



Annual Report

2024



CREWS Report Series – Annual Report 8 – 2024

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Acknowledgements: We recognise the contributions to the preparation of this report from the following:

WMO: Daniel Kull, Jean Baptiste-Migraine and Lina Sjaavik, Mohammed Ali, Sima-A Bernardine, Lara Bethonico de Moura, Stephanie Gallasch, Tania Gascon, Fatih Kaya, Joshua Ngaina, Pinghouinde Michel Nikiema, Alice Soares, Tessa Tafua, Sophea Tim, Guilherme Varro and Jason Watkins

GFDRR/ World Bank: Henriette Mampuya and Hugo Wesley, Arati Belle, Edouard Ereno Blanchet, Luc Marius Jacques Bonnafius, Keren Carla Charles, Kondwanie Frank Chirembo, Saurabh Dani, Carl Christian Dingel, Efrem Ferrari, Michael John Hammond, Eric Kidude Kipasa, Yunziyi Lang, Hyunji Lee, Cecile Lorillou, Illya Miko, Joao Ramalho de Lima Rego, Nahida Sinno, Claudia Soto and Kpotivi Kpatanyo Wilson-Bahun

UNDRR: Stefanie Dannenmann-Di Palma, Andrew Colin Spezowka and Sandra Amlang, Adair Gloria Ackley, Saira Ahmed, Muhammad Baksh, Nazgul Borkosheva, Sanjay Pariyar and Carlyne Yu with additional thanks to Carlie Labaria and Xuan Che (SFM data)

IFRC: Jurg Wilbrink

ITU: Galimira Markova and Anna Perlin

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Data limitations apply in this report. They concern all active programmes and sources of data and information due to:

Data availability: Data is not available on all indicators, from all programmes, for every year, from all partners, nor systematically disaggregated by sex.

Standardization: Differences in methodologies, definitions, and reporting responsibilities among and between implementing and operational partners.

Reporting time lag: Internal processes can affect availability of definitive figures and information.

Reporting bias: Data provided is self-reported by each implementing partner or source who is responsible for its accuracy.



Annual Report 2024

**Achieving with confidence
– navigating uncertainty**

The CREWS Initiative

The Climate Risk & Early Warning Systems (CREWS) Initiative funds life-saving climate action.

We help the world’s poorest and most vulnerable countries build early warning systems against hazards such as floods and drought to strengthen their resilience to climate shocks. CREWS also seeks to avert and minimize loss and damage through increased availability and improved access to multi-hazard early warning systems by 2030.

We work with and benefit from the expertise and leadership of governments along with the collective experience of our implementing partners – the World Meteorological Organization (WMO), the World Bank Group/ Global Facility for Disaster Risk Reduction and Recovery (GFDRR) and the UN Office for Disaster Risk Reduction (UNDRR).

Our support for Least Developed Countries and Small Island Developing States is through a pooled Trust Fund – with contributions from Member States. In 2024, there were 12 CREWS Contributing Members.

Our growing membership and financial support testify to the relevance, urgency and value of our work.

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Foreword

Achieving impact with confidence while successfully navigating uncertainty is the theme for the CREWS Annual Report 2024. The report demonstrates the progress made by CREWS throughout 2024, and how we continue to build momentum in scaling up effective early warning and early action in LDCs and SIDS, despite an increasingly challenging national and global environment.

The highlights featured in this report show we can be increasingly confident in CREWS’ impact, in our use of learning, in the strength and depth of our partnerships and in our value offer in a rapidly evolving and uncertain context. This is clearly shown by the actions CREWS has taken – at the programme and portfolio levels – to ensure CREWS outcomes directly contribute to the achievement of the UN Secretary General’s goal of universal coverage of early warning systems by 2027 through Early Warnings for All (EW4All), to the goals of the Paris Agreement, the Sendai Framework and to the achievement of the Sustainable Development Goals.

Out of the 19 active CREWS programmes in 2024, three entered their final phase and their results are showcased in this report. However, responding to demand and thanks to the support of our 12 donor country Members, the CREWS portfolio continues to grow. In 2024, the CREWS Steering Committee approved more than USD 21 million in new financing decisions across two new country programmes, a new phase to the regional programme in the Caribbean and the EW4All Accelerator programme with global outputs and targets for seven focus countries at the national level.

This report also draws into focus the delivery of CREWS’ core values, illustrated by numerous examples of best practice developed within our programmes. Importantly, this includes the ways in which CREWS has transitioned from a gender-informed approach to one that is gender-responsive and how this supports CREWS’ unwavering pledge to put people – especially the most vulnerable – at the heart of all we do.

This report also demonstrates CREWS’ commitment to provide and enable solutions tailored to meet countries’ needs, and that are also scalable, innovative and leverage further financing. A range

of quantitative and qualitative data in this report shows CREWS interventions being leveraged by other projects, for example in West Africa where the impact of capital investment from the Green Climate Fund (GCF) is maximised as a result of technical support for implementation and operation supplied by CREWS. There is also evidence of how the new GCF Simplified Approval Process (SAP)-CREWS Scaling Up Framework is enabling countries to scale up success from their CREWS programmes. Togo is leading the way with their proposal presented to the GCF board in early 2025, with several other countries following suit. CREWS is also scaling through digital approaches, with tools such as ClimWeb, being rolled out across numerous National Meteorological Services in Africa with CREWS support.

I am delighted that this year saw agreement to expand CREWS’ expertise and services available to LDCs and SIDS through the International Federation of Red Cross and Red Crescent (IFRC) and the International Telecommunication Union (ITU) joining CREWS as full Implementing Partners.

This report celebrates CREWS’ achievements of the last year and gives us good reason to look forward with confidence, including our new strategy, under development, that will set our strategic direction to 2030. However, we recognise that we are operating in uncertain times – both in terms of the increasing frequency and impact of disasters as a result of a changing climate and increasing vulnerability, and the global shifts that are taking place, especially in terms of international financing. With the continued commitment of our Members, our implementing and operational partners, and with a growing demand for CREWS from countries and the communities they serve, we look forward – with confidence – to reporting further successes in the coming years.



Gerard Howe
Head, Climate Resilience Department
Foreign, Commonwealth and
Development Office, UK
Chair, CREWS Steering Committee

2024 in numbers

397.6 million



people living in LDCs and SIDS with access to and receiving forecasts and early warning services developed or improved with CREWS support so far

Since 2015, close to **6,000**



deaths and missing persons in LDCs and SIDS attributed to hydrometeorological events¹

Since 2015, more than **101 million**



people in LDCs and SIDS have had their livelihoods disrupted or destroyed, attributed to disasters²

The impact of CREWS is measured in the lives and livelihoods saved by early warning systems

In 2024:

19 programmes in operation ✓

10 countries supported by CREWS through national programmes with a further **10 countries** supported through the CREWS Accelerated Support Window

70 countries are benefitting from CREWS regional programmes

27 FCV countries supported ✓

13 programmes have included gender quality as an objective or outcome ✓

Only **23%** of reported people trained through capacity building programmes are women

20 national plans, strategies and legislations on early warnings approved and/or implemented ✓

USD 929.2 million



resources leveraged by the World Bank due to CREWS programmes since 2015

USD 23.5 million



contributed in 2024

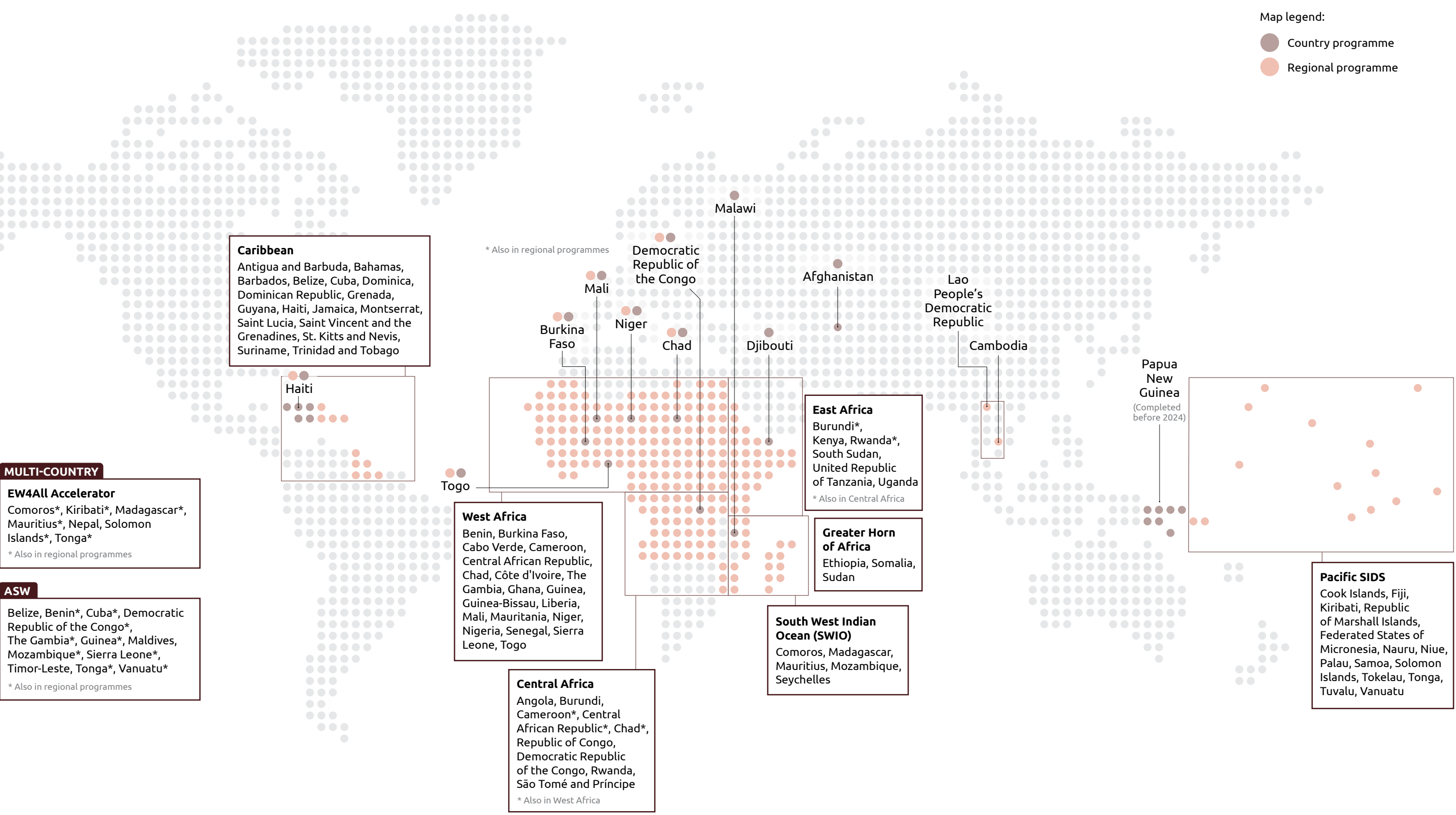
USD 78.8 million



funding required to address immediate demand

¹ Source: Sendai Framework Monitor, Target A for LDCs and SIDS as reported by 31 October 2024.
² Source: Sendai Framework Monitor, Target D for LDCs and SIDS as reported by 31 October 2024.

CREWS Initiative in action



Growing with confidence



Credit: UNDP Haiti

Throughout 2024, CREWS has built on the momentum of previous years to continue delivering a growing portfolio of effective programmes which bring lifesaving and livelihood-supporting early warning systems to people living in Least Developed Countries (LDCs) and Small Island Developing States (SIDS). To date, the programme has supported

77 countries, more than a third of which are affected by conflict or fragility³ (see [Feature: Operating in fragile or conflict-affected contexts](#)). CREWS also continues to prove itself to be a key delivery mechanism for the achievement of the UN Secretary's goal of Early Warnings for All (EW4All) which aims for universal coverage of early warning systems by 2027.

³ As categorised by the World Bank in 2024: <https://thedocs.worldbank.org/en/doc/608a53dd83f21ef6712b5dfef050b00b-0090082023/original/FCSListFY24-final.pdf>

Programme highlights

With 19 programmes underway in 2024, progress has taken on different forms according to the phase that programmes are in. Highlights from 2024 include:

New programme proposals initiated

Supported by their respective Implementing Partners, approval was granted to develop new programme proposals for:

- West Africa Phase 3
- Benin
- Dominican Republic

New proposals under development

- South Asia Sub-regional
- Pacific SIDS Phase 3
- Pacific Drought
- Southeast Asia Sub-regional Phase 2 (Cambodia and Lao)

New programmes starting

CREWS approved more than USD 21 million in new financing decisions during 2024:

- Caribbean Phase 2 (USD 7 million)
- EW4All Accelerator programme (USD 5.5 million)
- CREWS Djibouti (USD 3.5 million)
- CREWS Niger Phase 2 was approved (USD 3.9 million, leveraging USD 1 million from the European Commission ACP/ EDF funds)
- Accelerated Support Window actions were approved for
 - Guinea Conakry (USD 250,000)
 - Timor Leste (USD 250,000)
 - The Gambia (USD 247,500), Belize (USD 250,000) and Democratic Republic of Congo (USD 250,000)

Furthermore, 7 countries have initiated the preparation of GCF Simplified Approval Process (SAP) applications of up to USD 25 million each by using the new GCF/SAP-CREWS Scaling-up Framework on Early Warning: Belize, Trinidad and Tobago, Togo, Haiti, Cambodia, Lao PDR and Fiji. Of these, Togo has led the way, submitting their application to the GCF in January 2025. (See also [Feature: GCF Simplified Approval Process \(SAP\)-CREWS Scaling Up Framework](#))

Existing programmes drawing to a close

In 2024, 3 programmes entered their final stage: CREWS Burkina Faso, CREWS West Africa and CREWS Pacific SIDS 2.0. In addition, 3 Accelerated Support Window actions were completed in 2024 (Benin, Maldives and Tonga). Highlights from these programmes are featured later in this report (see [Feature: Accelerated Support Window](#)).



Credit: UNDRR/ Sanjay Pariyar

In addition to the examples in this and previous Annual Reports, a series of impact stories are available on the CREWS website, with more being added throughout the year: <https://crews-initiative.org/measuring-impact/>



Portfolio highlights

Whilst the programmes focus on delivery on the ground, there have been numerous developments at the portfolio level which set a strong foundation for future growth, including initial groundwork and consultations for the CREWS 2030 Strategy and Operational Plan.

Portfolio-level highlights from 2024 include the launch of a [new website](#) (in June) which is structured around the CREWS value proposition with easier access to programme information and a [dashboard](#) for monitoring Accelerated Support Window actions. 2024 also saw the publication of flagship reports including the [CREWS Annual Report 2023](#) and UN reports on the Status of MHEWS both [globally](#) and in [LDCs](#) which both showcased CREWS programmes. Meanwhile, there were also developments in terms of guidance, cooperation mechanisms and financial arrangements.

Guidance

MEAL Framework: In 2024, the Monitoring and Evaluation (M&E) framework was revised and strengthened to become a Monitoring, Evaluation, Accountability and Learning (MEAL) Framework (see [Feature: Reporting with confidence](#)).



Credit: UNDRR/ Sanjay Pariyar

Mechanisms for cooperation

A range of mechanisms have been set up to enable cooperation with and across the initiative. For example, CREWS is increasing its services to countries by inviting the IFRC and ITU to become CREWS Implementing Partners (see [Feature: Expanding with confidence](#)).

CREWS also continues to engage with other initiatives and programmes which are aligned with its goal. Key examples include the Global Shield against Climate Risks, the European Union's Team Europe Initiative, the Systematic Observations Financing Facility and the Alliance for Hydromet Development, which CREWS has recently joined (see also [Promotes coherence: Aligning and adding value](#)).

Through the work of its programmes, CREWS has demonstrated the value of twinning between National Meteorological and Hydrological Services (NMHS) as a mechanism for providing technical assistance and building institutional capacity in LDCs and SIDS. It is also actively engaging with advanced NMHS to increase access to technical support for CREWS operations. So far, CREWS has had discussions with the NMHSs of Finland, Norway, Switzerland and the United Kingdom.

In addition, in 2024, CREWS established a platform for practitioners to share learning and best practices with the aim of enhancing CREWS operations. Topics from the first meetings of the CREWS Operational Coordination Group (OCG) included the CREWS 2030 Strategy and the role of Regional Institutions as well as updates on both operational and financial issues.

Financial arrangements

In 2024, the criteria of eligible actions under the Accelerated Support Window were expanded to allow programme preparation support and additional funds were ring-fenced. The newest permitted action is especially important for countries who have significant gaps in early warning systems yet may struggle to develop programme proposals for submission to CREWS due to limited technical or human capacity.

Meanwhile, the GCF/ SAP-CREWS Scaling Up Framework continues to provide fast-track access to GCF funding for countries with ongoing or recently completed CREWS programmes. Togo is leading the way and expected to submit its proposal in January 2025. (See also [Multiplier: Leveraging resources for maximum impact](#)).

Feature: Reporting with confidence

In 2024, a new CREWS Monitoring, Evaluation, Accountability and Learning (MEAL) Framework was adopted.⁴



In the new framework, the overall success of programmes, and the portfolio as a whole, is measured in terms of wider socio-economic benefits i.e. the reduction of lives and livelihoods lost to extreme climate events, and the number of people living in the areas covered by the early warning services with access to, and receiving, such services.

At the heart of the framework lies the CREWS Theory of Change where the outputs and outcomes of the individual programmes all contribute to achieving the initiative's goal:

“Strengthened resilience to climate shocks and loss and damage averted minimized, and addressed through increased availability and improved access to multi-hazard early warning systems by 2030.”

To support the roll out of the new MEAL Framework, the Secretariat conducted a series of training events in 2024, with more than 50 project managers from both implementing and operational partners. The Secretariat is also providing guidance, especially for implementing partners that do not have an M&E Specialist.

All new programme proposals are required to align with the new MEAL framework and Monitoring and Evaluation (M&E) plans are now mandatory. In addition, programmes are required to submit logical frameworks (aligned with the Theory of Change) and results-based budgets for each financing decision. Wherever possible, indicators are disaggregated by gender so as to account for the number of services developed that have a gender-responsive lens.

With the MEAL framework coming into operation in 2024, this is the first year that all CREWS programmes – new and pre-existing – have reported using the same indicators⁵, enabling the systematic collection of quantitative data across the initiative. The data collected in this first year also serves as a baseline from which future progress can be measured. Data relating to the minimum set of core indicators is especially important for measuring the success of CREWS investments and is presented in [Appendix A](#) an extended version of which is available [online](#). In [Appendix B](#), the Core Indicators are mapped to the CREWS Goal and Outcomes.



In addition to quantitative data, the Status Reports encourage implementing partners to share qualitative information about their programmes as well as links to deliverables (e.g. reports, websites, tools) and related communications. The Status Reports have therefore also been the initial source of the programme highlights from 2024 which are featured in this report. These reports are available on the CREWS website (<https://crews-initiative.org>).



Work is already underway to develop the CREWS M&E online results tracking system. Training and capacity building relating to the MEAL framework will also continue to ensure that CREWS can report its performance with confidence.

⁴ https://crews-initiative.org/wp-content/uploads/2024/11/20241104_CREWS_OP_ME_web_pages.pdf

⁵ The CREWS Results Framework is set out in Annex 3 of OPN2 and replicated at [Appendix B](#). CREWS metrics and indicators.

Feature: Expanding with confidence

In October 2024, the CREWS Steering Committee adopted a new Accreditation Framework for Implementing Partners. The Accreditation Framework sets out the criteria, accountability measures and decision-making processes that are required for an applicant to be accredited as an Implementing Partner for the CREWS Initiative.

Implementing Partners are the mechanism through which CREWS delivers its portfolio, with Implementing Partners working with countries and regional organizations to design and deliver interventions which contribute to achievement of the CREWS objective.

To date, there have been three Implementing Partners: the United Nations Office for Disaster Risk Reduction (UNDRR), the World Meteorological Organization (WMO), and the World Bank through its Global Facility for Disaster Reduction and Recovery. Two of the existing Implementing Partners (UNDRR and WMO) are also pillar leads within the EW4All initiative.⁶ Given the synergy between the CREWS objective and the goal of EW4All, the CREWS Steering Committee recognised the benefit of considering as future Implementing Partners

the two remaining EW4All Pillar Leads, namely the International Telecommunications Union (ITU) and the International Federation of Red Cross and Red Cross Societies (IFRC). Thus, the Accreditation Framework has been developed to provide a formal mechanism for these organisations to apply to become CREWS Implementing Partners.

All invited applicants must complete the four-stage accreditation process which ensures that the Steering Committee is comfortable using an Implementing Partner’s policies and procedures for implementing CREWS Initiative programmes, including the administration of funds received from the CREWS Trust Fund.

At the time of writing, both the ITU and the IFRC have been invited to apply to become Implementing Partners and the applications that they have submitted are being processed. In addition to progressing these applications, next steps include a review of existing CREWS Operational Procedure Notes to identify any modifications required to accommodate an increased number of Implementing Partners.



Credit: Credit: WFP/ Rana Deraz

⁶ The 4 EW4All initiative comprises 4 pillars: Pillar 1. Disaster risk knowledge, led by the UNDRR; Pillar 2. Detection, observations, monitoring, analysis and forecasting of hazards, led by the WMO; Pillar 3: Warning dissemination and communication, led by the ITU; and Pillar 4: Preparedness to respond, led by the IFRC.

Feature: Accelerated Support Window

Eight new Accelerated Support Window actions were underway in 2024 bringing the overall total to 12, with 3 completed in 2024 and the work in Mozambique completed prior to 2024.

Here we highlight the outputs from the actions which completed in 2024.

ASW Action: Benin

The action focused on the provision of analyses and advice relating to hydromet services and early warning systems in Benin. Key outputs delivered through the action were:

- A diagnostic report on the multi-risk early warning system in Benin
- A Roadmap and investment plan for an effective multi-risk early warning system
- A capacity building plan providing an analysis of needs and a 2-step action plan covering knowledge sharing and training.

The strategic steps needed to modernize hydrometeorological products and services in Benin are primarily driven by the needs of the user community. The intervention has encouraged government ownership and financial commitment to build, operate and maintain the EWS, with sufficient budgets for all key stakeholders and supported by a good network of local teams and focal points.



Credit: Red Cross of Benin

ASW Action: Maldives

Risk knowledge was the focus of the action in the Maldives. UNDRR initiated engagement with the National Disaster Management Authority for the Maldives to help improve the collection, management

and use of risk data, which was highly fragmented across multiple entities.

Key outcomes were: enhancing understanding of the status of risk knowledge and related tools in Maldives; and strengthening disaster data collection mechanisms, including the rollout of a new tracking system for loss and damage caused by hazardous events.

ASW Action: Tonga



With 92% mobile coverage in Tonga, the action focused on the development of the Weather Tonga App. A public awareness campaign accompanied the launch of the MACRES app in August 2024 at the Pacific Leaders’ Summit.

Tonga Met Service consulted with multiple sectors, users and communities to understand their specific needs. The participatory approach continued throughout the development of the application with adjustments made to the app to ensure that it was fit for purpose. Key lessons learnt included the time required to iteratively develop the application and to resolve technical aspects of hosting the app.

ASW Dashboard

In 2024, a dashboard for the Accelerated Support Window was launched. It provides an overview of the status of these interventions.

Accelerated Support Window - General Overview										
Navigation for: [Country Filter] [Map View]										
Country	Action Title	Budget	Duration	Start Date	Original Closing Date	New Closing Date	Project Phase	Action Rule	Interv. Report	Final Report
Benin	Strengthening Early Warning Systems	\$600,000.00	12 months	August 2023	December 2023	August 2024	Completed	%	%	%
Burkina Faso	Enhance temperature forecasting for the Sahel region to support disaster risk management and WFP operations	\$200,000.00	36 months	January 2024	December 2025		Ongoing	%		%
Madagascar	Strengthening National Risk Data Repository for Early Warning and Disaster Preparedness	\$120,000.00	12 months	January 2024	December 2024		Completed	%		%
Mozambique	Integrated Early Warning and Disaster Risk Reduction System	\$750,000.00	4 months	August 2023	December 2023		Completed	%	%	%
Samoa	Disaster Resilient Early Warning and Disaster Risk Reduction System	\$600,000.00	12 months	April 2023	March 2024	March 2024	Ongoing	%		%
Togo	Strengthening risk data assessment and analysis capacity for disaster risk management in Togo	\$600,000.00	12 months	August 2023	June 2024		Ongoing	%		%





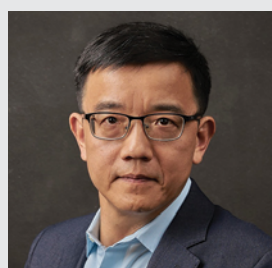
WMO and its Members are navigating unprecedented challenges as they work to protect lives and livelihoods from the escalating risks of extreme weather and climate. In this decisive moment for global climate action, the role of national meteorological and hydrological services has never been more critical. The CREWS Initiative continues to demonstrate its value as a trusted mechanism to advance the Early Warnings for All initiative, particularly in countries and regions most vulnerable to climate impacts. Ensuring predictable and adequate financing for CREWS is essential to expand the reach of these life-saving systems—so that no one is left behind.

Celeste Saulo
Secretary-General, World Meteorological Organization



As disaster risks become more complex, and when our collective action to achieve the Sendai Framework targets become even more important, we rely on delivery mechanisms such as CREWS to bridge the early warning capacity gap in LDCs and SIDS. UNDRR is proud to be an implementing partner of CREWS as we work together with diverse partners to reduce the loss of lives and livelihoods to extreme events.

Kamal Kishore
Special Representative of the United Nations Secretary-General for Disaster Risk Reduction



The World Bank is committed to helping client countries build resilience to weather and climate risks, including through support for multi-hazard early warning systems. Our partnership with CREWS is key to this effort, providing technical assistance that complements government-led investments to ensure systems are effective, sustainable, and tailored to local needs.

Ming Zhang
Global Director, Urban, Resilience and Land Global Department, World Bank



Mother with children, Plaplaya near Rio La Criba, Moskitia, eastern Caribbean coast, Honduras
Credit: imageBROKER.com/ Alamy Stock Photo

CREWS Values in action

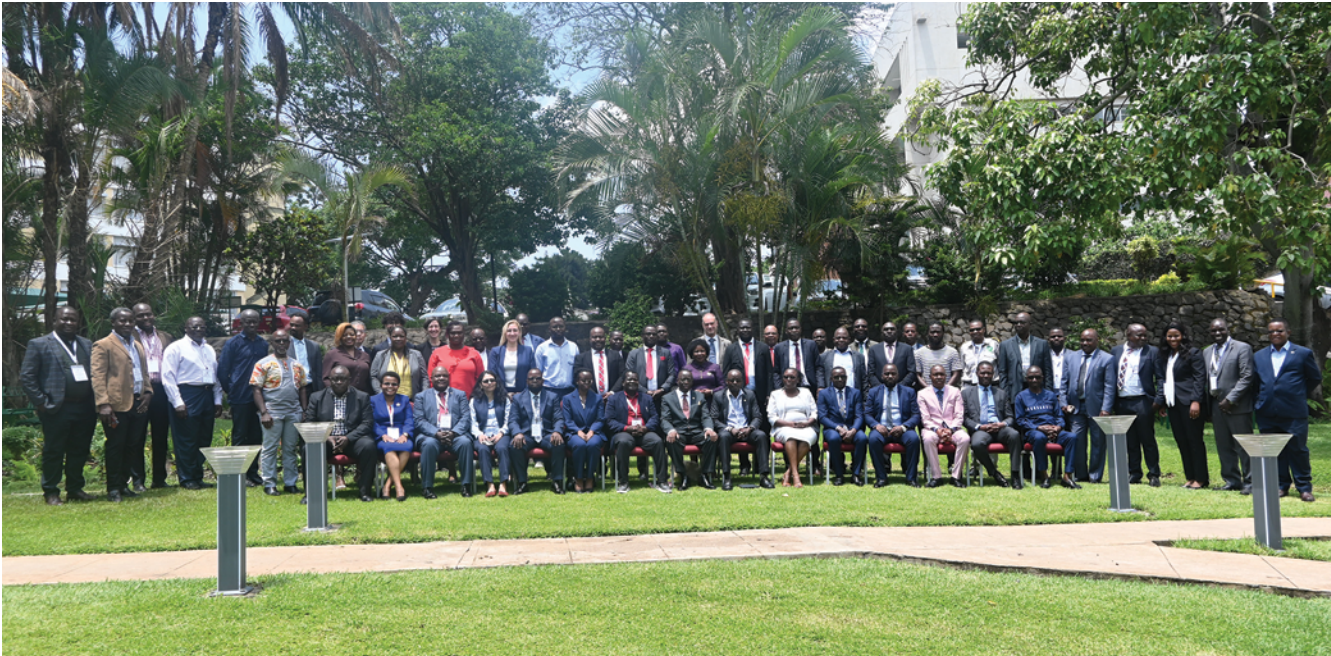


Unique: Targeting lifesaving needs

The CREWS initiative supports customized early warning solutions that meet nationally designed needs. CREWS responds to the priority activities articulated by countries. National institutions are engaged from the outset and take the lead on implementation, ensuring country ownership.

Malawi: The 'Charting a Path to a Resilient Malawi: Climate and Disaster Risk Management (DRM) Symposium,' held in Blantyre, Malawi, from 9-11 December 2024, marked the conclusion of the Malawi Resilience Disaster Risk Management Project. Hosted by the Government of Malawi and the World

Bank, 200 delegates discussed project outcomes, focusing on disaster risk management, resilience building, and climate adaptation. Key topics included integrating hazard data, improving forecasting, and strengthening early warning systems.



Credit: MRDRMP PIU

The symposium also explored urban resilience and disaster preparedness strategies. Delegates shared regional experiences, emphasizing the need for better coordination among governments, communities and stakeholders, as well as the importance of inclusive early warning systems and community preparedness.

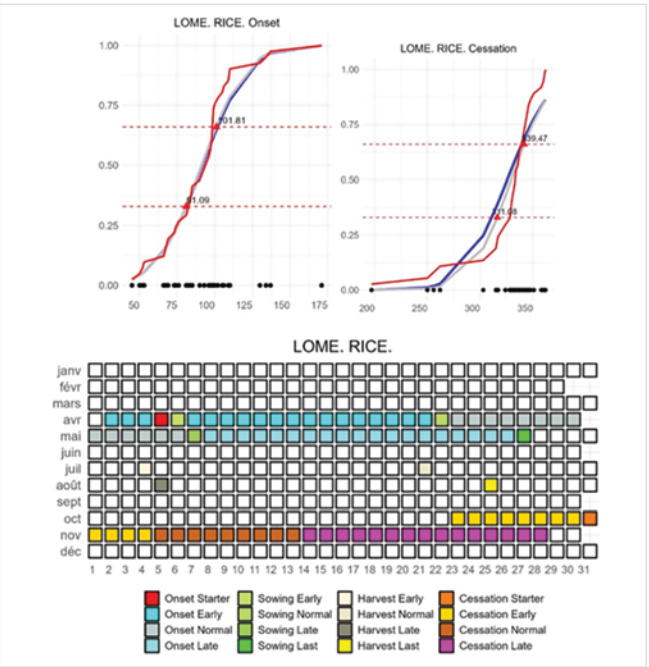
The symposium underscored the shift from reactive disaster response to proactive preparedness, building back better, and the importance of translating lessons into actionable steps with valuable insights for regional collaboration on disaster risk management.

“The training was inspirational. I observed that government is committed to ensuring disaster issues are inclusive and that persons with disabilities are not left out.”

Ethel Matala, Program Manager of the Federation of Disability Organizations in Malawi

UNIQUE: West Africa/ Togo: In January 2024, Togo hosted a training event for 55 agrometeorologists (including 13 women) from Burkina Faso, Chad, Mali, Niger and Togo as well as from the regional centre, AGRHYMET. The training focused on the development and use of crop calendars, and was supported by Fundació Universitat Rovira i Virgili Foundation (URV; see [Feature: Partnering across the sectors](#)).

The Togo team developed 4 crop calendars for the Togo Agriculture Sector, each for a different location and according to their different seasons: Lome (bimodal zone for the main rainy season in the south), Niamtougou and Dapaong (for the rainy season in the north) and Tabligbo (for the small season in the south. Following the training, the team from Chad have also set up an operational crop calendar tool.



Credit: ANAMET Togo/ Universitat Rovira i Virgili

Feature: Operating in fragile or conflict-affected contexts

The CREWS Initiative is committed to supporting LDCs and SIDS which are experiencing institutional fragility, conflict or violence. These countries often lack robust early warning systems, leaving them disproportionately exposed to hazards due to heightened vulnerabilities, low resilience to (recurrent) shocks and shortfalls in governance⁷. Supporting these countries is essential to meet the Early Warnings for All (EW4All) goal of universal coverage by 2027.

To date, CREWS has provided support to nearly 90 percent of the LDCs and SIDS that are eligible for Official Development Assistance and are classified by the World Bank as being affected by fragility or conflict⁸ and it continues to demonstrate successful delivery of programme outcomes despite high risks and uncertainty.

Operations in these complex and dynamic contexts is guided by best practice and lessons learnt across the early warning and early action community, including recent publications from CREWS implementing partners.⁹ Learning also comes from CREWS' own experience (e.g. Haiti), prompting CREWS to identify a series of operational adjustments that can be made in these contexts to ensure effective programme interventions and the implementation of early warning systems which meet local needs¹⁰. Examples of adjustments include introducing greater flexibility in programme design, management and funding, enhanced risk management and strengthening collaborations with local and international organisations.

Seeing a need to provide more detailed guidance to countries and implementing partners operating in contexts of fragility or conflict, in 2024 and in support of the CREWS initiative, the UNDRR-WMO Center of Excellence for Climate and Disaster Resilience commissioned an Analytical Paper¹¹ as a first step towards developing an Operational Procedure on CREWS Programming in fragile or conflict settings.

Haiti: Dynamic risk management

Haiti remains trapped in a multidimensional crisis, marked by political deadlock, gang violence, protests, and severe inflation, all worsening humanitarian needs and hindering efforts to address the situation. This crisis also impacts programme implementation and affects the lives of stakeholders. To mitigate these challenges, the programme ensures national ownership and commitment by fostering strong relationships with key stakeholders through regular engagement, e.g. bi-monthly meetings that begin with a situation update to align everyone on the current status. Programme activities are assessed and prioritized by the National Meteorological Service based on urgent needs, enabling flexible implementation. A key mitigating factor is the ongoing partnership with UNDP Haiti, which strengthens the programme's impact.



Credit: UNDP Haiti

People-centred: Putting lives and livelihoods first



CREWS puts people at the centre by engaging actively with, and encouraging collaboration between, local level actors for effective impact-based multi-hazard early warning systems that lead to early action.

This approach ensures that local organizations and communities are listened to and engaged so that investments are co-developed and driven by the needs of those dependent on timely and accurate warnings and climate information, especially the people who are most vulnerable to disasters and most at risk from the negative impacts of climate change.

“People” include a wide range of groups that play central and leading roles in our societies, some highly at risk, as well as the institutions representing and providing services to them. They require targeted and adapted information and/or warnings that lead to early action, aiming to leave no-one behind. These at-risk groups may include: women, men, youth, children, especially girls and young women, older persons, persons with disabilities, indigenous people, poor, marginalised and displaced people, people in exposed locations facing context specific, localised hazards, people whose livelihoods depend on climate sensitive natural resources (e.g. farmers, pastoralists), geographically isolated people, people facing cultural, legal or other discrimination, organisations providing vital but at-risk services and more.

To find out more about CREWS' people-centred approach, please consult the [CREWS Guidance Document on People-Centred Risk-Informed Early Warning Systems](#). Further guidance is available in [CREWS Operational Procedures Note No 5 'People-Centered Risk-Informed Early Warning Systems'](#).

Madagascar: With CREWS support the team in Madagascar have translated and distributed a thousand copies of two children's books which aim to increase awareness of floods and cyclones.



Credit: COPE/ DGM Madagascar

The [COPE books](#) are a series of beautifully illustrated not-for-profit books, aimed at increasing the disaster resilience of children. They cover natural hazards and provide coping tools, examples of preparedness actions and relatable stories in an imaginative and easy-to-understand way.

The books were originally prepared in English and in Madagascar in 2024, the books on floods and cyclones were translated into the local language, Malagasy.



Credit: DGM Madagascar

⁷ Jaime (2024). Page 4. Analytical Paper to guide the development of Operational Procedures on CREWS Programming in FCV settings: <https://crews-initiative.org/wp-content/uploads/2024/11/CREWS-Operational-Procedures-FCV-Final-Oct-2024.pdf>

⁸ World Bank: FY24 List of fragile and conflict affected situations, <https://thedocs.worldbank.org/en/doc/608a53dd83f21ef6712b5dfe050b00b-0090082023/original/FCSListFY24-Final.pdf>

⁹ For example, UNDRR-WMO Centre of Excellence for Climate and Disaster Resilience (2024). Early Warning Systems and Early Action in Fragile, Conflict-affected and Violent Contexts: Addressing Growing Climate and Disaster Risks. Geneva: <https://www.undrr.org/publication/early-warning-systems-and-early-action-fragile-conflict-affected-and-violent-contexts>

¹⁰ CREWS Strengthening operations in FCVs: https://crews-initiative.org/wp-content/uploads/2024/07/workdoc4_19th-Steering-Committee_CREWS-Strengthening-operations-in-FCVs_rev-1.pdf

¹¹ Jaime (2024). Analytical Paper to guide the development of Operational Procedures on CREWS Programming in FCV settings: <https://crews-initiative.org/wp-content/uploads/2024/11/CREWS-Operational-Procedures-FCV-Final-Oct-2024.pdf>

Djibouti: A people-centred approach has been taken from the outset of the CREWS Djibouti programme, which launched in September 2024. The World Meteorological Organization and the National Red Cross Red Crescent Society of Djibouti conducted a field visit to Boulaos, a commune in the greater Djibouti City area often severely and negatively impacted by major flooding. The mission served as an opportunity to understand and document first-hand the issues currently faced by the community, if and how they are receiving early warnings ahead of hazardous hydrometeorological events, and how they are responding.



Credit: WMO/ Vanessa Mazarese

This visit provided valuable insights from community leaders and local stakeholders about the increasing frequency of flash floods and their devastating impacts on lives and livelihoods. These local voices emphasized the urgent need for improved coordination between national institutions and local communities to address challenges and to enable anticipatory action.

Speaking passionately about the devastating impact of flood events on the people living in Boulaos, Abdoukader Iman Aden, the President of the Commune, said:

“Sometimes, entire families have died or been lost... because these people weren’t warned... but this system is a ray of hope for the commune in my opinion... With an early warning system we’ll have to get involved beforehand, go out into the field and warn people, use the law enforcements and thus, limit the loss of lives and damage to property as well.”

Abdoukader Iman Aden, President of the Commune of Boulaos, Djibouti

See the full video here (in French with subtitles in English): <https://wmo.int/media/news/new-crews-project-will-support-early-warnings-djibouti>



Credit: CREWS Haiti

Haiti: The Civil Protection Communication Department was supported in producing hydro-meteorological hazard awareness boards to raise public awareness of disaster risks. These boards address drought hazards, cyclonic hazards and their four major associated dangers, heavy rains and their consequences, and water management. A set of 41 boards was printed for the inauguration of the DGPC’s new crisis room and the launch of the 2024 cyclone season. The programme will expand the distribution of these boards to four geographical departments: Nippes, Centre, Sud-Est and Grand’Anse.

Gender-responsive: Empowering women and girls

CREWS recognises that the vulnerability of women and men, girls and boys differ as a result of economic, social, physical and environmental contexts. Women and men access and share information differently and their roles in society also vary. For example, in many societies, women are responsible for children and the elderly, so ensuring women receive climate information and warnings protects a larger and more vulnerable segment of the population. Understanding, accepting and respecting gender differences can improve response to warnings by empowering women to protect themselves and others.

CREWS’ approach to gender has evolved over time. From the outset, CREWS encouraged a ‘gender-informed’ approach to ensure that programmes recognised how people’s needs were affected by gender. Later, CREWS adopted ‘gender-sensitive’ as one of its core programming principles. In the context of early warning systems, a gender-sensitive approach recognises that “women’s empowerment is fundamental for building resilience and that men and women access, process, interpret and respond to information and warnings in different ways.”

Working with the Implementing Partners who are all committed to gender equality within their institutions as well as in their service and operations, CREWS is now proud to be advocating for a gender-responsive approach across its portfolio. This aligns CREWS with Key Objective 7 of the Sendai Gender Action Plan which is to “Implement gender-responsive and inclusive end-to-end MHEWS and anticipatory action”.¹²

Crucially, a gender-responsive approach goes beyond simply being aware of gender differences – it actively seeks to address the root causes of gender inequality and promotes gender equality. For example, a gender-responsive approach would ensure ‘gender-equitable participation’ in programme activities and decision-making and ‘gender-equitable access’ to early warning services and the resources required to take effective anticipatory action. The progression to a ‘gender-responsive’ approach is reflected in the CREWS Theory of Change, the updated Results Framework and in the ongoing review of CREWS Operational Procedures Note No 3 ‘Gender-Sensitive Programming’ which will set out the activities that each programme should take to promote gender equality.

Malawi: In 2024, a gender-sensitive risk assessment was finalised for Mzuzu and Zomba districts. This identified risks, vulnerabilities and local capacities and determined the level of acceptance of risk. A key activity was the revamping and strengthening of Village Civil Protection Committee teams in Zomba and Mzuzu. These community groups help manage disaster risk and are responsible for coordinating disaster risk management at the village level including orientation of the Ward Civil Protection Committees, which include representation of women, youths and people living with disability. Based on the findings of the risk assessment, protocols and standard operating procedures were updated and support was also given to the development of community contingency plans.



Credit: Malawi Red Cross Society

¹² UNDRR. Sendai Gender Action Plan, Promoting gender equality and the leadership of women in disaster risk reduction: <https://www.preventionweb.net/sendai-framework/sendai-framework-for-disaster-risk-reduction/SendaiGAP>

Somalia and Sudan: Breaking Barriers: Gender and Disability-Responsive Disaster Risk Reduction Training

The Training of Trainers Workshop on Gender and Disability-Responsive Implementation of the Sendai Framework took place in Nairobi from 19 to 21 November. Through the training, 13 women and 12 men from Sudan were equipped with tools to integrate inclusivity into disaster risk reduction. Participants, including policymakers, explored the disproportionate impact of disasters on women and persons with disabilities, as well as strategies for inclusive disaster risk reduction policies.



Credit: UNDRR/ Saira Ahmed

Despite ongoing armed conflict in Sudan, the delegation demonstrated remarkable dedication, ensuring their participation and commitment to strengthening disaster risk reduction strategies. Their resilience highlighted the urgency of inclusive disaster preparedness, particularly for conflict-affected populations. Sustained collaboration among stakeholders is essential to ensure no one is left behind in Sudan's disaster resilience efforts.

Key takeaways included the need for policy reforms, capacity building, and accessible early warning systems. Sudanese participants committed to forming a national working group and advocating for budget allocations supporting inclusive disaster preparedness. Additionally, UNDRR used the feedback from the workshop checklist to develop policy guidelines for inclusive disaster risk reduction.

“This training is a movement toward equity in disaster response.”

Ahmed, a participant

Cascading knowledge gained in Somalia

“As the head of the Gender Unit at the Somali Disaster Management Agency (SoDMA), I am proud to share the profound impact of our collaboration with UNDRR through the Gender and Disability Responsive Disaster Risk Reduction (DRR) Training of Trainers (TOT) in Nairobi. This training has significantly strengthened our ability to integrate gender and disability considerations into disaster preparedness, response, and recovery, ensuring that vulnerable populations—especially women, children, and persons with disabilities—are not left behind. Following the training, we returned to Somalia and immediately began retraining our staff, cascading the knowledge we gained. This has allowed us to mainstream gender and disability considerations across our operations, making our DRR strategies more inclusive and effective.

Additionally, the policy guidelines developed by UNDRR for mainstreaming the needs of vulnerable groups will provide a crucial framework for our work, shaping our strategies to ensure they respond to the unique needs of marginalized communities.

Thanks to UNDRR's vital collaboration, SoDMA's institutional capacity has been greatly strengthened, enabling us to better serve the Somali people and protect those most at risk from the impacts of disasters. This partnership has truly laid the foundation for more resilient communities in Somalia.”

Ms. Halima Yousif, Head of Gender Unit, Somalia Disaster Management Authority

Solution-orientated: Agile and scalable innovations



CREWS uses innovation and applies agile solutions for transformational and sustainable change. Good and innovative practices are applied and shared continuously across national and regional programmes.

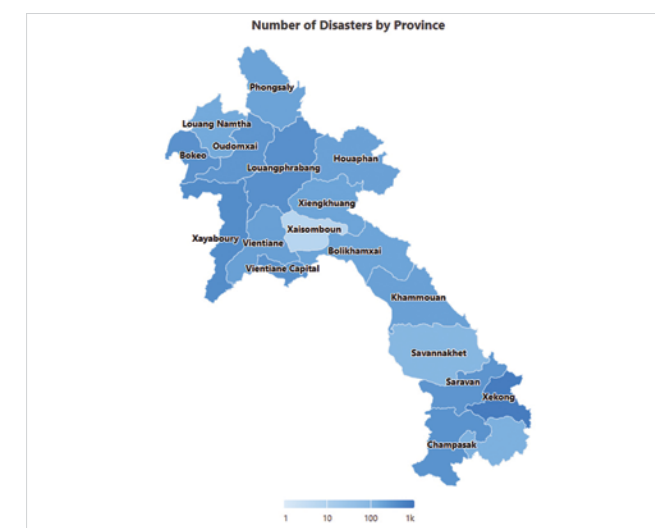


Credit: Mali Meteo

Mali: In Mali, essential forecasts, warnings and key messages are being disseminated to the national and local level through bulletins, TV and radio as well as Mali Meteo's website, which was upgraded through the ClimWeb package. A social media campaign has also helped to raise awareness of the SOS SÉCURITÉ application which facilitates early warning and emergency response. More than 1 million people have downloaded the app so far.

Lao PDR: The LaoDi database, which hosts historical disaster impact records, was restored and made fully operational through the CREWS SouthEast Asia programme, with the final phase of work completed in 2024. With data spanning from 1990 to 2023, the platform is now publicly accessible via LaoDi's website, offering a valuable resource for disaster risk and vulnerability assessments.

The LaoDi platform has already proved to be crucial for reporting and managing the impacts of multiple tropical cyclones which affected the region in 2024, including Prapiroon, Yagi, and Soulik.



Credit: Lao PDR Social and Welfare Department Disaster Management Committee, 2025

“Lao Disaster Information (LaoDI) System has become a valuable tool since the restoration of its data and functionality. It now supports the development of situation reports and will soon enable dashboard updates for emergencies during disasters. Currently, we use LaoDI for mapping disaster occurrences and generating reports for the Central Disaster Management Committee and other concerned stakeholders.”

Mr. Ting Phonethavy, Technical Officer from the Department of Social Welfare (DSW) under the Ministry of Labour and Social Welfare (MoLSW)

Greater Horn of Africa – Somalia: The myDEWETRA platform is a web-based GIS tool developed by the CIMA Foundation and the Italian Civil Protection Department which is being used by the Somali Disaster Management Agency. Through the CREWS Greater Horn of Africa programme, a national configuration of myDEWETRA has been set up in Somalia.



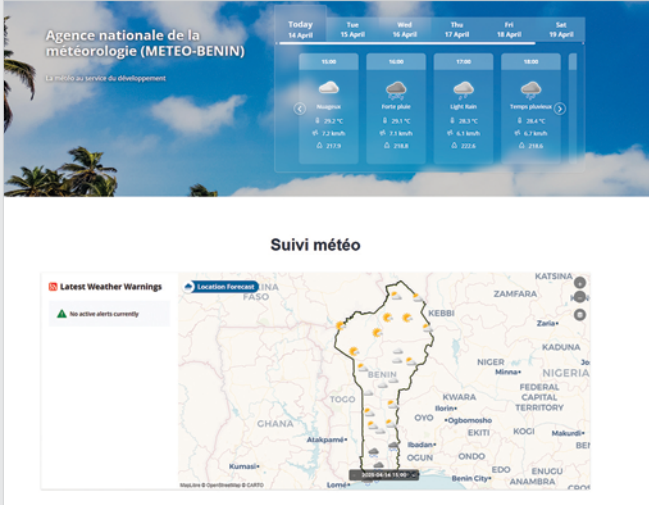
Credit: CIMA Research Foundation/ Italian Civil Protection Department

The preliminary configuration allows users to explore global and regional products which are available in real time and as past scenarios. Products which are of particular interest in Somalia include observations of rainfall and drought as well as essential forecasting products, including numerical weather prediction data from the European Centre for Medium-range Weather Forecasting and outputs from the Global

Flood Awareness System to inform hydrological forecasts. Training sessions in the coming months will ensure that disaster risk management and hydromet stakeholders can make the most of the platform whilst fostering collaboration and improving access to, and sharing of, essential national geospatial data and information to aid decision-making.

Feature: Open-source Digital Tools

A suite of new open-source digital tools has been developed and is being rolled out across West Africa. The tools have been co-developed by the WMO (led by the WMO Regional Office for Africa) and NORCAP¹³, together with technical teams from NMHS through the ClimWeb Community, following an agile, bottom-up approach. This digital transformation aims to strengthen NMHSs' ability to predict extreme weather events, issue timely warnings, and protect vulnerable populations.

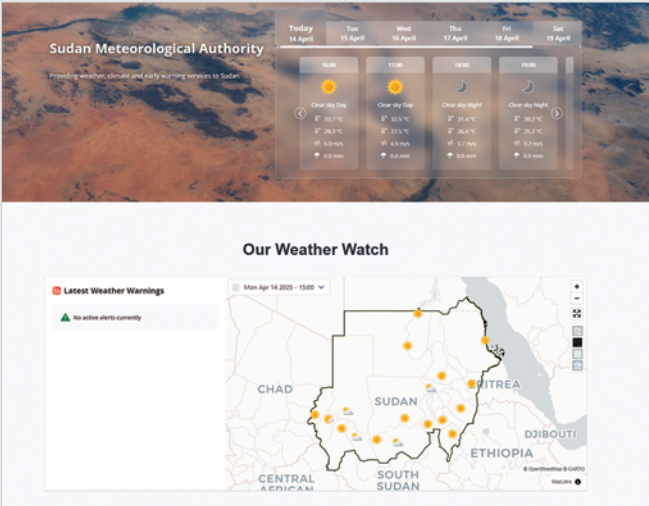


Credit: Meteo Benin: <https://www.meteobenin.bj>

The hosting of the ClimWeb content management system, CAP-composer (to issue warnings in the format of the Common Alerting Protocol) and WIS2box was initiated in [Guinea Bissau](#) and [Togo](#) and by the end of 2024, the tools had been adopted by more West African countries, namely: [Benin](#), [Burkina Faso](#), [Chad](#), [The Gambia](#), [Ghana](#), [Mali](#) and [Niger](#).

Within this package, [ClimWeb](#) and other digital climate tools (e.g. WIS2box) are revolutionising how information is collected, analysed and shared, including the integration of local data. Meanwhile, the embedded CAP-composer enables NMHS to issue CAP warnings to their citizens and through the AMHEWAS network ensuring that the regional/ continental situation is based on national data. CREWS has supported the rollout of ClimWeb through training events (for example on [WIS2 in November 2024 in Casablanca, Morocco](#)) and by supporting the hosting of ClimWeb, either through the provision of physical servers or a cloud-based solution depending on the local context.

By the end of 2024, ClimWeb has been rolled out to 17 African nations, including countries covered by CREWS Greater Horn of Africa ([Ethiopia](#) and [Sudan](#)), CREWS East Africa ([Burundi](#) and [South Sudan](#)) and CREWS SWIO ([Seychelles](#)), CREWS country programmes ([Democratic Republic of Congo](#) and [Malawi](#)) and also to countries not directly supported by CREWS (e.g. [Zimbabwe](#)).



Credit: Sudan Meteorological Authority: <https://meteosudan.sd>

In all of these countries, ClimWeb is revolutionising how citizens can access weather and climate information, for example, through geo-referenced forecast visualisations and other content that is locally configured to meets users' needs. The system also enables hazard forecasts to be displayed as overlays on local data relating to exposure and vulnerability, providing local decision-makers with a more comprehensive picture of the risks that hazards present.

In addition, ClimWeb provides NMHSs with website analytics about how users are interacting with their website which can inform future plans. CimWeb also has an Application Programming Interface for integrating content into mobile applications.

Read more about the package of digital tools through the [CREWS Impact Story](#).



¹³ Norwegian Capacity to international relations (NORCAP) is a global provider of expertise to the humanitarian, development and peace-building sectors which is part of the Norwegian Refugee Council and funded by the Norwegian government.

Multiplier: Leveraging resources for maximum impact



CREWS programmes provide long-term investments targeting improvements in policies, institutions and programme design within the countries where it operates. Across the CREWS portfolio, the country programmes promote a favourable environment for, and leveraging of, effective additional financing and action, thereby ensuring that CREWS interventions are relevant beyond the influence of its own programmes.

In support of the programming principle of leveraging resources, CREWS has also developed strong partnerships with climate finance institutions, for example with the Green Climate Fund (GCF). The GCF Simplified Approval Process (SAP)-CREWS Scaling Up Framework for Early Warning enables countries with demonstrably successful and scalable CREWS programmes to scale up their activities with GCF resources of up to USD 25 million. (See also [Feature: GCF Simplified Approval Process \(SAP\)-CREWS Scaling Up Framework](#)).

Global Observatory for Early Warning Investments:

Key to leveraging resources is understanding the broader landscape of available financing as well as the gaps. Developed by UNDRR and WMO with CREWS support, the [Global Observatory](#) provides a unified framework to track and understand the investments made by multilateral actors, identifying financing gaps and fostering collaboration among stakeholders.

The Observatory's main goal is to help early warning system stakeholders make informed decisions by revealing who is investing in early warnings, where the funds are going, what actions they support, and where the gaps are.



<https://earlywarningsforall.org/site/early-warnings-all/dashboards/global-observatory-ews-investments>
Credit: EW4All, 2025

As of the end of 2024, the Observatory tracks 324 projects in 127 countries and is fed by self-reported data by 9 Multilateral Development Banks (MDBs) and climate funds¹⁴, this data was analysed by WMO and UNDRR against a common taxonomy for tracking early warning investments and this analysis was validated by the MDBs and climate funds. This data provides some indication of overall trends in the financing of early warning. However, it does not have the granularity needed for regional or country programming.

Strengthening Climate Resilience in the DRC:

How CREWS is Transforming Hydromet Systems: The Democratic Republic of Congo (DRC) is making significant strides in enhancing its hydrometeorological capabilities, thanks in large part to CREWS. By bolstering technical capacity and mobilizing expertise at local, regional and international levels, CREWS has played a pivotal role in securing investments and advancing critical early warning systems, including:

- Unlocking USD 8 million for the *Projet de Renforcement des Services Hydrométéorologiques et Climatiques de la RDC* (HYDROMET-RDC, P159217). CREWS enabled the DRC government to leverage investment to strengthen national early warning data infrastructure and improve alert protocols for targeted cities, making communities more resilient to climate hazards.
- Informing the USD 100 million Kananga Emergency Urban Resilience Project (PURUK, P179292) where technical experts are working alongside the government to mitigate flood and erosion risks and enhance climate risk management at both the provincial and city levels.
- Shaping the USD 200 million Urban Flood Resilience Project (PRIUR, P508410 – in preparation). Building on CREWS-led assessments

for Kinshasa, Bukavu, Uvira and Kalemie, PRIUR will fortify flood early warning systems, enhance emergency preparedness and support critical flood reduction infrastructure like drainage systems.

Chad: A Ready-to-Respond (R2R) diagnostic is underway for multiple hazards (including floods, heat and drought). Accounting for recent achievements in early warning systems as a result of CREWS support, it will include next steps for better response and an investment program, part of which is expected to be picked up by the PILIER and the RESITCHAD projects.

A detailed flood model for N'Djamena was financed and has played a critical role in organising flood response in 2024 and identifying priority flood protection investments. Dissemination within Chadian institutions has started and next steps include training of agents at the national meteorological and hydrological institutions. There will also be discussion on how best to use the R2R recommendations and how it may be applied beyond the capital's administrative boundaries.

Under PILIER, USD 10M are allocated to improving Emergency Preparedness and Response with a focus on upgrading existing early warning systems, capacity building and material upgrading of the NMHS to enhance forecasting accuracy, timeliness, and operationalization.

¹⁴ Data from the following MDBs is included in the Global Observatory: World Bank, Green Climate Fund, Global Environment Facility, Adaptation Fund, African Development Bank, Inter American Development Bank, Islamic Development Bank, CREWS and the Systematic Observations Financing Facility.

Feature: GCF Simplified Approval Process (SAP)-CREWS Scaling Up Framework

The Simplified Approval Process (SAP) Pilot Scheme supports projects and programmes with minimal to no environmental and social risks through a GCF contribution of up to USD 25 million. Projects and programmes are eligible for SAP if they are ready for scaling up and have the potential for transformation, promoting a paradigm shift to low-emission and climate-resilient development.

Specifically, the GCF-SAP-CREWS Scaling Up Framework aims to scale-up CREWS investments by building on programmes that have produced and show evidence of successful results, are scalable and where high demand exists (CREWS, 2023, p. 5).



Credit: UNDRR/ Sanjay Pariyar

The framework covers several interrelated dimensions – quantitative, functional and institutional (ibid, p. 5). The eligibility criteria are closely aligned with the value propositions of both GCF and CREWS, and the process of operationalization takes account of both GCF and CREWS processes of programming and project design, preparation, review, and approvals in line with the existing standards and procedures.

To date, 7 countries have initiated the preparation of SAPs of up to USD 25 million each: Belize, Trinidad and Tobago, Togo, Haiti, Cambodia, Lao PDR and Fiji. Togo has led the way and submitted to GCF in January 2025. One early lesson learnt is the need for robust information to provide evidence of the

potential for scale up. In this regard, the new CREWS MEAL is showing its value by helping countries to identify and quantify the functional and institutional results that can be built on, replicated and financed by through the GCF-SAP (see [Feature: Reporting with confidence](#)).

Strengthening the resilience of vulnerable communities within high climatic and disaster risk areas in Togo

The Green Climate Fund (GCF) Board has just approved the first-ever single-country project in Togo within the GCF portfolio (SAP048). This milestone project, valued at USD 27 million, will enhance the country's preparedness for climate change and disaster risks by establishing a fit-for-purpose Climate Information and Early Warning System.

By focusing on people-centered climate information services, impact-based multi-hazard early warning systems and investments in disaster risk reduction and early action mechanisms, this initiative will directly and indirectly benefit 9.3 million people across Togo.

Aligned with key international frameworks – including the Sendai Framework for Disaster Risk Reduction, WMO's Global Framework for Climate Services, and the UN's Early Warnings for All (EW4All) initiative – this project is a major step forward in strengthening climate resilience in the region.

The project was developed under the [GCF-SAP CREWS Scaling Up Framework for Early Warning](#), reinforcing global efforts to enhance early warning capabilities worldwide. Looking ahead, we expect to see more projects approved under the scaling-up framework by GCF and CREWS initiative, further expanding access to life-saving climate information and early warning systems worldwide.

Partners: [World Meteorological Organization](#), [Green Climate Fund \(GCF\)](#) and [Banque Ouest Africaine de Développement \(BOAD, a GCF Accredited Entity\)](#)

Promotes coherence: Aligning and adding value



CREWS promotes programmatic alignment between the Implementing Partners and their respective expertise, networks of partners and ongoing programmes and operations. By considering existing projects and other international partner initiatives CREWS ensure that its programmes build on, and complement, existing interventions to ensure a coherent approach is taken to address national and regional priority needs. In particular, CREWS promotes coherence and coordination between organisations, programmes and initiatives focusing on climate adaptation, disaster risk reduction and sustainable development.

Through its Implementing Partners, CREWS programmes are already aligned with and/ or benefitting from the outputs, programmes and initiatives, for example:

- World Bank's Global Facility for Disaster Reduction and Recovery, especially its work to strengthen Hydromet Services and Early Warning Systems¹⁵
- WMO's flagship programmes and systems including: Severe Weather Forecasting Programme, Tropical Cyclone Programme and the Flash Flood Guidance System.
- The Systematic Observations Financing Facility and related assessments and interventions to address gaps in the Global Basic Observations Network.

Partnership working is an important mechanism for promoting coherence and coordination:

- At a **global level**, CREWS is actively engaged in numerous partnerships, including the Alliance for Hydromet Development (which CREWS joined in 2024) and the Risk-informed Early Action Partnership as well as groups with a financial focus, such as the InsuResilience Global Partnership and the Global Shield Against Climate Risks as well as Multi-lateral Development Banks like the GCF.
- At a **regional level**, CREWS programmes are delivered with the support and engagement of regional centres (e.g. WMO Regional Specialized Meteorological Centers), associations and development communities (e.g. African Union, the Economic Community of Central African States, the Intergovernmental Authority on

Development, East Africa Community and the Southern African Development Community, the Indian Ocean Commission, South Asian Association for Regional Cooperation and the Caribbean Community) and associated initiatives (e.g. Weather Ready Pacific).

To achieve impact at both the local level and at scale, CREWS and its Implementing Partners also partner with the private, academic and civil sectors. Indeed, CREWS has developed operational procedures on Private Sector Engagement to help countries and Implementing Partners make the most of the opportunity that such partnerships can bring (see [Feature: Partnering across the sectors](#)).

Central Africa: The Economic Community of Central African States (ECCAS) Situation Room was made operational in 2024. This is the Central African component of the Africa Multi-Hazard Early Warning and Early Action System (AMHEWAS) network. The network was launched with contributions from the Ministry of Foreign Affairs and International Cooperation, the Italian Agency for Development Cooperation (AICS) and the United Nations Office for Disaster Risk Reduction (UNDRR), and with the technical and scientific support of [CIMA Research Foundation](#).

An important recent development within the wider AMHEWAS network is the availability of national warnings issued using the Common Alerting Protocol (CAP). The roll out of ClimWeb has enabled many countries to implement and sustain CAP warnings and these can be brought together to form a regional picture based on the warnings and alerts issued by national institutions (see [Feature: Open-source Digital Tools](#)).

¹⁵ WB-GFDRR. Hydromet Services and Early Warning Systems: <https://www.gfdr.org/en/hydromet-services-and-early-warning-systems>

Greater Horn of Africa: In December 2024 experts from disaster management, meteorology and hydrology authorities from across the Greater Horn of Africa region gathered to address the transboundary challenges posed by drought and flood. Organized by UNDRR in collaboration with the IGAD Climate Prediction and Applications Centre (ICPAC) and supported by the CREWS Greater Horn of Africa programme, the event forged stronger collaboration between countries and regional entities that share transboundary risks to strengthen early warning systems. The 25 participants, including 3 women, worked towards developing a draft framework for transboundary cooperation, establishing a foundation for real-time data exchange and coordinated risk management efforts. Discussions on information-sharing protocols marked a critical step in creating a cohesive platform for disaster risk data, while sessions strengthened technical capacities in flood and drought modeling.

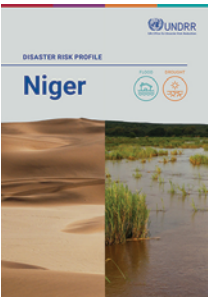


Credit: WMO

“Transboundary Risks required that partners break the walls and barriers by working together across the board and on aspects of transboundary cooperation and collaboration.”

Benjamin Ssekamuli, Hydrologist, Uganda

Niger: Building on relationships built during Niger 1.0 and other projects (e.g. the World Bank’s West Africa Food System and Resilience Program), CREWS Niger 2.0 is working with national authorities whilst also collaborating with regional centres based in Niamey and the University of Niamey.

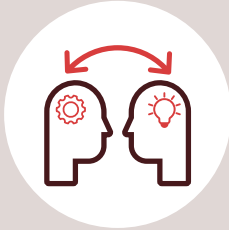


Credit: UNDRR

The scoping mission laid the groundwork for the implementation of activities under this programme, for example, supporting national authorities to understand and use the [Niger Disaster Risk Profile](#). It also catalysed an increased level of interaction and collaboration between the national meteorological and early warning entities and the regional centres, especially the African Center of Meteorological Applications for Development (ACMAD) and the AGRHYMET CCR-AOS (Regional Climatic Center for West Africa and Sahel).

A focus for the programme is the establishment of a disaster damage and loss database to inform risk-informed decision-making. The database leverages harmonized data collection and analysis, integrating data from the regional information system at AGRHYMET CCR-AOS which is setting up a regional watchroom for extreme climate events with support of the CREWS Niger 2.0.

Feature: Partnering across the sectors



Partnerships have been an important vehicle for the delivery of programmes in the West Africa region and this has included working with the **academic sector** and entering into agreements with the **private sector**.

Partnering with the academic and private sectors

Agrometeorologists from across the West Africa region have received training in the development and use of crop calendars from the Foundation of Universitat Rovira i Virgili ([URV](#)). Training resources have been developed in French and will be made available in other languages in the future. Togo has also received support from Brigham Young University ([BYU](#)) in terms of capacity building on hydrological data management and flood forecasting.



Credit: Universitat Rovira i Virgili

In relation to CREWS West Africa, the WMO also established a partnership agreement with a commercial entity, SEPIA Conseils. SEPIA is a consulting engineering firm that specialises in flood forecasting and management of the water cycle. The focus of the arrangement was to develop a methodological framework for urban flood forecasting, which is under implementation in several World Bank funded projects including in Burkina Faso, Chad and Togo.

Delivering with the civil sector

Partnership for Development of Kampuchea (PADEK) is a Cambodian NGO working to assist disadvantaged rural communities to improve their livelihoods and quality of life. It has been working closely with the National Committee for Disaster Management in Cambodia to lead the Community-based Flood Management Activities in Cambodia with support from the Asian Disaster Preparedness Centre, including the development of the Community-based Flood Management Manual. (See also [CREWS in Asia-Pacific](#)).

Feature: Implementing EW4All

CREWS is a key delivery vehicle to kick-start or drive forward Early Warnings for All (EW4All) in countries and regions. It is continuously learning and adapting its operations to meet the needs of LDCs and SIDS. In relation to EW4All, CREWS has updated the Accreditation Framework to enable the ITU and IFRC – leads of EW4All Pillars 3 and 4 respectively – to join the World Bank, UNDRR (Pillar 1 lead) and WMO (Pillar 2 lead) as CREWS implementing partners (see [Feature: Expanding with confidence](#)).

CREWS has also made progress on implementing several decisions noted in the CREWS Annual Report 2023, for example, ensuring that funding decisions on new programmes and interventions from its pipeline list are informed by data on the 30 EW4All kick-off countries, among other pertinent sources, and knowledge of the pipeline countries of other early warning partners (e.g. GCF and the Systematic Observations Financing Facility). Furthermore, the new CREWS MEAL Framework is aligned with the Theory of Change for EW4All and in the future, CREWS will draw on the Early Warning Maturity Index as an indicator through which the impact of its CREWS investments can be assessed.



Credit: UNDRR/ Sanjay Pariyar

Consolidating on this work, an accelerator programme was launched in 2024 (see [Programme in Focus: EW4All multi-stakeholder accelerator in LDCs and SIDS](#)). However, many other programmes across the CREWS portfolio have been achieving specific EW4All outcomes – including the development of EW4All Roadmaps and Action Plans, for example in Mozambique and in Southeast Asia.

Southeast Asia: Development of EW4All Roadmaps: The CREWS Initiative-funded programme in Cambodia and Lao PDR supported the development of the EW4All roadmaps in both countries. In Lao PDR, CREWS supported the coordination and consultation activities with government ministries, UN agencies, international and local NGOs, civil society organizations and the private sector. The [EW4All roadmap for Lao PDR](#) was endorsed in August 2024 and a roadmap for Cambodia has been produced and validated. In [Cambodia](#), the Roadmap has been translated into Khmer in preparation for government endorsement in 2025.

Programme in Focus: EW4All multi-stakeholder accelerator in LDCs and SIDS

The programme's primary objectives are to scale up and strengthen national Multi-Hazard Early Warning Systems efforts through the implementation of the Early Warnings for All (EW4All) Initiative. The programme is providing support to accelerate EW4All on a global level, with a special focus on 7 countries: Comoros, Madagascar, Mauritius, Nepal, Tonga, Solomon Islands and Kiribati.

EW4All (Nepal): People-centred/ Solution-oriented: With the assistance of the Department of Meteorology and Hydrology of Nepal, a team from WMO visited Katmandu in October 2024¹⁶. The visit included a field visit to assess the impacts of, and learn lessons from, the severe flooding in late September which was triggered by heavy monsoon rains. The WMO team met local communities, leaders and members of the national agencies. Stakeholders, including staff from the Department of Meteorology and Hydrology, highlighted several key areas for improvement, including the implementation of a tailored impact-based flood forecasting system at the national level as well as improving warning dissemination, e.g. through the implementation of the Common Alerting Protocol (planned for 2025). At the community level, impacts could be reduced by educating vulnerable groups about the impacts of flooding, how and where to receive warnings, and what actions to take should flooding suddenly occur. This will be through a workshop in 2025.

EW4All (Solomon Islands): Unique/ People-centred: The Flag Early Warning System for Small Crafts project is led by the Solomon Islands Meteorological Service and has been supported through the CREWS EW4All Accelerator. It includes the installation of EW marine flags around the main ports of the Solomon Islands to warn fishermen of hazardous weather. Aside from the installation of the flags, a key activity is the work within local communities to increase awareness of marine risks and to build capacity so that they know how to be informed and what actions to take in case of hazardous weather. The Flag Early Warning System project covers 6 sites: Lata and Tuwo (on Reef Island), both in Temotu Province, Kirakira in Makira Province, Komiko (on West Honiara) in Guadalcanal Province, Tulagi in Central Province and Gizo in Western Province.



Credit: WMO/ Stephanie Gallasch

¹⁶ WMO (2024). Improved Flood Preparedness and Community-based Early Warnings Needed in Nepal: <https://wmo.int/media/magazine-article/improved-flood-preparedness-and-community-based-early-warnings-needed-nepal>



Three children carrying firewood on their heads in Chongoni Forest, Dedza, Malawi, Africa.
Credit: Julian Lott/ Alamy Stock Photo

CREWS in Africa

39 countries assisted in 2024
12 countries affected by conflict: Burkina Faso, Cameroon, Central African Republic, Democratic Republic of Congo (DRC), Ethiopia, Mali, Mozambique, Niger, Nigeria, Somalia, South Sudan and Sudan
5 countries with social/ institutional fragility: Burundi, Chad, Comoros, Republic of Congo and Guinea-Bissau
5 regional programmes: West Africa, Central Africa, East Africa, Greater Horn of Africa and South-West Indian Ocean
8 country programmes: Burkina Faso, Chad, DRC, Djibouti, Malawi, Mali, Niger and Togo
5 Accelerated Support Window interventions: Benin, DRC, The Gambia, Guinea and Sierra Leone
USD 48.11 million programme funding (to 31 December 2024, excluding EW4All and ASW)



Ethiopia: Forecast-based financing is an innovative approach that can help governments and communities to act before a flood strikes, saving lives and livelihoods. CREWS has been supporting the conceptual design of a forecast-based financing system that could be implemented in three priority flood prone areas: the Awash Basin, the Omo Basin, and the Rift Valley Lakes Basin.

A key focus has been working closely with government agencies (Ministry of Water and Energy, Ethiopian Meteorological Institute and Ethiopia Disaster Risk Management Commission). By engaging with the stakeholders, CREWS support can contribute to a solution that is practical and scalable, and importantly, is owned by the Government. The conceptual design builds upon the rapidly developing meteorological and hydrological forecasting capabilities currently supported through a larger World Bank-financed operation. We envisage that CREWS will help the Government take a significant step forward in anticipatory action and flood risk management, by combining innovation and collaboration.



Credit: Anton Ivanov/ Alamy Stock Photo

Chad: The capacity of three institutions in Chad has been strengthened thanks to 3 multi-hazard early warning system projects: [UNDP GEF](#) (closed Sept 2024), [UNDP GCF PNUD](#) (approved 20 Feb 2025) and [CREWS](#). Crucially, CREWS has provided technical assistance to enable optimal use of investments under the other projects. Early warning system development has also been supported by other projects focusing on urban development and agriculture.

ANAM, the meteorological service, was converted into an agency in 2021 and in 2024, the line Ministry has: provided additional land for the construction of the forecasting centre (WB-funded [PILIER project](#)); [nominated](#) a new Director General and 9 other management positions; and committed to hire additional technical staff.

The civil protection directorate also evolved into an agency, with additional functions and more focus on anticipating and preventing the impacts. Its [strategic plan](#), supported by CREWS in 2024, was developed and will be validated in the second quarter of 2025.

Mali: Women were supported to actively participate and take up leadership roles in the local disaster preparedness and contingency planning committees (SCAP-RU) through the Mali Hydromet Project and CREWS Mali. For example, Halima, a female member of the national Disaster Risk Management platform encouraged women to participate in regional disaster risk reduction committees and crisis response teams to ensure that women’s voices and women’s needs were included in the organization of the response.

The disaster risk reduction training that these groups received with CREWS support helped them during the floods that occurred in Mali in 2024, especially in the Segou region. The training has empowered Women Leaders to liaise with local governors and to interact in the discussions for the management of the floods in their respective areas.



Credit: SAP/ CSA Mali



Credit: Met Malawi, 2024

Malawi – In 2024, Malawi launched its National Framework for Water and Climate Services (NFWCS). This crucial document highlights the country’s dedication to enhancing the nation’s ability to address climate-related risks and improve resilience against climate variability and change. The framework aligns with national policies and strategies, including the Malawi Vision 2063, which advocates for the integration of disaster risk reduction and the promotion of climate change adaptation and mitigation to sustain livelihoods through Green Economy initiatives. It is also aligned with the EW4All initiative, recognising that effective data management and integration with early warning systems – at the national and regional levels – are essential for the success of the National Framework for Water and Climate Services and to enable timely and effective communication of weather and climate information to stakeholders and the public.

EW4All Roadmap approved in Mozambique:

In response to the devastating impact of Cyclone Idai in 2019, which resulted in over 600 fatalities and approximately USD3 billion in damages, Mozambique, with support from the United Nations and the World Bank’s USD265 million Disaster Risk Management and Resilience Program, developed a comprehensive early warning system. This system integrates advanced technology, resilient infrastructure, and a coordinated emergency preparedness framework.



Credit: INAM

Now Mozambique is advancing its commitment to the global EW4ll initiative, aiming to protect its citizens from climate-related hazards by 2027. President Filipe Jacinto Nyusi emphasized the nation’s vulnerability to natural disasters like floods, cyclones, and droughts, highlighting the importance of early warning systems in mitigating these threats.

The new EW4All Roadmap, approved in August 2024, was coordinated by WMO. It provides an overarching framework for a coherent and consolidated Multi-Hazard Early Warning System program which could be embedded into Mozambique’s five-year development plan. It seeks to embrace the whole of the meteorological value chain, from collecting weather and climate observations data, over to better forecasts, improved early warning systems and through to better informed climate adaptation plans.



Credit: Seychelles Meteorological Authority, 2024

Seychelles: Through CREWS SWIO, the WMO has supported the Seychelles Meteorological Authority (SMA) in the development of a new Strategic Plan which was published in 2024. The Strategic Plan is aligned with the investment plan that was developed at the start of the CREWS programme.

WMO also supported the development of SMA’s Operational Plan, a new organisational structure and the development of Job Descriptions for all SMA positions against core competencies. A training programme for new recruits and for continuous development has also been developed.

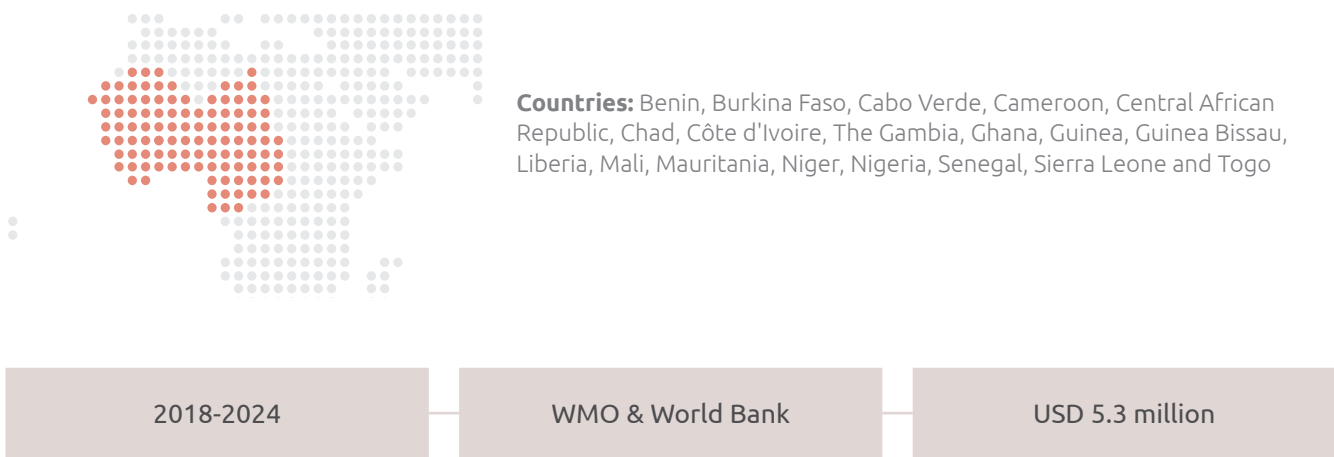
Inaugural Eastern Africa Dialogue Platform on Anticipatory Action:

‘Moving from policy to practice: strengthening disaster risk management through anticipatory action’: In October 2024, more than 200 people attended the Dialogue Platform which was co-hosted by the IFRC Network and the World Food Programme. The aim of the platform was to take stock of the progress in anticipatory action in the region, generate lessons and propose priorities for policy, practice and finance to support the mainstreaming of anticipatory action in the region. CREWS supported the participation of representatives from IGAD Member states (Ethiopia, Kenya, Rwanda, South Sudan, Uganda and the United Republic of Tanzania), enabling them to share their experience in supporting the scale up of early warning and early action in the region.

The meeting culminated in the [Mombasa Declaration](#) through which participants committed to scaling up anticipatory action to enhance the resilience of communities across the Eastern African region in alignment with the IGAD Regional Roadmap on Anticipatory Action.



Programme in Focus: West Africa



Focus on the core Indicators

- 12 LDCs/ SIDS with national investments plans and budgets for MHEWS
- 0 national plans, strategies and legislations on early warnings approved and/ or implemented
- 0 multi-hazard assessments, analyses, and other mapping of needs, gaps and priorities that inform investment requirements on early warning
- 6 hazards which pose a risk of life and economic loss for which forecasting and warning services are in place
- 0 climate and weather information products co-designed with users’ needs

The CREWS West Africa programme has been in operation since 2018 and has supported 15 countries since inception, 3 of which were subsequently included in the CREWS Central Africa programme and some countries which are not LDCs/ SIDS (Cameroon, Côte d'Ivoire, Ghana and Nigeria).

Originally due to complete at the end of 2024, a time-extension has been requested to align with a GCF project which runs until the end of 2026. Specifically, the extension will enable the remaining funds approved by CREWS to be used to provide technical assistance to support the successful implementation and operation of capital investments under the GCF project.



Credit: Remo Kurka/ Alamy Stock Photo

Strengthening operational multi-hazard forecast systems

The programme has strengthened forecasting and warning systems and services for 6 hazards prevalent in the region:

- Drought and severe weather in place before 2018, both enhanced by CREWS (including by setting-up a high-performance computer in Regional Specialized Meteorological Centre (RSMC) Dakar) and providing training to LDCs and SIDS on optimal use of model outputs;
- Riverine floods: available since 2018 through [FANFAR](#), with AGRHYMET and SMHI providing operational flood forecasting and alerts for 10 days ahead and enhanced by CREWS;
- Sub-seasonal forecasting (6 week lead time): available since 2018 through [MISVA](#) and enhanced by CREWS
- Dust and sandstorms: available since 2019 in Burkina Faso and since 2022 for a further 6 countries, with further improvements in 2024 and implemented by CREWS; and

- Flash floods: available through the Flash Flood Guidance System (FFGS) for Burkina Faso, Mali and Niger since 2024 and implemented by CREWS.

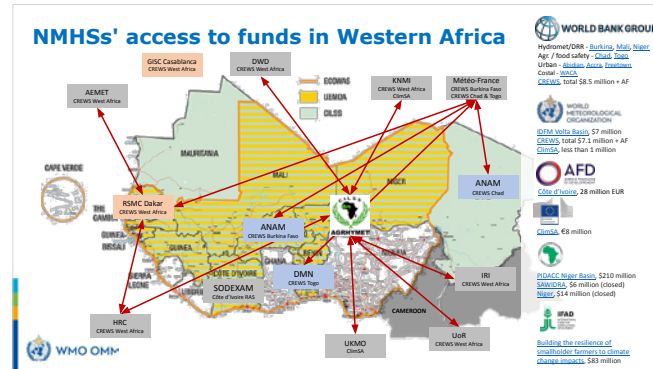
Key weather and climate information products have also been improved through the programme. For example, before CREWS West Africa, 10-day agricultural bulletins (known as dekads) included only observational data for the past 10 days and a seasonal forecast, leaving a crucial gap. Informed by outputs from other centres (e.g. RSMC Dakar and AGRHYMET), these bulletins now include a forecast of the weather in the coming week, significantly improving their usefulness to the region’s farmers. Other activities linked to CREWS West Africa include the development of Crop Calendars in Togo and Chad and the roll out of a suite of digital tools across the continent (see [Feature: Open-source Digital Tools](#)).



Credit: Jake Lyell/ Alamy Stock Photo

Building effective regional networks

A key aspect of CREWS West Africa has been the development of effective regional networks. The strengthening of regional centres has been a particular highlight bringing economies of scale at the national level and demonstrably leading to lower investment costs for Burkina Faso, Mali, Côte d'Ivoire and Guinea.



Credit: WMO/ Jean-Baptiste Migraine

Through an inclusive, collaborative approach, the programme has brought together:

- National public sector institutions in the region: NMHS, NDRMA/O and those responsible for civil protection.
- Regional centres: WMO centres responsible for meteorology, agrometeorology, climate and related applications, training and data distribution some collaborating for the first time and formalizing these arrangements (e.g. RSMC Dakar and AGRHYMET).
- International institutions: European NMHS as well as international academic and research institutions which are committed to supporting the region.

The programme has also encouraged the development of a cooperation framework to strengthen the capacity of national hydrological and meteorological services and their partnerships with the private sector (see [Feature: Partnering across the sectors](#)). The World Bank is also close to finalising guidance on Public Private Engagement in the region.

Leveraging other financing

CREWS West Africa has benefitted from other investments in the region, for example the ability to monitor country progress on the implementation of the Global Framework for Climate Services and/or National Strategic Plans in NMHS in the region through a monitoring tool. Countries in the region are also benefitting from other CREWS funding, for example [Guinea](#) who has received CREWS Accelerated Support Window funding to support the development of a strategy for the newly created national meteorological agency (ANM).

Numerous other funding opportunities are also being explored, including GCF investments (e.g. GCF-IDA 31 million USD in Burkina Faso and in Mali) and regional World Bank programmes such as the West Africa Food System Resilience Program (FSRP) and West Africa Coastal Areas Resilience (WACA). The appraisal of new investments for Hydromet services leveraged through the Development, Resilience and Valorization of Transboundary Water for West Africa project ([DREVE](#)), an investment which is under preparation and is expected to strengthen the capacity of hydrological services in the region.



Credit: ANAM

Developing a warning advisory system for sand and dust storms

Seven countries across the West Africa region are receiving sand/ dust warnings from the [Sand and Dust Storm Warning Advisory System](#) provided by the Barcelona Dust Regional Center (AEMET-BSC¹⁷). In addition, a summary of the concentration index for the thirteen regions of the country was produced.

CREWS supported the provision of the tool, which in Burkina Faso, has been connected to the [website of ANAM Burkina Faso](#) to ensure semi-automatic conversion to warnings in Common Alerting Protocol format.

In 2024, the system was further improved thanks to AEMET installing dust/ sand sensors in several countries. The first of these was installed in Burkina Faso (funded by the European Union) with sensors subsequently installed in Chad, Mali and Niger thanks to CREWS support. These sensors, measure dust concentrations and enable the calibration of the sand and dust storm warning advisory system in relation with field observations.



Credit: ANAM

Installing a Flash Flood Guidance System

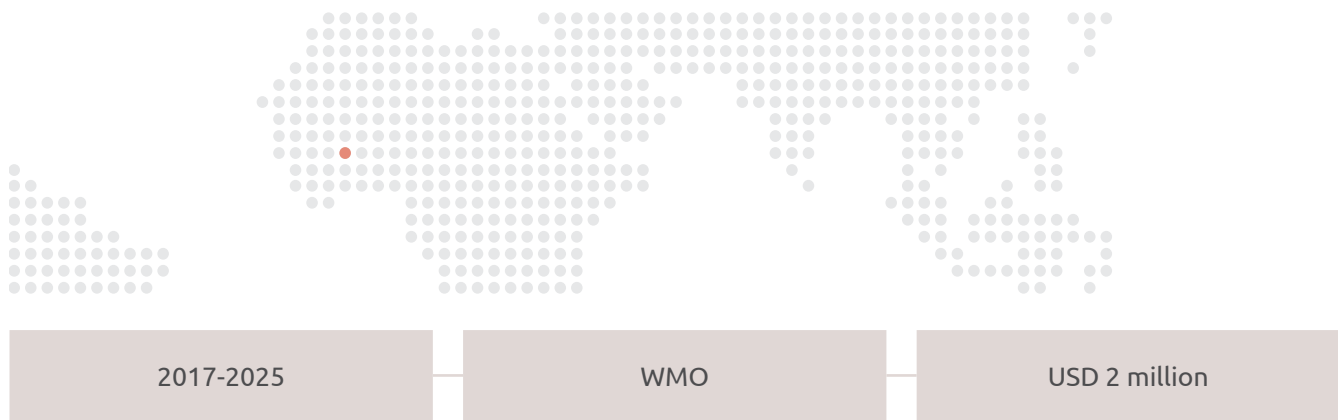
In 2024, CREWS West Africa fully funded the installation of FFGS in Burkina Faso, Mali and Niger. This was a cost-effective approach which leveraged a pre-existing USAID-funded system which was already in place for nearly 70 countries globally achieving significant economies of scale. The system is running with a single hosting arrangement for the three countries. The extension of flash flood forecasting to additional countries in Central and

West Africa is under consideration, bringing together different tools.

In Mali in April 2024, an FFGS national training workshop was held to ensure national forecasters (meteorologists and hydrologists) are equipped with appropriate expertise and knowledge to ensure optimal use of the system for forecasting and warning.

¹⁷ The WMO Barcelona Dust Regional Center was created in 2007 thanks to the formal agreement of two Spanish institutions: the Meteorological State Agency of Spain (AEMET) and the Barcelona Supercomputing Center (BSC).

Programme in Focus: Burkina Faso



Focus on the core Indicators

- 1 LDCs/ SIDS with national investments plans and budgets for MHEWS
- 2 national plans, strategies and legislations on early warnings approved and/ or implemented
- 2 multi-hazard assessments, analyses, and other mapping of needs, gaps and priorities that inform investment requirements on early warning
- 4 hazards which pose a risk of life and economic loss for which forecasting and warning services are in place
- 3 climate and weather information products co-designed with users’ needs

CREWS Burkina Faso programme started in 2017 and was the first national CREWS programme to be launched in Africa. The aim of the programme was to improve meteorological and hydrological warning services in the areas of hydrology and management of water resources, agriculture, food security and other economic sectors.

There have been 2 phases to the programme, the first completing in 2021 and the second which was due to complete at the end of 2024 but for which an extension to the end of 2026 was requested to align with the timeline of the GCF-funded project. This alignment is important as through its implementing partner (WMO), CREWS is most able to provide the technical assistance (e.g. training) that is required to maximise the benefit of capital investments made by the GCF.



Credit: ANAM

Implementing recommendations from programme evaluations

Following best practice, a mid-term evaluation was undertaken in 2019 by an evaluation expert with technical knowledge of agrometeorology and hydrometeorology. Recommendations from this evaluation enabled programme activities to be adjusted for maximum impact. A final evaluation was carried out in 2021 based on five evaluation criteria, namely relevance, effectiveness, efficiency, impact and sustainability.

Key findings from the evaluation were that the programme was highly relevant yet moderately efficient – mainly due to the complexity of the programme, for example, in terms of the number of inter-related activities and institutions involved. Programme effectiveness in terms of achievements was affected by delays but training events were reported as highly effective. The programme was assessed as having had a positive impact on beneficiaries, especially in relation to the provision of sand/ dust-storm forecasts and improved agrometeorological warnings and services. Finally, the sustainability of the programme would rely mainly on strengthening the skills of ANAM staff and the synergies and collaborations that were developed with other projects such as ClimSA (funded by the European Union) and Hydromet (funded by the GCF). A series of recommendations were made, for example the need to further calibrate the sand/ dust-storm forecast – an action that was completed in 2024.

Sustained support has a multiplying effect

CREWS has been operating in Burkina Faso for a long time, providing many opportunities for alignment with other interventions and investments in the country (for example, GCF FP074 which has the same objective as CREWS and ClimSA which is focused on co-developing services with end users). Continued support from CREWS, especially the provision of training, has ensured that the software and hardware is operated efficiently and maintained.

The early development of a Strategic Plan for the National Meteorological Agency (ANAM) has enabled continued progress to be made despite three changes of leadership since CREWS first started operations in Burkina Faso. Also key to sustainability, government support for the NMHS has increased over time as demonstrated by the new buildings provided to both the meteorological and hydrological services and the additional staff recruited. Good management, strategic planning and sustained funding has directly led to a larger, stronger and more capable ANAM.

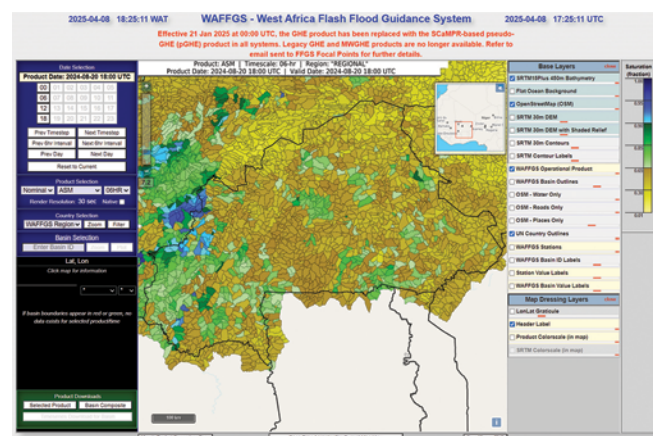
In Burkina Faso, the close partnership between the World Bank and WMO helped mobilise GCF project funding (e.g. FP074) to scale up CREWS interventions. In this way, CREWS has demonstrably enabled funds and implementing partners to build on each other’s strengths through co-ordinated, complementary interventions.



Credit: ANAM

Technical assistance from CREWS maximises the benefits of other investments

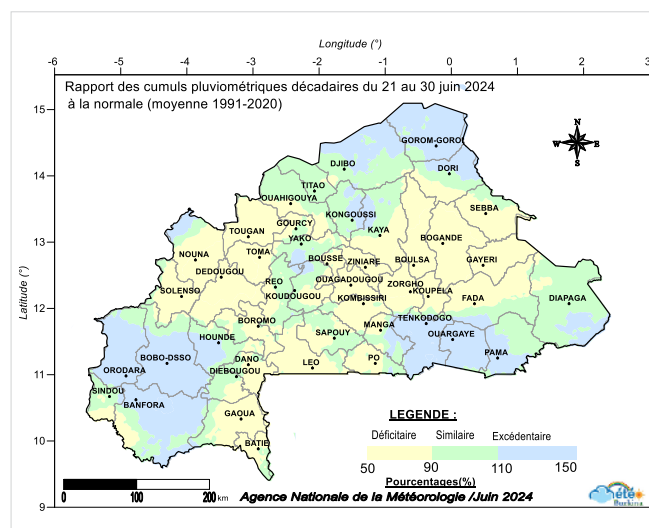
Whilst other investments (e.g. GEF and GCF) have purchased essential equipment for Burkina Faso, a focus for CREWS has been the provision of training. For example, in relation to the Flash Flood Guidance System (FFGS), a national training workshop in April 2024 ensured that national forecasters (meteorologists and hydrologists) were equipped with appropriate expertise and knowledge to ensure optimal use of the system for forecasting and warning. This complemented a wide package of support provided by WMO and funded by GCF and IDA under the World Bank project 'Strengthening Climate Resilience in Burkina Faso' (P164078). Other examples include training in the use of Numerical Weather Prediction (NWP) outputs from global and regional centres, training in the use of the digital tools delivered through the ClimWeb package (see [Feature: Open-source Digital Tools](#)).



Credit: HRC, AGRHYMET and RSMC Dakar

Improved agrometeorological bulletins

Before the CREWS Burkina Faso programme, the agrometeorological bulletins were of limited use to farmers as they were mainly a report on the state of water resources based on observations data from the previous 10 days and did not include an outlook for the next 10 days – the forecast section has now been improved with a seamless approach. To enable forecasters to add this information, weekly briefings were initiated under CREWS, supported by Meteo France and RSMC Dakar (regional lead for the WMO's Severe Weather Forecasting Programme) and these provided accurate predictions of the likelihood of rainfall events in the next 7 days to 6 weeks. Also, for agriculture, outreach to communities through roving seminars ensured the dissemination of seasonal forecasts pre-season and also a mid-season update enabling farmers to provide feedback on the season and the forecast accuracy.



Credit: ANAM, Burkina Faso 2024

Note: Burkina Faso has also benefited from activities and investments made under CREWS West Africa including the roll out of ClimWeb and the installation of sensors to calibrate the dust/ sandstorm forecast (see also [Programme in Focus: West Africa](#)).

CREWS in Asia Pacific

20 countries assisted in 2024

1 country affected by conflict: Afghanistan

5 countries with social/ institutional fragility: Federated States of Micronesia, Kiribati, Republic of Marshall Islands, Solomon Islands and Tuvalu

2 regional programmes: South-East Asia (Cambodia and Lao PDR) and Pacific SIDS 2.0

1 country programme: Afghanistan

3 Accelerated Support Window interventions: Timor-Leste, Tonga and Vanuatu

USD 16.08 million programme funding (to 31 December 2024, excluding EW4All and ASW)

Cambodia: Flooding is one of Cambodia's most frequent disasters, severely impacting rural livelihoods, infrastructure, and socio-economic development. Population growth, land-use changes, industrialization, and climate change have intensified its frequency and severity. To address these challenges, Community-Based Flood Management support was provided to strengthen local capacity to protect lives, property, and livelihoods from flooding in Cambodia.

Key lessons from the interventions include community engagement in flood risk management, early warning systems, and integrating flood mitigation into development plans. Using the lessons learned from this engagement, the National Committee for Disaster Management Cambodia and Partnership for Development in Kampuchea (PADEK) worked closely with local Disaster Management Committees at the commune, district, and provincial levels to develop the Community-based Flood Management Manual. This manual compiles these insights to guide stakeholders, particularly local authorities and flood-prone communities in Cambodia.



Credit: Kraig Lieb/ Alamy Stock Photo

Lao PDR: Fifteen village-level disaster preparedness and response plans were developed in Phongsaly Province, along with two community-based disaster risk management plans in Oudomxay Province. These efforts were complemented by capacity-building training for communities on disaster risk management, including community-level disaster response drills, awareness-raising on disaster risk reduction and risk profiling.

At the national level, a Disaster Risk Reduction Action Plan has been developed to operationalize the National Strategy on Disaster Risk Reduction 2021–2030, which is currently nearing endorsement. Additionally, a disaster risk reduction plan for the natural resources and environment sector has been prepared to support the Ministry of Natural Resources and Environment’s five-year development plan, aiming to mainstream disaster risk reduction into sectoral planning.



Credit: UNDRR/ Sanjay Pariyar

Afghanistan: Lessons learnt from the flooding in May 2024

On May 10-11, 2024, heavy rainfall led to flash floods in northeastern Afghanistan affecting 21 districts across Baghlan, Badakhshan and Takhar provinces. The rains continued with further torrential downpours on May 16-17, 2024, causing additional flooding in the districts of Ghor, Faryab, Herat and Mazar provinces, with Ghor being the worst affected. The floods resulted in severe loss of life and livelihoods. Initial estimates from the World Food Programme were that nearly 1,000 people had died or were injured, more than 5,000 houses were fully or partially damaged and thousands of livestock perished.

The devastating impacts of the events underscored the importance of Afghanistan’s flood early warning system, which is supported by the Flash Flood Guidance System (FFGS) and highlighted critical needs in ensuring last-mile connectivity to effectively translate forecasting outputs into actions that save lives and protect livelihoods.

Effectiveness of Forecasting & Dissemination: The Afghanistan Meteorological Department issued early warnings for heavy rainfall and potential flash floods 12 hours before the event. These alerts were disseminated through WhatsApp groups, emails and social media, reaching key stakeholders, including the Afghanistan National Disaster Management Authority and local authorities.

The FFGS, supported by WMO, combined with global models and satellite-based monitoring, successfully identified high-risk areas. The initial technical evaluation of the FFGS highlights several key areas for further improvement, including the integration of high-resolution input data, risk and warning products and development of capacity to provide impact-based forecasting. Furthermore, despite timely warnings, many communities did not receive actionable information in time, particularly those in remote rural areas.

Community Trust and Challenges: As part of the CREWS Afghanistan Programme, preliminary results from a post-event survey in Baghlan and Ghor provinces (conducted by the World Bank in collaboration with the World Food Programme) revealed that fewer than one-third of flood-affected households had received any form of early warning. In addition, the data showed that most warnings came through informal sources such as family members, community leaders, and religious figures. Moreover, the warnings lacked actionable guidance. Among those who did receive a warning, over half reported receiving it less than six hours before the flood, which was insufficient to support timely disaster response. In contrast, more than half of affected households indicated that they would need at least 24 hours’ notice to take meaningful action. Female participants emphasized that limited access to early warning information, restricted mobility and inadequate awareness of emergency response training have significantly hindered their ability to engage in flood preparedness and response efforts. These insights will be instrumental in informing the design and strengthening of Afghanistan’s early warning systems to ensure they are more inclusive and effective.



Credit: WFP/ Rana Deraz

A resident from Baghlan province, who lost his home in the floods, shared:

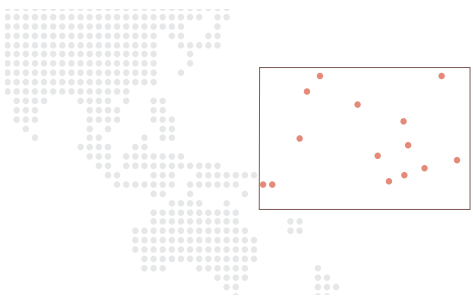
"We heard from neighbours that rain was coming, but we had no way to know it would be this bad. If we had received a direct warning on our phones or the mosque loudspeakers, maybe we could have saved more of our belongings and helped others escape in time."

Additionally, the absence of localized flood models and real-time data transmission delays limited the precision of warnings. In some cases, flood-prone areas did not receive targeted alerts, underscoring the need for improved forecasting resolution and community-based dissemination channels.

Next Steps: Lessons from this event are shaping Afghanistan’s Hydromet Roadmap 2.0, including the development of an Afghanistan’s Drought Decision Support Platform and enhancements to multi-hazard early warning dissemination.

By bridging these gaps, Afghanistan can strengthen its resilience against future extreme weather events, ensuring that early warnings save more lives and livelihoods.

Programme in Focus: Pacific SIDS



Countries: Cook Islands, Federated States of Micronesia (FSM), Fiji, Kiribati, Nauru, Niue, Republic of Marshall Islands (RMI), Palau, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu and Samoa

2017-2025

WB, WMO & UNDRR

USD 4.8 million

Focus on the core Indicators

- **4** LDCs/ SIDS with national investments plans and budgets for MHEWS
- **9** national plans, strategies and legislations on early warnings approved and/ or implemented
- **5** multi-hazard assessments, analyses, and other mapping of needs, gaps and priorities that inform investment requirements on early warning
- **5** hazards which pose a risk of life and economic loss for which forecasting and warning services are in place
- **3** climate and weather information products co-designed with users' needs

Strengthening the skills of women leaders

The Women in Leadership in Meteorology and Hydrology Workshop 2.0 (WILS 2.0) in Port Vila, Vanuatu, in September 2024, brought together 37 female leaders from across the Pacific region. The workshop aimed to strengthen leadership skills, enhance collaboration and promote continuous learning. Women in Leadership was established to address the under-representation of women in leadership roles in the meteorological and hydrological sectors, particularly within the Pacific region. It fosters an environment for women to build confidence to contribute to decision-making, disaster risk management and climate resilience efforts. In addition, Women in Leadership offers mentorship opportunities to young female scientists. The workshops also supported the participation of women leaders in decision-making spaces such as the Pacific Meteorological Council Meeting, which took place just a few days later.



Credit: Vanuatu Meteorology and Geohazards Department (VMGD)

Implementing Impact-based Forecasting in the Solomon Islands and Vanuatu

WMO implemented two impact-based forecasting workshops during the implementation of the CREWS Pacific SIDS 2.0 programme, in the Solomon Islands in 2023, and in Vanuatu in 2024. The purpose of the workshops was to provide a forum for training participants on impact-based forecasting and to develop tools and mechanisms for operationalizing impact-based forecasting and warning systems in both countries. The workshops brought together stakeholders from across civil society, including representatives from the outer islands, reinforcing their crucial role in the development of impact-based forecasts. South-south cooperation was key in the delivery of both workshops. In the Solomon Islands, an expert from the Philippine Atmospheric, Geophysical and Astronomical Services Administration shared experiences on how the impacts of typhoons in the Philippines inspired a new way of communicating warning messages by including likely impacts.

One year later, in Vanuatu, experts from the recently trained Solomon Islands Meteorological Service contributed to the facilitation of the workshop sharing their experience in kickstarting the implementation of impact-based forecasting. In Solomon Islands, 57 participants from 27 stakeholder organizations were trained, and in Vanuatu there were 37 participants from 7 stakeholder organizations.



Credit: WMO/ Samuel Muchemi

Developing a guidance to support Early Warning and Early Action



Credit: UNDRR

Under the CREWS Pacific SIDS 2.0 programme, an inclusive early warning early action checklist and implementation guide was developed. The checklist and implementation guide have been developed to ensure that the key elements of early warning systems (governance; disaster risk knowledge; detection, monitoring, analysis, and forecasting; dissemination and communication; and preparedness to respond) are gender-responsive and disability-inclusive. They provide support and direction for systematically integrating and monitoring gender and disability inclusivity across all actions related to warnings. Whilst developed for the Pacific SIDS, the checklist can be adapted or contextualised as needed to different countries.

Taking a strategic approach to development capabilities



Credit: Tonkin + Taylor

Under CREWS Pacific SIDS 2.0, National Strategic Plans for Meteorology and National Frameworks for Weather, Water, Climate and Ocean Services were developed for Tokelau (2021), Tonga (2021), Solomon Islands (2022) and Vanuatu (2023). A National Strategic Plan for Meteorology provides a structured approach to strengthening a country's meteorological capabilities, ensuring accurate weather forecasting, disaster risk reduction, and climate resilience. It aligns national policies with international standards, enhances observational networks, and promotes research and capacity building. Similarly, the Global Framework for Climate Services ensures the effective delivery of climate information to support decision-making across sectors such as agriculture, health, water management, and disaster preparedness. It fosters collaboration among stakeholders, improves access to climate data, and enhances adaptation strategies to mitigate climate change impacts, ultimately safeguarding lives, livelihoods, and economic stability.



Credit: VMGD

Partnering with youth groups to deliver Community-based Early Warning Systems in Niue

Support was provided to the Niue Meteorological Service to implement a traditional knowledge-based training on drought. This initiative involved cultivating yams, a common crop, to monitor and better predict cyclones during El Niño years. The activity was carried out in partnership with the Girls and Boys Brigade of Niue, a leading youth community group. Over the past three years, the brigade has planted yams to observe their responses to cyclones throughout each cyclone season. From 2021 to 2023, the El Niño Southern Oscillation status was La Niña, but with the shift to El Niño in 2024, it became crucial to compare the differences between these two phases and enhance forecasting capacity for tropical cyclones in the 2023-2024 season. The results helped Niue Meteorological Service to improve early warning and early action efforts. This initiative also provided an opportunity to raise awareness about drought, its definition and its impacts while promoting traditional knowledge passed down through generations in Niue.

Coordinating and collaborating across the sectors

The Pacific National Meteorological and Hydrological Services and the National Disaster Management Offices identified coordination as a challenge as the two entities often operated in silos during disaster preparedness and response. The lack of coordination and collaboration has led to limited data sharing, delayed early warnings and ineffective response. To address this gap, WMO and UNDRR invested in strengthening coordination and collaboration between the National Meteorological and Hydrological Services and the National Disaster Management Offices by bringing them together for planning and implementation of early warning system activities at the national level under the CREWS Initiative. For instance, the CREWS Project Steering Committee meetings played a crucial role in fostering collaboration between the two entities through joint planning, information sharing, discussion and validation of national needs, gaps and priorities across the four pillars of multi-hazard early warning systems. Furthermore, these meetings also facilitated targeted discussions on gender and disability inclusivity to ensure that early warning systems are people-centred, gender-responsive and disability-inclusive and tailored to the specific needs of various groups.



Credit: VMGD

CREWS in the Caribbean

17 countries and territories assisted in 2024

0 countries affected by conflict

1 country with social/ institutional fragility: Haiti*

1 regional programme: Caribbean 2.0

1 country programme: Haiti

1 Accelerated Support Window intervention: Belize

USD 13.54 million programme funding (to 31 December 2024, excluding ASW)

* In 2025, the World Bank assessed Haiti as being affected by conflict but in 2024, the country was listed as being affected by fragility.

Regional Advancing Resilience: Strengthening Multi-Hazard Early Warning Systems in the Caribbean: The first Americas and Caribbean Multi-Hazard Early Warning Systems (MHEWS) Regional Multi-Stakeholder Forum (MSF), co-chaired by the Caribbean Disaster Emergency Management Agency, together with UNDRR and WMO, was held as a hybrid event on 5 December 2024.

Common elements included people-centred and inclusive approaches, impact-based and action-oriented systems, data management and integration, leveraging local, traditional and indigenous knowledge with state-of-the-art science and technology, strengthening governance and institutional support, enhancing financing for vulnerable communities, and localized action and community empowerment.

Key outcomes included commitments to enhance coordination, innovative policy and financing frameworks and stronger public-private partnerships. Special emphasis was placed on community engagement, innovative financing strategies, and leveraging technology for more effective and inclusive risk communication.



Credit: UNDRR forum report



Credit: UNDP Haiti



Credit: UHM

Haiti: From October to December 2024, 19 young people, including 10 women, received 45 days of theoretical and practical training in weather forecasting and observation for aviation activities. Upon completion, they participated in a practical internship at the National Office of Civil Aviation and the Hydrological Unit of Haiti.

Seventeen of the 19 trainees earned certificates and were hired by the Haitian government as weather forecasters and observers at Hydrological Unit of Haiti and the international airports in Cap-Haitien and Port-au-Prince.

The certificate award ceremony took place in February 2024, with the Minister of Agriculture and the Director General of National Office of Civil Aviation in attendance

Caribbean region: With support from the CREWS Caribbean 2.0 programme, late 2024 saw the delivery of the second and final phase of a regional course designed to improve Marine Weather Competencies in SIDS. An online learning course was held from 28 October to 22 November 2024, followed by face-to-face learning in Bridgetown, Barbados, from 2-11 December 2024. The training was hosted by the Caribbean Institute for Meteorology and Hydrology and strengthened a range of technical skills, including basic satellite imagery interpretation for marine environment, impact-based forecasting and wave forecasting. Many of the sessions were interactive so that they enhanced both technical skills in marine forecasting and the communication skills required for service delivery. These sessions brought the participants closer to the marine stakeholders and helped them understand better their end-users' needs while enhancing their competency with regards to Marine Service provision.



Credit: Peter Phipp/ Travelshots.com/ Alamy Stock Photo



A young rice field worker carries rice during heavy monsoon rains in Tarai, Nepal, 2007
Credit: Mark Pearson / Alamy Stock Photo

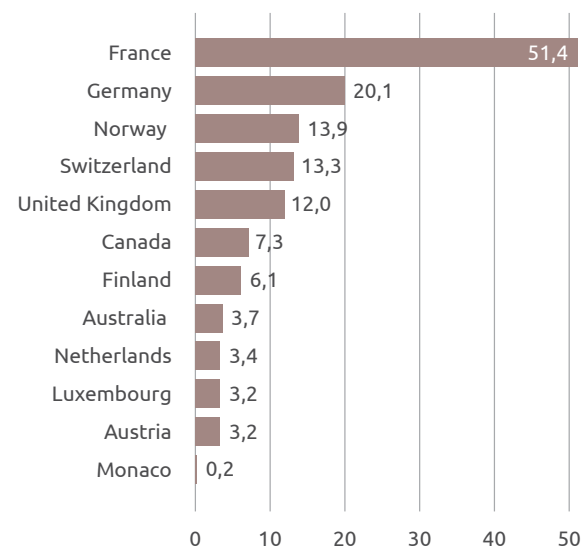
Financials

Fund contributions

The CREWS Initiative thanks its 12 Members for their generous support.

By the end of 2024, USD 137.87 million in pledges and contributions¹⁸ have been made into the CREWS Trust Fund since it was established in 2016. Of this amount, USD 127.90 million has been received by the Trustee and applied to the CREWS Trust Fund.

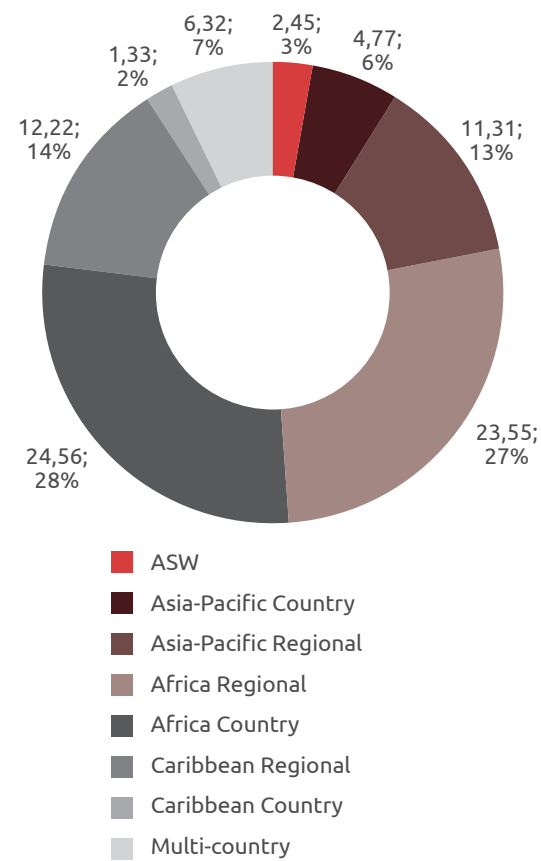
During 2024, CREWS signed a new contribution agreement with France for EUR 8 million and received in total USD 23.5 million from Austria, Canada, France, Monaco, Norway, Switzerland and the United Kingdom. In addition, the Trust Fund earned an investment income of USD 5.83 million on its liquid balances, including the investment income received from the Implementing Partners.



Contributions and pledges as of 31 December 2024 (in USD millions)

Programme funding

By 31 December 2024, the CREWS Steering Committee had approved USD 106.99 million in funding, of which 80.9% was directly funding programmes. Funds available to support CREWS Steering Committee funding decisions amount to USD 26.73 million.



Funding decisions by programmes¹⁹ as of 31 December 2024 (in USD millions)

CREWS Trust Fund Summary
Inception through December 31, 2024 in USD millions

	Total	% of Total
Donor Pledges and Contributions		
Contributions	133.35	96.7%
Pledges	4.52	3.3%
Total Pledges and Contributions	137.87	100.0%
Cumulative Resources		
Resources received		
Cash Receipts	127.90	89.0%
Investment Income earned a/	5.83	4.1%
Total Resources Received	133.72	93.1%
Resources not yet Received		
Contributions not yet received	5.45	3.8%
Pledges	4.52	3.1%
Total resources not yet received	9.97	6.9%
Total Potential Resources (A)	143.69	100.0%
Cumulative Funding Decisions		
Programmes	86.51	80.9%
Fees	10.47	9.8%
Administrative Budget	10.01	9.4%
Total Funding Decisions Net of Cancellations (B)	106.99	100.0%
Total Potential Resources Net of Funding Decisions (A) - (B)	36.71	
Funds Available		
Funds Held in Trust with no restrictions	28.89	
Approved Amounts Pending Cash Transfers	2.15	
Total Funds Available to Support Steering Committee Decisions	26.73	

a/ Represents investment income earned on the liquid balances of the CREWS Trust Fund and investment income received from Implementing Partners

Note: sub-totals may not add up due to rounding.

Sustainable investment

Since July 2019, the CREWS Trustee (World Bank) has been integrating Environmental, Social and Governance (ESG) factors into its investment processes as part of a Sustainable and Responsible Investment (SRI) approach to investment management. The CREWS investment portfolio is primarily comprised of short-term high-grade fixed-income securities (sovereign, supranational and agency securities and bank deposits). As of December 31, 2024, the portfolio has an ESG Quality Score of 6.71 (out of 10) and an ESG Rating of A.

For more information, please see the full [Trustee Report](#).



18 A pledge represents a contributor’s expression of intent to make a contribution. Pledges are formalized into Contributions by way of a Contribution Agreement/ Arrangement between the Contributor and the Trustee.

19 Figures may differ from the Trustee due to different aggregation methods, timing of reports and the inclusion or exclusion of Implementing Partner fees. Regions cover regional, multi-year country programmes and Accelerated Support interventions.



Nuer Tribe Woman Calling on a Mobile Phone, Gambela, Ethiopia.
Credit: ERIC LAFFORGUE/ Alamy Stock Photo

Achieving with confidence

Growing with confidence

Recognising that CREWS is a key delivery mechanism for Early Warnings for All (EW4All), during 2024, crucial steps were taken to programmatically align CREWS with EW4All. The approval of the Accreditation Framework in 2024 provides a mechanism for the remaining two EW4All pillar leads – the International Telecommunications Union (ITU, Pillar 3 lead) and the International Federation of Red Cross and Red Crescent Societies (IFRC, Pillar 4 lead) – to become CREWS Implementing Partners. 2024 also witnessed the inaugural meeting of the CREWS Operational Coordination Group comprising Implementing Partners, regional institutions and NMHS with CREWS Cooperation Frameworks. The Operational Coordination Group seeks to support the CREWS Steering Committee in carrying out its functions and making decisions and may also serve as a platform for sharing learning and best practice across the portfolio. Furthermore, it recognises the crucial role of regional institutions and centres in the global scale up of early warning systems.



Credit: UNDRR/ Sanjay Pariyar

Reporting with confidence

A new MEAL framework was fully adopted in 2024 with all programmes reporting against it for the first time and the numbers in this report serving as a baseline for reporting future progress. The new CREWS Theory of Change and accompanying Monitoring, Evaluation, Accountability and Learning (MEAL) framework are aligned with the goal of EW4All and CREWS will soon include as one of its indicators the EW Maturity Index being developed by the EW4All M&E working group, led by the WMO and the UNDRR.

Whilst programmes have reported on the 5 Core Indicators of the new results framework, qualitative data is also important. Throughout this report, programme highlights provide evidence – including some individual testimonies – of the positive impact that communities are experiencing on the ground as a result of the sustained commitments of programme partners across all sectors as well as the increasing levels of support from national and local governments in the countries where CREWS operates.

Maturing with confidence

As CREWS prepares to enter its tenth year, there have been updates to some of the Operating Procedure Notes which provide crucial guidance to implementing and operating partners. These recent updates reflect how the initiative has developed over time for example, CREWS' transition from a gender-informed approach to one that is gender-responsive. In due course, other operational procedure notes (e.g. Programming and Project development) will be updated to take account of this important development. On another theme, the update to the operational procedures for the Accelerated Support Window addresses a need for additional support to be available to countries with lower levels of capacity so that they can prepare CREWS programme proposals and benefit from both the economies of scale and opportunities for leverage that CREWS support brings. Furthermore, 2024 saw the delivery of an Analytical Paper to guide the development of Operational Procedures on CREWS Programming in countries affected by fragility, conflict and violence with further work on this important topic scheduled for 2025.



Credit: UNDRR/ Sanjay Pariyar

Operating with confidence

In 2024, the CREWS Steering Committee approved USD 21,133,500 in new financing decisions for 2 new country programmes (Djibouti and Niger 2.0), a new phase to the Caribbean programme and the EW4All Accelerator programme. This brought the total number of multi-year country and/ or regional programmes to date to 24, with 19 active in 2024. Evidence from the three programmes nearing completion in 2024 demonstrates beyond doubt the value that CREWS generates by bringing together key stakeholders at national and regional levels, with some entering into formal agreements for the first time. It has also shown how CREWS is leveraging, and is being leveraged by, other investments. By coordinating and aligning both interventions and timelines (for example, in West Africa), technical support from CREWS is supporting capital investments by other funders (e.g. GCF) or programmes (e.g. World Bank Hydromet programme) ensuring that staff

in national and regional institutions receive the training and support to maximise the benefits of new systems and equipment. By promoting a coherent approach, maximum impact is achieved at minimum cost through economies of scale and using the comparative advantage of partners to the greatest effect.



Credit: UNDP Haiti

Partnering with confidence

Whilst the new Accreditation Framework paves the way for new Implementing Partners, CREWS has been strengthening other partnerships – for example, in 2024, CREWS joined the Alliance for Hydromet Development and CREWS continues to actively participate in the Risk-informed Early Action Partnership and the Global Shield Against Climate Risks. Also in 2024, CREWS finalised a Co-operation

Framework with the UK's Met Office, the first of up to 10 frameworks that might be agreed in the coming years that will provide fast-track access to technical support. Partnerships have also been fundamental to our programmes, with partnerships between the public, private, academic and civil sectors as exemplified in this report.

Acting with confidence

Throughout 2024, CREWS programmes have operated true to its core values and in this report, numerous examples of best practice have been shared from across the portfolio. There have been examples of unique solutions – like the weather app in Tonga, achieved through an Accelerated Support Window action – to country-specific configurations of systems, for example the LaoDi database in Lao PDR. LaoDi hosts historical disaster impact records and has already proven crucial for reporting and managing the impacts of multiple tropical cyclones which affected the region in 2024, including Papiroon, Yagi, and Soulik.

It has been possible to provide appropriate, tailored solutions as a result of participatory approaches that ensure that the needs of the most vulnerable communities are understood through consultations with members of these communities – such as members of Boulaus commune in Djibouti – and co-design activities, such as the development of hazard awareness boards in Créole for the citizens of Haiti. Meanwhile, gender-responsive interventions have empowered women across CREWS countries

with powerful testimony from Somalia about the benefits of the training provided with CREWS support and the actions that local stakeholders have already taken to implement what they learned.

However, a particular strength of CREWS – manifested through its engagement with EW4All – is the desire to promote coherence and have a multiplying effect. This report includes many examples of funds being leveraged and interventions being aligned, especially in West Africa.

Throughout 2024, CREWS has built on the momentum from previous years and set a solid foundation for the future. With work on a new Strategy and Operating Plan initiated in 2024, CREWS and its partners will soon set the direction for CREWS out to 2030. For now, CREWS looks forward with confidence, assured by the continued commitment of its funders, implementing and operational partners as well as the growing demand for CREWS support from governments across the LDCs and SIDS, and the communities they serve.



Credit: WMO/ Vanessa Mazarese



An indigenous woman wading through shallow water of a reef in Tonga carrying a stringer of fresh fish caught for sustenance.
Credit: Jim DeLillo/ Alamy Stock Photo

Appendix A. CREWS Operations in 2024



<https://crews-initiative.org/reports/annual-report-2024/figures-and-data/>

Programme	Countries	Implementing Partners	Budget (USD millions)	Timeframe	FCV Status (using World Bank List for FY 2024)
Country programmes					
Burkina Faso	Burkina Faso	WMO	2,2	2017-2025	Conflict
Chad	Chad	WB & WMO	3,1	2019-2025	Fragile
DR of the Congo	Democratic Republic of the Congo	WB & WMO	3,0	2017-2025	Conflict
Djibouti	Djibouti	UNDRR & WMO	3,7	2024-2028	
Malawi	Malawi	WB & WMO	3,0	2022-2026	
Mali	Mali	WB & WMO	3,3	2017-2025	Conflict
Niger 2.0	Niger	WB, WMO & UNDRR	3,9	2024-2028	Conflict
Togo	Togo	WB & WMO	2,4	2019-2025	
Afghanistan	Afghanistan	WB & WMO	3,7	2019-2025	Conflict
Haiti	Haiti	WMO	1,5	2021-2025	Fragile
Regional programmes					
West Africa	Benin, Burkina Faso, Cabo Verde, Cameroon, Central African Republic, Chad, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo	WB & WMO	5,3	2018-2024	6 Conflict 2 Fragile
Central Africa	Angola, Burundi, Cameroon, Central African Republic, Chad, Democratic Republic of the Congo, Republic of the Congo, Rwanda and Sao Tomé e Príncipe	WB, WMO & UNDRR	4,9	2022-2026	3 Conflict 4 Fragile

1. # of LDCs and SIDS with national investment plans and budgets prioritizing multi-hazard early warning programmes	1.1a # of national plans, strategies and legislations on early warnings approved and/or implemented	1.2 # of multi-hazard assessments, analyses and other mapping of needs, gaps priorities that inform investment requirements on early warning	2 # of hazards which pose a risk of life and economic loss for which forecasting and warning services are in place in LDCs and SIDS with CREWS support	3.1a # of climate and weather information co-designed to users' needs by group representing vulnerable segments of exposed populations	Programme
1	2	2	4	3	Burkina Faso
1	0	3	4	1	Chad
0	1	4	3	0	Democratic Republic of the Congo
0	0	0	0	0	Djibouti
1	2	3	5	2	Malawi
1	0	1	3	33	Mali
1	0	0	2	0	Niger 2.0
1	4	6	3	3	Togo
0	1	0	2	0	Afghanistan
0	1	2	2	0	Haiti
12	0	0	6	0	West Africa
1	1	0	1	0	Central Africa

Programme	Countries	Implementing Partners	Budget (USD millions)	Timeframe	FCV Status (using World Bank List for FY 2024)
East Africa	Burundi, Kenya, Rwanda, South Sudan, Uganda and the United Republic of Tanzania	WB, WMO & UNDRR	7,0	2023-2026	1 Conflict 1 Fragile
Greater Horn of Africa	Ethiopia, Somalia and Sudan	WB, WMO & UNDRR	5,2	2022-2026	3 Conflict
Southwest Indian Ocean	Comoros, Madagascar, Mauritius, Mozambique and Seychelles	WB, WMO & UNDRR	4,0	2020-2025	1 Conflict 1 Fragile
South-East Asia	Cambodia, Lao PDR	WB, WMO & UNDRR	5,5	2021-2025	Nil
Pacific 2.0	Cook Islands, Federated States of Micronesia (FSM), Fiji, Kiribati, Nauru, Niue, Republic of Marshall Islands (RMI), Palau, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, Samoa	WB, WMO & UNDRR	4,8	2017-2025	5 Fragile
CREWS Caribbean 2.0	Antigua and Barbuda, Bahamas, Barbados, Belize, Cuba, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Lucia, Saint Vincent and the Grenadines, St. Kitts and Nevis, Suriname, and Trinidad and Tobago	WMO & UNDRR	7,0	2024-2027	1 Fragile
Multi-country programmes					
EW4ALL multi-stakeholder accelerator in LDCs and SIDS	Comoros, Kiribati, Madagascar, Mauritius, Nepal, Solomon Islands and Tonga	WMO & UNDRR with IFRC & ITU	5,5	2024-2025	3 Fragile

1. # of LDCs and SIDS with national investment plans and budgets prioritizing multi-hazard early warning programmes	1.1a # of national plans, strategies and legislations on early warnings approved and/or implemented	1.2 # of multi-hazard assessments, analyses and other mapping of needs, gaps priorities that inform investment requirements on early warning	2 # of hazards which pose a risk of life and economic loss for which forecasting and warning services are in place in LDCs and SIDS with CREWS support	3.1a # of climate and weather information co-designed to users' needs by group representing vulnerable segments of exposed populations	Programme
0	0	0	0	6	East Africa
1	0	2	2	2	Greater Horn of Africa
5	1	6	2	0	Southwest Indian Ocean
2	1	4	4	6	South-East Asia
4	9	5	5	3	Pacific
0	2	4	5	0	CREWS Caribbean 2.0
3	3	7	2	0	EW4All Accelerator

Appendix B. CREWS metrics and indicators

Source: CREWS (2024). CREWS Operational Procedures Note N° 2 Monitoring and Evaluation, revised in July 2024: https://crews-initiative.org/wp-content/uploads/2024/11/20241104_CREWS_OP_ME_web_pages.pdf

Expected results	Indicators
Goal: 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 2030.	# of people living in LDCs and SIDS with access to/and receiving forecasts and early warning services developed or improved with CREWS support
	# of deaths and missing persons in LDCs and SIDS attributed to hydrometeorological events, per 100'000 population
	# of people in LDCs and SIDS whose livelihoods were disrupted or destroyed, attributed to disasters
Outcome 1. National and local multi-hazard early warning systems prioritized and funded	# of LDCs and SIDS with national investment plans and budgets prioritizing multi-hazard early 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 warnings approved and/or implemented
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	# of multi-hazard assessments, analyses and other mapping of needs, gaps priorities that inform investment requirements on early warning
Outcome 2. Improved early warning service delivery and accessibility by national and regional institutions	EW Maturity Index [not yet available]
	# of hazards which pose a risk of life and economic loss for which forecasting and warning services are in place in LDCs and SIDS with CREWS support
Outcome 3. Outcome 3. Early warning programmes are driven by people-centered and gender-responsive principles and promote private sector engagement	# of climate and weather information co-designed to users' needs by group representing vulnerable segments of exposed populations
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 needs	

CREWS Implementing Partners



CREWS Operational Partners



The CREWS Initiative gratefully acknowledges the support of:

CREWS Members



Australia



Austria



Canada



Finland



France



Germany



Luxembourg



Monaco



Netherlands



Norway



Switzerland



United Kingdom
(Chair)

CREWS Observers



Japan



Mexico



New Zealand



Spain



USAID

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