Draft: HAITI Project Proposal

<table>
<tr><td>Project Title</td><td colspan="8">Support for the Hydrometeorological Unit of Haiti (UHM) for sustainable operability and the implementation of a relevant and efficient hydrometeorological warning system</td></tr>
<tr><td>Project Reference</td><td colspan="8">CREWS/CProj/13/Haïti</td></tr>
<tr><td>Geographical Area Covered</td><td colspan="8">Haïti</td></tr>
<tr><td rowspan="2">Profile of LDCs[1] and/or SIDS[2]</td><td>Level of Disaster Risk</td><td>Very high</td><td>Average annual loss due to disasters</td><td>2% of GDP between 1975 - 2012
15% of GDP 2008
120% in 2010 [3]
32% in 2016[4]</td><td>Access to Information and Communications (ICT Index)</td><td>Ranked 168th in the ICT Development Index[5]</td><td>NMHS capacity</td><td>Low</td></tr>
<tr><td>Hydromet and EWS statutes</td><td>Low</td><td>Disaster loss and risk data to inform early warning</td><td>Not available</td><td>Demand / Priority</td><td>High</td><td>Leverage potential</td><td>High</td></tr>
<tr><td>Runtime</td><td colspan="8">3 years</td></tr>
<tr><td>Total cost of CREWS contribution</td><td colspan="8">US$ 1,500,000</td></tr>
<tr><td rowspan="5">Main Implementing Partner</td><td colspan="8">World Meteorological Organisation</td></tr>
<tr><td colspan="6">a. Allocation requested for implementation by the Government</td><td colspan="2">US$ 0</td></tr>
<tr><td colspan="6">b. Allocation requested for implementation by the partner</td><td colspan="2">US$ 1,327,434</td></tr>
<tr><td colspan="6">c. Implementing partner fee</td><td colspan="2">US$ 172,566</td></tr>
<tr><td colspan="6">d. Total</td><td colspan="2">US$ 1,500,000</td></tr>
<tr><td>Other partner</td><td colspan="8">[Other partners involved in the implementation of the project and / or provision of funds]</td></tr>
<tr><td>Project Recipient / beneficiary</td><td colspan="8">Ministry of Agriculture, Natural Resources and Rural Development (MARNDR) / Hydrometeorological Unit of Haiti (UHM), Directorate of Civil Protection (DPC), National Coordination of Food Security (CNSA)</td></tr>
<tr><td>Total amount for the project</td><td colspan="8">US$ 1,500,000</td></tr>
<tr><td>Main objectives</td><td colspan="8">To improve the capacity of UHM to develop and deliver co-produced multi-hazard alerts, as well as to strengthen its cooperation with key ministries, priority sectors and communities that will increase the effectiveness of Haiti's early warning system.

This will be done through improving the technical capacities of UHM to better calibrate and integrate systems for flood warning; improve the numerical weather prediction use and forecasts and to have an overall quality management system. These areas will be supported by the existence of a more robust</td></tr>
</table>

[1] Least developed countries

[2] Small Island Developing State

[3] Post-Disaster needs assessment report for Cyclone Mathieu, https://www.undp.org/content/dam/haiti/docs/Prevention%20des%20crises/UNDP-HT-PrevCri-EvaluationBesoinPostCatastropheCycloneMathieu-PDNA-31012017-SM.pdf

[4] Mr Vincent Degert, Ambassador of the European Union in Haiti, in his speech on behalf of the partners at the launch ceremony of the Post Cyclone Mathieu PDNA

[5] http://www.itu.int/net4/ITU-D/idi/2017/

	governance framework that will be reflected in a National Strategic Plan for UHM that is currently being developed under the Canada ECCC's Haiti project. This framework is expected to outline the specific service delivery areas of UHM, how it will work with its national and sectoral stakeholders and the nature of support that will be available for its sustained functioning. There will also be the refining of its delivery of services to targeted stakeholders identified within this initiative to assist in accessing forecasts, interpreting and translating into evidence-based actions that will seek to minimize impact.	
Initial situation; Project justification	a. Vulnerability, risk exposure, disaster impacts (on people and the economy)	Haiti has the highest exposure to multiple hazards in the Caribbean. The country is situated on the western third of the island of Hispaniola and regularly experiences a high prevalence of disasters including earthquakes, cyclones, floods, droughts, which are worsened by climate change. The impact has also been further aggravated by deforestation that has left the urban and rural areas where the poorest segment of the population live exposed to landslides following heavy rainfall. Between 1900 and 2016, more than one hundred disasters affected the country[6]. Each successive disaster takes a toll on the Haitian economy and further hinders its sustainable development. More specifically: • *Exposure to hydro-meteorological phenomena (tropical storms, cyclones, etc.)* More than 98% of the population is at risk of at least two of the following disasters: earthquakes, hurricanes, landslides, floods and droughts[7]. Global warming contributes to increased frequency and intensity of extreme weather events that cause disasters. • *Demographic factors (rapid and uncontrolled urbanisation)* 40% of the population is located in the cities. This massive rural migration has led to rapid urbanisation. Hence, there is a high population density in agglomerations in low-lying areas and floodplains (risk zone). 30% of the population lives in extreme poverty and 58% in poverty. The lack of an urbanisation plan, sanitation policy and relocation strategy led to the irrational use of space and the degradation of the environment. • *Economic factors* Classified among the least developed countries and small island developing states, Haiti faces serious fiscal problems and has insufficient public infrastructure[8]. With economic growth stagnating between 0 and 2%, the Haitian economy covers only 50% of its food needs and is mainly commercial, with a very important informal sector[9]. The country is financially very dependent on external support; official development assistance represents about 9% of its GDP. • *Political factors* The lack of political stability makes it difficult to sustain development and resilience projects implemented with the support of donors (development partners). • *Low capacity of institutions in charge of risk management*

6 https://www.unisdr.org/files/54921_annex03documentpayshaiti.pdf

7 ibid.

8 http://web.worldbank.org/archive/website01539/WEB/IMAGES/GFDRR_HA.PDF

9 Federal Department of Foreign Affairs, "Swiss Cooperation Strategy in Haiti 2018-2021"

		In addition to the low level of preparation across the country for responding to the risks associated with the advent of extreme and seasonal weather events, risk management institutions usually suffer from: - insufficient capacity (human, financial, logistical and equipment resources); - lack of multi-sectoral coordination mechanism; - weak connection between early warning and rapid response; - lack of interconnection between the different early sectoral early warning systems; etc. • *Social and educational factors* The capacity for solidarity and recovery of the Haitian population is very often hindered by the lack of risk management culture, which needs to be institutionalised. There is a need to use existing risk knowledge to inform and educate the population to change behaviours to build and reinforce resilience.
	b. Status of the EWS, Disaster Risk Management Agency, NMHSs, actors present	Following the 2010 catastrophic 7.0 Mw earthquake Haiti had more than 230,000 deaths, 1.5 million people displaced and significant damage to most of its critical infrastructure. Of the destroyed infrastructure was the Haitian National Meteorological Centre (CNM). In a country so vulnerable to extreme weather and climate events, there was an urgent need to restore forecasting capabilities in order to reduce the vulnerability of the Haitian population. Six months after the earthquake and just before the June to November hurricane season a website (www.meteo-haiti.gouv.ht) was established to disseminate information and warnings to United Nations agencies, non-governmental organizations (NGOs), disaster affected communities and the media. The re-establishment of the meteorological services in Haiti resulted in a short period and from strong collaboration between WMO Members including Canada, Cuba, the Dominican Republic, France (MeteoFrance from its office in Martinique), Japan, the United Kingdom and the United States of America. Additionally, WMO partnered with Environment and Climate Change Canada (ECCC) to develop the project "Climate Services to Reduce Vulnerability in Haiti." This initiative started in 2012 and has greatly modernised the hydrometeorological services by provision of a new headquarters, training programme for forecasters that continues , and the installation of technical equipment such as forecaster workstations, Internet, communications and related technology. This project is implemented in close coordination with a World Bank project, which aims to further strengthen the hydrometeorological services of Haiti. Around 2015 Haiti undertook structural reforms to unify its meteorological and hydrological services bringing together CNM and SNRE to create UHM which is under the Ministry of Agriculture, Natural Resources and Rural Development. UHM has a staffing complement of about 56 personnel including a director, five forecasters, 10 observers, one communication officer, five climatologists/hydrologists, a computer scientist and a maintenance technician, all supported by administrative staff provided by its line Ministry. UHM together with the majority of agencies involved in the early warning value chain are part of the Thematic Committee of the Early Warning System (EWS) which is working on the finalisation of the

		national multi-risk EWS manual with financing from the World Bank (WB) and support from consultants. All these institutions which include the Directorate of Civil Protection (DPC) are limited in their activities due to inadequate funding, equipment, skills and human resources but have been benefiting from development partners like the World Bank that was mentioned previously, among others. UHM is still confronted with a number of institutional and structural challenges but now has the basic capacities for observing, monitoring and forecasting. UHM issues hydro-meteorological alerts in agreement with the Permanent Secretariat for Risk and Disaster Management (SPGRD). The UHM also issues the watch and warning bulletins to the Civil Protection Directorate (DPC). The DPC is within the SPGRD, which disseminates and manages the alerts and the response in the field. The *Groupe d'appui à la coopération internationale* (CAMI) supports the national, departmental and municipal emergency operations Centres. These centres are decentralised structures of the DPC. Other services currently provided by UHM include: - regular bulletins (weather and sea conditions) twice a day for the media and the WEB, along with other users - Aeronautical assistance for the two airports (Port au Prince and Cap Haitien. FIR surveillance service to be implemented soon. - Simplified processing of some climatological data and supplies to certain institutions (agriculture, food security). - Data rescue in progress with the help of students entering the data. Apart from these services provided there is still the challenge of the lack of structured procedures such as difficulty of real-time monitoring once the alert is issued[10] and the lack of tools to effectively communicate to reach the population, in particular, vulnerable groups and remote and isolated populations.
	a. Projects and programmes dealing with EWS and hydromet under implementation or preparation	The resources being requested from CREWS will directly enhance the capabilities and sustainability of UHM as well as the Directorate of Civil Protection for disseminating alerts based on potential impacts. The priority areas and key activities identified and expanded on later in the proposal builds on the achievements of on-going projects funded by Canada ECCC and being those being implemented by the World Bank Group, the World Food Programme, the United States Agency for International Development, the Inter-American Development Bank among others. - Canada ECCC-funded USD 6.5 million project provided a fully equipped building; basic systems for operational activities and training in the main areas for service delivery (Civil Protection, Assistance to aviation, marine meteorology, basic climatology and hydrology. There is more training planned for 2020 along with the development of UHM National Strategic Plan; - WB USD 5 million financed Hydromet project which plans to equip 12 rivers with automatic stations as well as provide appropriate trainings for personnel;

[10] Insufficient national coverage for the rivers. No flow measurement of watercourses, no water level gauges, gauging, water level control, etc. The WB Hydromet project plans to equip 12 rivers with automatic stations as well as appropriate training.

		- Coastal Inundation and Flood Forecasting Demonstration Project (CIFDP), which allows Haiti to receive reliable and accessible storm forecasts provided by the WMO Miami-based Regional Specialty Meteorological Centre (RSMC); - USAID funded Flash Flood Forecasting System (FFGS) project that helps improve early warning capabilities in the event of floods and the Severe Weather Forecasting Demonstration Project (SWFDP[11]) to help improve the forecasting system using products and data from WMO global and regional centres. Activities are planned for execution in 2020; - The Financing Based Forecasting Project financed by the World Food Program (WFP) with the support of the Cuban weather forecast which aims to set up an operational weather forecast plan; and - World Bank financed projects currently under implementation at the DPC include the Reconstruction and Disaster Risk Management Project, Risk Management and Resilience Project on Climatic Hazards and the Municipal Development and Urban Resilience project. - World bank led USD 5.5 million CREWS Caribbean regional project where Haiti as a CARICOM member state will benefit from inclusion in the regional strategy and capacity building activities planned by WMO under Component Two. The proposed project will serve as a catalyst to strengthen resilience in the agriculture sector, which employs about 60% of the active population and accounts for 20.35% of Gross Domestic Product, against risks and hazards[12].
	b. Describe the potential multiplier / optimisation of CREWS investments.	The design of this initiative is built on the established results produced by the previous initiatives, some of which are still being actively implemented. Several consultations and sharing of information have been held to ensure that key experts and expert institutions (National Weather Service of the United States, Meteo-France and INSMET of Cuba, as well as WMO Regional training centres in Barbados and Costa Rica) assisting in various aspects of the projects are aware of what is being done and what is being pipelined. Synergies are being encouraged and facilitated. All of these consultations have involved the director of UHM and key local partners. There is also the deepening of strategic partnerships locally that will increase the visibility and value of UHM to policy makers. Emphasis is being placed on the agriculture sector given its critical role in the economic landscape and increase in products and services by UHM to the sector stakeholders will support the need for increased investments. In this area, Chemonics Foundation Haiti has a project designed to increase forest cover and sustainable arboriculture in northern Haiti. Chemonics Foundation Haiti is the legal representative of Chemonics International Inc with the beneficiary being USAID Reforestation Project. As part of this project there will be a Memorandum of Understanding with the Centre National de L'Information Geo-Spatiale (CNIGS) and UHM to expand the national network of weather stations, particularly in the North East Department where institutions do not have real-time data transmission. At the end of the project, the stations will become the property of UHM which will provide greater confidence for investment in continuing the strengthening of capacities and

[11] Severe Weather Forecasting Demonstration Project

[12] In FOA in Haiti: http://www.fao.org/haiti/fao-en-haiti/le-pays-en-un-coup-doeil/fr/

		maintenance of equipment. CREWS support will build on already installed equipment and technical systems and training already received by UHM staff, focusing on continued operations of UHM, increase capacity of staff to produce and deliver co-produces products and services to key sectors and support UHM in the development and implementation of a pilot project for the benefit of farmers. The project through its collaboration with DPC will work with targeted communities and civil society to build their capabilities to understand and use weather and climate information provided to safeguard lives and livelihoods. The combination of CREWS supports as well as current and future investments in the sector will increase the probability of a sustainable UHM and allow Haiti to make progress in the provision of hydro-meteorological services.
	e. Describe the measure to ensure consistency with existing initiatives	The project National Steering Committee is composed of international and national stakeholders that are leading current projects mentioned above in Section D. The development of this proposal has also been done in consultation with the same institutions. An effort has been made, which will continue, to systematically coordinate with relevant institutions and avoid duplication of effort. WMO recognises the limited availability of external funding and the need to maximize impact on the ground. This can only be achieved by integrating contributions from the different institutions and stakeholders. Stakeholders will be engaged through regular consultations at national, departmental and community levels. Furthermore, Météo France, WB and the Regional Specialized Meteorological Center (RSMC) – Miami, Hurricane Center / National Hurricane Center are all key partners of the WMO network long-standing cooperation mechanisms.
Project design	a. Project components and activities	The CREWS project will help improve the management and operational capabilities of UHM to enable a more robust coordination with stronger technical and operational capabilities related to forecasting delivery to support warning. It will support multiple levels of hydro-meteorological and warning services, with different coordination requirements. The project will help improve the management and operability of the UHM to strengthen forecasting, early warning and decision support capabilities for a timely and relevant response. Thus, the expectations and needs of the DPC and other response actors vis-à-vis UHM needs to be taken into consideration depending on the season and tailored to different hydro-meteorological risks. **Component 1: Enhanced UHM to deliver high quality services to Civil Protection and other stakeholders.** Output 1.1: UHM institutional arrangements strengthened Broad activities: 1.1.1 Host high level finalization and validation workshop of the National Strategic Plan 1.1.2 Organize joint meetings for National Strategic Plan implementation 1.1.3 Develop and implement a QMS including protocols with users and partners 1.1.4 Conduct training on QMS Output 1.2. Technical capacities of UHM to provide forecast and warnings improved Broad activities: 1.2.1 Conduct technical workshops 1.2.2 Improve calibration and integration of systems for flood warning

		1.2.3 Develop & implement certification process 1.2.4 Develop verification mechanisms to improve Numerical Weather Prediction (NWP) use and forecasts 1.2.5 Conduct training of UHM Staff and Volunteers Observers on the maintenance of meteorological station 1.2.6 Implement a robust, secure and integrated system for production and dissemination of forecast and warning (Common Alerting Protocol) 1.2.7 Develop multi-support access to warning products and services (strengthen capacities for video production and warnings) **Component 2: Established/Improved hydrometeorological warning system** Output 2.1: National Coordination mechanism strengthened Broad activities: 2.1.1 Conduct consultations to identify priority user needs 2.1.2 Develop or revise Standard Operating Procedures for EWS 2.1.3 Develop or revise SOPs for UHM outlining methodology and calibration of thresholds based on impacts of past events of severe weather 2.1.4 Conduct national exercise Output 2.2: Early Warning Services developed and accessible for the agriculture sector Broad activities: 2.2.1 Conduct consultations with agriculture sector to identify priority needs 2.2.2 Develop gender-responsive plan and Standard Operating Procedures (clearly outlining what products and services will be made available and the necessary actions) 2.2.3 Establish database of farmers 2.2.4 Develop and validate products and services for farmers **Component 3: Enhanced preparedness and response capacities at national and community levels** Output 3.1 Preparedness and Response plans strengthened and accessible Broad activities: 3.1.1 Identify and conduct risk assessment of pilot community 3.1.2 Review and strengthen preparedness and response plans and SOPs at national and community level 3.1.3 Conduct exercise on dissemination and communication of alerts at community level 3.1.4 Develop gender-responsive public awareness on key hazards Identified good practices from other CREWS agro-meteorological projects would be leveraged.
	b. Logical framework and implementation timeline (work plan)	Annex 1, 2 and 3 (will be revised further)
Organisation and procedures	a. Institutional framework	WMO will lead the implementation of the project, in coordination with the National Steering Committee (NSC), which will be responsible for overseeing the implementation of the project. The NSC will be chaired by a representative of the Ministry of Agriculture, Natural Resources and Rural Development (MARNDR). The NSC will be made up of representatives of ministries involved in early warning, planning, finance, and local communities.

		The NSC will meet at least once a year or on an as needed basis. The role of the NSC will be to monitor and ensure that project activities are moving on-time and within budget.
	b. Monitoring and evaluation system	Day to day monitoring of the project and its outputs will be the responsibility of WMO (with input from partners). The Monitoring & Evaluation will be based on a results-based evaluation framework, developed by WMO[13].
Viability and sustainability of the project	a. Main risks identified	In addition to the risk of disasters caused by natural hazards, which may temporarily interrupt the implementation of the project and cause delays in implementation, the high risks of the project are related to: **Political risk: Changes at Ministerial Level.** The constant changes at the ministerial level could slow down the implementation and may challenge the project's sustainability. To mitigate this risk, it is important to ensure the national ownership of the project by involving various stakeholders at different levels at all stages of project implementation as well as keeping the Ministry informed of project progress and recognizing its important role in project sustainability. **Institutional risk: Project objectives not directly aligned with Government priorities.** Given that the priorities of relevant ministries may not always be directly aligned with those of the project, it is desirable to establish a Memorandum of Understanding between WMO and MARNDR with clearly defined roles and responsibilities. **Security risk:** Increased periods of insecurity are recurrent in Haiti and can: (1) have a significant impact on the pace, capacity and quality of work; (2) delay the timing of implementation of activities.
	b. Critical Hypotheses	The project was prepared on the premise that basic technical systems and equipment were installed at the UHM level, but are underutilised. Strengthening of managerial staff capacities, calibration of existing hydrometeorological infrastructure, development of standard operating procedures, common alerting protocol and establishment of a communication platform are expected to improve the quality of services provided, in particular early warnings, which are the most sought after services for UHM.
	c. Assessment of the sustainability of the project	The weak national capacity for generating and disseminating alerts is exacerbated by the lack of real-time monitoring of alerts issued, insufficient financial resources, limited human resources and technical equipment of relevant national institutions that comprise the EWS value chain. The project will support efforts initiated through targeted capacity building of institutions (UHM, CPD, farmers' organisation, etc.) to support inter-sectoral coordination through close collaboration with development partners in the field (WB, AFD, EU, USAID, etc.). Development partners working in the country will integrate efforts and collaborate to convince the Haiti government of the value added of early warnings in support of sustainable development in the country, with a view to securing national commitment to provide the necessary conditions to enable UHM to perform their mandate. WMO is also actively engaging a local with the necessary expertise and knowledge of the institutional arrangements with UHM and its partners to provide support and help strengthen existing relationships. Further, Haiti remains a priority country for WMO and programmes to support further development of UHM are integrated into its core business.

[13] https://www.wmo.int/pages/about/monitoring_evaluation_en.html

Annex 1: Support for the Hydrometeorological Unit of Haiti (UHM) for sustainable operability and the implementation of a relevant and efficient hydrometeorological warning system							
Concise logical framework with results and indicators (to be revised within the first year of implementation)							
	Narrative	**Indicator**	**Means of Verification**	**Baseline**	**Target**		
					YR1	YR2	YR3
Outcome 1	Enhanced UHM to deliver high quality services to Civil Protection and other stakeholders	% increase in satisfaction with UHM services by targeted stakeholders	User survey & report	TBD	+10%	+10%	+10%
Output 1.1	UHM Institutional arrangements strengthened	Development of NSP Existence of QMS	Endorsed National Strategic Plan Documentation of QMS or Certification	0 TBD	0 TBD	1 TBD	0 TBD
Output 1.2	UMH technical capacities to provide forecast and warnings improved	No of staff trained No of end users trained to use specific products	Training records Training records	TBD TBD			
Outcome 2	Improved hydrometeorological warning system	% of participants demonstrating an increase in knowledge of MHEWS arrangements by end of project	Pre & post surveys for baseline and end line statuses	TBD			
Output 2.1	National Coordination Mechanism Strengthened	Development of Concept of Operations for UHM	Documentation of CONOPS for UHM	TBD			
Output 2.2	Early warning services developed and accessible for the agriculture sector	Development of Standard Operating Procedures	Standard Operating Procedures developed and available	0	0	1	0
Outcome 3	Enhanced preparedness & response capacities at national and	% of participants demonstrating an increase in knowledge of response capabilities	Pre & post surveys for baseline and end line statuses	0	+%10	+%20	+%50

Annex 1: Support for the Hydrometeorological Unit of Haiti (UHM) for sustainable operability and the implementation of a relevant and efficient hydrometeorological warning system							
Concise logical framework with results and indicators (to be revised within the first year of implementation)							
	community levels	(roles & responsibilities)					
Output 3.1	Preparedness & Response plans strengthened and accessible	No of national institutions with preparedness & response plans No of communities with Response Plans & SOPs	Revised national preparedness and response plan Community Plan & SOPs accessible	TBD TBD			

Annex 2: Support for the Hydrometeorological Unit of Haiti (UHM) for sustainable operability and the implementation of a relevant and efficient hydrometeorological warning system – Timeline for Implementation (to be revised within first year of implementation)

Components	FY2020				FY2021				FY2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Outcome 1 Enhanced UHM to deliver high quality services to Civil Protection and other stakeholders												
1.1 UHM Institutional arrangements strengthened		X	X	X	X	X	X	X	X	X	X	X
1.1.1 Host high level finalization and validation workshop of the National Strategic Plan	X											
1.1.2 Organize joint meetings for National Strategic Plan implementation			X	X	X							
1.1.3 Develop and implement a QMS including protocols with users and				X	X	X						
1.1.4 Conduct training on QMS					X	X						
1.2 UMH technical capacities to provide forecast & warnings improved		X	X	X	X	X	X	X	X	X	X	X
1.2.1 Conduct technical workshops		X	X	X	X	X	X	X	X	X	X	X
1.2.2 Improve calibration and integration of systems for flood warning			X	X	X	X	X					
1.2.3 Develop & implement certification process					X	X	X	X	X	X	X	
1.2.4 Develop verification mechanisms to improve Numerical Weather Prediction (NWP) use and forecasts				X	X	X	X	X	X			
1.2.5 Conduct training of UHM Staff and Volunteers Observers on the maintenance of		X	X	X	X	X	X	X	X	X	X	X

Components	FY2020				FY2021				FY2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
meteorological station												
1.2.6 Implement a robust, secure and integrated system for production and dissemination of forecast and warning			X	X	X	X	X	X	X	X	X	X
1.2.7 Develop multi-support access to warning products and services (strengthen capacities for video production and warnings)				X	X	X	X	X	X	X		
Outcome 2 Established/Improved hydro meteorological warning system												
2.1: National Coordination mechanism strengthened				X	X	X	X	X	X	X	X	X
2.1.1 Conduct consultations to identify priority user needs					X	X						
2.1.2 Develop or revise Standard Operating Procedures for EWS (DPC)						X	X	X	X	X	X	
2.1.3 Develop or revise SOPs for UHM outlining methodology and calibration of thresholds based on impacts of past events of severe weather						X	X	X	X	X	X	
2.1.4 Conduct national exercise									X	X	X	X
2.2: Early Warning Services developed and accessible for the agriculture sector				X	X	X	X	X	X	X	X	X
2.2.1 Conduct consultations with agriculture sector to identify priority needs			X	X	X	X						
2.2.2 Develop gender-responsive						X	X	X	X	X		

Components	FY2020				FY2021				FY2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
plan and Standard Operating Procedures												
2.2.3 Establish database of farmers			X	X	X							
2.2.4 Develop and validate products and services for farmers				X	X	X	X	X	X	X	X	X
Outcome 3: Enhanced preparedness and response capacities at national and community levels												
3.1 Preparedness and Response plans strengthened and accessible				X	X	X	X	X	X	X	X	X
3.1.1 Identify and conduct risk assessment of pilot community			X	X	X	X						
3.1.2 Review and strengthen preparedness and response plans and SOPs at national and community level						X	X	X	X	X	X	
3.1.3 Conduct exercise on dissemination and communication of alerts at community level									X	X	X	X

Annex 3: Estimated Budget

Project Components & Outputs	Activities	Estimated Cost
Component 1: Enhanced UHM to deliver high quality services to Civil Protection and other stakeholders		568,000
Output 1.1: Quality Management System developed and maintained	1.1.1 Host high level finalization and validation workshop of the National Strategic Plan 1.1.2 Organize joint meetings for National Strategic Plan implementation 1.1.3 Develop and implement a QMS including protocols with users and partners 1.1.4 Conduct training on QMS 1.1.5 Engage Local Expert	
Output 1.1: Technical capacities of UHM to provide forecast and warnings improved	1.2.1 Conduct technical workshops 1.2.2 Improve calibration and integration of systems for flood warning 1.2.3 Develop & implement certification process 1.2.4 Develop verification mechanisms to improve Numerical Weather Prediction (NWP) use and forecasts 1.2.5 Conduct training of UHM Staff and Volunteers Observers on the maintenance of meteorological station 1.2.6 Implement a robust, secure and integrated system for production and dissemination of forecast and warning (Common Alerting Protocol) 1.2.7 Develop multi-support access to warning products and services (strengthen capacities for video production and warnings)	
Sub-Total Component 1		**568,000**
Component 2:Improved Hydro-meteorological Warning System		100,000
Output 2.1 National Coordination Mechanism strengthened/established	2.1.1 Conduct consultations to identify priority user needs 2.1.2 Develop or revise Standard Operating Procedures for EWS 2.1.3 Develop or revise SOPs for UHM outlining methodology and calibration of thresholds based on impacts of past events of severe weather 2.1.4 Conduct national exercise	
Output 2.2 Early Warning Services developed and accessible for the agriculture sector	2.2.1 Conduct consultations with agriculture sector to identify priority needs 2.2.2 Develop gender-responsive plan and Standard Operating Procedures (clearly outlining what products and services will be made available and the necessary actions) 2.2.3 Establish database of farmers 2.2.4 Develop and validate products and services for farmers	
Sub-Total Component 2		**100,000**
Component 3: Enhanced preparedness and response capacities at national and community levels		119,034
Output 3.1 Preparedness and Response plans strengthened and accessible	3.1.1 Identify and conduct risk assessment of pilot community 3.1.2 Review and strengthen preparedness and response plans and SOPs at national and community level 3.1.3 Conduct exercise on dissemination and communication of alerts at community level 3.1.4 Develop gender-responsive public awareness on key hazards	
Sub-Total Component 3		**119,034**
Component 4: Project Management	Recruitment of a technical coordinator, 2 years	320,000
	Project manager 1 years	110,400
	Travel for consultations	50,000
	Three National Steering Committee Meetings	60,000
Sub-Total Component 4		**540,400**
Subtotal: components		1,327,434
Project support cost, 13%		172,566
Grand total		**1,500,000**