<b>Project Recipient/Beneficiary</b>				DGMM, DRE, ANPC				
				Form of Contribution			In kind	
<b>Total Project Amount</b>				<i>US\$2,365,000</i>				
<b>Main objective(s)</b>	<p><b>To support the strengthening of national capacity to deliver climate, hydrometeorological and early warning services in selected sectors and communities.</b></p> <p>CREWS resources will contribute to improvement of the Government of Togo's early warning services for drought, flooding and other severe climate and weather events by enhancing the capacities of national services in charge of: i) meteorology and climate; ii) hydrology; iii) civil protection.</p> <p>CREWS resources will support provision of scientific and technical expertise as well as capacity</p>							

	<p>development among stakeholders and communities involved in early warning (national services, population in areas prone to floods and agricultural drought, etc.). CREWS activities in Togo will help ensuring that early warnings reach those who are most vulnerable in selected pilot areas, with a focus on community engagement and gender inclusion.</p> <p>Finally, the CREWS project will act as a vehicle for capital mobilization in the sector, creating favourable baseline conditions, knowledge and pilot activities which could be transferred and scaled up by larger-scale investments. CREWS funding is intended to leverage additional investments in the sector, primary by the WBG and the Green Climate Fund but also from other development partners part of the Africa Hydromet Program.</p>				
<p><b>Initial state of play - project rationale</b></p>	<table border="1"> <tr> <td data-bbox="402 510 587 1541"> <p>a. Vulnerability, exposure to risks, disasters impacts (on people and economy)</p> </td> <td data-bbox="587 510 1382 1541"> <p>Togo is frequently affected by a range of hydro-meteorological and climatological disasters, notably floods and droughts (including poor distribution of rains, late rains). Between 1925 and 2018, Togo endured more than 60 flood events that caused major damage to infrastructure, as well as significant loss of life. The successive flooding has leached essential nutrients from topsoils, accelerated erosion, and degraded the quality of the arable land.</p> <p>Drought events occur most frequently in the northern, especially in the Kara and Savannah regions, where each year temperatures reach above 40°C. Over the past 70 years, Togo has experienced three major droughts (between 1942-1943, 1976-1977, and 1982-1983) and less acute but notable drought events, leading to severe famines. In terms of the total number of people affected, flood and droughts are the most severe hazards (600,000 and 550,000 respectively from 1970 according to EM-DATA) with floods being causing the highest number of fatalities.</p> <p>Projected increases in the intensity and frequency of flood events will continue to cause severe economic distress in Togo. Investments in ex-ante measures in the agriculture to avoid food shortages and transportation as well as the infrastructure sector will be necessary to build resilience to floods. Developing a drought risk reduction framework and the development of early warning and communication systems is also vital to building coping capacity at the local, regional and nation levels.</p> <p>Highly vulnerable to climate variations, Togo’s agriculture sector constitutes 43% of gross domestic product and is the mainstay of most Togolese livelihoods. Agriculture will remain the mainstay of economic growth for the foreseeable future, with staple crops being yams, cassava, corn, millet, sorghum, cocoa, coffee, rice, and cotton. If recent trends continue, future agricultural supplies will not be enough to meet demands and reduce poverty. According to a recent World Food Programme survey, 71.1% of Togolese are vulnerable to food insecurity. This is a result of low agricultural capacities and high reliance on increasingly erratic weather conditions. Floods inundate fertile land, kill livestock, destroy standing crops, and reduce or eliminate yields. Climate change is projected to bring about a shift of seasons accompanied by a reduction of humid periods, a rise in evapotranspiration, and drying of soils.</p> </td> </tr> <tr> <td data-bbox="402 1541 587 2020"> <p>b. Status of the EWS, DRM agencies and NHMSs, actors / players present</p> </td> <td data-bbox="587 1541 1382 2020"> <p>Today, the country does not issue any official severe weather warnings. Flood forecasting is currently being conducted in a pilot stage for the Oti River (FEWS Oti), for the Mono River (FUNES) and at the community level early warning. More can be done, which leaves enormous potential for diminishing the loss of lives, livelihoods and assets. Similarly, seasonal forecasts and planting and harvesting advisories could be significantly improved to enhance the productivity of farmers.</p> <p>Togo’s providers for climate, weather and water services are the Directorate General for National Meteorology (DGMN) and the Directorate for Water Resources (DRE). DGNM is responsible among others (i) to manage the national weather observation network, (ii) to provide information and weather services and promote their use in the various socio-economic sectors, (iii) to participate in weather and climate research related to its mission and (iv) to follow and implement international guidelines in the field of meteorology and climate.</p> </td> </tr> </table>	<p>a. Vulnerability, exposure to risks, disasters impacts (on people and economy)</p>	<p>Togo is frequently affected by a range of hydro-meteorological and climatological disasters, notably floods and droughts (including poor distribution of rains, late rains). Between 1925 and 2018, Togo endured more than 60 flood events that caused major damage to infrastructure, as well as significant loss of life. 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	<p>DRE has the mandate (i) to develop national policies, directives and standards related to water resources and their implementation, (ii) to manage national hydrometric and piezometric networks as well as the Integrated Water Resources Information System, (iii) to promote and ensure the implementation of the integrated water resources management (IWRM), (iv) to develop regional and international cooperation for sustainable water resources management among others.</p> <p>Moreover, in 2017, the government established the National Civil Protection Agency (ANPC) in order to improve the coordination and management of disaster risk reduction activities by putting all relevant agencies and stakeholders “under one roof”. This agency has initiated a number of activities within the framework of resilience. These activities includes the training of DRE staffs in GIS and water resources management, the updating of the National Contingency Plan, the development of the Emergency Response Preparation Plan and the identification of disaster risks in Togo. With support of the WB, ANPC has organized a simulation exercise of a flood disaster in the Mono basin. This exercise brought together all the actors of the national platform for disaster risk management. Moreover, ECOWAS supported ANPC to organize for national actors involved in disaster management, training workshop on the identification of post-disaster needs. In addition, the Togolese Red Cross (CRT) has supported several community led early warning activities and collaborate closely with other institutions.</p>
<p>c. Projects and programs dealing with EWS and hydromet under implementation or preparation</p>	<p>Several technical assistance activities have been rolled out in support of flood management and early warning systems. These include the Strengthening Flood Management downstream Nangbeto Dam on the Mono river using a forecast model (FUNES), and the Volta Basin project which supports a trans-border early warning system for the Oti River in Ghana and Togo (FEWS-Oti). These technical assistances highlighted the need for more engagement for modernizing Togo’s early warning services.</p> <p>In October 2018, the Adaptation Fund Board approved the “Benin, Burkina Faso, Cote d’Ivoire, Ghana, Mali, Togo: Integrating Flood and Drought Management and Early Warning for Climate Change Adaptation in the Volta Basin” 4-years project led by WMO and starting from 2019. The project will develop systematic approaches to enhance flood and drought monitoring, forecasting and warning. The West Africa Coastal Area program - WACA Res-IP, financed by the World Bank, is supporting the country on coastal protection against erosion and flooding, which will develop early warning services for erosion and storm surge. The Togo Infrastructure and Urban Development Project financed by the World Bank, improves access to infrastructures and basic urban services in selected cities of Togo. CREWS will inform the inclusion of soft services, like urban flood EWS to enhance urban resilience in selected cities.</p> <p>Based on the CERC of the WACA and PIDU projects, the World Bank is currently supporting Togo in the development of its Immediate Response Mechanism Operational Manual. This manual will enable the Togolese authorities to mobilize 5% of the IDA resources of the country portfolio to respond to emergencies.</p> <p>On the pipeline side, the World Bank is considering a regional technical and financial engagement on hydromet modernization in West Africa which includes Togo. The investment project (IDA) will support, if approved, national institutions to sustainably enhance warning capacities, making use of CREWS technical recommendations and activities.</p>
<p>d. Describe the multiplier /leveraging potential of the CREWS investments</p>	<p>CREWS would provide access to world-class expertise in line with most recent norms, standards and technical solutions to ensure optimal use of current and pipeline investments/projects aiming at significantly increasing the capacity to generate and communicate effective, impact-based, multi-hazard, gender-informed early warnings to protect lives, livelihoods, and assets.</p> <p>Leveraging on existing and pipeline projects, CREWS resources will help building local capacity to take full advantage of system improvements financed by other</p>

		<p>initiative (e.g. World Bank financed) and have access to global best practices and state of the art approaches. The combination of technical assistance resources with investment resources increases the chances for Togo to make significant advances in the modernization of early warning services.</p> <p>Moreover, it is worth noting that many of the activities listed above contribute to develop adaptive capacities. However, none of the existing initiatives specifically targets the improvement of hydro-meteorological information and warning systems with end to end connectivity, starting from building capacity at the national level to providing end user services. The combination of this proposed project with ongoing initiatives will allow the leveraging of different resources, with CREWS focusing on use of scientific information, capacity building, community engagement and gender inclusion to reduce climate risks for both the population and productive sectors.</p> <p>In terms of potential pipeline investment, the WBG is currently in discussions with the Government of Togo on a climate resilience investment focusing on hydromet and early warning systems modernization. Hydromet and EWS are investment priorities in the Region for the World Bank, which have been lately confirmed in the Action Plan for Climate Adaptation and Resilience. The CREWS project will act as a vehicle for capital mobilization in the sector, creating favourable baseline conditions, knowledge and pilot activities which could be transferred and scaled up by larger-scale investments, not only from the WBG but also from other development partners such as the Green Climate Fund.</p>
	<p>e. Describe measure to ensure coherence with existing initiatives</p>	<p>The CREWS project will be strategically coherent and practically efficient if it is logically consistent with other existing initiatives, programs and practices. To address this requirement, the CREWS project will be implemented with the same institutions (ANPC, DGMN, DRE) that are already engaged in disaster risk reduction efforts, such as FEWS-Oti, the WMO project on the Volta Basin, the potential Hydromet modernization regional engagement in West Africa and WACA Res-IP. Since the creation of the agency in 2017, all the three main institutions involved in DRR are working closely and more efficiently. The implementation of each project components will be mainly oriented towards the reinforcement of capacities for the success and achievement of ongoing projects and programs' which are in line with national development plan. For instance, CREWS project will reinforce the capacities for the development and implementation of early warnings systems that are scheduled within Volta Basin Project and urban flood EWS activities.</p> <p>CREWS will help in EWS and the CERC initiative will help the government of Togo to respond to the disaster.</p>
<p><b>Project design</b></p>	<p>a. Project components and activities</p>	<p><b>Component A. Strengthening hydrological and meteorological services</b></p> <p>a. Provision of scientific and technical advice to the meteorological and hydrological services for feasibility studies, quality management framework (QMF), operation and maintenance support, diagnostics, training plans, identification of technical specifications for equipment and organization of services - US\$ 200,000 (WMO)</p> <p>b. Support to climate watch service for enhanced seasonal and sub-seasonal forecasting and decision support for agriculture and pastoralism at national level; service provision to smallholder producers in pilot sites in different climate areas. This task includes the development of decision support systems that integrate seasonal and sub seasonal forecasting to provide continuous and timely information for decision making on agriculture and pastoralism as well as to smallholder producers. It will also invest on the capacity building of the climate watch center in delivering the above-mentioned services - US\$ 200,000 (WMO)</p> <p>c. Support to the development of a capacity building plan and carrying out of trainings (in partnership with one of the regional or global centers, such as CILSS/AGRHYMET, EAMAC, U. of Lomé, WASCAL) focusing on (i) Climate prediction, (ii) Hazard detection, monitoring, forecasting and warning, (iii) Multi Hazard Early Warning Systems, (iv) Flood forecasting, (v) Climate data management (calibration, concentration, quality-control) from remote sensing</p>

		<p>and in-situ networks, (vi) GIS and remote sensing, (vii) operational meteorology and hydrology, refresher course for field observers - US\$ 200,000 (WMO)</p> <p>d. Support the design and carrying out of piloting products for EWS for flood and food security in a selected area. This activity will include upstream information on hydrometeorology and agrometeorology - US\$173,000 (WMO)</p> <p>e. Direct support (transfer of funds to beneficiaries through DGMN) to project beneficiaries for small equipment, missions, workshops, recruitment of a Project Manager – US\$200,000 (WMO)</p> <p>f. Undertake a capacity assessment, strategic development and business development plan (potential partial cost-recovery initiatives) for integrated hydromet service, with a specific focus on sustainability and inter-ministerial coordination. The activity will also include diagnosis of opportunities and pilot activities for public-private partnerships and introduction of innovations and low costs hydromet and early warning service equipment. It will also strengthen the institutional framework of the DGMN and support the DGMN in its conversion into a National Meteorological Agency - \$100,000 (WBG)</p> <p><b>Component B. Civil protection, emergency management, disaster risk reduction, community support and last-mile service delivery</b></p> <p>a. Support the design and carrying out of piloting products for EWS: flood and drought in selected priority area(s), in collaboration with other projects, such as the WMO Volta Basin Project and World Bank activities on urban resilience and the potential regional hydromet project in West Africa. The pilot will also include targeted activities related to advisory services to the benefits of crop producers (agrometeorology) and support to community engagement and gender for DRR (flood community mapping, awareness campaigns, gender groups, etc.). The activity will include:</p> <ul style="list-style-type: none"> <li>i) Development of hydrologic modelling for risk assessment and for informing early warning systems in selected urban areas. Proposed activities under this task will concern the development of hydrological and hydraulic models for flood simulation in selected urban areas. The developed model(s) will inform risk assessment and early warning systems for enhancing urban resilience - US\$ 250,000 (WBG)</li> <li>ii) Vulnerability and exposure mapping to flood risk in selected urban areas, including community and flood risk mapping. The activity is highly participative and aims to bring together training and awareness to flood risk in selected communities. It also aims to promote open data approaches and all data produced will be freely and widely available on the community-based platform OpenStreetMap – US\$ 150,000 (WBG)</li> <li>iii) Support to the development of multi-hazard risk assessment. Under this task, an identification of climate and disaster risks will be undertaken in selected areas to inform impact-based forecasting early warning – US\$ 150,000 (WBG)</li> <li>iv) Support to community engagement and woman groups participation in disaster risk management decision making processes. This task will support both local institutional strengthening and capacity building at community level, and support the design of usable and meaningful alerts adapted to the local context in the selected pilot area - US\$ 200,000 (WBG)</li> </ul> <p>b. Support for development of national operational procedures for multi-hazard warning (early warning for drought, food security and nutrition, rapid warning and the alert). Under this task, the development of operational procedures for early warning and rapid response will be performed. This will also include support to the design of a comprehensive set of communication</p>
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		<p>channels for effectively dissemination and communicating early warnings - US\$100,000 (WBG)</p> <p>c. Institutional support and training in contingency planning of ANPC and other civil protection stakeholders, including simulation exercises with selected communities. This task consists of the development of a training program on disaster risk reduction with emphasis on early warning, targeted public education and awareness programs for warning systems and related public actions, and the organization and implementation of frequent simulation exercises in selected areas - US\$ 200,000 (WBG)</p>
	b. Logical framework and work plan	See attachments 1, 2 and 3 below
<b>Organization and operating procedure</b>	a. Institutional framework	The CREWS financing would be implemented by the World Bank and WMO. At the national level, a National Steering Committee (NSC) will be responsible for overseeing the project implementation, including project related work programs. The NSC, chaired by a representative from the Ministry of Security and Civil Protection, will be composed of representatives from line ministries involved, inter alia, in planning, meteorology, hydrology, agriculture and environments. The NSC will function during the full project implementation period and will meet at least once a year.
	b. Monitoring and evaluation system	The continuous monitoring of the project and its achievements would be the responsibility of the World Bank with inputs from WMO and the NSC. The M&E system will be a result-based framework, conceived as a management tool, emphasizing project impacts and outcomes, as well as regular monitoring of inputs and outputs. For the purposes of transparency, part of this database will also be available from the project website to regularly share information with the public, and this information will be shared with communities by dedicated communication teams.
<b>Project viability and sustainability</b>	a. Main identified risks	The main project risks are related to the limited capacity of counterparts, both in terms of financial means and technical capacity. The project aims to increase the visibility and relevance at national level of the three agencies involved in the project, particularly DGMM and DRE, by strengthening their capacity to deliver useful services for the general public, productive sectors (agriculture) and vulnerable communities. This will be realized by focusing on a pilot area where improved early warning services will be provided. The overall goal is to showcase enhanced services that could lead to increased national budgetary allocation of the operating environment (including budgets for operation, maintenance, recruitment and training). Increased budgetary allocation will also improve the overall sustainability of hydromet and early warning systems on the longer run, after project completion. To mitigate risks the complexity of the project will be limited, focusing on capacity building and targeted EWS products. The project will draw on lessons learnt from several other projects in the region with similar objectives (Mali, Niger, DRC, Burkina Faso) and draw as much as possible from experience and structure of existing projects in Togo. The project will collaborate and coordinate with active projects to avoid duplication and overlap and capitalize on experiences of closed projects.
	b. Critical assumptions	The project was prepared under the assumption that support to some basic services will be provided at a national level (seasonal and daily forecasting, ten-day agro-meteorological reports, etc.). Support to more specialized services (such as flood forecasting systems, personalized agro-meteorological information services, warning reports to anticipate impacts, etc.) will be provided to selected zones to be identified based on the following criteria: (i) presence of specific hydro-meteorological natural hazards; (ii) exposure of populations and critical infrastructures (urban zones, roadblocks, irrigation, transport, hospitals, schools, etc.); and (iii) presence of other projects, which would allow for an optimal utilization of hydro-meteorological services (notably towards crop producers, livestock herders, fishermen, hydropower generators, aviation and other transport related sectors, extractive industries, local government, micro-insurance and urban planners).

		CREWS will support technical assistance and training for identified gaps in knowledge and practices related to the project's objectives.
	c. Judgment on the project sustainability	<p>The investment is institutionally sustainable, economically viable, and technically feasible and has string social, environmental and economic co-benefits. Although financial sustainability is always a challenge in hydromet and early warning projects in Africa, because of limited technical and financial capacity of NHMS, the project will leverage on the on-going efforts in the country for inter-ministerial collaboration in the areas of emergency preparedness and response (DGMN and ANPC were recently created). The project, through financial resources and technical assistance, will benefit the strengthening of the institutional framework and create a full sense of ownership at national level.</p> <p>The CREWS initiative in Togo will sustain institutional capacities through the transfer of knowledge and skills. The project will support capacity-building activities at national as well as local institutions in order to facilitate project ownership.</p> <p>Technical sustainability will be achieved by building mechanisms to reinforce capacity at national level through training and deliver specific services in selected areas and communities.</p> <p>The estimated value of damage and some economic losses of one flood event in 2009 was about US\$45 million (PDNA 2009). The project will help mitigate the impact of future natural disasters and increase Togo's overall resilience.</p> <p>Because of knowledge transfer and institutional support, the expected benefits of improved hydromet and DRM capacity and social accountability are likely to be large in terms of meeting local needs, improved governance and coordination efficiencies.</p>





**Togo Hydromet and Early Warning Services  
Contribution to CREWS Programming Framework**

Result Level	Indicators	Baseline	Target
To significantly increase the capacity to generate and communicate effective impact-based multi-hazards early warning systems and risk information to protect lives, livelihoods, and assets in LDCs and SIDS (SFDRR Target G)	# of people covered by multi-hazard early warning system, disaggregated by gender (subset of proposed SFDRR Indicator G-3)	0	TBD based on pilot area
Increased accuracy and timeliness of weather forecasts and early warning	# of countries demonstrating increased accuracy and timeliness of weather forecasts and early warning	0	1
National and local agencies provide better early warning and respond more effectively when hazards occur	# of countries with improved institutional capacity in the use of disaster risk information for early warning and contingency planning	0	1
Improvement of NMHSs' service delivery	average increase in WMO Service Delivery Progress Model (SDPM) level across CREWS countries	0	1
Assessment of institutional capacities of NMHSs, user needs, on-going and planned programs, and socioeconomic benefits of hydromet services and early warning	# of national capacity assessments	0	4
Production of hazard and risk information of exposed populations and assets	# of national risk assessments	0	1
Development of long-term service delivery strategies and development plans for NMHSs	# of NMHS service delivery strategies and development plans  % of new NMHS service delivery strategies and development plans that include specific gender provisions	0	2
Development of preparedness and response plans with operational procedures for early warning dissemination	# of national plans developed  % of new national plans that include specific gender provisions	0	1
Design and implementation of targeted education and public awareness campaigns	# of people reached, disaggregated by gender	0	10,000
Travel (of clients for training, study	# of people trained abroad,	0	10

tours, etc.)	disaggregated by gender		
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**Togo Hydromet and Early Warning Services**  
**Logical framework with indicators**

Indicator	Means of Verification (MoV)	Baseline	Target	
			Mid-term (if applicable)	Final
Operational procedures and MoUs supporting early warning	Project reports reflecting the existence of new or updated procedures, their availability, and their operational implementation	0	1 (meteo)	3 (meteo, hydro, civil protection)
Direct project beneficiaries (number), of which female (percentage)	Estimates in project reports	0	TBD based on pilot area	TBD based on pilot area
Number of professionals having participated in trainings	Tracking from participation sheets in project reports	0	30	60
National capacity assessments for EWS	Updated report finalized reflected in the project reports	1	2	2
Increased satisfaction of selected sectors and communities in pilot area(s) with improved services in flood and drought EWS	For sectors: Regular consultations with key stakeholder For Communities: (1) Public surveys conforming with WMO methodologies, disaggregated where possible for gender and vulnerable groups. (2) Direct feedback from users through DNPC	0	30%	50%
Number of climate-related hazards for which warning or monitoring forecast bulletins are operationally produced with sufficient lead-time for preparedness and early response	Verification of the existence of operational procedures and their implementation.	0	1 (flooding)	3 (drought, flooding, and severe weather)
Number of user groups having expressed their needs and developed a resulting action plan to address them	Annual report reflecting the needs of user groups	0	1 (civil protection)	3 (among civil protection, municipalities, agriculture aeronautic transportation, hydropower)