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Circular

Subject: Publication of June 2024 edition of MeteoWorld Newsletter by WMO.

MeteoWorld is a quarterly newsletter that has been published since 2004. It contains brief items and announcements from Members and the Secretariat that relate to ongoing WMO activities, updates on global weather patterns, climate research, and advancements in meteorological science. It serves as a comprehensive source for meteorologists, climate scientists, and weather enthusiasts, offering insights into current trends and developments in the field. The June 2024 edition is out for community and is attached herewith. The same can also be accessed through WMO website.

Dr. R.K. Giri
Sc.–F (Head Org.)
For DGM

WEATHER CLIMATE WATER

WORLD METEOROLOGICAL ORGANIZATION

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METEOWORLD

JUNE 2024

Looking forward to United Nations General Assembly High-Level Week

Summit of the Future
Our Common Agenda

The United Nations will host hundreds of world leaders, policymakers, experts and advocates in September for the High-Level week of the 79th session of the UN General Assembly (UNGA 79). The week of 21 to 28 September will have a busy schedule of Summits and high-level events mandated by UNGA resolutions and the United Nations Secretary-General.

The first day of the high-level General Debate of the UNGA will be Tuesday, 24 September. Principal among the events that will precede the first day of General Debate is the Summit of the Future on 22 and 23 September. A high-level event on the Existential Threats of Sea-Level Rise will be held afterwards on 25 September.

The WMO Office in New York is working with partners to secure opportunities to showcase WMO activities and priorities, including Early Warnings for All and the Global Greenhouse Gas Watch, in different side-events and exhibitions. Permanent Representatives to the WMO who would like to learn more about UNGA High-Level Week, or who are planning to come to New York as part of your national delegations, are invited to contact the WMO New York office (wmony@wmo.int).

Summit of the Future

This high-level Summit will bring world leaders together to forge a new international consensus on how we deliver a better present and safeguard the future. This "once-in-a-generation" opportunity is intended to mend eroded trust and demonstrate that international cooperation can effectively tackle immediate and emerging challenges as well as those that may yet be over the horizon.

Existing agreements and commitments, starting with the UN Charter and including the Universal Declaration of Human Rights, the 2030 Sustainable Development Agenda, the Paris Agreement of the Framework Convention on Climate, the Addis Ababa Action Agenda of the Third International Conference on Financing for Development and many others, serve the "purpose". The Summit of the Future will look at the **"how"**. How do we cooperate better to deliver on the aspiration and goals we have committed to? How do we better meet the needs of the present while also preparing for the challenges of the future?

The aim of the Summit is twofold: accelerate efforts to meet our existing international commitments and take concrete steps to respond to emerging challenges and opportunities. This will be achieved through an action-oriented outcome document called the Pact for the Future. The Pact will be negotiated and endorsed by countries in the lead-up to and during the Summit. Two negotiated outcomes will be annexed to the Pact, one will be a Global Digital Compact, the other will be a Declaration for Future Generations. WMO is working to ensure language related to its mandate is reflected in the outcome documents.

Immediately prior to the Summit, on 20 and 21 September, the United Nations will convene two Future Action Days, to generate additional opportunities for the engagement of all actors. The first, on 20 September, will focus on Youth, while 21 September will focus on Digital Futures, Peaceful Futures and Sustainable Futures for All.

This year, the WMO-led United in Science report – which will be launched in the margins of the Summit – will connect with several key Summit-related themes.

Existential Threats of Sea-Level Rise

On 25 September, the General Assembly has decided to hold a high-level meeting to address the threats posed by sea-level rise. The event will consider the science of sea-level rise and its impacts on sustainable development and cultural heritage as well as the legal issues that relate to the existential threats that sea-level rise poses for some low-lying countries. WMO is working to ensure the activities of its Members are represented in this event.

Climate Week NYC 2024 – It's time!

Climate Week NYC is the largest annual climate event of its kind, hosting over 600 events and activities across the City of New York – in-person, hybrid and online. Each year, business leaders, political change makers, local decision takers and civil society representatives of all ages and backgrounds from around the world gather to drive the transition, speed-up progress, and champion change that is already happening.

Climate Week NYC is hosted by Climate Group, an international non-profit whose purpose is to drive climate action, fast. Climate Group hosts the week's official program, which brings together senior international figures from business, Government, civil society and the climate sector.

This year, Climate Week NYC is being held from 22–29 September. The event takes place every year in partnership with the UNGA and is run in coordination with the United Nations and the City of New York.

Hydromet Gap Report calls for collaboration to ensure Early Warnings for All

The Hydromet Gap Report 2024, published on 18 June, presents analysis based on Country Hydromet Diagnostics (CHD) conducted in 20 Least Developed Countries (LDCs) and Small Island Developing States (SIDS). It sheds light on the weakest links in the hydrometeorological value chain, which require urgent attention from governments and development partners.

CHDs are part of the Systematic Observations Financing Facility's (SOFF) support to countries. They are conducted, with SOFF funding, by advanced national meteorological offices who serve as peer advisors. The Hydromet Gap Report is issued by the Alliance for Hydromet Development of which WMO is a founding member. The Hydromet Gap Report was launched during the eighth SOFF Steering Committee meeting in Reykjavík, Iceland.

LDCs and SIDSs are experiencing devastating impacts from more frequent and intense weather, climate and water-related extreme events. Already 60 countries have collaborated through SOFF with the Alliance for Hydromet Development to identify gaps in their operations and enabling environment. The results of the first 20 countries are captured in the report. National Meteorological and Hydrological Services (NMHSs) provide essential services that are a basis for effective climate adaptation and resilience action and which play a foundational role for economic prosperity and resilient development; however, many countries face substantial challenges in delivering such services.

The Hydromet Gap Report shows that hydrometeorological services offer an under-recognized and cost-effective opportunity to turn international commitments under the Sustainable Development Goals (SDGs) into actions that will accelerate their delivery. The ability to predict and prepare for changes in weather and climate allows societies to improve resilience and economic prosperity. Improved forecasts of extreme events, accompanied by the effective dissemination of information and appropriate response measures, can save lives and substantially reduce economic losses, both major goals of the Early Warnings for All initiative.

The Hydromet Gap Report identifies deficiencies that prevent the effective provision of high-quality weather, climate, hydrological and related environmental services:

- **Weak observational infrastructure** – All of the 20 assessed NMHS had gaps in their observation networks – due to inoperable stations, difficulties in maintenance, particularly of automatic weather stations – and frequent data quality issues.
- **Not collecting and sharing enough basic weather and climate data** – The general trend is positive, but there are still large data gaps (GBON compliance), especially over Africa and the Pacific islands. Lack of training, technical resources and Internet connectivity limit services quality and development. SOFF as a United Nations specialized climate fund has been created to tackle this issue.
- **Low data quality, availability and sharing** – Data transmission represents a significant challenge. The majority of the 20 NMHS assessed do not have a centralized automated data management system. Behind this gap stands a general lack of enabling information and communication technologies infrastructure.
- **Under-resourced and under-staffed NMHS** – The lack of qualified personnel, as well as financial resources, exacerbate the gap.
- **Inadequate Early Warning Systems and no impact-based forecasting** – None of the NMHSs had fully implemented impact-based forecasting. They also lacked standard alerting procedures, 24/7 alert services were not available nor were integrated Multi-Hazard Early Warning Systems (MHEWSs). Impact-based forecasting provides the information needed to act before disasters to minimize socioeconomic costs.

Support to close these gaps is crucial to improve Early Warning Systems towards achieving Early Warnings for All by 2027. The Gap Report identified the need for coordinated support from both government and development partners in several areas:

- To implement sustainable, context-responsive and cost-effective solutions, processes and frameworks, including closing the information and communication technology gap
- To promote the promulgation of appropriate legislation and build governance mechanisms for hydrometeorological and other MHEWS-relevant services
- To foster close cross-sectoral and regional relationships among national stakeholders and service users
- To build in-house expertise to produce tailored services, including through in-situ trainings
- To support regional technical cooperation frameworks.

In response to these findings and policy recommendations, the Alliance for Hydromet Development has outlined a set of priority actions, including the expansion of SOFF to other parts of the hydrometeorological value chain in support of the Early Warnings for All initiative.

Participating countries: Hydromet Gap Report launch: collaboration needed to ensure Early Warnings for All – Systematic Observations Financing Facility (un-soff.org)

Africa Ministerial Conference on Meteorology

The Sixth Session of the Africa Ministerial Conference on Meteorology (AMCOMET) met virtually from 15–16 May to elect new leadership for the next two years. The Conference urged AMCOMET Member States to expedite implementation of previous recommendations, decisions and declarations with the support of Africa Union Commission, (AUC), WMO and other partners and endorsed the implementation, monitoring, evaluation and resource mobilization plans in the Integrated Strategy on Meteorology adopted by the African Heads of States.

The 6th AMCOMET session aimed to shape policies, forge partnerships and lay the groundwork for the provision of weather, climate and water services that could be used as catalysts for socioeconomic development. An adoption of innovation and technological advancements is essential to modernize meteorological and hydrological services in Africa.

The Conference emphasized the crucial role of National Meteorological and Hydrological Services (NMHSs) as the national authoritative voices for the issuance of early warning information and alerts. The accurate and timely information that NMHSs provide to governments and users ensure safety and contribute to the resilience of communities and the socioeconomic development of countries. It requested better coordination between the Africa Multi-hazard Early Warnings and Action System (AMHEWAS) Situation Rooms and NMHSs on the sending early warnings and advisories, in recognition of the mandates and authority of NMHSs.

The Conference commended the production of implementation, monitoring and evaluation of meteorological services, and the generation of resource mobilization plans to guide the work of AMCOMET. It requested that its Members, AUC and WMO facilitate their launch and pursue recourse mobilization at events such as the Conference of Parties (COP) of the United Nations Framework Conference on Climate Change (UNFCCC).

The Conference further underscored the urgent need for Members and partners to increase their investments in human resources, hydrometeorological infrastructure, data collection and service provision. These investments are crucial to improve the functional capacities of the NMHSs to support decision-making in weather-sensitive socioeconomic sectors such as agriculture, water, health, infrastructure and energy.

Africa to implement Early Warnings for All Action Plan

The 19th Session of WMO Regional Association I (RA I, Africa), held online from 13–15 May, expressed commitment to implementing the Early Warning for All Action Plan in Africa while also mainstreaming climate services into national planning.

The implementation of the Action Plan was the main focus of RA I discussions, which encouraged Members to develop national early warning roadmaps in consultation with relevant authorities. RA I agreed to strengthen infrastructure component systems on the continent, including WMO programmes such as WMO Integrated Global Observing System (WIGOS), Global Basic Observing Network (GBON) and WMO Information System (WIS). RA I will review gaps in the observation network, communication systems and data exchange and capacity challenges due to the lack of trained meteorological professional.

RA I also considered the tools and strategies for mainstreaming climate services for various socioeconomic sectors during national planning. Regional capacity development and research to spur innovation and create linkages with the academia were also core issues discussed. RA I resolved to enhance efforts to mobilize resources – by tapping into climate funds, collaborating with development partners, formulating project proposals, and through enhanced Government support – to modernize and strengthen the operational capacities, services and sustainability of NMHSs.

RA I further resolved to continue executing The WMO Strategy for Service Delivery and Its Implementation Plan by incorporating activities at the national plans. It also embraced the use of digital tools and systems to improve NMHS operations and service delivery, as contained in its Implementation Plan. RA I further expressed its determination to strengthen collaboration and dialogue between National Hydrological Services (NHSs) and National Meteorological Service (NMSs), where the institutions are separate, through joint planning and implementation to support the Early Warning for All initiative.

New funding from Denmark to scale up Early Warnings for All initiative in Africa

The Early Warnings for All initiative is well underway, but significant gaps are still being identified, particularly in Least Developed Countries (LDCs) in Africa. Niger, Somalia, South Sudan, United Republic of Tanzania and Uganda face many challenges to improve climate resilience by providing early warning services that help protect populations from the impacts of weather, climate and water-related hazards such as flash floods and droughts. These hazards often result in loss of life and substantial economic and material damages. To support these countries with their climate mitigation efforts, the Ministry of Foreign Affairs of Denmark announced in March that Denmark would provide CHF 4.9 million to fund a four-year Early Warning for All implementation project.

Drought in Somalia

The Danish project will support immediate action to roll-out activities across the four pillars of the Early Warnings for All initiative: disaster risk knowledge; detection, observations, monitoring, analysis and forecasting; warning dissemination and communication; and preparedness and response capabilities. It will further strengthen anticipatory action by leveraging the WMO Coordination Mechanism (WCM) to support the design, delivery and uptake of climate and risk information services for climate action.

Following national consultations in Niger, Somalia, South Sudan, Uganda and Tanzania, the Ministry of Foreign Affairs of Denmark endorsed the project proposal and agreed upon four main goals:

- Develop national Early Warning Systems in five African LDCs
- Support Early Warning and Early/Anticipatory Action in Fragile and Conflict-affected Contexts
- Enhancing Climate Science Information for Climate Action
- Effective Global and Regional Coordination and Support by WMO for Early Warnings for All.

The project will facilitate the implementation of Multi-Hazard Early Warning Systems (MHEWS) in the five countries. This includes the production, analysis, interpretation and use of climate and risk information to strengthen MHEWS. It will build capacity in the National Meteorological and Hydrological Services to monitor and forecast priority hazards and to generate and disseminate actionable impact-based early warning services. Communities will develop their capacity to respond, prevent or mitigate impacts of climate-related hazards. The countries will also be able to benefit from the development of an enabling policy framework, that fosters effective coordination between relevant agencies and stakeholders.

The Danish project officially launched in April 2024 and is expected to be completed in 2028.

Eastern Africa Ramps Up Severe Weather Preparedness

The WMO Severe Weather Forecasting Programme (SWFP) for Eastern Africa will be stepping up efforts to enhance impact-based forecasting and early warning services following a pivotal meeting in Tanzania from 14 to 17 May. The SWFP-Eastern Africa Management Team meeting identified capacity gaps for improving severe weather forecasting and Early Warning Systems, especially in its newest Members, Djibouti, Somalia and Sudan, in supports the Early Warnings for All initiative. Its main outcome is the updated Regional Severe Weather Operational Plan in support of the Early Warning for All initiative.

The Management Team co-chairs, who represent the WMO Regional Specialized Meteorological Centres (RSMCs) for Severe Weather Forecasting (SWF) in Nairobi and Dar es Salaam, led the meeting. Representatives of the WMO World Meteorological Centres in Exeter, Washington and Offenbach and the WMO Regional Training Centre (RTC) Kenya leant support to the proceedings. The SWFP focal points from the National Meteorological and Hydrological Services (NMHSs) of Burundi, Djibouti, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Sudan, Uganda, and United Republic of Tanzania were funded through the Finnish Meteorological Services (FINKERAT) and Climate Risk and Early Warning Systems (CREWS) projects for East Africa and Horn of Africa.

The Management Team discussed the Numerical Weather Prediction (NWP) tools and products the WMCs and RSMCs had provided to the NMHSs to enable them to in turn provide severe weather forecast

and warning services in their countries. There was a shared sense of urgency and commitment to strengthen collaboration to better protect lives and property from the impacts of severe weather through the implementation of people-centred Multi-Hazard Early Warning Systems (MHEWS), the provision of impact-based forecasts and warnings that are accessible and understandable to the public and by assuring that these reach the most vulnerable communities. The Tanzania Meteorological Agency (TMA) showcased their experiences with Early Warning Systems and facilitated an exchange of experiences on developing or implementing national roadmaps for strengthening MHEWS.

A guided tour of the TMA Central Forecasting Office and RSMC SWF Dar es Salaam

The meeting assessed emerging needs for capacity building through targeted training initiatives to enhance the skills of operational forecasters across the subregion. It further looked at how to better support NMHSs in fragile and conflict-affected States that are especially vulnerable to severe weather events. WMO stressed its commitment to providing tailored support to these countries and its plans to facilitate customized in-country and regional training at RSMC Nairobi. By building local capacity and strengthening regional collaboration and data exchange, SWFP-Eastern Africa can ensure that accurate and timely weather information is always available, even in data-sparce countries.

The participants developed a road map under the Eastern Africa Severe Weather Operational Plan with practical measures to ensure the sustainability and effectiveness of training activities. The Management Team aims to improve collaboration between the NMHSs and RSMCs to enhance communication and to continuously improve forecasting and warning tools and methods. Three key areas were identified for further technical advancements:

- Developing new risk indices for lightning, hailstorm, frost and heat stress hazards
- Enhancing data assimilation and automated data sharing via the Global Telecommunication System (GTS)
- Enforcing national forecast verification, data exchange and feedback to RSMCs via web-based reporting mechanism.

The agreed actions mark a significant milestone in the ongoing effort to strengthen Early Warning Systems in Eastern Africa.

Progress of the CREWS East Africa Project Implementation

The Climate Risk and Early Warning Systems (CREWS) East Africa project, launched in 2023, is making significant strides. The four-year US$7 million project builds on the achievements of the HIGHWAY project to support the East African Community (EAC) in achieving its Early Warning System Vision 2025. The CREWS partners – WMO, United Nations Office for Disaster Risk Reduction (UNDRR) and the World Bank – are implementing the project in collaboration with regional entities and the National Meteorological and Hydrological Services (NMHSs) of Burundi, Kenya, Rwanda, South Sudan, United Republic of Tanzania and Uganda. Project activities to strengthen regional and bilateral collaborations towards enhancing capacity for impact-based forecasting and people-centred predictions and warnings are bringing the participating NMHSs closer to achieving Early Warnings for All.

The project's national focal points and the heads of the participating NMHSs received CREWS support to attend the WMO/EAC Meeting of the Heads of Operational Meteorology in Uganda on 23 and 24 May. A dedicated session on the CREWS East Africa project provided an update on progress and the gathering of recommendations for workplans. The implementation of WIS 2.0, the facilitation of twinning partnerships within the region, the support of radar data sharing among NMHSs, and addressing Impact-Based Forecast and Warning Services (IBFWS) needs were viewed as the priorities. Several specific national recommendations were also prioritized:

- Addressing the technical challenges of the Regional Instrument Centre (RIC)-Kenya
- Linking the CREWS East Africa and the FINKERAT projects to facilitate technical support of the Finnish Meteorological Institute to the Uganda National Meteorological Authority (UNMA)
- Requesting that the Tanzania Meteorological Agency (TMA) – a designated Regional Specialized Meteorological Centre (RSMC) – develop a basic plan to support the participating NMHSs.

These recommendations are currently being implemented, enhancing regional cooperation and strengthening the NMHSs capacity to provide accurate and timely forecasts. The Meeting was an important step forward towards the provision of national Early Warning Systems across East Africa.

Discovering the Early Warnings for All Initiative in the Americas

The Early Warnings for All is gaining momentum in the 30 countries designated for priority implementation. Six of the countries are in the Americas and the Caribbean: Antigua and Barbuda, Barbados, Ecuador, Guatemala, Guyana and Haiti. However, the scope of the initiative still needs to be fully communicated in all countries and institutions, both regionally and nationally. Towards this objective, a series of webinars will take place throughout the year to sensitize all to the need to pull together to achieve the Early Warnings for All goal. The first on 29 May, in Spanish, gathered 400 participants from across the Americas.

The webinar series has five main goals:

- Strengthen collaboration between National Meteorological and Hydrological Services (NMHS), National Disaster Risk Management Offices (NDMOs), and the humanitarian sector
- Share collaborative national level work experiences that can be replicated in other countries
- Improve the communication and dissemination of warnings and/or alerts
- Promote the implementation of impact-based forecasting
- Develop capacities for cataloging high-impact events.

The first webinar focused on presenting the structure of the Early Warnings for All initiative: its four pillars and its scope. Then it highlighted the partnerships and connections that would be needed between national institutions, particularly NMHSs and NDMOs. A

second webinar in July will focus on sharing experiences among institutions within the framework of Early Warning Systems. Subsequent webinars will promote continued interaction between national and regional institutions, so that all actors align and commit to making early warning access a reality by 2027 across the Americas and the Caribbean.

The National Meteorological Service of Argentina, the WMO Regional Training Centres in Argentina and Peru, the Climate Centre of the International Federation of Red Cross and Red Crescent Societies (IFRC) will lead this effort in the Americas. They will work in coordination with the Early Warning for All lead implementation agencies: WMO, the United Nations Office for Disaster Risk Reduction (UNDRR), the International Telecommunication Union (ITU), and the International Federation of Red Cross and Red Crescent Societies (IFRC).

Pacific Islands Early Warning Services Week

Early Warnings Systems (EWS) were at the forefront of a series of meetings held in Fiji from 15–18 April. The overall goal of the three events was to enhance national and regional coordination on EWS to strengthen the capacity of Pacific Small Island Developing States (SIDS) to enhance preparedness to act when natural hazards loom. The week started with the second Pacific Anticipatory Action Regional Workshop entitled Advancing Anticipatory Action: The Pacific Way, which took place on 15 and 16 April. The Collaboration for Inclusive Early Warning Systems and Climate Services in the Pacific Regional Coordination Workshop took place on 17 April. The week then came to a close with the CREWS Pacific SIDS 2.0 Project Steering Committee Meetings on 18 April. The event harmonized various regional programmes and projects with the Early Warnings for All initiative and other global goals for sustainable development and disaster risk reduction.

Advancing Anticipatory Action: The Pacific Way attracted 124 participants from National Disaster Management Offices (NDMOs), National Meteorological and Hydrological Services (NMHSs), National Red Cross Societies, and sectoral ministries of 16 Pacific Island States. Other participants included United Nations agencies, the International Federation of Red Cross and Red Crescent Societies, and regional partners such as the Pacific Community and the Pacific Island Forum Secretariat. The Workshop took note of progress in anticipatory action initiatives, including the establishment of a national anticipatory action framework for Tropical Cyclones in Fiji, innovative use of social protection mechanisms, drought programming, and anticipatory action insurance products. Emphasis was placed on contextualizing anticipatory action to the Pacific and building on existing networks to enhance disaster response and preparedness.

The Pacific Regional Coordination Workshop on the following day gathered the representatives of Pacific SIDSs governments, non-governmental organizations (NGOs), the private sector, regional organizations, and international agencies. The discussions explored the synergies between the Early Warnings for All initiative and Weather Ready Pacific programme, identifying gaps and challenges, and exploring how these and other regional initiatives can further complement each other.

The CREWS Pacific SIDS 2.0 Project Steering Committee Meetings on the final day updated the participating countries and regional partners on progress over 2023 and 2024. The CREWS implementation partners – WMO, United Nations Office for Disaster Risk Reduction (UNDRR), and the World Bank's Global Facility for Disaster Reduction and Recovery (GFDRR) – also consulted with the participating countries on the specific needs and gaps that could be considered for inclusion in the upcoming pre-approved next phase of the CREWS Pacific SIDS project and CREWS Pacific Regional Drought project.

New Funding to strengthen Multi-Hazard Early Warning Systems in the Caribbean

The Climate Risk and Early Warning Systems (CREWS) initiative has approved US$ 7 million in funding for a new three-year project in the Caribbean region. The CREWS Caribbean 2.0 project will build on a recently completed project to continue strengthening Early Warning Systems in the region. The project will be led by WMO and United Nations Office for Disaster Risk Reduction (UNDRR). The regional implementation partners will include the Caribbean Meteorological Organization (CMO), the Caribbean Disaster Emergency Management Agency (CDEMA), and the Caribbean Institute for Meteorology and Hydrology (CIMH). Other major partners include the International Red Cross Federation (IFRC), the International Telecommunications Union (ITU) and the Caribbean Chamber of Commerce (CARICHAM).

The collaborative and inclusive project development process for CREWS Caribbean 2.0 was completed at the CREWS Caribbean Partners Meeting, hosted by CMO and CDEMA in Trinidad and Tobago in November 2023. The meeting secured final endorsement of the proposed activities from the Regional Early Warning Consortium (REWSC) as well as the President of the WMO Regional Association IV (RA IV, (North America, Central America and the Caribbean) and CREWS Steering Committee Members and partners. REWSC will function as the CREWS Caribbean 2.0 Project Steering Committee.

Strong leadership from National Meteorological and Hydrological Services (NMHSs) aligned with National and Regional Disaster Risk Management Organizations (NDRMOs) is essential to co-design services and delivery approaches for effective Multi-Hazard Early Warning Systems (MHEWS). Improved disaster risk knowledge, better monitoring and forecasting and stronger warning and dissemination capabilities – with a particular focus on reaching and involving individuals down to the last mile and the most vulnerable groups – will enhance the response capabilities of individuals, communities, business institutions and organizations.

CREWS Caribbean 2.0 will enhance the operational capacities of NDRMOs and NMHSs through regional cooperation and improved governance mechanisms that are conducive for users to participate and

Flooding of the Piarco Airport (Trinidad and Tobago) perimeter (Photo: Kenneth Kerr)

be engaged in the design and delivery of early warnings. The project will focus on strengthening MHEWS governance, improving disaster risk knowledge at the regional, national and community levels, and strengthening NMHSs service provision with a special focus on marine, severe weather and hydrological capacities. It will also strengthen warning dissemination and reinforce early action at the community level. As is the case for all CREWS projects, the project will apply inclusive and gender responsive approaches to ensure that the most vulnerable are engaged meaningfully in the development of MHEWS.

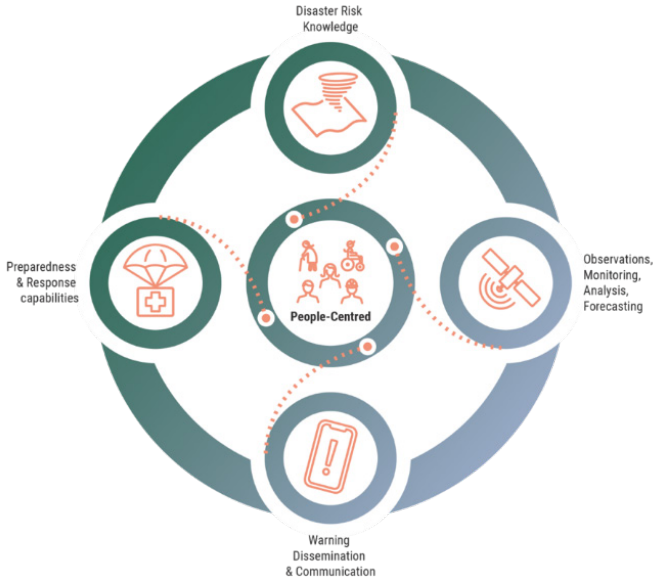
CREWS Caribbean 2.0 contributes to the goals of the Early Warnings for All initiative and other international frameworks, such as the United Nations Sustainable Development Goals (SDGs), the Sendai Framework for Disaster Risk Reduction 2015–2030 and the Paris Agreement of the United Nations Framework Convention on Climate Change. The project will further build on the outcomes and achievements of CREWS Caribbean 1.0.

New Funding to accelerate Early Warnings for All

The Early Warnings for All initiative aims to ensure universal preparedness for hazardous weather, water and climate events through the establishment of life-saving Early Warning Systems at regional, national and local levels by the end of 2027. Funding from the Climate Risk and Early Warnings (CREWS) initiative is boosting progress towards achieving this goal in vulnerable Least Developed Countries (LDCs) and Small Island Developing States (SIDS). Its 18-month Early Warnings for All Accelerator for LDCs and SIDS Project aims to strengthen Multi-Hazard Early Warning Systems (MHEWS) in seven countries: Comoros, Kiribati, Madagascar, Mauritius, Nepal, Solomon Islands and Tonga.

The project will be jointly implemented by the four Early Warnings for All leads: WMO, United Nations Office for Disaster Risk Reduction (UNDRR), International Telecommunications Union (ITU) and International Federation of Red Cross and Red Crescent Societies (IFRC). They will work hand-in-hand with National Disaster Management Offices (NDMOs) and the National Meteorological and Hydrological Services (NMHSs) in the seven countries.

The project will evaluate existing MHEWS capacities to identify gaps and needs and leverage ongoing initiatives and projects. It will span across the four Early Warnings for All pillar, using an inclusive, people-centred approach that embraces vulnerable communities, such as persons with disabilities and children, and harnessing local and indigenous knowledge. The project will facilitate peer-to-peer learning and knowledge sharing and help to build partnerships, accountability and transparency.



The four pillars of the Early Warnings for All initiative

The LDCs and SIDS Project has four main expected outcomes:

- Strengthen the availability, access and use of accurate, timely and disaggregated climate and risk information for MHEWS
- Enhance the accuracy and timeliness of weather and climate-related forecasts and warnings
- Improve the quality and coverage of multi-hazard early warning communication and dissemination
- Promote early and anticipatory action for various weather and climate-related disasters and ensure response preparedness capabilities are in place; strengthen coordination of investments in MHEWS.

For the NMHSs, strengthened capacity to monitor and predict weather and climate-related events will lead to improved forecasting models, improved early warning capabilities, increased public trust, and better-informed decision-making. The project will help NDMOs to proactively prepare for and respond to potential disasters and thus minimize their impacts on communities and infrastructure. By receiving advance notice of impending natural hazards and/or extreme events, they can implement evacuation plans, deploy resources and coordinate emergency services more effective. The LDCs and SIDS Project will also work closely with public and private sector telecommunication regulators and companies via ITU and humanitarian communities via IFRC.

Advancing Weather Verification for Improved Forecast Accuracy

The 9th International Verification Methods Workshop from 20 to 22 May and Verification Tutorial from 5 to 18 May, both hosted by the South African Weather Service in Cape Town, were the first such events to be held in Africa. The Workshop and Tutorial were organized by the WMO World Weather Research Programme's (WWRP) Joint Working Group on Forecast Verification Research and the WMO Working Group on Numerical Experimentation to showcase WMO's dedication to global outreach and scientific exchange.

The Tutorial gathered 25 early-career scientists, postgraduate students and senior scientists from diverse regions. Twelve were representatives from National Meteorological and Hydrological Services (NMHS) in Cameroon, Kenya, Senegal, South Africa and United Republic of Tanzania. Climate Risk and Early Warning Systems (CREWS) projects sponsored 10 participants. The tutorial taught essential verification techniques through lectures and hands-on projects that demonstrated how to tackle real-world weather data problems. The trainees developed and presented innovative verification tools and enhanced their practical skills.

The Workshop that followed the Tutorial featured keynote talks and presentations. Experts shared the latest in verification research, addressing topics such as operational verification, ensemble forecasting, and high-impact weather event evaluation. The Workshop emphasized the critical role of verification science in supporting the Early Warnings for All initiative.

The two events fostered partnerships and enhanced the capabilities of the next generation of verification experts. By combining theoretical knowledge with practical experience, the Workshop and Tutorial laid a strong foundation for future advancements in weather verification research. The in-person format allowed for active interaction and a richer learning experience, reinforcing the value of such gatherings

in advancing global weather research and protecting communities worldwide.

For more information, including the Tutorial and Workshop programs, abstract booklet, lectures and presentations, visit www.9thverificationworkshop.weathersa.co.za.

A Proven Enabler Comes Out for Sporting Events

Organizers, competitors and fans of the upcoming Paris Olympic and Paralympic Games have one question on their minds: What will the weather be like? The China Meteorological Administration (CMA) case study on the usefulness of the Pro-Active, Inter-Active and Co-Active approach (3A) to weather nowcasting on-the-ground may give them an answer. The 3A approach distinguished itself at the Hangzhou Asian Games, held last September and October 2023, by providing clear precise weather forecast to organizers, competitors and fans alike.

The three elements – Pro-Active, Inter-Active and Co-Active – can conceptually function on their own and as an integrated whole. Being "pro-Active" is essential for doing a good job and calls on meteorologists to be public-minded: to take the initiative to plan and innovate from a higher user-oriented plane. "Inter-activity" puts the emphasis on the needs of those being served and calls for extensive fact-finding research on users – Government, society and citizens – based on the 9119 Working Method (CWM), to understand their needs and contexts. A "co-Active" approach calls for robust horizontal and vertical partnerships and engagements between meteorologists and stakeholders to ensure the quality and effectiveness of services as well as coordinated and efficient delivery of services. Therefore, the 3A approach, which brings these elements together as inseparable components, ultimately builds stakeholder trust in meteorological services that respond to their needs.

Thanks to the 3A approach, an unprecedentedly sophisticated weather service campaign was smartly orchestrated at the Hangzhou Asian Games. Team building, the installation of station equipment, operations and service delivery had to consider all aspects – dimensions, features and processes – of this grand high-profile event. Risks had to be

controlled and managed over the fastidious full-service cycle of the bidding, preparatory, testing and rehearsal, and competitive stages of the Asian Games. The detailed and intensive investigation and research, empowered by the WMO Regional Association II-sponsored Research Demonstration Project, underpinned the smooth progress of activities from flame collection to rehearsal drills, torch relays, and four opening and closing ceremonies.

Over the entire Asian Games, meteorologists became real game-changers. For example, the opening ceremony of the Asian Games Village was postponed by 30 minutes so it could take place between two showers. Meteorologists triggered 70 high-impact weather alerts and six competitive disciplines, including cricket, equestrian and sailing, had events rescheduled 16 times due to weather forecasts. In the quarterfinals of women's cricket, an accurate forecast won an extra hour of competition time – a "window" – for the game to be completed. Co-Actively, the services were delivered in a one-stop mode with tailored popular interpretations of what the weather "would do" integrated into accurate forecasts. To play it safe, dedicated liaison officers posted "last mile" updates in each venue.

The 3A approach, first used during the bidding in 2015 to host the Asian Games, has continuously improved through ever more precise monitoring, rapid observation, instant data transmission, accurate microscale forecasting, customized services by venue, and a digital intelligent matrix of granularity. The 3A approach is an enabler for any eye-catching public event like upcoming Paris Olympic Games. Good governance is rare, the 3A approach offers a road map for its implementation.

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