Early Warning Systems and Early Action in Fragile, Conflict, and Violent Contexts: Addressing growing climate & disaster risks
MOTIVATION

One-third of the world’s population are not covered by early warning systems. This figure is shocking given that more than 130 million people worldwide are affected by disasters each year on average. The majority of people not yet covered by an early warning system (EWS) are in Least Developed Countries (LDCs) and Small Island Developing States (SIDS), a significant number of which experience fragility, conflict and violence. As of 2023, less than 50% of the LDCs and approximately 60% of the Landlocked Developing Countries (LLDCs) have multi-hazard early warning systems. Indeed, of the top 25 most climate vulnerable countries, 19 are fragile and/or conflict-affected, illustrating the alarming intersection of conflict, violence, and fragility (FCV) with growing climate and disaster risks.

The Early Warnings for All (EW4All) Initiative launched by the UN Secretary-General in November 2022 at COP27 aims for the whole world to be protected by an early warning system by the end of 2027. While important attention and resources have been directed towards putting the initiative into practice, a greater focus is needed on how fragile, conflict- and violence-affected countries can successfully implement early warning systems, including elements of systems that may need to be adapted or developed.

To address existing needs and to support the success of EW4All, the Centre of Excellence for Climate and Disaster Resilience (Centre of Excellence) – which is jointly led by the World Meteorological Organization (WMO) and the United Nations Office for Disaster Risk Reduction (UNDRR) and currently comprises fourteen international organisations plus partners – is committed to assisting the establishment and strengthening of early warning systems in FCV contexts, so as to ensure that communities living in these situations aren’t left behind.

Linking finance to systems-strengthening

Despite constituting a crucial component of adaptation and risk reduction, strengthening early warning systems remains critically underfunded. Financing is more commonly provided by humanitarian funding instruments which cannot meet current and future needs and are not conducive for longer-term systems-building and maintenance. This brief is situated alongside past and current calls to increase climate finance to countries affected by conflict, fragility and violence. These calls for increased financing respond to the reality that a high number of FCV countries are disproportionately affected by climate change, and yet have access to the fewest resources to adapt to it.

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1 UN (2022) Early Warnings for All. Webpage, available at: [www.tinyurl.com/EW4All](http://www.tinyurl.com/EW4All)
3 UNDRR, WMO, UNDRR Bonn Office (forthcoming) 2023 Global status of multi-hazard early warning systems: Target G.
4 To learn more about the Centre of Excellence, please see: [https://coeexdr.preventionweb.net/](https://coeexdr.preventionweb.net/)
Strengthening EWS in FCV Contexts through COP28

The Centre of Excellence contributes to achieving the goals and objectives advanced during COP28 regarding countries experiencing FCV. Improving financing for EWS in these contexts is aligned with many of the commitments and charters on climate finance unveiled at COP28. The COP Presidency Day advanced climate action in fragile- and conflict-affected contexts through a series of non-negotiated outcomes. These include a Declaration on Climate, Relief, Recovery and Peace targeting financial support for adaptation and resilience, a package of solutions to commit funding to increasing this flow of finance, and a Charter on the Future of Disaster Financing to increase pre-arranged finance and earlier action. Early warning systems in FCV contexts have much to benefit from these objectives and must be included as an explicit component of follow-up discussions for action.

The 'Getting Ahead of Disasters' Charter launched at COP28 by the UAE COP28 Presidency, the Government of Samoa and the UK Government focuses on finance for managing risks and presents proactive measures for action; pre-arranged finance; improved coordination through the alignment of finances across sectors; and enhancing delivery systems, with a focus on people-centred and localising approaches, including through allocating and distributing finance. Strengthening EWS in FCV contexts is central to enacting these new climate finance opportunities.

This policy paper presents key considerations and calls for action to ensure countries in contexts of fragility, conflict and violence are supported by all relevant EWS stakeholders – and especially donors, humanitarian and development agencies, and civil society actors. The policy paper draws on the Handbook for Early Warning Systems and Early Action in Fragile, Conflict, and Violent (FCV) Contexts that is under development by the Centre of Excellence and its partners.

Next steps

The Centre of Excellence will launch the Handbook on Early Warning Systems and Early Action in FCV Contexts in the first quarter of 2024. This will be followed by operationalizing, piloting and rolling it out in selected countries to continue to gather learnings and insights for effective action in FCVs and will further inform the product as a living document. Alongside this work, the Centre of Excellence will promote related work on early and anticipatory action in FCV contexts by other actors to further coordinate relevant guidance and information.
KEY MESSAGES

➔ The Early Warnings for All Initiative – ‘a formidable but essential challenge’⁶ – represents an opportunity for populations living in contexts of fragility, conflict and violence to gain the protection that early warning systems can offer.

➔ Multi-hazard early warning systems must be understood as an essential service, the establishment, coordination, and continuity of which must be assured even in conditions of fragility, conflict and violence.

➔ More coherent, long-term financing and projects to develop and strengthen EWS in countries affected by FCV are imperative, which account for low starting points and heightened risks of disruptions. A blend of finance mechanisms that includes climate finance and humanitarian and development funding is crucial for EWS establishment and sustained maintenance across the early warning value cycle.

➔ Contextual factors specific to FCV contexts include the timescale, type, and geography of conflict and fragility, along with the capacities and power dynamics of primary stakeholders (e.g., affected communities, government actors, and international partners). These are critical considerations to guide effective EWS implementation and do no harm.

➔ The establishment and implementation of early warning systems and early action in FCV contexts is possible and is urgently needed. These systems can be strengthened through better utilizing already available remote sensing data and technology to address issues of access and information gaps in FCV contexts.

Considerations for Early Warning Systems in FCV contexts

Fragile, conflict-affected, and violent contexts can differ in significant ways from other contexts and thus necessitate special considerations for the development and implementation of EWS. Distinguishing factors include the *timetable, type, and geography of conflict, violence, and fragility*, along with the level of involvement of main engaged stakeholders, such as the presence or absence of government or non-State actors, and the likely presence – and in some cases predominance – of the international community.

Geographic considerations and types of conflict, amongst other considerations, are important when evaluating the availability and potential utilisation of forecast information and feasibility of certain types of EWS or early actions. For instance, in an armed conflict hotspot where the relevant authorities are party to a conflict, coordinated humanitarian actors may work with affected communities to develop a regional EWS using global forecasts and remote sensing in the absence of broader engagement by authorities. Alternatively, well-resourced community led EWS may be the most effective and sustainable approach amid widespread acute conflict.

Different types, geographies, and timescales of conflict give rise to different stakeholders best placed to lead or support EWS. These range from affected communities themselves to government actors to international partners – including donors, humanitarians, development, and climate actors – which may be working at the national, regional, or international level (and often a combination of these actors).

In a conflict context, it may be challenging for an EWS to be established and maintained without the involvement of the parties to the conflict. In such a situation, ensuring appropriate representation of the conflict parties may be necessary, or at the very least engaging in awareness-raising on EWS in areas under the control of different parties may be imperative to enable an effective EWS. These and other considerations illustrate the necessity of establishing and strengthening early warning systems that are adapted to FCV contexts through contextual understanding and tools tailored to different situations, such as the integration of conflict risk assessments and monitoring into disaster risk management.

Current barriers and challenges in EWS for FCV contexts

Despite the importance of increasing EWS in contexts of fragility, conflict and violence, stakeholders commonly meet a range of barriers and challenges. Broader climate finance is currently limited in FCV contexts;² also for other types of finance, donors may feel that available funds would stretch further or be more effective in more stable contexts.

Government stakeholders, ranging from meteorological services to disaster management authorities, are often limited in funding and capacity and are often preoccupied with other challenges relating to fragility or conflict. The piece-meal and project-based nature of existing funding for EWS is particularly problematic in FCV contexts where fragmentation in governance and limited country-wide reach or access limits project scope, or ongoing conflict risks eliminating single-project gains.

This is compounded by the short-term nature of funding in fragile and humanitarian contexts, which poses challenges for long-term systems development, in part as these funds are generally annualised humanitarian envelopes. Humanitarian actors may also lack coordination around EWS as well as capacity to address an impending hazard rather than the multiple ones at hand.

Affected communities may be difficult to reach through telecommunication, thus limiting their ability to receive information to inform action.

These examples, while far from exhaustive, are illustrative of the challenges and barriers faced by EWS stakeholders, alongside other realities relating to contexts of fragility, conflict and violence.

Common vision and steps towards implementation of EWS for FCV contexts

While challenging, improving the capacity of countries and regions experiencing FCV is not impossible, and is highly necessary. Research shows that ‘forecasts exist and could be used to provide early warnings in conflict-affected areas’.8 Forecasts using remote sensing data and global models in areas with limited ground observations through existing infrastructure and capacity were able to predict most of the major flood events and droughts in 20 countries affected by protracted conflict over the last 20 years.9

Early warning systems led by stakeholders ranging from governments to communities in FCV contexts have been developed with success, illustrating that in different situations natural hazards are identified and information about them conveyed in time for people to take action. However, many of these systems must be strengthened and expanded and many more must be developed in countries affected by fragility, conflict and violence.

As part of upholding the commitment to the EW4All agenda, there is a need for a common vision to support EWS coverage in FCV countries. This vision, in turn, must be complemented by steps towards implementation. This section presents an overview of key elements for implementing early warning for all in FCV contexts.

1. **EWS are provided as an essential service for all even in conditions of fragility, conflict and violence**

Within humanitarian, development, disaster risk reduction (DRR), and other domains, the continuity or establishment and sustained maintenance of services in crisis situations is the objective, not least to ensure that

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9 Ibid.
the basic rights of every human to access food, water, shelter, healthcare, education are fulfilled. There is a concomitant need for early warning systems to be understood as a basic service, the establishment and sustained management and maintenance of which must be assured – even during other, overlapping crises. To work towards this, EWS stakeholders should consider:

**Risk assessments include dimensions of fragility, conflict and violence**
- Existing hazard knowledge is combined with conflict and fragility analysis, indicators, and information to provide current pictures of multiple hazards including conflict; increased understanding of vulnerability, and exposure; and to assess the risk of cascading events and impacts. Technology and innovation, such as existing freely accessible remote sensing data, is leveraged.
- Key stakeholder mapping is conducted, including power mapping, to identify roles, resources, roadblocks, and partnerships for EWS.
- Vulnerability factors of affected communities are considered in light of FCV; a thorough analysis of marginalised groups is conducted, including of groups aligned or perceived as aligned with particular parties or factions, to avoid increasing conflict or vulnerability.

**Multi-hazard analysis and forecasting takes fragility, conflict and/or violence into account**
- Fragility, conflict and violence are included as key risks to observe and monitor and a process established or confirmed, connected to EW coordination mechanisms, to update new or emerging risks. Climate-conflict or climate-fragility risk analyses are conducted to identify effective forms of risk management.
- National Meteorological and Hydrological agencies in contexts of fragility, conflict and violence have capacity to provide climate services and have full access to regional/international hazard monitoring data. Ensuring national-regional/international linkages are established can be an important first step for countries affected by fragility, conflict and violence to receive monitoring data.
- A combination of low-tech sensors/cameras, regional/global forecast models, and community-based monitoring and warning systems are identified for forecasting and warning services in conflict or fragile contexts where funding and capacity is limited.

**Appropriate warnings are disseminated and communicated to populations in FCV contexts, including ‘last mile’ populations.**
- Community-based early warning systems are established with monitoring systems in place for key hazards in a particular region.
- Capacity is developed or increased for Common Alerting Protocol (CAP) guidelines to help alerting authorities issue trauma-informed messages.
- Impact-based warnings consider level of conflict/fragility, such as an awareness of the state of critical infrastructure prior to a natural hazard.
- Conflict-affected communities co-produce warnings to ensure messages are conflict-sensitive (e.g., trauma-informed, designed to promote trust, etc.).
Institutions and people are enabled to act early and respond to a warning through enhanced risk education that includes information on fragility, conflict and/or violence

- Multiple last-mile operators are activated and mobilized as relevant to access particular communities and/or areas of countries to account for various lines of authority and political control.
- Longer-term investments in last-mile operators and community-based early warning systems are realised to account for limited population access.
- Disaster preparedness efforts are coordinated as part of wider EWS coordination to reduce the siloing of efforts and to enable information and updates to be shared across ministries, agencies, and between other relevant actors.
- Disaster preparedness measures, including response plans, account for both the short-term and long-term effects of fragility, conflict and violence, ranging from blocked evacuation routes to limited or non-existent infrastructure or shelter. All measures are evaluated through a do-no-harm approach.

2. Early warning system-building is approached as a longer-term endeavour that must be supported through coordinated finance and investments across timescales and sectors

EWS funding from a variety of funders is often piecemeal, with short- to medium-term financing frequently channelled through individual projects. This impedes the development and sustainability of any EWS but is particularly challenging in FCV contexts, where many elements of an EWS are under-developed or non-existent. Such a single project approach is unlikely to make a significant difference to the wider system.

A longer-term view of systems-building is needed to account for the often-low EWS starting point of many countries experiencing FCV. Limitations may include few existing systems, and limited capacity, funding, as well as time for stakeholders to develop or implement them. These challenges are commonly compounded by disruptions, and delays due to fragility, conflict or violence. To work towards this, EWS stakeholders should consider:

Greater availability of a range of finance mechanisms for EWS in FCV contexts to enable longer-term development horizons and objectives

- Funding for EWS in FCV contexts shifts from primarily humanitarian funding to also being further supported by climate finance and development funding to support longer-term systems-building and to enhance the entire EWS value cycle.
- Climate finance mechanisms are utilised or developed to address the gap in funding opportunities for sustainable early warning systems. Alongside new mechanisms unveiled at COP28, those related to National Adaptation Plans (NAPs), Nationally Determined Contributions (NDCs), and Technology Needs Assessments (TNAs) under the Paris Agreement, the 2030 Agenda, as well as DRR under the Sendai Framework may offer avenues for investing in EWS in FCV contexts.
- EWS are funded through grants rather than loans to account for the high debt levels of many countries experiencing fragility, conflict or violence.
- Donors take on a higher risk tolerance for establishing or strengthening EWS in FCV contexts, underpinned by a recognition of the extreme risks that come with inaction. This may mean increasing expertise on conflict and residual risk and adjusting fiduciary requirements.
Greater coordination of finance and implementation in EWS
- Greater donor coordination is developed to streamline projects and reduce risk, including through donor coordination groups or the development of country roadmaps to guide investment and action;
- Existing donor coordination mechanisms continue to be utilised.\(^{10}\)
- Calls for proposals are generated for projects to improve systems strengthening;
- Multi-year and/or linked projects are focused on a system-based approach to build up capacity across the EWS value cycle;
- Coordination of ongoing EW initiatives in FCV contexts (government-led, community-based, or otherwise) established or strengthened to link, support, and/or scale up services;
- EW coordination capacity is funded and empowered to develop tailored coordination plans in relevant contexts, such as by an agency with a coordination mandate.
- Investment in early action is underpinned by relevant investments in the other areas of the EWS value cycle to ensure the 4 Pillars of Multi-Hazard Early Warning Systems are supported;\(^{11}\)
- Short-, medium-, and long-term objectives and plans are mapped in a roadmap or similar document to identify and work towards common goals and objectives across EWS stakeholders.

Increased flexibility and contingency planning for projects or initiatives developing EWS
- Risk matrices and the provision and uptake of analytics relating to FCV are utilised by donors to plan for and address risks as they emerge;
- Potential delays and disruptions in EWS systems-building are addressed prior to a funding allocation through flexibility or contingency planning to address timelines and/or budgets;
- A non-earmarked contingency fund within project or programme budgets is developed to enable quicker response to address problems in EWS arising from FCV contexts;
- Smaller-scale and localized EWS projects are supported to account for the larger role that community-based actors play in some FCV contexts.

3. Inclusive EWS are developed which are trusted by affected communities and co-produced with them to take account of the nuances and dynamics of conflict/fragile settings

Promoting inclusion and developing trust among and between the stakeholders of EWS development and the end-users of early warnings is critical. This is particularly true in FCV contexts where trust in governments and other systems of authority have often been eroded. Steps to achieve this include increasing the participation of women and girls, displaced people, and conflict-affected populations in co-producing EWS and EW/EAs.

Levels of inclusion in EWS and resulting people-centred solutions are closely tied to existing levels of trust. This means that lives are and can be saved through community co-production and inclusion, including through community-based early warning and early action systems.

\(^{10}\) Examples include the CREWS and Global Climate Fund (GCF) Simplified Approval Process (SAP)-CREWS Scaling-up Framework and ongoing coordination between the Adaptation Fund and GCF as well as various work by the World Bank Group and multilateral development banks.

\(^{11}\) Disaster risk knowledge and management; Detection, observation, monitoring, analysis, and forecasting; Warning dissemination and communication; and Preparedness and response capabilities.
The knowledge and roles of local communities is recognised and embedded in EWS

- A people-centred EWS is developed to be trauma-informed, -aware and -responsive to particular risks faced by populations in conflict (e.g., higher risk of gender-based violence for women in conflict settings), and cognisant of ways that risk perceptions might differ based on context (e.g., in situations of acute conflict).

Community-based early warning early action systems are recognised and invested in

- Community-based or localized EW/EA is promoted through ongoing training and resources, ideally with clear linkages to broader sources of warnings and information (e.g. regionally and nationally).
- Disaster preparedness, including plans or standard operating procedures, are co-produced with affected communities to identify additional non-natural hazards and risks as well as to identify community-based protection and risk reduction measures already being implemented.

Core local systems are used as the communication base for early warnings to counter mistrust in information

- Consistent information is conveyed across political/conflict divides, including through different media sources (e.g. broadcasting media, social networks, alternative media), to improve public awareness, to reach the most people, and to reduce mistrust in misinformation;
- Uncertainty is communicated, including what is known and not known about an event;
- Messaging is people-centred (e.g. trauma-informed), culturally and contextually aware of fragility, conflict or violence.

4. Technical support, capacity-building, and coordination of national early warning systems is provided by and among regional and international centres and actors to share learning and knowledge and ensure that EWS become an accessible common good for all

FCV contexts raise a variety of challenges relating to hazard detection, monitoring, analysis, and forecasting. A major cause of cascading problems is limited availability, quality, and quantity of hazard data, which impedes the development of informed monitoring and forecasting services and mechanisms.

Limited funding, capacity, and time among national EWS stakeholders in FCV contexts means that regional and international collaboration and partnerships are foundational supports to national systems. This is particularly true in instances of acute fragility, conflict or violence, where national actors may be unable to perform essential duties on-site, and in some cases rely on external actors to continue to monitor and provide forecasts to enable early warnings and early action.

Institution building is supported to develop inclusive EWS

- Stakeholders are involved in funding, capacity-building, and implementation coordinate to support national systems development and strengthening, ideally through committed multi-year funding and streamlined projects to build up different elements of the EWS value cycle;
- There is technical and financial support for embedding analytical and technical tools and products in government led EWS, including as science and technology evolve.
Gaps in data availability, quality, and quantity in EWS in countries affected by FCV are filled through regional and international cooperation with the support of technology and innovation

- National met agencies in conflict and fragile contexts have full access to regional/international monitoring data. Ensuring national-regional/international linkages are established can be an important first step for countries affected by FCV to receive monitoring data;
- Partnerships established with regional/international actors to receive and analyse data to increase the quality of data analysis. Collaboration between state and non-state actors, and regional/international bodies and agencies may provide the most robust form of risk knowledge, monitoring and forecasting given potentially weak institutional capacity.

Humanitarians and other EWS stakeholders, including the development and scientific communities and technology providers, increase coordination and communication to strengthen early warning systems and avoid duplication of efforts

- In a humanitarian context, coordination mechanisms are established between humanitarian agencies with involvement from government (e.g., National Disaster Management Authorities) and affected communities as far as possible, so as to build on existing work and reduce potential duplication and taking place through or with the Inter-Cluster Coordination Group (ICCG) and Information Management Working Groups (IMWGs).
  These mechanisms are utilised to: a) share existing data and evidence on hazards, populations, and governance structures, b) identify and disseminate forecasts to relevant stakeholders and coordinate stakeholders to develop SOPs and contingency plans for likely/possible hazards, and c) support EWS, such as through investing in community-based systems.
- Seasonal meetings of humanitarian actors and other relevant stakeholders are held to address possible climate hazards and climate/conflict or climate/fragility hotspots, to inform planning, and increase collaboration and coordinated action. This supports increased interaction across sectors to develop plans of action for cross-sectoral cascading events (e.g., flood leading to displacement leading to epidemic compounded by limited healthcare availability/accessibility due to conflict).
The Centre of Excellence

The climate crisis is happening now. Those least responsible are the most affected. Hazardous events will only become more frequent and intense.

The enormity of current and future threats – including those emanating from a changing climate – requires course correction from a set of disconnected actions among sectors, disciplines, institutions and geographies, to more convergent, collaborative risk reduction and risk management approaches.

The Centre of Excellence for Disaster and Climate Resilience (CoE) was established by the World Meteorological Organization (WMO) and United Nations Office for Disaster Risk Reduction (UNDRR) to bring together its members and partners to assist aligned efforts in support of those most at risk in a changing climate.

The CoE offers partners a space to identify and explore common challenges and possible solutions, to learn from practice and research, and conduct advocacy in support of collective and collaborative action to reduce risks to humans and ecosystems – especially the most vulnerable.

The COE benefits from the guidance, support, and partnership of the following organizations:

- Food and Agriculture Organization (FAO)
- Group on Earth Observations (GEO)
- International Federation of Red Cross / Red Crescent societies (IFRC)
- The International Organization for Migration (IOM)
- International Science Council (ISC)
- United Nations Development Programme (UNDP)
- United Nations Education, Scientific and Cultural Organization (UNESCO)
- United Nations Environment Programme (UNEP)
- United Nations High Commissioner for Refugees (UNHCR)
- United Nations Institute for Training and Research (UNITAR)
- United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA)
- United Nations University (UNU)
- World Bank (WB)
- World Food Programme (WFP)