

CREWS Project Proposal		
Project Title	CREWS Dominican Republic: Improving Climate Services ¹ and Multi-Hazard Early Warning Systems	
Document Reference	CREWS/CProj/18/Dominican Republic	
Geographical coverage	Dominican Republic	
Time frame	2026-2030	
Total CREWS Contribution	US \$ 4,500,000.00	
Lead Implementing Partner	World Meteorological Organization (WMO)	
	a. Execution	US\$3,185,840.0
	b. Fees	US\$414,160.0
	c. Total	USD 3,600,000.0
Additional Implementing Partners	United Nations Office for Disaster Risk Reduction (UNDRR)	
	a. Execution	US\$796,460.00
	b. Fees	US\$103,540.00
	c. Total	USD 900,000.00
Main objective(s)	<p>Improve the capacities of national institutions in the Dominican Republic to consolidate climate and multi-hazard early warning services that effectively address hydrometeorological hazards for enhanced disaster resilience and adaptation to climate change especially for vulnerable communities and socioeconomic sectors.</p> <p>This will be achieved through:</p> <ul style="list-style-type: none"> - Increase in the institutional, technical and operational capacities of the main institutions involved in the early warning systems linked to extreme hydrometeorological hazards, mainly floods (river, coastal, urban) and droughts. - Improve production and access to adapted forecasts through integrated and interoperable systems to support decision-making and warning services and introduce planning and preparedness actions to reduce the impacts of hydrometeorological risks in vulnerable pilot communities. 	

¹ For the purposes of this project, climate services are defined as the provision and use of meteorological, climate, hydrological and marine data, information, and knowledge to aid decision-making, especially in priority sectors such as agriculture and food security, disaster risk reduction, energy, health, and water.

	<p>- Strengthening and development of climate services favouring the co-production and integration of climate information at sub-seasonal and seasonal scales in the planning and management of socioeconomic activities of priority sectors in the Dominican Republic.</p>
<p>Project Recipient/Beneficiary Beneficiary (people and organizations at risk who are the intended beneficiaries of the project at the impact level)</p>	<p>By improving climate services and early warning systems, the project aims to benefit the 11.33 million inhabitants of the Dominican Republic. A greater focus will be placed on communities and users particularly vulnerable to hydrometeorological hazards such as women, children and persons with disabilities in disadvantaged urban and rural areas, and communities that have suffered the impacts of climate variability and extreme events in the last decade.</p> <p>In addition, through the provision of climate and hydrometeorological information adapted to guide planning and management practices, the project will benefit priority socioeconomic sectors such as agriculture and fisheries, water resource management, disaster risk management, tourism and navigation.</p>
<p>Additional operational partners (expected direct beneficiaries of the project in the form of increased capacity, products and services to be offered by the project).</p>	<p>The main entities under the National System for Disaster Prevention, Mitigation and Response (SN-PMR) will receive direct support from the project. This includes the technical institutions that produce information on multiple hazards, and the bodies directly linked to risk management and early warning systems.</p> <p>The main beneficiary national entities are:</p> <ul style="list-style-type: none"> ● Dominican Institute of Meteorology (INDOMET) ● National Institute of Hydraulic Resources (INDRHI) ● Emergency Operations Center (COE) ● Civil Defense (DC) ● National Geological Survey (SGN) <p>The project will also collaborate with other entities as the Pontificia Universidad Católica Madre y Maestra (PUCMM), and the National Emergency Commission of the Dominican Republic (CNE), including the National Integrated Information System (SINI).</p> <p>The successful implementation of this project is ensured through collaboration with multiple technical partners. The technical partners have been identified through previous collaborations and ongoing support to improve early warning systems and strengthen climate resilience. These include Cuba's National Institute of Meteorology (INSMET) for the development of weather and climate forecasts, Brigham Young University (BYU) recognized for its innovative flow forecasting and data management applications, the Dominican Republic Red Cross, and the World Food Programme (WFP) which has extensive experience in strengthening community actions on warning systems as well as the promotion of institutionality and governance at the national level. In terms of training, collaboration will be carried out with national entities such as the PUCMM after accrediting institutions based on an assessment of their training programs to ensure they meet WMO standards, WMO Regional Training Centres (ie. Caribbean Institute for Meteorology and Hydrology (CIMH), RTC-Costa Rica, RTC-Santa Fe), and other regional entities such as the Regional Committee on Hydraulic Resources (CRRH).</p> <p>In addition, lessons learned from the International Federation of the Red Cross (IFRC) and the International Telecommunication Union (ITU), both pillar leads in the Early Warning for All Initiative (EW4All) together with UNDRR and WMO, will be promoted.</p>

<p>Initial situation / rationale</p>	<p>a. Vulnerability, exposure to risks, impact of disasters (on people and the economy)</p>	<p>As in the rest of the Caribbean region, the economic and social well-being of the population of the Dominican Republic is intrinsically linked to the climate and the natural environment and, therefore, has a high exposure to hydrometeorological and climate hazards.</p> <p>According to the Country Climate and Development Report (World Bank Group, November 2023), the Dominican Republic is highly vulnerable to climate change, including extreme natural phenomena and slow-onset events, such as rising temperatures or forest degradation, which affect important economic sectors and society, especially poor and marginalized populations. Losses in fiscal accounts could reach 19.7% of total government revenues by 2050, compared to a scenario in which the adverse effects of climate change did not occur.</p> <p>Moreover, the IFRC, states that the Dominican Republic is the second most vulnerable country in the Caribbean after Haiti. This island nation is exposed to tropical storms, floods, droughts, wildfires, landslides, and faces considerable risk from earthquakes and tsunamis.</p> <p>According to the "Yearbook of Sociodemographic Statistics 2023", at least 23% of the population lives in poverty and 3.2% in extreme poverty. The national average of the Gini Coefficient that measures inequality is 0.378, with a higher value in urban areas (0.380),² resulting in significant disparities in access and opportunities. In addition, at least 12 % of the population lives with some type of disability, with women being the most affected³.</p> <p>The rapid pace of urbanization and increasing immigration from Haiti have led to the emergence of communities that are often unregulated and located in high-risk areas. The lack of adequate legislation and/or means to enforce it in key areas such as construction, land-use planning and urban development significantly increases the exposure and vulnerability of the population to future hazard events.</p> <p>In recent years, the main disasters have been floods in November 2024, Hurricane Beryl in June 2024, flooding and landslides in 2023, Hurricane Fiona in September 2022, Hurricane Dorian in August 2019, Hurricanes Maria and Irma in September 2017, Hurricanes Matthew and Earl in 2016, hurricane Erika in 2015 in addition to other manifestations of slow or localized development and cascading events such as biological hazards, droughts, and forest fires (213 in 2022).</p> <p>Recent diagnostics regarding access to early warning systems for hydrometeorological phenomena in high-risk areas concluded that the current national EWS focuses mainly on the institutional response and lack the level of detail and differentiation necessary for the population to act promptly and prioritize self-protection. While the government has made strides to mainstream disaster risk management (DRM) and climate change adaptation at the sectoral level, including health, education, water resources management, public investment, construction, fiscal management, and social protection sectors; institutional gaps still persist in the ministries responsible for comprehensively understanding disaster risk. This, in turn, limits the possibility of its meaningful integration into planning processes, as well as risk and resilience norms and standards established in the national system of public investment, health, construction and other sectors.</p> <p>In recent decades, significant steps have been taken in the development and gradual implementation of disaster risk reduction (DRR) laws, such as Law 147-02 of 2002 on Risk Management (the creation of the Dominican Republic's National System for Disaster Prevention, Mitigation and Response), as well as other relevant laws in various areas (for</p>
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² Dominican Republic, Ministry of Economy, Planning and Development, Yearbook of Sociodemographic Statistics 2023, p. 130-131

³ Dominican Republic, National Statistics Office (ONE), 2023, Population with Disabilities.

example, the creation of a national policy regarding EWS is being sought). There is an ongoing long-term process to integrate disaster risk into development planning, although some discrepancies persist regarding overlapping roles and mandates, as well as gaps in areas that have not been fully addressed; such as land-use planning, urban development and construction. In addition, information on the effects of disasters is dispersed among different ministries, with quality levels varying significantly.

b. State of the EWS, DRM institutions and NMHSs, actors/players present

At the national level

In the Dominican Republic, the SN-PMR is the mechanism for the implementation of Risk Management policies through Law No. 147-02 (see Figure 1). The primary function of this system is "to integrate community efforts (public and private) to ensure the timely and efficient management of all human, technical, administrative and economic resources essential for prevention, mitigation and response, rehabilitation and reconstruction in emergency and/or disaster situations". The SN-PMR has the mandate to implement preventive risk reduction measures that are structured in accordance with the principles of a MHEWS (Law No. 147-02 - Decree No. 874-09, Article 20). The National Emergency Commission (CNE), chaired by the Executive Director of Civil Defense and made up of the Emergency Operations Center (COE) and a Technical Committee for Risk Prevention and Mitigation (CTNPMR), has an advisory capacity for the coordination of disaster risk reduction activities.

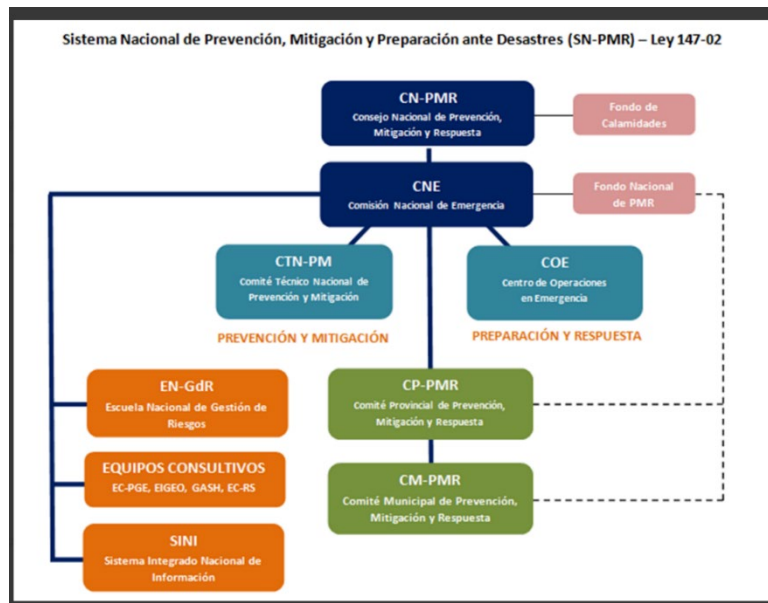


Figure 1. Integration diagram of the SN-PMR.

The main national institutions in multi-hazard risk management that contribute to the generation of information and emergency management are:

- INDOMET is the National Meteorological Service, responsible for monitoring and interpreting terrestrial and marine meteorological information, as well as technical forecasting to prepare information to support the warnings for the knowledge, protection and safety of the population.
- INDRHI is the National Hydrological Service, responsible for hydrometric monitoring networks and providing dam and river information to support flood early warning systems.
- The National Emergency Commission directs and guides the areas of technical, scientific, economic, financial, community, legal and institutional study, in order to

help formulate and promote the policies and decisions of the National Council for Disaster Prevention, Mitigation and Response.

- The COE (Emergency Operations Centre) is responsible for the evaluation and decision of the warnings (creation: Decree No. 360-01). Article 12, Decree No. 874-09 regulates Law 147-02 and establishes that the COE is the only coordinating authority empowered to declare warnings in the event of dangerous events. It also ensures that information is clearly communicated to the media.
- INDOTEL is the Dominican Institute of Telecommunications whose mandate is to manage communications during disaster situations, under the decision of the COE (Decree No. 874-09: Identifies the roles and responsibilities of other entities during warnings)
- SINI is the National Integrated Information System whose operations centre supports the National Emergency Commission through Civil Protection by processing information from various sources.
- The SGN is the national geological service in charge of the management and monitoring of geotechnical and geohydrological risks.
- Civil Defence is responsible for emergency preparedness and coordination of institutional emergency response efforts. Civil Protection can count on the support of the Red Cross, firefighters, police and army. Civil Protection has local contact with all the mayor's offices in the country.

In March 2019, WMO, together with the Dominican Republic's leading flood management entities, conducted a detailed assessment of the country's institutional capacities in flood forecasting and EWS. The evaluation of the system confirmed that, in the Dominican Republic, there is strong inter-institutional cooperation and support between entities linked to hydrometeorological risk management. This aspect combined with a clear distinction of the roles and responsibilities of the institutions involved in the national EWS facilitates coordination efforts to manage disaster events. The assessment also identified significant gaps in information and products intended to support decision-making for flood warning in the Dominican Republic. This evaluation focused mainly on INDRHI's Hydrology Department, which was identified as the entity that required the most support, centralization of efforts and investment within the national EWS for floods. The main weaknesses in INDRHI are the significant gaps in the real-time monitoring of stream flows or water levels, the absence of standardized and functional systems for flood forecasting, and the limited number of technical and professional personnel. Therefore, at present, the country does not have an adequate forecasting system that guarantees the generation and delivery of products in a timely manner for flood warning decision-making. Consequently, in order to improve warnings and response practices and mechanisms, as dictated by Law No. 147-02-Decree No. 874-09, Article 20, considerable efforts and significant investments are required for this crucial link within the national EWS.

Regarding INDOMET, an evaluation of meteorological services was completed in 2024 through a national hydrometeorological diagnosis under the auspices of SOFF. It was identified that, among other aspects, the following is required:

- Work together with INDRHI to have an SOP, systematizing cooperation between both institutions, and for the development of operational products related to hydrological monitoring and prediction
- Develop governance systems for coordination in service delivery

	<ul style="list-style-type: none"> - Disseminate information in digital format, in formats useful for the systems used by the different sectors of users. Implement the dissemination process through the MCH system. - Establish mechanisms to train technicians from different sectors in the use and interpretation of the services provided. - Continue with the process of digitizing climate information - Develop a level warnings system that allows society to assess risk quickly and easily - To carry out studies on the socioeconomic benefits of the products supplied by INDOMET. - Work together with INDRHI for the implementation of the project "Generation and management of hydrometeorological data and climate change scenarios in the Dominican Republic" <p>In addition to meetings with INDOMET, it is also identified that the following are required:</p> <ul style="list-style-type: none"> - Improve observations by complying with normative and guidance material from the WMO-WIGOS Integrated Global Observing System, including historical observations and data sharing. - Generate climate outlooks on a monthly and seasonal scale, as well as calculations of climate indices, including for sectors. <p>Regional level</p> <p>The region has well-established organizations dealing with hydrometeorological hazards and disaster risk management and continuously increasing harmonization, standardization and collaboration.</p> <p>The Dominican Republic is in the process of becoming a member of the Regional Committee on Water Resources (CRRH), which is a specialized body in the fields of meteorology and climate, hydrology and water resources, and hydraulics, belonging to the intergovernmental organization Central American Integration System (SICA) and works with its member countries, represented by NMHSs, to strengthen the provision of hydrometeorological information. It provides:</p> <ul style="list-style-type: none"> • Central American Climate Database (CDB), • Virtual Center for Severe Atmospheric Meteorology (CVTAS). • Forums: Central American Forum on Climate and its Applications (FCAC-SICA), Hydrological Forum, Climate Change Forum. • CENTROCLIMA Platform, a technology portal. <p>The Central American Policy for Integrated Disaster Risk Management (PCGIRD) and the Regional Plan (PRGIRD) provide the framework for action for the participating States of the Coordination Centre for Disaster Prevention in Central America and the Dominican Republic (CEPRENAC) (which is also part of SICA). This framework is also aligned with the 2024-2030 Programmatic Strategy for the Central American Regional Plan, as well as with the cross-cutting approach of the Policy and Plan on issues of human rights, gender equality, indigenous populations, protection of children, youth and older persons, persons with disabilities and diversity.</p>
<p>c. Projects and programmes dealing with EWS and hydromet under</p>	<p>The proposed project is in line with multiple initiatives being carried out in the Dominican Republic and the Caribbean region:</p> <ul style="list-style-type: none"> • This project will align with the CREWS Caribbean 2.0, the CREWS Haiti project and other CREWS projects in the Caribbean, such as Belize's ASW and Cuba's AWS. Evaluations, methodologies and tools can be co-designed and shared with these

<p>implementation or preparation</p>	<p>projects. In addition, it will seek to make training processes more efficient that can include the beneficiaries of these projects.</p> <ul style="list-style-type: none"> • This project also considers the World Bank-Dominican Republic Emergency Response and Resilience project, valued at \$200 million over four years, with focus on: 1) resilient recovery, rehabilitation and reconstruction, having the following subcomponents: (i) emergency disaster recovery; and (ii) rehabilitation and reconstruction of selected critical public and community infrastructure; and 2) support for government capacity for disaster risk preparedness, response, and recovery, having the following subcomponents: (i) Improved resilient and inclusive territorial planning and development; (ii) Strengthening geospatial information systems for disaster risk assessment and response. The project will contribute USD 7.5 million to INDRHI, including the strengthening of observation networks (e.g. through the installation of climatological and hydrological stations) and improvements to data exchange platforms. • The project is aligned with CEPREDENAC's regional policy, plan, and programmatic strategy in Central America and the Dominican Republic; the Punta del Este Roadmap as a result of the First Summit between National Meteorological and Hydrological Services (NHRS) and National Disaster Risk Management Agencies (NDROs) in February 2023 within the framework of the Regional Platform for Disaster Risk Reduction in the Americas and the Caribbean, which proposes a series of actions at both the regional and national levels; as well as with the ongoing initiatives to strengthen coordination between CDEMA and CEPREDENAC, including their respective participating States. Given the geographical proximity between the Caribbean and Central American subregions, as well as the intergovernmental institutional structures, this project is expected to provide a significant opportunity not only for the strengthening of MHEWS in the Dominican Republic, but also for its expansion at the subregional and regional levels, particularly throughout Central America. • It will also align with a Memorandum of Understanding between the European Union and Latin America and the Caribbean in the area of comprehensive disaster risk management; supported by UNDRR. • The World Food Programme (WFP) is promoting a comprehensive agenda in the Dominican Republic to strengthen EWS, in close coordination with key government entities. Together with the Ministry of Economy, Planning and Development (MEPyD), it leads the process of developing the National Policy on Multi-hazard EWS, aligned with the proposal for public policies of EWS established by CDEMA, through technical diagnoses, inter-institutional validations and the design of an action plan that defines operational responsibilities in the face of different hazards. In support of INDOMET, and within the framework of SOFF (see https://www.un-soff.org/document-library/?_sfm_country=Dominican%20Republic), WFP contributes to the strengthening of the country's meteorological observation network, improving the generation and availability of basic data for climate forecasts. From a territorial approach, the <i>Resilient Watershed</i> program strengthens local capacities in vulnerable areas through the implementation of community warnings systems, to prepare and Respond to the Climate Crisis in the Dominican Republic, prioritizing the articulation between local governments and social actors. On the other hand, the ANACAONA system (Advanced Analysis and Navigation for the Coordination of Warnings and Operations in the Face of New Hazards) seeks to integrate and harmonize existing
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	<p>monitoring systems, reduce response times, increase the accuracy of warnings and strengthen institutional interoperability in risk management. Finally, WFP is making progress in the implementation of Anticipatory Action (AA) mechanisms against floods, initially developed in the Yaque del Norte basin—especially in the provinces of Monte Cristi and Valverde—in coordination with INDRHI and INDOMET, through activations based on rainfall thresholds predicted up to 8 days in advance. Currently, these actions are being expanded to the Lower Yuna basin, with the aim of reducing humanitarian impacts through planned early actions. All these initiatives are developed in conjunction with entities such as the MEPyD, INDOMET, INDRHI, the Civil Defense and the COE and other entities of the national disaster risk management system, promoting an articulated, preventive and evidence-based response to climate hazards.</p> <ul style="list-style-type: none"> • The Global Green Growth Institute (GGGI) has supported the Emergency Operations Center of the Dominican Republic to improve the management of risk and vulnerability data in emergency operations and enable risk-based infrastructure planning, such as hurricane and earthquake-proof housing adaptation and building standards. The GGGI facilitated, together with the Secretary of State for Housing and Urban Development, the collection of housing survey data for the National Risk Atlas, aimed at informing decisions to develop land management infrastructures to protect and serve vulnerable populations. • During 2024-25, the Bloomberg Center for Public Innovation (BCPI) at Johns Hopkins has partnered with the City of Santo Domingo to develop a resident impact data project focused on improving the city's ability to anticipate and respond to extreme weather events. The city is experiencing more and more torrential rainfall, even outside of its wet season that historically runs from May to November and will leverage data collected in the city to address flooding and other climate vulnerabilities by providing timely warnings and clear guidance to its one million residents, improving preparedness, and reducing the social and physical impact of climate change-intensified flooding. For the city, it is desirable that the system include predictive models of rainfall and landslides and that it has the capacity to analyse the climatic vulnerability of the city's neighbourhoods, including exposure and the absorption rate of precipitation. Ultimately, the systems would provide residents with clear, actionable information that can be disseminated quickly and contain location-specific details and could be scalable to other cities. BCPI will support database management, historical and predictive data analysis, support in the design of algorithms and predictive models, engagement with residents and community leaders, offering a range of collaboration options with CREWS IPs.
<p>d. Describe the multiplier/leveraging potential of the CREWS investments</p>	<p>This project is a continuation of the support provided by the project CREWS "Strengthening resilience to high-impact hydrometeorological events – through the improvement of Multi-hazard Warning Systems (MHEWS) – in Small Island Developing States and Southeast Asia", to the Dominican Republic, funded by Environment and Climate Change Canada (ECCC). Through this project, an operational Integrated Riverine Forecasting System was developed adapted to the needs of INDRHI in two pilot basins (IRFF: Integrated Riverine Forecasting System).</p> <p>The proposed project will serve as a bridge to the CREWS Caribbean 2.0 initiative and will partner with commitments beyond the Dominican Republic, like Cuba and the Central American countries (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama – CEPREDENAC Participating States). This cross-border approach is designed to accelerate governance reforms, technical support, capacity building, peer-to-peer exchanges, and both South-South and triangular cooperation on MHEWS and the EW4All initiative across Latin America and the Caribbean.</p>

	<p>In addition, the CREWS Dominican Republic project is strategically aligned with a major government program to modernize the water sector, supported by the World Bank, which has an investment of approximately USD 250 million, of which USD 7.5 million will be allocated to INDRHI for the installation of climate and hydrological stations. This alignment not only enhances the production of critical information for water resources management but also builds on previous support provided by WMO and other partners for a better understanding of disaster risk to facilitate its proper disaster risk management. The project builds on the experiences, achievements and best practices of the CREWS Caribbean and CREWS Haiti projects and will complement regional initiatives such as the integration of coastal hazard early warning systems (iCHEWS under the COAST-PREDICT programme of the UN Ocean Decade) and implementation of the Group on Earth Observations (GEO) Global Water Sustainability (GEOGLOWS). This layered approach ensures that CREWS investments will catalyze broader technical and financial frameworks, ultimately strengthening regional resilience and adaptive capacity.</p>
<p>e. Describe measures to ensure coherence with existing initiatives</p>	<p>Several existing initiatives have already contributed to improving hydrometeorological services in the Dominican Republic. For example, WMO has recently facilitated the development of the above-mentioned IRFF, which provides forecasts based on local impact, while establishing synergies with resources from other activities such as the Severe Weather Prediction Programme (SWFP/SISPI), the Flash Flood Guidance System (FFGS), the Coastal Flood Prediction Initiative (CIFI) and GEO's GEOGLOWS initiative. Despite these advances, significant gaps remain in adapting services to end-user needs.</p> <p>In response, this project is designed to bolster the production and delivery of multi-hazard warning information and planning support. It promotes the co-production of risk information between climate-sensitive sectors and aims to improve the planning and execution of early actions. The approach is people-centred and inclusive, aiming to improve collaboration between national and local authorities, as well as community groups, to integrate climate data into their decision-making processes.</p> <p>To ensure consistency with these existing initiatives, the project will implement the following measures:</p> <p>Regular engagement and communication with stakeholders:</p> <p>Carry out a mapping of the key actors and the current components of the early warning system(s) in the country. Organize national consultative workshops and implement the Early Warning and Inclusive Early Action Checklist as well as the gap analysis checklist to ensure representative dialogue and feedback.</p> <p>Engagement with regional and national representatives:</p> <p>Encourage strong ownership among national authorities from the start of the project.</p> <p>Align efforts with subregional intergovernmental entities to support regionally agreed strategies and promote expansion and multinational exchanges.</p> <p>Establish a national coordination mechanism to streamline communication and ensure effective knowledge management.</p> <p>Strengthened collaboration and partnerships:</p> <p>Take advantage of the designation of a UN EW4All focal point in the country, together with regional DRR thematic networks (e.g. women's networks, persons with disabilities, indigenous</p>

		<p>knowledge, youth, civil society, media, private sector and the UNDRR Regional Advisory Group on Science and Technology -RSTAG).</p> <p>Align the project with the strategic vision of the Americas and Caribbean Regional Coordination Mechanism, as well as key documents such as the Punta del Este Roadmap (2023) and the outcomes of the EW4All/MHEWS Multi-Party Forum.</p> <p>Coordinate with the four lead agencies of the EW4All pillars and supporting partners on complementary initiatives (e.g. disaster risk awareness, impact-based forecasting linked to the Common Alert Protocol, anticipatory action, DRR funding, resilient infrastructure and the Making Resilient Cities 2030-MCR2030 initiative).</p> <p>Incorporate the recommendations of the mid-term review of the implementation of the Sendai Framework and the High-Level Political Declaration by integrating local, traditional and indigenous knowledge with innovative scientific solutions.</p> <p>Facilitate knowledge transfer and sharing:</p> <p>Establish agreements on Standard Operating Procedures (SOPs) covering the four pillars of EW4All and the inter-pillar (governance).</p> <p>Enhance South-South, cross-border and triangular cooperation to maximize investments, promote knowledge management and share best practices and lessons learned.</p> <p>Robust monitoring and evaluation:</p> <p>Adapt and build on developments in monitoring and evaluation from other CREWS initiatives (such as CREWS Caribbean 2.0) and the EW4All global monitoring and evaluation frameworks.</p> <p>Incorporate tools such as after-action reviews, SOFF peer reviews, and Sendai Framework Target G indicators.</p> <p>Ensure alignment with national standards and policies, while strengthening the strengthening of national policy and planning.</p>
<p>Project Justification</p>	<p>a. Who, where and in what ways and to what hazards people and ecosystems are exposed and vulnerable.</p>	<p>The geographical location and topographical diversity of the Dominican Republic expose its inhabitants and ecosystems to the risk of disaster due to multiple events, such as hurricanes, tsunamis, earthquakes, severe storms, coastal floods, landslides and river floods.</p> <p>Hurricanes and Strong Storms: Located in the Atlantic hurricane belt, the Dominican Republic experiences a hurricane season from June to November, which brings strong winds, torrential rains, and storm surge that can trigger other hazards, such as flooding and landslides. Notable hurricanes, such as David in 1979, Georges in 1998, and Maria and Irma in 2017, have caused human losses, significant damage to infrastructure, agriculture, and housing, particularly affecting vulnerable communities in coastal and low-lying areas.</p> <p>Flooding: Heavy rainfall, often associated with tropical storms and hurricanes, causes river, pluvial, and flash flooding, especially in deforested or poorly drained areas. The floods in the Caribbean in May 2004, for example, caused significant human and material losses, especially in areas such as Jimaní, near the border with Haiti. In the IRFF project, the flood-prone basins of the Yaque del Norte and Haina rivers were chosen as pilot basins.</p> <p>Flash floods: Flash floods have become a major threat, directly linked to climate change. In 2023 and 2024, the Santo Domingo metropolitan area suffered severe flash flooding that caused considerable damage and widespread disruption. These events caused damage to infrastructure, affecting thousands of homes and businesses, and causing the temporary</p>

		<p>displacement of more than 10,000 people. The frequency and intensity of flash floods are projected to increase, posing a continuing threat to urban areas.</p> <p>Coastal flooding: Coastal communities are vulnerable to storm surges and rising sea levels, which cause flooding and erosion. These phenomena threaten ecosystems such as mangroves and coral reefs, which provide natural protection from storms, and impact tourism, fisheries and coastal villages, vital sectors of the national economy.</p> <p>Landslides: Deforestation, topography, heavy rainfall, and inadequate land-use planning exacerbate landslide risk in mountainous regions, posing a threat to rural communities and infrastructure.</p> <p>Droughts and forest fires: According to the IPCC's 6th sixth report on climate change as well as national communications, the Dominican Republic will be more prone to droughts in 2050 and 2100. Droughts pose significant risks to agriculture and water resources. Prolonged dry periods can lead to water shortages and increase the likelihood of wildfires, affecting rural livelihoods, biodiversity, agricultural activities and tourism.</p> <p>Earthquakes and tsunamis: The country is located on the boundary of the North American and Caribbean tectonic plates, which makes it susceptible to seismic activity. There have been major earthquakes, and in 1946, a large earthquake north of the Dominican Republic triggered a tsunami, underscoring the potential for such events.</p>
	<p>b. Describe the proposed partnerships and the approach to stakeholder engagement in design and implementation.</p>	<p>The project is co-developed with national authorities through several consultations with the institutions involved in the EWS value chain and climate services (INDOMET, INDRHI, COE, DC, SGN, among others) and ensures that INDOMET, in its capacity as an NMS, leads coordination and implementation efforts at the national level. In addition, work will be done with the WFP national office to ensure articulation of activities related to the response. This co-development is one aspect that ensures that the main national partners have ownership of the project and lead implementation of the project with the support of WMO, UNDRR and other partner organizations.</p> <p>Moreover, WMO and UNDRR as the CREWS Implementing Partners and overall leads of the EW4All initiative at the global level will work closely with ITU and IFRC as leads of EW4All pillars 3 and 4 on Dissemination and Communication of Warnings and Preparedness and Response respectively. The regional offices of the organizations, coordinate on an ongoing basis with other EW4All partners in the region who will support the implementation of the project, including UN partner agencies and the UN Resident Coordinators Office and UN country teams (UNCT), the private sector and civil society organizations.</p> <p>Finally, partnerships will be sought with regional entities, such as the CRRH, CEPREDENAC, CDEMA and others, to ensure that national efforts are homologated with regional efforts and that, in addition, there can be lessons learned that can be shared and scaled, generating information and knowledge that can be more easily shared.</p>
<p>Project design</p>	<p>a. Project components and activities, including describing what and how people-centre</p>	<p>CREWS Dominican Republic focuses on strengthening climate multi-hazard warning services by improving governance and institutional collaboration, as well as strengthening risk knowledge, improving the development and delivery of climate, meteorological and hydrological forecasting services, and increasing efficiency and effectiveness in the production, dissemination, communication of hydrometeorological warnings and community responses. The project will benefit users and sectors vulnerable to climatic and hydrometeorological events, with an inclusive approach that addresses both gender and marginalized groups (children, persons with disabilities, and others) with greater exposure to risk. The main national institutions of the SN-PMR of the Dominican Republic have guided the development of this project which is structured in four components and in the main activities described in this section.</p> <p>Component 1 – Strengthening the governance and institutionality of climate services and MHEWS</p>

<p>d, risk-informed and gender-sensitive approaches will be applied, and how people most at risk, local actors and organisations will be involved.</p>	<p>1.1: National Framework for Climate (and Water) Services (NFCSs) developed and operational</p> <p>The National Framework for Climate Services (NFCS) will be developed together with an action plan aligned with INDOMET's strategic plan (2025-2030, in process of approval), with the aim of strengthening the development of climate services in priority socioeconomic sectors. Technical workshops will be organized in collaboration with national institutions, to establish strategies for the co-production of sectoral climate products. In addition, users from sectors such as agriculture, fishing, resource management and tourism will be trained in the use of climate information applied to their activities. Synergies will be established with other countries in Latin American region implementing NFCS, such as Cuba and Colombia.</p> <p>1.2 : CNE's Standard Operational Protocols on MHEWS enhanced</p> <p>The implementation of the existing national multi-hazard EWS policy (under review) will be supported through the development and annual review of standard operating procedures (SOPs) for inter-institutional collaboration related to warning services for major hazards (such as extreme weather and flooding)</p> <p>It will contribute on analysing exchange of forecasts and inter-institutional decision-making. An exchange mission will also be carried out between key actors to improve operational processes.</p> <p>1.3: Institutionally valued meteorological and hydrological services</p> <p>A socio-economic study on the value of climate services and a business plan for their commercialisation will be prepared to promote their sustainability and strategic use.</p> <p>Component 2 – Improving knowledge about disaster risk</p> <p>2.1: Access to information on enhanced risk</p> <p>The integration of digital cartographies of existing hydrometeorological risks in the Dominican Republic to the SINI platform will be supported, thus strengthening information management for decision-making. Specific mapping of reservoirs at risk of flooding will be developed, based on studies of filling conditions in collaboration with other projects.</p> <p>2.2: Improved landslide risk awareness</p> <p>The technical manual on modelling and mapping of landslide risks caused by rainfall will be updated, and areas of greater vulnerability will be defined through the revision of critical thresholds.</p> <p>2.3: Strengthened capacities to assess and understand multi-hazard risk, according to its potential impacts and frequency of occurrence.</p> <p>The database of damage and losses due to hydrometeorological events will be updated using the Disaster Loss and Damages Tracking System (DTS), and exposure models with multi-hazard attributes will be implemented. In addition, prospective, quantitative and probabilistic methods will be developed to guide risk assessments and mitigation and adaptation measures. Finally, a plan will be drawn up to conduct impact-based risk assessments, contributing to more effective and resilient planning.</p> <p>Component 3 - Strengthening observation, monitoring and forecasting for service delivery</p> <p>3.1: Improved interoperability and data management for efficient production of meteorological and hydrological services</p> <p>The meteorological and hydrological data infrastructure in the Dominican Republic will be strengthened by improving observational data exchange standards, supporting the implementation of WIS 2.0 and the optimization of WHOS, including trainings under the WIS framework. INDOMET's data management system will be modernized, ensuring from reliable internet access to the quality and availability of climate information. Regarding INDRHI, support will be provided for improving the interoperability of their data management system based on WHOS.</p>
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In addition, the design of the basic meteorological monitoring network will be reviewed. The hydrological network design will also be reviewed and updated for critical areas, and gaugings will be carried out along with the updating of rating curves, prioritizing the maintenance of key hydrological stations, all in compliance with the WIGOS framework. Finally, the MCH system will be configured and updated, improving the server, digitizing relevant historical data and consolidating a national inventory of hydrological data, to make data easier to access and process and thus support evidence-based decision-making.

In this component, inputs from SOFF will be fully considered, including the National Gap Analysis, National Contribution Plan for GBON, and will collaborate closely with a SOFF project (1,5 Mio USD) that will upgrade the Dominican Republic's meteorological infrastructure (2026–2028) to achieve full GBON compliance, including station upgrades, data systems, and staff training.

Results from the reviews of the network designs will be incorporated into maintenance and operation plans. These plans will provide practical recommendations and address challenges related to data collection and transmission, as well as maintenance and calibration.

3.2: Enhanced climate, marine, and aeronautical services at the seasonal, sub-seasonal and meteorological scales

This output seeks to improve the capacity to generate climate services, nowcasting and precipitation forecasts as well as aeronautical and marine services. In terms of climate services, the generation of seasonal and subseasonal climate forecasts in different areas of the country will be improved, including the development of adapted sectoral products. An integrated system will be implemented for agrometeorological monitoring and forecasting, agricultural and hydrological droughts, and forest fires, strengthening the anticipation of extreme events. In terms of nowcasting and forecasts of precipitation and marine services, a nowcasting component will be developed within the SISPI system, using satellite data, radars and rainfall observations, together with products associated with impacts. The generation of short- and medium-term weather forecasts will be optimized through multi-model models and local data, including impact bulletins. The production and delivery of marine meteorology services will be improved through SISPI, and the coastal flood impact mapping system (CIFI) will be evaluated to increase its operational use.

Moreover, in order to comply with international standards of organizations including WMO and ICAO (International Civil Aviation Organization), the project will support proper planning of a quality management system and personnel competency frameworks for the Dominican Republic's aeronautical meteorological service provision. Finally, strengthened partnerships with the National Civil Aviation Authority, as well as other stakeholders such as air navigation service providers, airport managements and airline operators) will be sought to discuss and plan cost recovery arrangements.

3.3: Improved hydrological services, flood and landslide forecasting for short-term to seasonal scale

The operational capacities of the Department of Hydrology at INDRHI will be strengthened in several areas: institutional, improvement of infrastructure and staff capacities, forecasts and outlooks, as well as a landslide monitoring system. To this end, the following activities will be carried out: updating of its operational plan, with emphasis on improving the development and delivery of services at the national and local levels. A website dedicated to the communication of hydrological services will be developed, and the integrated flood forecasting system will be updated, incorporating improvements in tools such as GEOGLOWS, FFGS, CIFI and IRFF, along with a training plan adapted to INDRHI staff. In addition, a subseasonal-seasonal hydrological forecasting system will be implemented and indicators on the hydrological status and prospects (HydroSOS) will be generated. Hydrological products and flood bulletins will be reviewed and optimized, establishing semi-automatic tools for their production and dissemination. Finally, technical capacity will be strengthened through a modular training plan in operational hydrology, the improvement of the forecast room with new equipment, and the development of products in areas with a high probability of landslides, based on precipitation thresholds and systems such as FFGS.

		<p>Component 4 – Supporting community outreach, warning and response, incorporating inclusive and gender-sensitive measures</p> <p><i>4.1: Access to hydrometeorological information provided for decision-making on warnings</i></p> <p>Multi-hazard monitoring platforms will be strengthened to improve decision-making in the issuance of meteorological, hydrological and landslide warnings. Access for women, youth, and elderly will be a priority since the inception of such platforms</p> <p><i>4.2: Improved dissemination and communication of warnings</i></p> <p>The CAP protocol will be integrated into the warning systems of INDRHI and COE, with the technical support of INDOMET, and the warning thresholds will be reviewed to ensure their effectiveness. In addition, inter-institutional simulations will be carried out to improve the communication of warnings, as well as workshops aimed at the media and institutional communicators in priority areas. Such workshops will be carried out from a gender-approach to ensure participation and application of women, as well as youth and elderly.</p> <p><i>4.3: Reception and appropriation of warnings by the strengthened population</i></p> <p>Community awareness-raising campaigns on early warnings and anticipatory actions will be carried out in pilot basins, and disaster risk reduction (DRR) plans will be updated with a focus on early warning systems (EWS) in vulnerable municipalities. Finally, community leaders, with particular focus on female leaders, will be trained in climate risk management, strengthening local preparedness for extreme events, including youth and elderly.</p> <p>Cross-cutting</p> <p>Under this project, strengthening human and institutional capacities are central to ensuring the effective and sustainable delivery of climate and hydrometeorological services. Therefore, capacity development is a cross-cutting component that will focus on enhancing the competency-based approach to training for both INDOMET and INDRHI as NMS and NHS of Dominican Republic respectively.</p> <p>The project will conduct a comprehensive assessment of: existing education and training providers, training needs and competency gaps (also based on previous assessments), alignment with WMO competency standards and BIP requirements, and defining specialized training needs. Based on the results, the project will work with technical partners to provide operational trainings linked to the different technical components being implemented (i.e. improvement of databases, forecasting systems, etc.).</p> <p>The project will ensure that standardize documentation and procedures are developed, ensure traceability of training events, collection of information on number of men and women trained, and embed processes for maintaining and updating competencies linked to performance criteria and job descriptions to embed training needs into practices in the institutions.</p>
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<p>Organization and Operating Procedures</p>	<p>a. Institutional framework (Describe the envisaged project management structure and how all organisations involved in the implementation of the project will collaborate. Briefly describe the key roles of each partner/actor by component)</p>	<p>The project is part of a robust and multisectoral institutional collaboration, aimed at strengthening impact-based early warning systems. Implementation will be led by WMO and the United Nations Office for Disaster Risk Reduction (UNDRR).</p> <p>At the national level, operational implementation will be carried out by key institutions such as INDOMET, INDRHI, COE, DC and SGN, with technical support from WMO and UNDRR, as well as the partners identified for each of the activities.</p> <p>A Project Steering Committee (PSC) will be established, made up of the aforementioned institutions and chaired by INDOMET. The PSC will ensure effective governance, timely delivery of activities and quality of results. This committee will have functions of supervision, definition of roles, review of progress, risk management and generation of synergies with other relevant</p>
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		<p>projects. The PSC meetings will be held annually, in person or virtually, ensuring continuous coordination between implementing partners and national institutions. The PSC may invite other partners to its meetings when it deems it relevant (for example, to define synergies with projects of multilateral and regional agencies, etc.).</p>
	<p>b. Monitoring and evaluation system (ensuring sufficient resources for monitoring and evaluation)</p>	<p>The monitoring and evaluation of the CREWS project in the Dominican Republic are based on a results framework aligned and reporting to the CREWS MEAL (Monitoring, Evaluation, Accountability and Learning) system. During the first year of the project, the monitoring and evaluation plan can be reviewed and enhanced (based on Annex 4).</p> <p>The project's logical framework will serve as the main tool to assess progress against these indicators, allowing for strategic adjustments based on the results achieved.</p> <p>The project will conduct internal evaluations on a semi-annual basis where performance will be analysed and both operational and strategic risks will also be assessed. In addition, external reviews will be carried out in the middle and at the end of the project, to ensure that the quality and scope of the project is met and to take timely corrective measures if necessary. The results will be included in the official reports for CREWS.</p>
<p>Feasibility and sustainability of the project</p>	<p>a. Main risks identified</p>	<p>Overall Risk Rating: The overall risk rating for this project is moderate to low.</p> <p>Environmental risks (low):</p> <p>Large-scale structural measures are not considered since the focus of the project is mainly technical assistance, which will not generate negative impacts on the environment. However, since the installation of meteorological and hydrological stations is considered, it will be considered to generate the least possible environmental impact in the specific sites chosen for such installations.</p> <p>Country commitment (low): Given that this project is being co-developed with the national authorities and addresses specific needs that they are keen on strengthening, there is a low risk of insufficient commitment by the Dominican Republic's national institutions and authorities. However, the complexity and administrative intricacies of the agencies involved could pose challenges for implementation, as well as unforeseen changes in the management of the institutions.</p> <p><i>Mitigation measures:</i> Implementing partners will maintain strong channels of communication with all national institutions and stakeholders through established networks and offices, ensuring that the latter remain the lead for of the project. The project will designate focal points from key national hydrometeorological and disaster risk management institutions to ensure systematic and continuous communication regarding needs, progress and developments. In turn, if inter-institutional agreements are established (for example, for coordination or for the exchange of data and information), these will include well-defined</p>

		<p>commitments and will be given under the key institutions according to the governmental structure.</p> <p>Human resources/capacity risks (medium): The limited administrative and technical capacity of national hydrometeorological and disaster and emergency risk management institutions may affect the project's ability to manage the additional workload in conjunction with its usual responsibilities. While the project will support staff training, the underlying shortage of human resources may not be fully resolved.</p> <p><i>Mitigation measures:</i> For technical capacity, a comprehensive capacity development plan will be produced and applied, including, among others, trainings to build up and maintain the staff skills. For administrative capacity, partners will work closely together to provide administrative guidance on WMO and UNDRR procedures related to contracts, procurement and budgets. This support will help facilitate the management of the increased workload and provide long-term guidance on the development of a sustainable recruitment strategy.</p>
	<p>b. Critical assumptions</p>	<p>Strong national and institutional commitment: The success of the project presupposes a strong commitment from the national government of the Dominican Republic and its relevant institutions, ensuring support to integrate, improve and ensure the sustainability of early warning systems and climate services.</p> <p>Effective collaboration between implementing partners: Success depends on seamless cooperation between major international agencies (WMO and UNDRR), RTCs, and technical partners such as the World Food Programme (WFP) and Brigham Young University (BYU), as well as other collaborating entities.</p> <p>Active participation of national and regional networks: It is assumed that national meteorological organizations (NMHSs) and disaster risk management organizations (NDRMOs) will be actively involved, building on the results of previous CREWS initiatives, and that regional agencies (e.g. CMO, CDEMA, CRRH and CEPREDENAC) and networks of contacts will support and expand these efforts.</p> <p>Increased public awareness and demand for resilience: The project assumes that growing public awareness of hydrometeorological hazards will create strong demand for resilient, people-centred early warning systems and climate services.</p> <p>Clear roles and complementary contributions: It is assumed that all stakeholders will agree on their respective roles in all components of the project – disaster risk awareness, detection, monitoring, analysis, forecasting, dissemination of warnings, preparedness and early action – to ensure coordinated and effective implementation.</p> <p>Continuous improvement of existing services: The project is based on the assumption that the fundamental services developed in previous projects (such as specialised flood forecasting services) will be maintained and continue to improve, especially in areas of high exposure and vulnerability of critical infrastructure.</p>

		<p>Leveraging financial and technical support: The initiative assumes that coordination with major international financial institutions (GFDRR, IDB, CAF, CARIBBEAN DEVELOPMENT BANK, etc.) will remain strong, facilitating additional financing, technical support, and the integration of sustainable business plans for weather and hydrological products.</p>
	<p>c. Judgement on the project sustainability</p>	<p>The sustainability of the project will be fostered by:</p> <p>Building on the results of CREWS Caribbean:</p> <ul style="list-style-type: none"> - The project builds on the proven methodologies and best practices of the CREWS Caribbean initiative, ensuring that lessons learned are effectively transferred to the Dominican context. Moreover, opportunities for joint trainings ensure effective use of funds. Partnering with RTCs (like in the case of CREWS Caribbean) and national training institutions ensures that knowledge transfer can be sustained after the project. - This alignment promotes the sustainability of new systems by building on proven frameworks that have already proven successful in the region. <p>Preparation of INDRHI for the World Bank project:</p> <ul style="list-style-type: none"> - Strengthening INDRHI's technical and operational capacities will directly support the implementation of the World Bank's next water sector modernization project. - By aligning INDRHI's systems with the World Bank's requirements, the project lays a solid foundation for effectively accessing and using the US\$7.5 million allocated for that project, thereby supporting long-term sustainability. - CREWS will focus on critical areas/hotspots, particularly in regard to the hydromet network. Any outcomes from the design studies on the meteorological and hydrological observational networks will be shared for consideration of the World Bank project. <p>Improvement of the governance of climate services and early warning institutions:</p> <ul style="list-style-type: none"> - The project will drive improvements in the governance of climate services and multi-hazard early warning systems by establishing a national framework for climate services focused on priority sectors. - In this way, best practices and lessons learned will be institutionalized and procedures will be standardized in all key bodies, fostering a culture of continuous improvement and resilience. <p>Development of a business plan for meteorological and hydrological products:</p> <ul style="list-style-type: none"> - A specific business plan will be developed to market and maintain meteorological and hydrological products. - This approach will ensure that revenue-generating mechanisms are in place to support the financial viability and continued innovation of these critical services. - Likewise, it will be ensured that the approach is in accordance with the law that creates INDOMET and INDRHI. <p>Improvement of existing pilot systems:</p> <ul style="list-style-type: none"> - The project will enhance and extend existing pilot systems, including IRFF, SWFP/SISPI GeoGlow and CIFI, ensuring that they evolve from experimental phases to fully operational tools.

		<ul style="list-style-type: none"> - The continuous refinement and integration of these pilot systems into national systems will enhance their long-term usefulness and sustainability. <p>Expansion of disaster risk knowledge on a national scale:</p> <ul style="list-style-type: none"> - By integrating advanced data collection and risk analysis, the project will improve the overall understanding of disaster risk for multiple hazards across the country. - Greater knowledge of risk will support, in addition to the activities mentioned above, evidence-based decision-making processes, allowing for more proactive and resilient planning across sectors. - Knowledge on risk along with project products and services will be widely disseminated <p>Integration of data exchange and warning dissemination protocols:</p> <ul style="list-style-type: none"> - The project will establish robust protocols for data exchange and warning dissemination within regional and global networks (such as CAP and WIS). - This integration will ensure timely and accurate impact communication, creating a resilient network that benefits not only the Dominican Republic but also neighboring countries. <p>Fostering of regional and global cooperation:</p> <ul style="list-style-type: none"> - By building partnerships with regional organizations and leveraging initiatives such as the EW4All Regional Coordination Mechanism, the project will catalyze broader south-south and triangular cooperation, as well as ensure that good practices can be captured and replicated in the region. - This collaborative approach will facilitate ongoing technical support, shared learning, and the long-term sustainability of multi-hazard early warning systems. <p>These strategic elements, drawn from the project's components and activities, collectively underpin the long-term sustainability of the project by ensuring institutional alignment, financial viability, technical robustness, and regional integration.</p> <p>Support to strengthening institutional capacities:</p> <ul style="list-style-type: none"> - The project has a strong focus on capacity development, based on competency management framework and supporting WMO documentation. The project will ensure that (1) materials are created for ensuring services provision, (2) the region is prepared to support trainings on such services provision, (3) the country is able to access regional and national resources for keeping capacity, and thus reducing dependency on external training providers. Moreover the project will allow to embed capacity development in ongoing institutional processes rather than adhoc activities, ensuring uptake of provided trainings. - A systematic approach to knowledge management will be taken, concentrating capacity development materials for the use of RTCs and national institutions, documenting outcomes of any training provided, including the collection of information on number of women and men trained.
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Annex 1: Budget breakdown (USD)

N ^o	Components and outputs	Budget approx (USD)	WMO	UNDRR
1	Component 1 – Strengthening the governance and institutionality of climate services and MHEWS	450.000	350.000	100.000
1,1	1.1: National Framework for Climate and Water Services (NFCS) developed and operational		180.000	
1,2	1.2 : CNE’s Standard Operational Protocols on MHEWS enhanced		100.000	100.000
1,3	1.3: Institutionally valued meteorological and hydrological services		70.000	
	Coefficient %	0,15		
2	Component 2 – Improving knowledge about disaster risk	460.460	190.000	270.460
2,1	2.1 : Access to information on enhanced risk		90.000	
2,3	2.2 : Improved landslide risk awareness		100.000	
2,3	2.3: Strengthened capacities to assess and understand multi-hazard risk, according to its potential impacts and frequency of occurrence.			270.460
	Coefficient %	0,15		
3	Component 3 - Strengthening observation, monitoring and forecasting for service delivery	1.655.840	1.655.840	
3,1	3.1 : Enhanced interoperability and data management for efficient production of meteorological and hydrological services		200.000	
3,2	3.2 : Enhanced climate, marine, and aeronautical services at the seasonal, sub-seasonal and meteorological scales		625.840	
3,3	3.3 : Improved hydrological services, flood and landslide forecasting for short-term to seasonal scale		830.000	
	Coefficient %	0,55		
4	Component 4 – Supporting community outreach, warning and response, incorporating inclusive and gender-sensitive measures.	446.000	220.000	226.000
4,1	4.1 : Access to hydrometeorological information provided for the decision-making of warnings		120.000	-
4,2	4.2 : Improved dissemination and communication of warnings		50.000	116.000
4,3	4.3 : Reception and appropriation of warnings by the strengthened population		50.000	110.000
	Coefficient %	0,15		
	Budget	Total (USD)	2.415.840	596.460

Total UNDRR	900.000,00
Implementation of activities	596.460,00
Kick-off/Closing, Steering committee meetings	30.000,00
Project management (20% project officers)	170.000,00
Execution fee (13%)	103.540,00
Total WMO (Lead)	3.600.000,00
Implementation of activities	2.415.840,00
Kick-off/Closing, Steering committee meetings	20.000,00
Project Evaluation (final)	50,000,00
Project management (20% project officers)	700.000,00
Execution fee (13%)	414.160,00
Total Project (USD)	4.500.000,00

Annex 2: Work plan/implementation timeline

Results/outputs/activities	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1.1.1 Development of the National Framework for Climate Services (NFCS) and action plan to boost climate services in priority socio-economic sectors, including a method for monitoring					█	█	█	█												
1.1.2 Conduct technical workshops on the generation of sectoral climate products in cooperation with national institutions, and countries such as Cuba and Colombia							█	█	█	█	█	█								
1.1.3 Conduct training workshops for sectoral users on the use of climate information in their related activities									█	█			█	█	█	█				
1.2.1 Support the operation of the new multi-hazard early warning system (MHEWS) policy at the national and local levels, through the creation of standardized operating procedures (SOPs)			█	█	█	█	█	█												
1.2.2 Conduct annual workshops for the review of MHEWS SOPs (extreme storms, rapid/urban, river and coastal flooding and possibly others as defined by national authorities) at the inter-institutional level							█	█	█	█			█	█			█	█		
1.2.3 Exchange mission of the MHEWS main actors for retrospective analysis of SOPs and proposal for improvement									█	█										
1.3.1 Development of a socio-economic study of the value of climate, meteorological and hydrological services					█	█	█	█												

data quality control, including these aspects in maintenance and operation plans																				
3.1.3 Review of the design and optimization study of the INDOMET basic meteorological monitoring network, include these aspects in maintenance and operation plans and provide recommendations																				
3.1.4 Conduct gaugings and updating of rating curves, including support for the maintenance of priority hydrological stations. Conduct WIGOS trainings as required.																				
3.1.5 Create an inventory of hydrological data in the country, collect and digitize priority historical data of past events, and configure and update MCH, including server improvements																				
3.2.1 Improvement of the generation of seasonal and subseasonal climate forecasts in different climatic zones of the country and development of sectoral climate products																				
3.2.2 Development of an integrated system for agrometeorological and (agricultural and hydrological) drought monitoring and forecasting and forest fires.																				
3.2.3 Development of a nowcasting component based on satellite data, radars and rainfall observations within the SISPI immediate forecast system, and development of associated impact products																				
3.2.4 Improvement of weather forecast generation (short and medium term) based on multi-model products (SWFP-AROME, SISPI-WRF, etc.) and local data, including development of impact bulletins																				
3.2.5 Assess INDOMET capabilities in terms of monitoring sea conditions and sea water level rise and propose an improvement plan. Implement an operational system to																				

improve the production and delivery of marine meteorology services based on SISPI and establish a service policy plan.																				
3.2.6 Evaluation of the Coastal Flood Impact Mapping System (CIFI) and incorporation of improvements to increase its operational use																				
3.2.7 Assess the status of implementation of a quality management system for the provision of aeronautical meteorological services, including through the conducting of a gap analysis and the development of a remediation plan																				
3.2.8 Assess the status of implementation of competency frameworks for aeronautical meteorological personnel (aeronautical meteorological observers and aeronautical meteorological forecasters), including through the conducting of a gap analysis and the development of a remediation plan.																				
3.2.9 Assess the status of implementation of a cost recovery arrangement for the provision of aeronautical meteorological services, including through the conducting of a gap analysis and the development of a remediation plan.																				
3.3.1 Update of the Operational Plan of the Department of Hydrology, with emphasis on improving the development and delivery of services at national and local levels																				
3.3.2 Development, configuration and enabling of a website for the communication of hydrological services																				
3.3.3 Update the integrated flood forecasting system at the national level, based on the improvement of systems available in INDRHI (e.g.: GEOGLOWS for river floods, FFGS for rapid floods, CIFI for coastal floods, and the IRFF forecasting system for impact in urban areas of Yaque del																				

4.2.2 Review and improvement of thresholds for decision-making on hydrometeorological warnings.																				
4.2.3 Conduct an inter-institutional simulation workshop on the communication and dissemination of warnings of rapid hydrometeorological events																				
4.2.4 Conduct awareness-raising workshops for the media and institutional communicators on the interpretation and communication of forecasts and warnings in priority areas																				
4.3.1 Carry out awareness-raising campaigns on early warnings and anticipatory actions in vulnerable communities in pilot basins (e.g., Yaque del Norte, Haina and Yuna)																				
4.3.2 Develop and/or update local DRR plans with a MHEWS focus in three pilot localities (municipalities)																				
4.3.3 Training at local level on climate and disaster risks and and anticipatory actions in the pilot areas																				

Annex 3: Logical framework

Refer to the CREWS MEAL framework and ensure its harmonisation

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Expected Results	Indicators	Baseline	Target	Unit of Measure	Disaggregation	Sources
<p>Goal:</p> <p>Strengthened resilience to climate shocks and loss and damage averted and minimized through increased availability and improved access to multi-hazard early warning systems by 2027</p>	<p># of people living in LDC and SIDS with access to/and receiving forecasts and early warning services developed or improved with CREWS support</p>	0	10,878,267	number of people	<p>For climate warnings: all population for climate</p> <p>For flood warnings: Yaque del Norte, Haina and Yuna (~2,8 Mio). Men and Women.</p> <p>When data is available, include children and people with disabilities, as well as belong to most at risk sectors.</p> <p>When possible, also by basin/geographical region</p>	<p>DR's Statistics National Office)¹</p> <p>National Strategic plans, EW4ALL Roadmaps, training reports, bulletins from INDOMET, INDRHI, and other national institutions</p>
<p>Outcome 1:</p> <p>National and local multi-hazard early warning systems</p>	<p># of LDCs and SIDS with national investment plans and budgets prioritizing multi-hazard early</p>	0	1	number	Dominican Republic	<p>EW4ALL with national investment plan and budget. coordinated with national institutions and project partners</p>

prioritized and funded	warning programmes					
Output 1.1: A country and/or region has developed or strengthened legislative and/or institutional frameworks to support and sustain multi-hazard early warning systems	# of national plans, strategies and legislations on early warning approved and/or implemented	0	1	number	1 National Framework for Climate Services (NFCS) and Action plan	RD NFCS (2026-2029) SOP report to support new MHEWS Policy
	# of coordination mechanisms strengthened or established to enhance collaboration on early warning among national or regional institutions	0	1	number	1 MHEWS mechanism (for hydrometeorological hazards) established consisting of 2 exchange of experiences/ trainings on EWS institutional coordination for climate, hydrology, marine, and/or aviation, and 4 coordination meetings of CNE participating institutions strengthened (1 per year)	Minutes, reports, surveys, available platforms, documents & consultations of the CNE and COE, and other participating institutions

<p>Output 1.2: Multi-hazard needs, gaps and priority assessments, analyses and related investment plans for early warning systems in a country or region are driven by CREWS financing</p>	<p># of multi-hazard assessments, analyses and other mapping of needs, gaps priorities that inform investment requirements on early warning</p>	<p>0</p>	<p>1</p>	<p>number</p>	<p>1 validated socio-economic analysis report on the value of hydrometeorological services, including a plan for commercialization of specialized related services</p>	<p>Assessment Reports</p>
<p>Output 1.3. Partnerships and cooperation frameworks developed for financing and scaling up</p>	<p>Total volume of funds leveraged by national institutions and development partners (in USD) through CREWS investments</p>	<p>0</p>	<p>~470M</p>	<p>number</p>	<p>Potential leverage from: World Bank funded project (BM-P177823): 200 Mio IDB (DR-L1161): 270 Mio</p>	<p>Project workplans</p>
<p>support to multi-hazard early warning systems</p>	<p># of LDCs and SIDS benefiting from GCF resources through the GCF-SAP CREWS Scaling Up Framework</p>	<p>0</p>	<p>1</p>	<p>number</p>	<p>1 GCF-SAP CREWS Dominican Republic requested</p>	

<p>Outcome 2. Improved early warning service delivery and accessibility by national and regional institutions</p>	<p># of hazards which pose a risk of life and economic loss for which forecasting and warning services are in place in LDCs and SIDS through CREWS support</p>	<p>4 hazards predominant - Tropical cyclone, Heavy rain, Flooding, Drought (climate)</p>	<p>5 Hazards - include Drought (agriculture and hydrological), Landslides</p>	<p>number</p>	<p>1 warning/watch/advisory products improved for agricultural and hydrological drought, landslides, sub-seasonal to seasonal hydrological conditions</p>	<p>Bulletins, advisories, warnings, watches, etc. from INDOMET, INDRHI, and other national institutions</p>
<p>Output 2.1 Risk information and tools generated by countries to enable the delivery of impact-based early warnings</p>	<p># of risk data tools developed or strengthened to generate early warning products and/or support impact-based warnings.</p>	<p>1</p>	<p>3 (1 Enhanced/Updated and 2 new)</p>	<p>number</p>	<p>1 SINI platform updated with risk maps 1 DSS tailored to Dominican Republic with updated losses and damage information 1 exposure model implemented</p>	<p>Technical assessment based on document review, field campaign data, and verification of updated SINI system cartographies, risk and hazard maps, reservoir analyses, and related planning products.</p>

<p>Output 2.2. Monitoring, analysis and forecasting of hazards that threaten the country/region are improved and sustained by the countries</p>	<p># of functioning monitoring and observation systems established or strengthened per hazard</p>	<p>4</p>	<p>4 improved</p>	<p>number</p>	<p>1 nowcasting component updated with remotely-sensed data to SISPI 1 drought monitoring and forecasting improved to provide information for agriculture and hydrological practices 1 flood forecasting systems improved 1 Landslides monitoring system improved</p>	<p>Document review and technical verification of reports covering database and interoperability improvements, meteorological, hydrological, and marine-meteorology monitoring network design and maintenance, updated rating curves and gauging activities, MCH system updates and data digitization, delivery of modular training programs, and the functionality of the improved landslide monitoring system.</p>
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	<p># of hazards monitoring, analysis and forecasting processes developed or improved</p>	<p>2</p>	<p>6 (2 updated and 4 new)</p>	<p>number</p>	<p>1 Agromet and drought monitoring and forecasting system 1 flood monitoring and forecasting system 1 Disaster registry updated in the DTS 1 operational data exchange system (meteorological and hydrological) 1 quality management system for the provision of aeronautical meteorological services 1 operational process for the production and delivery of marine meteorology services</p>	<p>Document review: 1 report on process for agromet and drought monitoring and forecasting 1 report with operation of flood monitoring and forecasting 1 report for updating disaster registry in the DTS 1 report with process for operational data exchange system (meteorological and hydrological) 1 plan for enhancing/updating quality management system for the provision of aeronautical meteorological services 1 report with operational process for the production and delivery of marine meteorology services , verification of data updates, and technical</p>
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					analysis, Reports on WIS 2.0 implementation at INDOMET, WHOS/INDRHI system updates, and documentation of WIGOS standards trainings, SISPI Impact products and their reports
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<p># of forecasting and prediction products developed and/or accessed from WMO Global Prediction Centers (GPCs), Regional Specialized Meteorological Centers (RSMCs) and NMHSs</p>	<p>1</p>	<p>3 (1 improved and 2 developed)</p>	<p>number</p>	<p>1 National HydroSOS Outlook Product developed tailored to DR 1 agromet drought outlook product, developed 1 Improved national weather forecasting bulletin based on the used of AROME from RSMC Martinica and multi-model NWP products</p>	<p>Sector-specific outlook reports/bulletins, HydroSOS product/bulletin, and established procedures for hydrological forecast production and coordination, reports on weather forecast generation and impact bulletins</p>
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<p>Output 2.3 Warnings are communicated by the countries based on common alerting protocols under agreed standard operational procedures (SOPs)</p>	<p># of warnings issued in CAP format</p>	<p>0</p>	<p>2 hazard alerting delivered (heavy rain, flood) by CAP</p>	<p>number</p>	<p>CAP will be established and integrated into INDOMET and INDRHI (or COE/DC) for the provision of heavy rain, and flood forecasting alerting</p>	<p>Reports from trainings, community-based meetings, institutional figures from government/institutional reports</p>
	<p># of updated LDCs and SIDS entries in the WMO register of alerting authorities</p>	<p>1 (INDOMET)</p>	<p>2 (INDOMET + new registration from Emergency Coordination Center-Civil Protection)</p>	<p>number</p>	<p>INDOMET is registered. Register any additional institution for their mandated alerts (ie. INDRHI)</p>	<p>Registration valid and updated on WMO site</p>

	<p># of communication channels through which warnings are disseminated in the area covered by a prediction service for a given hazard(s)</p>	<p>2</p>	<p>3 (1 INDOMET web site , 1 COE/DR warning communication system improved with inclusion of CAP composer, and 1 NHS website developed and both connected to CAP)</p>	<p>number</p>	<p>1 NMS website operational improved with CAP inclusion and 1 NHS website created with CAP inclusion 1 COE/DR for warning dissemination improved with the inclusion of CAP</p>	<p>Document review and technical verification of operational flood forecasting frameworks, warning dissemination tools and platforms (websites, bulletins, and automated production systems), upgraded forecasting and impact-based systems (GEOGLOWS, FFGS, CIFI, IRFF, HydroSOS), user guides and trainings, portals, visualization tools, and established procedures for hydrological forecast production and coordination.</p>
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Output 2.4 Warnings are received, understood and acted upon based on co-produced preparedness and response plans by the countries	# of preparedness and anticipatory action plans or Standard Operating Procedures (SOP) that are operational and linked to prediction and warning services	1	4(1 improved and 3 developed)	Number	1 Report of SOPs for hydrometeorological hazard alert 3 local DRR plans with a MHEWS focus developed in three pilot localities (municipalities)	Workshop reports, Communication plans, CbEWS launch press releases
	# of risk maps, advisory and other warning products that are available and adapted to the user group/development sector needs	1	4 (1 improved on Severe weather and 3 developed)	number	1 Risk maps for reservoir flooding 2 forecasting products improved as warnings support on Severe weather (heavy rain, strong wind, high wave) and on flooding 1 climate buletin with sectorial advisory for Ports/Tourism/Agriculture/Water	Technical reports, Awareness Materials published, Sector specific products launched

<p>Outcome 3. Early warning programmes are driven by people-centered and gender-responsive principles and promote private sector engagement</p>	<p>Level of integration of people centered and gender responsive approaches</p>	<p>Low - The Gender and Climate Change Action Plan of the Dominican Republic (PAGCC-DR) is not fully integrated across NMHS planning processes</p>	<p>Medium - Active support from the PAGCC for people-centered integration (women, youth, and persons with disabilities) in the Dominican Republic</p>	<p>qualitative level</p>	<p>3 Awareness campaigns on MHEWS and DRR in 3 local communities</p>	<p>Reports from trainings, community-based meetings, institutional figures from government/institutional reports</p>
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<p>Output 3.1 People of different backgrounds, gender, youth, older persons, people with disability, poor, marginalized, displaced, and non-native, as well as related institutions have co-produced climate and weather information products tailored to their need</p>	<p># of climate and weather information products co-designed to users' needs by group representing vulnerable segments of exposed populations</p>	<p>0</p>	<p>4</p>	<p>number</p>	<p>4 sectorial climate products (Ports/Tourism/Agriculture/Water) co-produced between INDOMET and/or INDRHI and other national institutions and tailored to the need of the mentioned sectors</p>	<p>Meetings & consultations, surveys, Bulletins from INDOMET, INDRHI, and other national institutions</p>
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	# of women and men trained through 1 capacity building programme (with at least 8 activities)	0	140	number	<p>At least 10 men and 10 women from INDOMET and INDHRI will receive 4 depth operational trainings on weather and flood forecasting related areas</p> <p>At least 100 school children (2 campaigns) on early warning system and DRR awareness</p> <p>At least 20 elderly trained (3 workshops) on community based practices for EWS</p>	List of participants disaggregated by gender, vulnerability, and disability. Reports of the trainings. Agenda and report of the capacity building programme, WIGOS standards trainings documentation
	# of CREWS projects that have included gender equality as an objective or outcome	0	1	number	Activities on gender inclusion are considered however these are not part of an objective or outcome	Training attendance sheets, workshop reports, participants evaluation sheets
	# of targeted outputs and activities towards gender implemented	0	8	number	4 operational training for forecasters from INDOMET and INDRHI, 2 awareness campaign for children and 3 workshops for most at risk communities	Training attendance sheets, workshop reports, participants evaluation sheets
Output 3.2 Private sector is engaged to foster innovation and sustainability	# of agreements with private sector to co-finance or co-implement Early	0	1	Number	One PPE agreement (target: agriculture , port, or hydropower companies)	MOU, Project commitment

in delivery of early warning services	Warning System initiatives					
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CREWS MEAL Results	Result 1. National and local Early warning of multiple hazards Priority and funded systems			Outcome 2. Improvement of the early reduction service delivery and accessibility by the Regional institutions				Outcome 3. Early warning programs are driven by People-centred and gender-sensitive principles and promoting the private sector commitment	
<p>CREWS MEAL Departures</p> <p>Project results</p>	<p>Result 1.1. A country and/or region has developed or strengthened legislative and/or institutional frameworks to Support and sustain multi-hazard early warning systems</p>	<p>Result 1.2. Multi-hazard needs, gaps and priorities assessments, analyses, and related investment plans for The early warning systems of a country or region are driven by CREWS Financing</p>	<p>Result 1.3. Partnerships and cooperation frameworks developed to finance and scale up support for multi-skilled Rapid risk warning systems</p>	<p>Outcome 2.1 Country-generated risk information and tools enable impact-based early warnings</p>	<p>Result 2.2. Risk monitoring, analysis and forecasting that threaten the country/region are improved and supported by countries</p>	<p>Outcome 2.3 Countries report warnings based on common warning protocols in accordance with agreed standards Operating Procedures (SOPs)</p>	<p>Outcome 2.4 Warnings are received, understood, and acted upon based on co-produced preparedness and response Country Plans</p>	<p>Outcome 3.1 People of different backgrounds, gender, youth, the elderly, people with disabilities, the poor, the marginalized, displaced and non-native peoples, as well as related institutions have jointly developed climate and weather information products tailored to your needs</p>	<p>Outcome 3.2 The private sector is committed to fostering innovation and innovation. Sustainability in the provision of early warning services</p>
<p>Output 1.1: National Framework for Climate and Water Services (NFCS) developed and operational</p>	✓	✓						✓	✓
<p>Output 1.2: Enhanced Multi-Hazard CNE Operational Protocols over EWS</p>	✓								
<p>Output 1.3: Institutionally valued meteorological and hydrological services</p>		✓	✓						✓
<p>Output 2.1: Access to Enhanced Risk Information</p>		✓		✓					
<p>Output 2.2: Improved landslide risk awareness</p>				✓					
<p>Output 2.3: Capacities to assess and understand multi-hazard risk strengthened,</p>				✓					

	according to its potential impacts and frequency of occurrence.								
	Output 3.1: Enhanced interoperability and data management for efficient production of climate, meteorological and hydrological services				✓			✓	
	Output 3.2 Improved seasonal, sub-seasonal and meteorological climate services and marine services created				✓	✓		✓	
	Output 3.3 : Improved, short-term and seasonal hydrological services, flood and landslide forecasting				✓	✓		✓	
	Output 4.1 : Access to hydrometeorological information provided for decision making warnings						✓		
	Output 4.2 : Improved dissemination and communication of warnings						✓		
	Output 4.3: Reception and appropriation of warnings by the strengthened population.						✓		

Annex 4: Monitoring and Evaluation Plan Format

4.1 Theory of change

This section will introduce the Theory of Change (and logical model) for the project, including key causal factors, assumptions, and risks. Make sure it matches the Theory of Change of the CREWS MEAL framework.

The ToC and logic model are attached separately (see tab 2 of [CREWS Dom Rep Workplan_FINAL.xlsx](#))

4.2 Control

This section describes how the project will monitor performance and track progress towards the expected results in the results framework.

- Roles and responsibilities in oversight activities

Responsible	Tasks
WMO	<ul style="list-style-type: none"> Oversee the overall monitoring and evaluation (M&E) process Ensure alignment of monitoring activities with the project's goals and objectives and reliable data collection from national institutions. Monitor project activities, including assessing progress toward deliverables. Review and approve monitoring plans and performance reports. Carry out internal mid-term evaluation to assess project progress.
UNDRR implementing Partner (Co-)	<ul style="list-style-type: none"> Support M&E especially on the risk communication and community preparedness side
External Evaluator	<ul style="list-style-type: none"> Conduct independent end-of-project evaluations to validate internal monitoring results. Provide recommendations based on findings to enhance future project performance. Assess whether the project outcomes and impacts are in line with the goals and objectives stated.
Project Steering Committee (PSC)	<ul style="list-style-type: none"> Strategic oversight and review monitoring reports. Hold the project accountable for achieving its stated objectives through annual review of progress and validation of necessary adjustments.

A baseline data report, which is a tool that presents the initial magnitudes of the indicators, i.e. their value at the beginning of an intervention:

<p>1. Introduction</p>	<p><i>Briefly explain the purpose of the report and relevant information about the process of collecting baseline data (period of collection, mention of the methods used, locations where the data were collected, total number of indicators in the report, team or individual who carried out the collection, and other elements that the manager considers important).</i></p> <p>This baseline report will establish the initial values of all indicators in the project's results framework. It will describe the data collection process, including the period of collection, methods used (e.g., administrative data review, institutional assessments, interviews, surveys), locations and institutions involved (INDOMET, INDRHI, COE, DC), and the team responsible for the process.</p>
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	The baseline will include both quantitative and qualitative indicators and will highlight data gaps that the project must address.
2. Intervention summary (programme, project or investment)	<p><i>Briefly describe the intervention in question, including the objective, approach, main components, partners, start-up, duration, and any other elements that are considered relevant.</i></p> <p>The CREWS Dominican Republic project aims to strengthen end-to-end multi-hazard early warning systems through four interconnected components:</p> <ol style="list-style-type: none"> 1. Governance, coordination and institutional strengthening; 2. Enhanced risk knowledge and impact-based forecasting; 3. Improved dissemination and communication systems, including CAP and SOPs; 4. Community preparedness and last-mile readiness. <p>The project is implemented by WMO and UNDRR in partnership with national institutions, with a planned duration of 2026–2030.</p>
3. Indicator Benchmarks	<p><i>Include the following information for each indicator:</i></p> <ul style="list-style-type: none"> - <i>Indicator name and code</i> - <i>Indicator Type</i> - <i>Output or result measured by the indicator</i> - <i>The immediate and/or intermediate results (as applicable) into which the immediate product or result fits (the result chain).</i> - <i>Baseline data, including baseline data broken down by corresponding categories, if applicable.</i> - <i>Objectives, including annual objectives and objectives at the end of the project, including objectives broken down by corresponding categories, if applicable.</i> <p>The baseline values and indicators are attached separately. See tab 5 of : CREWS Dom Rep Workplan FINAL.xlsx</p>

4.3 Evaluation

This section describes all planned evaluations, from performance to impact, relevant to the project, and can be used to track evaluations over the project timeframe. It may include:

- **An evaluation plan, which identifies the different types of internal and external evaluations that will be carried out during the implementation period. It also includes the timetable for conducting the evaluations, as well as the budget, i.e. the necessary human and financial resources.**

Type of assessment	Evaluation management		When will it be held?				Resources	Budget
	Internal	External	Year 1	Year 2	Year 3	Year 4		
Formative assessment (mid-term or process assessment)								
Final Evaluation		X				X	External Consultant / Independent Evaluator USD 50,000	
Impact Assessment								

4.4 Learning

The learning section identifies how the project will use the available information to learn and adaptively manage execution. It may include:

- A learning plan that describes the learning activities that will take place during a given period (annual, bi-annual, etc.), specifying the objectives and expected outcomes, the participants and the timetable.

Type of activity	Objective / Expected results	Methodology / Necessary material	Target audience/participants	Execution schedule
Learning Workshop	Reflect on progress, challenges, and adaptive needs Improved planning and adjustments to workplans	Facilitated workshop; group discussions Workshop materials, MEAL data	WMO, UNDRR, PSC, national partners Project mid-term	TBD
After-Action Reviews (AARs)	Analyse performance following simulations or real hazard events Institutional learning and improved SOPs	Debriefing sessions, interviews SOPs, event records	INDOMET, INDRHI, COE, DC After major events	TBD
Documentation of Lessons Learned	Capture and systematize key insights Published lessons learned and knowledge products	Desk review, interviews Templates, MEAL database	All partners, CREWS Secretariat Mid-term & final	TBD
Regional Knowledge Exchanges	Share practices with other CREWS/EW4All countries Cross-country learning	Webinars, peer exchanges Virtual platform	Regional partners (Caribbean, CEPREDENAC, CDEMA) Annual or bi-annual	TBD
Capacity development plan	A list of trainings and workshops that will support staff of NMHS and Civil Defense to enhance their technical capacities	Assessments, SOPs, consultations	INDOMET, INDRHI, COE, DC	TBD
Specialized Trainings	Several trainings will be proposed based on needs and scope of activities, including: trainings on EWS sectoral products, training on probabilistic risk assessments, training on exposure-vulnerability tool, 1 4 WIGOS standards trainings	Facilitated trainings; group discussions Workshop materials, hands-on practice	INDOMET, INDRHI, COE, DC	TBD

Workshops	Awareness-raising workshops on the interpretation and communication of forecasts and warnings, in priority areas	Facilitated workshop; group discussions Workshop materials,	Schools, elderly (for interpretation) INDOMET, INDRHI, COE, DC, media (for communication)	TBD
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Annex 5: References

Acronyms

Reference Materials

Information about the NMS and the NHS

1. **Country Hydromet Diagnostic for Dominican Republic**

This report provides information regarding INDOMET's current capacities to provide its services at the national level.

<https://un-soff.org/document/dominican-republic-country-hydromet-diagnostics/>

2. **Report on EWS for Floods for Dominican Republic**

This report provides information regarding the current capacities of INDRHI and ONAMET to provide EWS services for floods.

[WMO DR Assessment Report E2E EWS Flood 2019.pdf](#)

List of relevant documents and sources on flood risk, cyclone impact, climate change and their effects in the Dominican Republic:

1. **Technical Report: Flood and Landslide Risk Assessments in the Dominican Republic**

This report provides a detailed assessment of flood and landslide risks in the country, informed by rainfall projections.

<https://adaptacion.cambioclimatico.gob.do/uploads/605bab37c70af1616620344.pdf>

2. **Natural Hazards and Hazards in the Dominican Republic: Compendium of Maps**

This compendium presents detailed maps illustrating the various natural hazards and hazards, including floods and cyclones, in the Dominican territory.

<https://mepyd.gob.do/mepyd/wp-content/uploads/archivos/libros/amenazas-y-riesgos-naturales-en-la-republica-dominicana-compendio-de-mapas.pdf>

3. **Climate Impacts and Resilience in the Dominican Republic**

This analysis discusses how climate change affects the country, including the increased incidence of tropical storms and cyclones, and its relationship to floods and landslides.

<https://thedialogue.org/analysis/impactos-climaticos-y-resiliencia-en-la-republica-dominicana/>

4. **Economic Impact of Natural Disasters on the Dominican Economy**

This paper analyzes the economic impact that natural disasters, such as floods and cyclones, have on the economy of the Dominican Republic.

<https://cnc.gob.do/wp-content/uploads/2024/01/20231228-Impacto-economico-de-los-desastres-naturales-en-la-economia-dominicana.pdf>

5. **National Adaptation Plan for Climate Change in the Dominican Republic 2015-2030**

This plan details the strategies and actions that the country implements to adapt to the effects of climate change, including measures against floods and cyclones.

<https://adaptacion.cambioclimatico.gob.do/wp-content/uploads/2022/07/Plan-Nacional-de-Adaptacion-para-el-Cambio-Climatico-en-RD-2015-2030-PNACC.pdf>

6. **Adaptation Plan to Floods Influenced by Climate Change in the Colonial City of Santo Domingo**

This document presents a specific plan to address floods in the Colonial City of Santo Domingo,

considering the effects of climate change.

<https://hydrobidlac.org/wp-content/uploads/2024/02/Plan-de-adaptacion-a-inundaciones-influenciadas-por-el-cambio-climatico-Ciudad-Colonial-de-Santo-Domingo-Republica-Dominicana.pdf>

7. **Flood and Landslide Risk Assessments in the Dominican Republic Informed by Rainfall Projections**

This report provides up-to-date assessments on flood and landslide risks in the country, based on projections of future rainfall.

<https://adaptacion.cambioclimatico.gob.do/datos/evaluaciones-de-riesgo-de-inundaciones-y-deslizamiento-en-republica-dominicana-informadas-por-las-proyecciones-de-precipitaciones/>

8. **Climate Change and the Dominican Republic**

This chapter from the Ministry of Economy, Planning and Development addresses how climate change affects the country, including exacerbating problems such as rising sea levels and extreme events.

<https://mepyd.gob.do/mepyd/wp-content/uploads/archivos/end/capitulo-6.-cambio-climatico.pdf>

9. **Dominican Republic: A Social Protection System That Is Climate Change-Proof**

This World Bank article discusses the country's vulnerability to phenomena such as droughts, floods, and storms, and how a social protection system can help mitigate these impacts.

<https://www.bancomundial.org/es/news/feature/2024/05/28/republica-dominicana-sistema-proteccion-social-a-prueba-cambio-climatico>

3. **The Importance of Acting on Climate Change in the Dominican Republic**

This World Bank video highlights the need for action to address the impacts of climate change in the country, including effects on labor productivity, health, and agriculture.

<https://www.bancomundial.org/es/news/video/2024/04/30/actuar-cambio-climatico-republica-dominicana>

Information on projects with which there are direct synergies

Dominican Republic - Hurricane Fiona Emergency Response Project (P180163)

This document contains the description of the aforementioned project. Component 2 "Component 2: Support to the Government's capacity for disaster risk preparedness, response, and recovery" contains activities regarding climate and EWS.

<https://documents1.worldbank.org/curated/en/099174501262327979/pdf/BOSIB06c2df6f807a0922a0aabfc1319300.pdf>

1. **Inter-American Development Bank Project – Basin Management Plan for Yuna River**

This document contains the description of the aforementioned project. Component 1 "Support Yuna River Basin's governance" contains activities regarding EWS for floods, climate monitoring, and strengthening management capacities within INDOMET and INDRHI.

<https://www.iadb.org/es/proyecto/DR-L1161>

Feedback Matrix (synthesis of feedback received from experts nominated by CREWS Steering Committee members)