

## Draft: HAITI Project Proposal

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| <b>Project Title</b>                                       | <b><i>Support for the Hydrometeorological Unit of Haiti (UHM) for sustainable operability and the implementation of a relevant and efficient hydrometeorological warning system</i></b>   |   |   |   |  |  |                    |      |
| <b>Project Reference</b>                                   | CREWS/CProj/13/Haiti  |   |   |   |  |  |                    |      |
| <b>Geographical Area Covered</b>                           | <i>Haiti</i>  |   |   |   |  |  |                    |      |
| <b>Profile of LDCs<sup>1</sup> and/or SIDS<sup>2</sup></b> | Level of Disaster Risk  | Very high   | Average annual loss due to disasters                | 2% of GDP between 1975 - 2012<br>15% of GDP 2008<br>120% in 2010 <sup>3</sup><br>32% in 2016 <sup>4</sup> | Access to Information and Communications (ICT Index) | Ranked 168 <sup>th</sup> in the ICT Development Index <sup>5</sup> | NMHS capacity      | Low  |
|  | Hydromet and EWS statutes   | Low   | Disaster loss and risk data to inform early warning | Not available   | Demand / Priority                                    | High   | Leverage potential | High |
| <b>Runtime</b>   | 3 years   |   |   |   |  |  |                    |      |
| <b>Total cost of CREWS contribution</b>                    | US\$ 1,500,000  |   |   |   |  |  |                    |      |
| <b>Main Implementing Partner</b>                           | <i>World Meteorological Organisation</i>  |   |   |   |  |  |                    |      |
|  | a.  | Allocation requested for implementation by the Government |   |   |  | US\$ 0   |                    |      |
|  | b.  | Allocation requested for implementation by the partner    |   |   |  | US\$   |                    |      |
|  | c.  | Implementing partner fee                                  |   |   |  | US\$   |                    |      |
|  | d.  | Total   |   |   |  | US\$ 0   |                    |      |
| <b>Additional implementing partners</b>                    | <i>World Bank</i>   |   |   |   |  |  |                    |      |
|  | a.  | Allocation requested for implementation by the partner    |   |   |  | US\$   |                    |      |
|  | b.  | Implementing partner fee                                  |   |   |  | US\$   |                    |      |
|  | c.  | Total   |   |   |  | US\$   |                    |      |
| <b>Other partner</b>                                       | <i>[Other partners involved in the implementation of the project and / or provision of funds]</i>   |   |   |   |  |  |                    |      |
| <b>Project Recipient / beneficiary</b>                     | <i>Ministry of Agriculture, Natural Resources and Rural Development (MARNDNR) / Hydrometeorological Unit of Haiti (UHM), Directorate of Civil Protection (DPC), National Coordination of Food Security (CNSA)</i>   |   |   |   |  |  |                    |      |
| <b>Total amount for the project</b>                        | US\$ 1,500,000  |   |   |   |  |  |                    |      |
| <b>Main objectives</b>                                     | <p>The main objective of the project is to improve UHM's capabilities to develop and deliver co-produced multi-hazard alerts and early warnings that meet the needs of sectors and communities.</p> <p>Project objectives:</p> <p><b>1 - Support the continued operations of UHM</b> and ensure the sustainability of prior investments</p> |   |   |   |  |  |                    |      |

<sup>1</sup> Least developed countries

<sup>2</sup> Small Island Developing State

<sup>3</sup> 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>

<sup>4</sup> 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

<sup>5</sup> <http://www.itu.int/net4/ITU-D/idi/2017/>

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|  | <p>made by WMO and other development partners. Focused interventions to this effect include targeted capacity building for UHM staff to further strengthen their capabilities and maximize use existing of hydro-meteorological systems.</p> <p>There is a need to create an enabling environment to enable UHM to fulfil its mandate; in particular the validation of the National Strategic Plan by the Ministry of Agriculture, Natural Resources and Rural Development as well as other relevant ministries. The engagement of a technical coordinator to support UHM staff in developing and implementing quality management system (QMS) to provide basic services to civil protection, aviation and other key stakeholders is also critical to help UHM improve their operations and support project implementation.</p> <p><b>2 - Establish an operations MHEWS at the national level.</b> Key activities include coordination with civil protection authorities, strengthening technical capacities at UHM in the production, dissemination and delivery of early warnings.</p> <p>UHM services (observations, forecasts, alerts) are needed in several sector specific early warning action plans in the country, which makes coordination, monitoring and efficiency a challenge. This is particularly true for UHM, which has very limited capacity. Therefore, training for UHM staff on verification mechanisms to improve use of NWP products. Furthermore, instalment of a communications system for the production and dissemination of forecast and warning products is envisioned to help improve UHM service delivery.</p> <p><b>3 - Enhance UHM capability to provide improved, reliable and tailor-made forecasts</b> for effective decision-making in target farming communities. Key activities will include development of new products and alerts.</p> <p>The World Bank is currently working on a single national multi-risk EWS plan expected to be endorsed by relevant national stakeholders. Building on this activity, a pilot project will be undertaken with targeted farming communities using the people-centered end-to-end EWS pillars. The pilot is expected to provide technical support at UHM to improve forecasts and deliver agriculture early warnings, and to engage with relevant national institutions and communities to co-produce warnings and service that are adapted to specific needs and delivered in an appropriate manner for informed decision making. The pilot will also take into consideration gender-specific needs that will be incorporated in a common response protocol, which integrates the dissemination and communication of early warnings, awareness campaigns and relevant information for those targeted communities.</p> <p>CREWS resources will directly enhance the capabilities and sustainability of the UHM, and indirectly the Direction of Civil Protection (DPC) in disseminating alerts based on potential impacts. The proposal builds on the achievements of on-going projects implemented by the World Bank Group (WB), the World Meteorological Organization (WMO), the World Food Program (WFP), the United States Agency for International Development (USAID), the Inter-American Development Bank (IDB) among others.</p> |  |
| <p><b>Initial situation; Project justification</b></p> | <p>a. Vulnerability, risk exposure, disaster impacts (on people and the economy)</p>  | <p>Haiti has the highest exposure to multiple hazards among Caribbean countries. It experiences a high prevalence of natural disasters such as earthquakes, cyclones, floods, droughts, which are further exacerbated by climate change. Between 1900 and 2016, more than one hundred natural disasters affected the country<sup>6</sup>.</p> <p style="padding-left: 40px;">□ <i>Exposure to hydro-meteorological phenomena (tropical storms, cyclones, etc.)</i></p> <p>More than 98% of the population is at risk of at least two of the following natural disasters: earthquakes, hurricanes, landslides, floods and droughts<sup>7</sup>. Global warming contributes to increased frequency and intensity of extreme weather events that cause disasters.</p> |

<sup>6</sup> [https://www.unisdr.org/files/54921\\_annex03documentpayshaiti.pdf](https://www.unisdr.org/files/54921_annex03documentpayshaiti.pdf)

<sup>7</sup> *ibid.*

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|  |   | <p>□ <i>Demographic factors (rapid and uncontrolled urbanisation)</i></p> <p>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.</p> <p>□ <i>Economic factors</i></p> <p>Classified among the least developed countries and small island developing states, Haiti faces serious fiscal problems and has insufficient public infrastructure<sup>8</sup>. 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<sup>9</sup>. The country is financially very dependent on the outside; official development assistance represents about 9% of its GDP.</p> <p>□ <i>Political factors</i></p> <p>The lack of political stability makes it difficult to sustain development and resilience projects implemented with the support of donors (development partners).</p> <p>□ <i>Low capacity of institutions in charge of risk management</i></p> <p>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:</p> <ul style="list-style-type: none"> <li>- insufficient capacity (human, financial, logistical and equipment resources);</li> <li>- lack of multi-sectoral coordination mechanism;</li> <li>- weak connection between early warning and rapid response;</li> <li>- lack of interconnection between the different early sectoral early warning systems; etc.</li> </ul> <p>□ <i>Social and educational factors</i></p> <p>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.</p> |
|  | <p>b. Status of the EWS, Disaster Risk Management Agency, SNHMs, actors present</p> | <p>The majority of agencies involved in the early warning value chain are limited in their activities due to inadequate funding, equipment, skills and human resources. Currently, all the actors involved 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.</p> <p>It is important to note that the major difficulties of the UHM reside in the lack of structured procedures such as difficulty of real-time monitoring once the alert is issued<sup>10</sup> and the lack of tools to effectively communicate to reach the population, in particular, vulnerable groups and remote and isolated populations.</p>   |

<sup>8</sup> [http://web.worldbank.org/archive/website01539/WEB/IMAGES/GFDRR\\_HA.PDF](http://web.worldbank.org/archive/website01539/WEB/IMAGES/GFDRR_HA.PDF)

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

<sup>10</sup> 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.

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|  |   | <p>The 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 <i>Groupe d'appui à la coopération internationale</i> (CAMI) supports the national, departmental and municipal emergency operations Centres. These centres are decentralised structures of the DPC.</p> <p>UHM faces constant challenges in delivering mandated services, given the limited human resources who are unable to cope with the high demand for services. Some support has been provided to address this gap; however this remains inadequate and requires additional investments.</p>   |
|  | <p>d. Projects and programmes dealing with EWS and hydromet under implementation or preparation</p> | <p>Several technical assistance projects have been and / or are currently being implemented to support the establishment of an early warning system.</p> <ul style="list-style-type: none"> <li>- ECCC-funded project which contributes to the creation of an operational working environment and development of basic forecasting capabilities for hydro-meteorological and dissemination channels;</li> <li>- WB financed Hydromet project which plans to equip 12 rivers with automatic stations as well as provide appropriate trainings for personnel;</li> <li>- 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 Center (RSMC);</li> <li>- 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<sup>11</sup>) to help improve the forecasting system using products and data from WMO global and regional centres;</li> <li>- 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</li> <li>- 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.</li> </ul> <p>The ECCC funded project "Climatological Service for the Reduction of Vulnerability in Haiti" has built an operational working environment (current UHM offices) and developed the basic capacities for meteorological, climatological and hydrological services.</p> <p>The proposed CREWS project will coordinate with partners on the ground in an effort to complement and integrated activities and interventions. 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<sup>12</sup>.</p> |
|  | <p>e. Describe the potential multiplier / optimisation</p>  | <p>Support from CREWS will contribute to current investments in strengthen hydro-meteorological services for enhanced forecasting,</p>  |

<sup>11</sup> Severe Weather Forecasting Demonstration Project

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

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|                              | <p>of CREWS investments.</p>   | <p>early warning and response systems.</p> <p>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-produced products and services to key sectors and support UHM in the development and implementation of a pilot project for the benefit of farmers.</p> <p>The project will contribute to further increasing the resilience of populations by taking into account the local context and building stronger relations between national authorities, communities and civil society.</p> <p>The combination of CREWS support 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.</p>   |
|                              | <p>e. Describe the measure to ensure consistency with existing initiatives</p> | <p>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.</p> <p>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.</p> |
| <p><b>Project design</b></p> | <p>a. Project components and activities</p>                                    | <p>The CREWS project supports multiple levels of hydro-meteorological and warning services, with different coordination requirements, as illustrated below:</p> <pre> graph TD     A[CREWS Haiti Project] --&gt; B[National Steering Committee (CNP)]     A --&gt; C[World Meteorological Organization (WMO)]     A --&gt; D[World Bank (WB)]     B --- E[Haiti Hydrometeorological Unit (UHM)]     C --- E     D --- E     E --&gt; F[Hydromet Early Warning System (EWS)]     E --&gt; G[Permanent Secretariate for Risk and Disaster Management (SPGRD)]     E --&gt; H[Civil Protection Directorate (DPC)]     F --&gt; I[Pilot project Agriculture]     I --&gt; J[National Food Security Coordination (CNSA)]     I --&gt; K[Municipality Emergency Operations Centre (COUC)]     G --&gt; L[National Multihazard Platform]     H --&gt; M[National MHEWS]   </pre>  |

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 the UHM needs to be taken into consideration depending on the season and tailored to different hydro-meteorological risks.

**Component 1: Strengthening of the organization, of the management and the capacity of UHM to deliver high quality services to Civil Protection and other stakeholders**

Output 1.1: UHM is well organized, with a clear mission, well defined activities for service delivery, and managed under a QMS

Proposed activities:

- Develop and implement a simple but efficient QMS, to provide services to Civil Protection, assistance to aviation and key stakeholders,
- Provide training on QMS
- Facilitate the high level validation of the National Strategic Plan (currently being developed under the ECCC Project)

Output 1.2: Establish an efficient and operational MHEWS at the national level

Proposed activities

- Develop and implement a MHEWS in coordination with Civil Protection and other relevant stakeholders
  - Organize consultation and workshops at national and local level to understand users' needs and provide a platform for a step by step progress validation
  - Develop and implement standard operating procedures for EWS, which would include the methodology and calibration of thresholds based on impacts of past events of severe weather, and production and communication / coordination mechanisms and strategy
  - Organize a comprehensive national exercise
- Strengthen technical capacities of UHM for the production, dissemination and communication with continuity of service
  - Implement a robust, secure, integrated and interconnected system for production and dissemination of forecast and warning products (Common Alerting Protocol)
  - Strengthen the capacities for video production for warnings (TV, WEB, Social network, among others)
  - Develop multi-support access to warning products and services and strengthen capacities for video production for warnings (TV, national WEB site, Social Networks, among others)
- Strengthen technical capacities of UHM to improve the service for forecast and warnings
  - Calibration, improvement and integration of systems for flood warnings (FFGS, rainfall/river modelisation)
  - Development of verification mechanisms to improve NWP use and forecasts in collaboration with WMO, ECMWF, among others
- Organize workshop and develop outreach products to educate on EWS

**Component 2: Improve early warning services for targeted users and communities**

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|  |  | <p><u>Output 2.1: Specific warning services are in place for targeted users and highly vulnerable communities</u></p> <ul style="list-style-type: none"> <li>• Identify the pilot project stakeholders and communities within the agricultural sector</li> <li>• Fine tune forecast and warning services to meet their specific needs while integrating gender issues</li> <li>• Develop and validate the common response protocol which integrates the dissemination and communication of warnings, awareness campaigns and relevant information for those target communities.</li> </ul> <p>The activities will also include awareness-raising and information workshops, establishment of a database of farmers, co-development of targeted products and services for farmers, and validation of products developed.</p> <p>Identified good practices from other CREWS agro-meteorological projects would be leveraged.</p>   |
|  | b. Logical framework and implementation timeline (work plan) | Annex 1, 2 and 3   |
| <b>Organisation and procedures</b>                 | a. Institutional framework                                   | <p>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.</p> <p>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.</p>  |
|  | 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 <sup>13</sup> .   |
| <b>Viability and sustainability of the project</b> | a. Main risks identified                                     | <p>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:</p> <p><b>Political risk: Changes at Ministerial Level.</b> 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.</p> <p><b>Institutional risk: Project objectives not directly aligned with Government priorities.</b> 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.</p> <p><b>Security risk:</b> Increased periods of insecurity are recurrent in Haiti and can: (1) have a significant impact on the pace, capacity and</p> |

<sup>13</sup> [https://www.wmo.int/pages/about/monitoring\\_evaluation\\_en.html](https://www.wmo.int/pages/about/monitoring_evaluation_en.html)

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|  |  | quality of work; (2) delay the timing of implementation of activities.  |
|  | b. Critical Hypotheses                             | <p>The project was prepared on the premise that basic technical systems and equipment were installed at the UHM level, but are underutilised.</p> <p>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.</p>   |
|  | c. Assessment of the sustainability of the project | <p>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.</p> <p>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.</p> |



## Annex 1: See Budget and Timeline

| Estimated Budget (USD)   |   |                  |        |    |    |    |        |    |    |    |        |    |    |    |
|--|---|------------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|
| Project Components & Outputs   | Activities  | Estimated Cost   | Year 1 |    |    |    | Year 2 |    |    |    | Year 3 |    |    |    |
|  |   |                  | Q1     | Q2 | Q3 | Q4 | Q1     | Q2 | Q3 | Q4 | Q1     | Q2 | Q3 | Q4 |
| <b>Component 1: Strengthening of the organization, of the management and the capacity of UHM to deliver high quality services to Civil Protection and other stakeholders</b> |   |                  |        |    |    |    |        |    |    |    |        |    |    |    |
| <i>Output 1.1: UHM is well organized, with a clear mission, well defined activities for service delivery, and managed under a QMS</i>  | Develop and implement a simple but efficient QMS, to provide services to Civil Protection, assistance to aviation and key stakeholders, and provide training on QMS                           | 35,000           |        | x  | x  | x  | x      | x  | x  | x  |        |    |    |    |
|  | Facilitate the high level validation of the National Strategic Plan (currently being developed under the ECCC Project)  | 5,000            |        | x  | x  | x  |        |    |    |    |        |    |    |    |
|  |   |                  |        |    |    |    |        |    |    |    |        |    |    |    |
| <i>Output 1.2: Establish an efficient and operational MHEWS at the national level</i>  | Develop and implement a MHEWS in coordination with Civil Protection and other relevant stakeholders   | 40,000           |        |    | x  | x  | x      | x  | x  | x  | x      | x  |    |    |
|  | Strengthen technical capacities of UHM for the production, dissemination and communication with continuity of service   | 450,000          |        |    |    | x  | x      | x  | x  | x  | x      | x  |    |    |
|  | Strengthen technical capacities of UHM to improve the service for forecast and warnings   | 45,000           |        |    |    |    | x      | x  | x  | x  | x      | x  |    |    |
|  | Organize workshop and develop outreach products to educate on EWS   | 15,000           |        |    |    |    |        |    |    |    |        | x  | x  |    |
| <b>Subtotal: Component 1</b>   |   | <b>590,000</b>   |        |    |    |    |        |    |    |    |        |    |    |    |
| <b>Component 2: Improve early warning services for targeted users and communities</b>  |   |                  |        |    |    |    |        |    |    |    |        |    |    |    |
| <i>Output 2.1: Specific warning services are in place for targeted users and highly vulnerable communities</i>   | Identify the pilot project stakeholders and communities within the agricultural sector  | 15,000           |        | x  | x  |    |        |    |    |    |        |    |    |    |
|  | Fine tune forecast and warning services to meet their specific needs while integrating gender issues  | 35,000           |        |    | x  | x  | x      | x  | x  | x  | x      | x  |    |    |
|  | Develop and validate the common response protocol which integrates the dissemination and communication of warnings, awareness campaigns and relevant information for those target communities | 50,000           |        |    |    |    |        | x  | x  | x  | x      | x  | x  |    |
| <b>Subtotal: Component 2</b>   |   | <b>100,000</b>   |        |    |    |    |        | x  | x  | x  | x      | x  | x  |    |
| <b>Component 3: Project Management</b>   |   |                  |        |    |    |    |        |    |    |    |        |    |    |    |
|  | Recruitment of a technical coordinator, 3 years   | 480,000          | x      | x  | x  | x  | x      | x  | x  | x  | x      | x  | x  |    |
|  | Engagement of NWP Experts, 25 days  | 10,000           |        |    |    |    | x      | x  | x  |    |        |    |    |    |
|  | Travel for consultations  | 50,000           |        |    | x  |    |        |    | x  |    |        |    | x  |    |
|  | Three National Steering Committee Meetings  | 75,000           |        |    |    | x  |        |    |    | x  |        |    | x  |    |
|  | Contingency   | 22,434           |        |    |    |    |        |    |    |    |        |    |    |    |
| <b>Subtotal: Component 3</b>   |   | <b>637,434</b>   |        |    |    |    |        |    |    |    |        |    |    |    |
| <i>Subtotal: components</i>  |   | 1,327,434        |        |    |    |    |        |    |    |    |        |    |    |    |
| <i>Project support cost, 13%</i>   |   | 172,566          |        |    |    |    |        |    |    |    |        |    |    |    |
| <b>Grand total</b>   |   | <b>1,500,000</b> |        |    |    |    |        |    |    |    |        |    |    |    |

## Annex 2: Contribution to the Framework for Action of the CREWS Programme

### *Support for the Hydrometeorological Unit of Haiti (UHM) for sustainable operability and the implementation of a relevant and efficient hydrometeorological warning system*

| CREWS Outputs  | Indicators   | Baseline   | Target  | Means of Verification   |
|--|--|--|---|---|
| Risk information to guide early warning systems and climate and weather services developed and accessible  | Number of documents developed to help improve the efficiency of operations of UHM  | 0 - No QMS   | 2 documents (QMS and validated NSP);<br>1 QMS training,   | Approved QMS document<br><br>QMS Training Report  |
| NMHS' Service delivery improved, including the development of long-term service delivery strategy and development plans  |  | 1 - National Strategic Plan will exist by the start of this project  | 1 NSP validation workshop   | Validation Workshop Report and High-Level Endorsed National Strategic Plan  |
| Information and communication technology, including common alerting protocol strengthened  | Increase technical capacity of UHM in delivering forecasts and warnings;<br><br>Communications and dissemination system in place;<br><br>Number of workshops with stakeholders to better understand needs of end-user<br><br>Number of outreach products developed<br><br>SOP in place | 0 - No SOP for EWS, no communications system in place; limited capacity to deliver warnings; no workshops with stakeholders have taken place | 1 document (SOP);<br>2 New Products developed;<br>6 User-engagement workshops<br>1 - Communications systems in place                        | 1 Approved SOP document<br><br>2 Outreach products available<br><br>6 Workshop reports<br><br>1 Communications System functioning |
| Preparedness and response plans with operational procedures that outlines early warning dissemination processes strengthened and accessible and Gender-sensitive training, capacity-building programmes provided | Number of communities with agriculture warning services<br><br>Number of new forecasts / warning services developed<br><br>Number of user engagement workshops held  | 0 - no agriculture services provided by UHM; no user-engagement workshops previously held  | 1 - Common response protocol for target communities<br><br>2 - New forecast / warning service provided<br><br>3 - User engagement workshops | 1 - approved Common response protocol document<br><br>2 - Forecasts / Warning Bulletins<br><br>3 - Workshop Reports               |

## Appendix 3: Logical Framework with Indicators

### *Support for improved forecasts and hydrometeorological alerts for rapid action in Haiti*

| CREWS Outputs  | Final Result  | Indicators   | Baseline   | Target  | Means of Verification   |
|--|---|--|--|---|---|
| <i>Component 1: Strengthening of the organization, management and capacity of UHM to deliver high quality services to Civil Protection and other stakeholders</i>  |   |  |  |   |   |
| Risk information to guide early warning systems and climate and weather services developed and accessible  | <i>UHM is well organized, with a clear mission, well defined activities for service delivery, and managed under a QMS</i> | Number of documents developed to help improve the efficiency of operations of UHM  | 0 - No QMS   | 2 documents (QMS and validated NSP);<br>1 QMS training,   | Approved QMS document<br><br>QMS Training Report  |
| NMHS' Service delivery improved, including the development of long-term service delivery strategy and development plans  | <i>UHM is well organized, with a clear mission, well defined activities for service delivery, and managed under a QMS</i> | Number of endorsed documents developed to help improve the efficiency of operations of UHM   | 1 - National Strategic Plan will exist by the start of this project  | 1 NSP validation workshop   | Validation Workshop Report and High-Level Endorsed National Strategic Plan  |
| Information and communication technology, including common alerting protocol strengthened  | <i>Established efficient and operational MHEWS at the national level</i>  | Increase technical capacity of UHM in delivering forecasts and warnings;<br><br>Communications and dissemination system in place;<br><br>Number of workshops with stakeholders to better understand needs of end-user<br><br>Number of outreach products developed<br><br>SOP in place | 0 - No SOP for EWS, no communications system in place; limited capacity to deliver warnings; no workshops with stakeholders have taken place | 1 document (SOP);<br>2 New Products developed;<br>6 User-engagement workshops<br>1 - Communications systems in place                        | 1 Approved SOP document<br><br>2 Outreach products available<br><br>6 Workshop reports<br><br>1 Communications System functioning |
| <i>Component 2: Improve early warning services for targeted users and communities</i>  |   |  |  |   |   |
| Preparedness and response plans with operational procedures that outlines early warning dissemination processes strengthened and accessible and Gender-sensitive training, capacity-building programmes provided | <i>Output 2.1: Specific warning services are in place for targeted users and highly vulnerable communities</i>            | Number of communities with agriculture warning services<br><br>Number of new forecasts / warning services developed<br><br>Number of user engagement workshops held  | 0 - no agriculture services provided by UHM; no user-engagement workshops previously held  | 1 - Common response protocol for target communities<br><br>2 - New forecast / warning service provided<br><br>3 - User engagement workshops | 1 - approved Common response protocol document<br><br>2 - Forecasts / Warning Bulletins<br><br>3 - Workshop Reports               |