

CREWS Project Presentation Note to the Steering Committee

1	Project Title	Mali Hydrological and Meteorological Services Modernization Project	
2	Project Reference	CREWS/CProj/02/Mali	
3	Geographic coverage	Country Project	
4	Timeframe	4 years, July 2017 – June 2021	
5	Total cost of CREWS contribution	US\$3,333,000	
6	Implementing Partner	World Bank/GFDRR	
		a. Allocation Requested for Execution by Government	US\$0
		b. Allocation Requested for Execution by Partner	US\$2,775,000 (TBC)
		c. Fees of Implementing Partner:	US\$308,000
		d. Total:	US\$3,083,000
7	Additional Implementing Partners	WMO	
		a. Allocation Requested for Execution by Partner	US\$217,500
		b. Fees of Additional Implementing Partner:	US\$32,500
		c. Total:	US\$250,000
8	Other Partners	Green Climate Fund (GCF)	
		Financial Contribution	US\$22,750,000
		Form of Contribution	Grant
		International Development Association (IDA)	
		Financial Contribution	US\$8,150,000
		Form of Contribution	Credit
9	Project Recipient/Beneficiary	Government of Mali	
		Financial Contribution	US\$2,000,000
10	Total Project Amount	US\$34,233,00	
11	Main objective	<p>CREWS resources will support the objectives of a bigger GCF operation therefore the objectives are aligned: To improve the country's hydro-meteorological, early warning and response systems and services in targeted areas:</p> <ul style="list-style-type: none"> – Enhanced hydro-meteorological observing, monitoring and impact forecasting services – Enhanced food security early warning system – Establish a flood early warning services – Enhanced civil protection response capacities 	
12	Initial state of play - project rationale		
	a. Vulnerability, exposure to risks, disasters impacts (on people and economy)	Mali is highly exposed to drought and flooding, and vulnerable to climate variability and change. Physical vulnerability is exacerbated by demographic, socioeconomic and environmental factors, which include (i) dependence on rain-fed agriculture or pasture land for nearly 80% of the population, (ii) a	

		<p>high rate of poverty and inequality, with inappropriate technical and financial capacities of governments and communities; (iii) settlement in floodplains due to demographic pressure and migration towards urban areas where 50% of the economic activities and assets are concentrated, in conjunction with weak urban and land use planning; and (iv) environmental degradation and soil deterioration.</p> <p>More than 7 million Malians were directly affected by drought and flood events in the last 3 decades. Annual economic damage and loss impact are calculated at approximately US\$140 million. Two thirds of Mali's land area is classified as desert or semi-desert, and the country is one of the most drought-prone in the world. There is high variability in annual rainfall ranges, and consecutive low rainfall / dry years have become increasingly frequent. The main flood-prone areas are urban and along the Inner Niger Delta (64,000 sq km). Thus, early warning for flood events is critical for protecting both the lives and livelihoods of the inhabitants.</p>
	<p>b. Status of the EWS, DRM agencies and NHMSs, actors / players present</p>	<p>Mali Météo, the National Directorate for Water Resources (DNH), the General Directorate for Civil Protection (DGPC) and the Food Security Early Warning System (SAP) are the key agencies responsible for weather and climate services including early warning and disaster risk management in Mali.</p> <p>Food security and nutrition monitoring and early warning is carried out by the Early Warning System (SAP), under the Office of the President. SAP is responsible for the continuous monitoring of the food production and availability situation, determining areas at risk, and identifying vulnerable populations. SAP coordinates information obtained from over 20 members of its network, including regional agencies, international organizations and NGOs.</p> <p>The DGPC is a part of the Ministry of Security and Civil Protection, and is the coordinating body for disaster risk reduction, including emergency preparedness, response and longer-term prevention activities. The DGPC's primary mission is to develop action plans under the National Civil Protection Policy and to ensure its implementation, while also ensuring inter-ministerial coordination for mainstreaming disaster risk reduction and climate change adaptation among sector-specific and crosscutting activities.</p> <p>Mali Météo is an autonomous agency under the Ministry of Equipment and Transport. It has the mandate to provide reliable and timely weather and climate information as well as appropriate services to public and private users from various socio-economic sectors. Mali-Météo experiences the precarious financial and staffing situation of the Agency, as well as the obsolescence of the network of meteorological and agro-climatological stations, leading to inadequate services to the weather-dependent sectors and communities.</p> <p>The National Directorate for Water Resources (DNH) is part of the Ministry of Energy and Water (MEE) and is responsible for water resource management and regulation in Mali. DNH's responsibilities include inventory and evaluation of potential water resources development within the framework of the National Plan; oversight of studies for, and supervision of, the construction of hydraulic works and their subsequent proper operation and management; evaluation of development projects in the water sector; and participation in sub-regional bodies and initiatives to manage water resources.</p>
	<p>c. Projects and programs dealing with EWS and hydromet under implementation or preparation</p>	<p>In Mali, there are a number of ongoing projects and programs addressing various aspects of climate and disaster risks that will be capitalized by the proposed Project. Major ongoing projects are described below:</p> <ol style="list-style-type: none"> 1. The EU is currently supporting the establishment of a regional system for food security monitoring (ECO-AGRIS) hosted by the Permanent Interstate Committee for Drought Control in the Sahel (CILSS, €18

million); as well as the MESA program for monitoring environment and security in Africa, with a budget of €37 million for the African continent. Since 2011, the EU has also been supporting the reform of National Food Security (NDS) system in Mali, guided by diagnostic work that was finalized in January 2014.

2. USAID is: i) supporting an institutional strengthening project for Mali Météo, aimed at providing sustainable financing for the newly formed autonomous public entity, ii) providing technical assistance to improve climate data, including the establishment of rainfall estimates over the entire country through a combination of station data and satellite estimates (in partnership with the International Research Institute for Climate and Society,(IRI), and iii) supporting the development of a decision making tool for farmers using agro-meteorological information, in conjunction with Mali Météo and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT).
3. Through a GEF funded project (US\$9,000,000), UNDP will be supporting disaster prevention and preparedness for major risks (mainly floods) across seven municipalities (three in Bamako, two in Mopti and two in Kayes). In addition, with funding of about €1.3 million from the ASNaCC project, UNDP will be supporting the installation of meteorological stations with Mali Météo.
4. With approximately €1.5 million per year over five years, GIZ will be providing technical assistance to support the implementation of the National Strategy on Climate Change (ASNaCC) and the Innovative Project Planning for Adaptation to Climate Change (PICP). This will include supporting: i) the NAP process: ii) mainstreaming risk considerations into environmental and social impacts assessments, sectoral development planning and with the private sector, and iii) the implementation of the Mali Climate Fund.
5. WMO is providing technical expertise to develop a national framework for climate services in Mali to better understand the needs of different user groups (under the umbrella of the Global Framework for Climate Services – GFCS initiative); and supports the hydrological service (DNH) through the Niger Basin Authority since 2005.
6. For nearly 10 years, and until October 2015, the French Development Agency (Afd) has provided funding to the Integrated Water Resource Management 2 (IWRM 2) project, with the objective to support the Niger Basin Authority (NBA) with hydrological data collection, analysis and modeling to monitor water resources along the Niger River.
7. The French Civil Security provides training for Malian civil protection officers (first aid, road rescue, fire prevention, operational management and emergency command) through the project Support to Civil Protection in Africa (APCA).
8. With funding from the Mali Fund for Korean Green Growth (KGGTF) managed by the World Bank, IRD piloting an innovative method for the estimation of rainfall based on cellular networks (Rain Cell Africa), which will support develop of public-private partnerships between Mali-Météo and Orange cellphone operator. In addition, IRD has worked on estimates of water resource problems in small basins, rainfall-runoff modeling and the impact of human activities on soil and changing hydrological regimes

The AfDB supports (i) since 2014, the establishment of a regional water observatory, the Water Resources Coordination Unit of the Economic Community of West African States (ECOWAS), and (ii) the Institutional Support Project to the African Climate Institutions (ISACIP), for USD 30 million, to strengthen the capacity of African Climate Institutions to generate climate information and to allow their wide dissemination to end users.

	<p>d. Positioning of CREWS support: complementarity and synergies with the existing programs</p>	<p>The Government of Mali recognizes the importance of addressing climate and disaster risks for strengthening the country’s economic growth and poverty reduction in a meaningful manner. The Strategic Framework for Growth and Poverty Reduction (CSCR 2012-2017), adopted by the Council of Ministers of Mali on 28 December 2011, is the reference document for the formulation and implementation of economic and social policies. The framework specifically identifies flood and drought hazards and the resulting food insecurity as significant barriers to addressing poverty reduction in the country. Mainstreaming climate change adaptation also has a prominent place throughout the framework. Following the political and security crisis of 2012-2013, the CSCR was supplemented by the Plan for the Sustainable Recovery of Mali (PRED 2013-2014) and the Government Action Plan (PAG 2013-2018). As part of its goal to strengthen economic growth in the country, one of the stated measures of the PAG is to develop and implement a plan to reduce the risk of flood and other natural hazards.</p> <p>It is therefore critical that donors act in a coordinated manner, in order to maximize opportunities and synergize activities. For this purpose, consultations have been held with several donor partners throughout the development of the Project. It is worth noting that many of the activities listed in the box above contribute to develop adaptive capacities, however none of the existing initiatives specifically target 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 initiative by UNDP will target preparedness at the municipal level and will rely upon this proposed Project for provision of forecast and warnings. It will be important for donors to coordinate throughout the project cycle so that stations are installed in areas where there is the most need and value added to provide required information for warning systems essential to reduce the vulnerability of communities. While not specifically targeting hydro-met services, other adaptation initiatives such as the EU’s policy reform of the National Food Security, USAID’s institutional strengthening project, and GIZ’s technical assistance to support climate risk mainstreaming will all help to improve the baseline conditions and readiness for agencies to successfully implement the Project. The combination of this proposed project with ongoing initiatives will allow the use of scientific information to reduce climate risks to both the population and productive sectors.</p>
<p>13</p>	<p>Project design</p>	
	<p>a. Project Outputs (<i>Bold italic items represent activities with contribution of CREWS financing</i>)</p>	<p>Component A. Institutional Strengthening, Capacity Building and Implementation Support Component A will invest in strengthening institutional setup and building capacity of human resources. This includes: <i>i) reinforcing the legal and regulatory framework of Mali Météo and DNH in order to develop partnerships and Standard Operating Procedures (SOPs) for delivery of services; ii) strengthening of the Quality Management Systems to raise standards and quality control/verification procedures across the target institutions; iii) implement a long-term and on-demand capacity development and training program for staff of Mali Météo, DNH, SAP and DGPC.</i></p> <p>Component B (not supported under the CREWS funding). Modernization of observation infrastructure and forecasting. Component B will finance: i) hydrological and meteorological monitoring networks at Mali-Météo and DNH (small-scale rehabilitation of priority stations and installation of new sensors); ii) transmission, data management and data dissemination hardware at Mali Météo and DNH; iii) refurbishment of facilities needed to support the services at Mali Météo and DNH; iv) technical systems and software for performing meteorological, hydrological and climate modelling and forecasting at Mali Météo and DNH; v) creation of an Emergency</p>

		<p>Operations Centre (COVACC) at DGPC; and vi) modernize the Food Security Early Warning Infrastructure (buildings and equipment) at SAP.</p> <p>Component C. Enhancement of Service Delivery to End-Users will provide technical assistance for delivery of more accurate, timely and user-friendly products and services to decision-makers and end-users. The component will specifically address <i>(i) defining of requirements and developing feedback mechanisms with different user groups (in line with the National Framework for Climate Services); and (ii) development of customized products and services made available to user groups through dedicated interfaces.</i> Priority target end-users are those involved in (a) agro-meteorological information services, (b) food security; and (c) civil protection emergency and contingency plans. This component will target beneficiaries with a gender-disaggregated approach. Within this context, the delivery of information will use combination of media (radios, TV, newspapers), Internet, cellphone and smartphones to reach users according to their needs. The success of this service delivery component will be dependent upon the extension support the users of hydro-meteorological information will receive from collateral sources in developing capacities for converting information/ forecast/ warning into action/ decisions at the right time and level in select zones. This component will promote the reliability and relevance of Mali-Météo and DNH to the public and decision makers, potentially leading to new sources of budget support and/or revenues in future.</p> <p>Component D. Project management will include support for all four entities for project coordination, monitoring and evaluation, reporting, financial management, procurement and environmental and social safeguards, technical and financial audits, development of project implementation manuals, and communication materials.</p>
	b. Implementing time frame	See Attachment 1
	c. Contribution to CREWS Programming Framework	<p>The Activity will contribute to the following outcomes of the CREWS Programming Framework:</p> <p>1.1 Assessments of institutional capacities of NMHSs, user needs, on-going and planned programs and socio-economic benefits of hydromet services and early warning systems.</p> <p>1.4 Long-term development plans for NMHSs, including the need for system interoperability at the national and regional levels.</p> <p>1.6 Preparedness and response plans with operational procedures for effective early warning dissemination, readiness to act with regular simulation exercises.</p> <p>1.7 Targeted education and public awareness programs available for warning systems and related public action.</p>
	d. Logical framework with indicators	See Attachment 2
14	Organization and operating procedure	
	a. Institutional framework	<p>The CREWS financing would be implemented by the World Bank (US\$3,083,000) and WMO (US\$250,000). At the national level, the DGPC acts as the chair of the National Platform for Disaster Risk Reduction, which brings together relevant government and non-governmental actors that play a role in disaster risk management in the country. This platform will be used as a consultative body throughout the design and implementation of the Project to ensure that the needs of both the central Government, the Municipalities and civil society users are taken into account. The platform also includes a formal inter-ministerial coordination body, chaired by the Prime Minister and consisting of ministers across all relevant ministries, which can also be used to ensure enhanced inter-governmental coordination</p>

		and information sharing.
	b. Monitoring and evaluation system	The continuous monitoring of the project and its achievements would be the responsibility of the World Bank and developed together with the national platform. 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.
15	Project viability and sustainability	
	a. Main identified risks	<p>The overall risk for the proposed operation is rated as substantial with regards to risks anticipated during implementation as well as with regards to sustainability of the hydromet services on a longer term. The overall substantial risk will be mitigated through robust project management and implementation support, long-term capacity building activities, policy and institutional framework strengthening and integration, focus on quality standards and project planning, strengthening financial planning and management and balancing investments with consideration to long-term, optimal use.</p> <p>The ratings for risks associated with political and governance, and are assessed as substantial.</p> <p>The country political and governance context remains complex with the ongoing conflict in the North. However, this will not affect the project significantly, as very few stations will be needed in the North. Simple meteorological data for the North could be obtained through alternative sources such as remote sensing calibrated with historical datasets. The risk of conflict and vandalism also poses a threat to the sustainability of project outputs and outcomes. Tight security procedures will therefore require to be put in place to ensure the safety and security of project staff and equipment during implementation and beyond.</p> <p>Risks related to (i) macroeconomic; (ii) sector strategies; and policies (iii) stakeholders, (iv) technical design, (v) environmental and social and (vi) fiduciary risks are assessed as moderate.</p> <p>Macroeconomic. A satisfactory macroeconomic environment can be expected over the duration of the project, however fluctuations are likely and could have impacts on imports of goods and services.</p> <p>Sector strategies and policies. The institutional relationship and collaboration between ministries will require to be improved to ensure optimal use of hydromet products and services across sectors to realize all benefits. This is expected to be supported under component A.</p> <p>Stakeholders. One of the main goal of the project is to deliver customized services to end-users and stakeholders, which will require new expertise for marketing in Mali Météo and DNH. This is expected to be supported through training and capacity building in component A.</p> <p>The technical design of the project is a Bank-executed technical assistance which will integrate the systems and services of four government entities who have respective roles in project implementation. Robust implementation support will ensure full delivery of customized services to end-users in selected sectors and zones through coordinated implementation of project components by respective implementing partners.</p> <p>Environmental and social. The project will have limited, if any, environmental or social impacts, and is expected to be Category B.</p>

		<p>Impacts would primarily be associated with (i) the installation and rehabilitation of observation equipment, (ii) any required establishment of access road or paths to these observation stations, and (iii) low social and environmental safeguards management and implementation experience and capacity of Mali Météo and DNH.</p> <p>Fiduciary. Directorate General for Civil Protection has experience with implementing Bank grants. It is expected that fiduciary risks can be mitigated by hiring support and training services during implementation. Procedures for administration and finance will be detailed in the Project Implementation Manual.</p>
	b. Critical assumptions	<p>The project was prepared under the assumption that some basic services will be provided at a national level (seasonal and daily forecasting, ten-day agro-meteorological reports, etc.). 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 investment 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).</p>
	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. The full modernization of the national hydromet services require substantial investments, in the order of US\$30-45 million, and would potentially lead to a cost-benefit ratio in the order of 1:10 as observed in large hydromet modernization projects. Larger projects enable provision of customized services to a greater number of end users, resulting in additional benefits at marginal costs (building upon basic observing, monitoring and forecasting capacities). This operation is designed under a programmatic approach covering all the crucial aspects of hydromet modernization and the integration of hydromet services with other service delivery units of the government, as well as with regional and global centers. In this manner, the project aims to develop the key elements in a manner to ensure sustainability of the project development objectives beyond the project cycle. While priority needs within the national services responsible for hydrology, meteorology and early warning were clearly greater than available resources, sustainability considerations including allocation of adequate O&M funds and ability to recruit and retain qualified workforce are the main factors which determined the total amount and composition of the project.</p>

Mali Hydrological and Meteorological Services Modernization Project – Timeline for implementation

TASK	2017		2018				2019				2020				2021	
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
<i>Component 1</i>																
Capacity building and institutional development																
<i>(i) Training and capacity building programs for agencies' staff and management</i>	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
<i>(ii) Enhancing institutional and regulatory frameworks</i>		X	X	X	X	X	X	X	X	X						
<i>(iii) Providing support for system integration of project activities</i>		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Component 2</i>																
Improvement of hydromet and early warning infrastructure																
<i>(i) Expanding and upgrading hydromet observation networks</i>				X	X	X	X	X	X	X	X	X	X			
<i>(ii) Enhancing data collection & transmission, forecasting and decision support systems</i>				X	X	X	X	X	X	X	X	X	X	X	X	X
<i>(iii) Strengthening preparedness and emergency response facilities and operations</i>						X	X	X	X	X	X	X	X			
<i>Component 3</i>																
Enhancement of service delivery and warnings to communities																
<i>(i) Establishing a national framework for climate services</i>			X	X	X	X	X	X	X	X	X	X	X			
<i>(ii) Improving flood and drought forecasting and warnings</i>			X	X	X	X	X	X	X	X	X	X	X	X	X	
<i>(iii) Developing new products for sector specific needs</i>					X	X	X	X	X	X	X	X	X	X	X	
<i>(iv) Strengthening "last mile" connectivity to ensure appropriate understanding and use of information</i>			X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>(v) Mobilization and sensitization of communities at risk</i>				X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Component D</i>																
Project Management	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Mali Hydrological and Meteorological Services Modernization Project
Concise Logical framework with results and impacts indicators (in line with GCF M&E framework)

Expected Result	Indicator	Means of Verification (MoV)	Baseline	Target	
				Mid-term (if applicable)	Final
M5.0 Strengthened institutional and regulatory systems	5.1: Institutional and regulatory systems that improve incentives for climate resilience and their effective implementation	Assessment from DRR National Platform	Regulatory documents are inadequate or insufficient		Regulatory documents are adequate or sufficient
A6.0 Increased generation and use of climate information in decision-making	6.1 Use of climate information products/services in decision-making in climate-sensitive sectors	Scorecards from MMA and DNH	0	1 public sector services (food security, or civil protection)	2 public sector services (food security, and civil protection)
	6.2 Perception of men, women, vulnerable populations, and emergency response agencies of the timeliness, content and reach of early warning systems	Surveys by DGPC and SAP, with consideration for poorest and most climate-sensitive user groups	TBD		Baseline + 20%
A7.0 Strengthened adaptive capacity and reduced exposure to climate risks	7.1 Use by vulnerable households, communities, businesses and public-sector services of Fund-supported tools, instruments, strategies and activities to respond to climate change and variability	Estimate from Mali-Météo	0	0.5 million farmers	2 million farmers, households, communities, businesses and public-sector services
	7.2: Number of males and females reached by [or total geographic coverage of] climate-related early warning systems and other risk reduction measures established/ strengthened	Aggregate from DGPC and SAP	1 million males 1 million females	1.5 million males 1.5 million females	2.6 million males 2.7 million females
A8.0 Strengthened awareness of climate threats and risk-reduction processes	8.1: Number of males and females made aware of climate threats and related appropriate responses	Aggregate from Mali-Météo, DNH, SAP and DGPC	1 million males 1 million females	1.5 million males 1.5 million females	2.6 million males 2.7 million females
Project outputs					
1. Enhanced hydro-meteorological observing, monitoring, and impact forecasting services	End users' combined satisfaction rate and behavior change in relation with improved hydromet information services	Survey with user groups under National Framework for Climate Services	Baseline	Baseline * 1.1	Baseline * 1.5
2. Enhanced food security early warning	Number of well-equipped agro-meteorological stations	Agro-meteorological advisory program	0	0	14
3. New flood early warning services	Number of urban municipalities covered with flood early warning system	DGPC	0	0	15
4. Enhanced civil protection response capacities	Number of Municipal Civil Protection Committees with capacities to use the customized flood early warning interface and engage in early preparedness and response activities	DGPC	0	0	10