CREWS CLIMATE RISK & EARLY WARNING SYSTEMS

CREWS Operational Procedures on Programming in Fragility, Conflict and Violence-affected Settings

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CONTENT

SECTION 1: INTRODUCTION

1. Over the last years, it has been acknowledged that people affected by Fragility, Conflict and Violence (FCV)[1] are often left behind and are not reached by Early Warning Systems (EWS). Evidence demonstrates a significant climate finance gap in FCV settings[1–4]. The Climate Risk and Early Warning Systems (CREWS) initiative is committed to enhancing the delivery of EWS in FCV-affected countries; therefore, the FCV Operational Procedures are built on learnings from past years of experiences of CREWS Implementing Partners (IPs) and other EWS actors[2].

2. The FCV Operational Procedures are divided into six sections: an introduction that includes FCV definitions and a second section on the rationale and background. A third section focuses on CREWS programming in FCV settings, a fourth on FCV sensitivity in CREWS projects, and a fifth on the roles and responsibilities of the CREWS secretariat, Steering Committee, and IPs. The sixth section describes measures and recommendations that could be integrated into EWS programming, and it concludes with a comprehensive section with annexes.

3. **Definitions:** The umbrella terms fragility, conflict, and violence apply to various settings. These reach from regions entrenched in high-intensity conflict to those considered to be post-conflict, characterized by weakened governance and social structures with latent risks of violence. They also extend to areas of urban violence or organized crime and to marginalized parts of a country where a limited state presence has opened spaces for non-state armed groups to operate.

   Fragility, conflict and violence are each complex and dynamic phenomena that can look different from one setting to another. In combination, they may reinforce each other and create protracted crises settings in which EWS are essential to managing residual risks and protecting lives and livelihoods, where residual risks are high due to gaps in long-term Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) (Annex 1).

   The Organisation of Eastern Caribbean States (OECS) refers to 'Fragility' as the combination of exposure to risk and the insufficient coping capacity of the state, system and/or communities to manage, absorb or mitigate those risks. Fragility can lead to negative outcomes including violence, the breakdown of institutions, displacement, humanitarian crises or other emergencies[6].

   The World Bank defines conflict as a situation of acute insecurity driven by the use of deadly force by a group — including state forces, organized non-state groups, or other irregular entities — with a political purpose or motivation. Such force can be two-sided — involving engagement between multiple organized and armed sides, at times resulting in collateral civilian harm — or one-sided, in which a group specifically targets civilians[7].

   The United Nations Office for Disaster Risk Reduction (UNDRR) refers to violence as the intentional or unintentional use of force whether physical or psychological, threatened or actual, against an individual, oneself, or against a group of people, a community, or a government. This definition is reflected in the Sendai Framework on Disaster Risk Reduction[8].

1 See 2025 OECD States of Fragility 2025[36] and World Bank Classification of Fragile and Conflict-Affected Situation[7].

2 EWS actors refer to all the stakeholders involved in the 4 EWS pillars, including communities at risk, NDMA, NMHS, regional/national technical organizations, NGOs, United Nations agencies, civil society, Red Cross Red Crescent Movement, research institutions, private sector (For example telecommunications), data management institutions etc. (see other actors in Annex 2).

4. **Objectives** of the FCV Operational Procedures

    a. Ensure the delivery of CREWS investments and activities in FCV-affected countries.

    b. Align investments with other designated financing mechanisms operating in FCV settings.

    c. Identify measures to enhance project impact and sustainability for FCV groups requiring specific early warning system services.

    d. Provide guidance to CREWS members for integrating FCV considerations across the CREWS programme and project development and implementation process.

SECTION 2: RATIONALE AND BACKGROUND

This section presents the CREWS Steering Committee decision to develop these FCV operational procedures and key arguments, lessons and policies supporting it. It also includes the connections to CREWS strategic partners' FCV plans.

5. The 19th session of the CREWS Steering Committee agreed on the development of CREWS Operational Procedures for fragile, conflict and violence affected settings. This decision is taken as CREWS currently funds EWS investments in 23 least developed countries (LDCs) and small island developing States (SIDS), which are categorized as FCV by the World Bank[9]. This corresponds to 52% of the CREWS portfolio in 2025, being 30% conflict-affected.

6. Climate action in FCV settings is a priority given the recognition that people affected by FCV conditions are at an extreme risk of being impacted by climate hazards[3], due to high levels of vulnerability[10] and unequal access to EWS[10–12]. Key policy processes are leading the progress to achieve the necessary climate finance allocation for FCV settings. Such processes relevant to CREWS are:

    a. The Climate, Relief, Recovery and Peace declaration[13] signed at the Conference of the Parties at its 28th meeting (COP28) in 2023 by 11 of the 12 CREWS donor countries and 7 of the CREWS-supported countries.

    b. The 2024 COP29 Baku call on Climate Action for Peace, Relief and Recovery[14], launched by 6 countries, including CREWS donors, Germany and the United Kingdom.

    c. The Coalition for Climate Action in Fragile and Conflict settings led by the Green Climate Fund (GCF), United Nations High Commissioner for Refugees (UNHCR) and Overseas Development Institute (ODI)[15], (formerly led by the International Committee of the Red Cross (ICRC) and the World Bank), whose members are also relevant partners of CREWS.

7. The CREWS FCV Operational Procedures are aligned to strategic partners' goals of enhancing support and delivery to FCV-affected countries, including:

    a. The GCF Strategic Plan for 2024–2027 prioritizes supporting developing countries while focusing on collaboration with partners to reach fragile and conflict-affected areas, in line with GCF-approved policies[16].

    b. The Global Environmental Facility (GEF) reviewed its gaps and identified a way forward to deliver in FCV-affected countries through the 2024 Gap Analysis of GEF-funded activity and engagement17 and the internal Scientific and Technical Advisory Panel STAP brief on environmental Security[18].

    c. African Development Bank Group's Strategy for Addressing Fragility and Building Resilience in Africa (2022-2026)[19].

8. As stated by the Early Warnings for All (EW4All) initiative executive action plan 2023-2027[20], partnerships are vital to bridge gaps among all the pillars of EWS; in FCV settings, this requires solid collaboration across the Humanitarian, Development and Peace nexus (HDP). Key actors facilitating work in tandem with CREWS to achieve the goal of reaching FCV populations with early warning and early action include protection agencies specialized in supporting conflict-affected populations, the growing network of organizations advancing conflict foresight, faith-based organizations and networks of civil society organizations, among others (see Annex 2 for a comprehensive list of HDP actors).

3 Although these operational procedures emphasize reducing climate risk as a priority in FCV settings, they also acknowledge that EWS must be multi-hazard, addressing systemic and compound risks.

9. EWS programming in FCV settings offers the opportunity to translate HDP nexus policies and commitments[21,22] into concrete action. For EWS to flourish in complex humanitarian crises, CREWS Implementing Partners and humanitarian organizations engaged in Anticipatory Action, together with peace actors, are required to work in tandem in a coordinated and harmonized way.

10. CREWS projects are aligned with the World Bank Group Strategy for Fragility, Conflict, and Violence 2020–2025[23] by contributing from an EWS perspective to systematically address the key drivers of fragility and sources of resilience.

11. CREWS recognizes that not all FCV settings are equal. People in high-intensity conflict fear the worst[24], yet countries with institutional and social fragility and suffering from protracted conflict and crisis bear severe challenges in implementing EWS[10,11,25]. Hence, tailored, adaptable, coordinated and sustained EWS investments are critical to achieving early warning for all the populations in these settings.

12. CREWS projects have faced direct and indirect impacts of FCV conditions, including security risk to national and international personnel involved in EWS programming, severe delays in project implementation due to changing political and security circumstances, shifting of funding from a country in high-intensity conflict, negative impacts on project sustainability, for example, due to a lack of funding to support EWS activities after a project ends, and lack of implementation in highly vulnerable territories controlled by Non-State Armed Groups (NSAG)[4], among other impacts (Annex 3).

13. In recognition that FCV considerations are critical in the design, implementation and sustainability of EWS, CREWS will integrate FCV considerations in the new 2030 strategy by:

    a. Aligning its ambitions and new goals with the FCV policies and strategies of CREWS IPs.

    b. Acknowledging the role of HPD nexus partners in EWS and creating an environment that enables effective collaborations in FCV settings.

    c. Learning from and engaging with similar institutions and initiatives on integrating FCV in their operations.

4 CREWS Secretariat will encourage further analysis about the challenges and legitimacy of working with NSAG in the context of CREWS investments.

SECTION 3: FCV PROGRAMMING IN CREWS PROJECTS

This section describes procedures and measures for integrating FCV considerations into CREWS programmes and projects, followed by FCV sensitivity recommendations.

14. CREWS Project Development and Approval

a. CREWS Project and Pipeline Countries

- The steering committee includes FCV country status as part of the CREWS allocations and pipeline countries for potential future allocations (see Annex 4 for possible sources of information).
- CREWS secretariat updates LDCs and SIDS status and needs, considering the status of FCV countries (see Annex 4 for potential sources of information).

b. CREWS Project Development Process

- The CREWS project design includes the participation of FCV expert organizations (global, regional and national) or/and individual experts (Annexes 2 and 4), as appropriate.
- CREWS projects in FCV settings are designed following a rigorous 4W[5] screening of past, existing and future EWS investments and projects.
- CREWS projects involving the World Bank Global Crisis Risk Platform, and the Global Facility for Disaster Reduction and Recovery (GFDRR) FCV unit.
- CREWS projects can include activities related to:
  - FCV sensitivity capacity-building tailored to EWS for National Meteorological and Hydrological Services (NMHSs), National Disaster Management Authorities (NDMA) and other crucial EWS actors.
  - FCV context analysis at the project inception phase (if implemented, results from the analysis should be incorporated in the project plan and theory of change).
  - whenever possible, flexible in-country funds, as part of contingency budget line, to allow rapid changes in activities, including logistics costs for the protection of EWS equipment, NMHS/NDMA facilities, or other EWS project-related data and assets (e.g. safeguarding/rescuing EWS data, essential parts replacement, relocation of EWS equipment, connection with Global Telecommunication System -GTS, etc.).
  - regional and local pre-arranged partnerships to enhance project adaptability and delivery under different FCV scenarios (Annex 5), as necessary.
  - other recommended strategic measures and operational activities as described in Section 5 and Annexes 6 and 7.

c. Project Submission and Decisions on Fund Allocations

- The CREWS secretariat is responsible for ensuring that FCV Operational Procedures are reflected in the project proposal when the project covers a country or countries in FCV prior to submission to the Steering Committee for review and approval.

5 4W: Who, What, Where, When. An approach to avoid duplication of efforts, programmatic coordination, coherence and optimal use of funding and resources.

15. Project Implementation

    - CREWS IPs ensure strategic and tactical project harmonization, coordination and complementarity with other EWS investments and initiatives in FCV settings[6].
    - During project implementation, contingency plans for FCV scenarios should be reviewed and tested regularly; this should be reported in the annual project status report submitted to the CREWS secretariat (see Annex 5 for FCV scenarios).

16. Accelerated Support Window (ASW)

    - The ASW can be used for FCV-sensitive project design preparation for CREWS projects approved by the Steering Committee for full proposal development.
    - ASW funds can also be used to undertake a rapid FCV context analysis to determine mitigation actions that enable project continuity under volatile FCV conditions, as necessary.
    - Project activities within the ASW should be FCV-sensitive whenever appropriate (see Annex 7 for potential measures to be supported under the ASW).

17. FCV sensitivity in CREWS projects:

    a. requires the integration of measures in FCV-affected countries, from existing guidelines on fragility, conflict and violence sensitivity at all stages of project development and approval. Recommended guidance includes:

        - Swiss Development Cooperation Toolbox: Conflict Sensitive Programme Management CSPM[26]
        - Red Cross Red Crescent Movement, Handbook for Disaster Risk Reduction practitioners, navigating fragility, conflict and violence to strengthen community resilience[5]
        - Food and Agricultural Organization (FAO) Programme Clinic: Designing conflict-sensitive interventions - Approaches to working in fragile and conflict-affected settings[27]
        - WMO-UNDRR. Early warning systems and early action in fragile, conflict-affected and violent settings: Addressing growing climate and disaster risks[25]
        - GFDRR Early Warning Systems in FCV settings report
        - Anticipatory Action in FCV settings toolkit[28]

    b. requires collaboration with actors engaged in novel and emerging foresight processes in humanitarian settings for conflict and complex crisis anticipation[7] as part of the project-related risk monitoring process, as appropriate; by doing this, CREWS IPs can complement their existing risk monitoring processes.

    c. ensures that IPs are familiar with the latest Common Country Assessment (CCA) developed by United Nations Country Teams (UNCTs), which includes analysis of conflict dynamics in countries. CCAs are supported by UNDRR through a National Risk Analysis process, which can be an instrument to enhance FCV sensitivity analysis.

6 This can include, for example: 1. sharing the Project Management Unit (PMU), 2. using the same nationally-led project advisory and/or steering committee for project decision making.

7 For example, Organisation for Economic Co-operation and Development (OECD) Strategic Foresight Unit, UNDP Strategic Foresight Network, The Peace Research Institute Oslo (PRIO) etc.

SECTION 4: ROLES AND RESPONSIBILITIES

This section presents the roles and responsibilities of each entity in the CREWS structure according to the CREWS Governance document.

CREWS STEERING COMMITTEE

1. Ensure that the FCV Operational Procedures are reflected in the 2025-2030 CREWS strategy by providing strategic advice.
2. Advocate for increasing climate funds to enhance EWS targeted to FCV settings and provide updates to IPs on this topic.
3. Lead high-level donor planning for strategic coordination of EWS investments in FCV settings.

CREWS SECRETARIAT

4. Ensure that these Operational Procedures are implemented[8] and used across the entire programming and project development process, by reviewing CREWS Operational Procedures Note 1.
5. Ensure that these Operational Procedures are implemented in tandem with other CREWS operational procedures, in particular: No. 2, Monitoring and Evaluation, No. 3 Gender-sensitive Programming and No. 5 on People-centered Riks Informed EWS.
6. Develop CREWS risk appetite, a decision-making framework to communicate expectations, inform decisions and enhance outcomes[29].
7. Improve the CREWS country-level funding decision processes to enable adaptability in operations in case of escalation of insecurity and political complexity that can jeopardize CREWS projects implementation.
8. Continue developing knowledge products about EWS in FCV settings.

CREWS IMPLEMENTING PARTNERS

9. Apply emerging lessons and recommendations in CREWS projects in order to deliver operations in FCV settings.
10. Account for the implementation of the CREWS FCV operational procedures.
11. Develop, enhance and/or apply joint contingency plans for business continuity for CREWS-funded projects, considering different FCV scenarios, if applicable (Annex 5).
12. Establish tactical partnerships at the regional and country level with key actors in the HDP nexus, particularly with protection agencies and national non-governmental organizations (NGOs)/Civil Society Organizations. These partnerships can play a key role in the access and business continuity of CREWS projects under complex circumstances.
13. Increase funding allocation within CREWS projects for regional and local actors, who strategically can implement project activities under different FCV scenarios, if applicable.
14. Conduct context and FCV sensitivity analysis at the onset of any CREWS project and integrate results into project implementation.

8 An implementation plan will be designed after Operational Procedures approval

SECTION 5: MONITORING AND EVALUATION OF THE FCV OPERATIONAL PROCEDURES

15. Develop a review mechanism to track the implementation and impact of CREWS investments in FCV settings, as necessary.

16. Following the recommendations in the CREWS FCV analytical paper, integrate considerations into CREWS Monitoring, Evaluation, Accountability and Learning (MEAL) operational procedures.

17. Measures of success for the integration of the FCV operational procedures in CREWS programming:

    a. Include FCV context analysis, as appropriate.

    b. Integrate FCV contingency planning as part of the project implementation, as appropriate.

    c. Post-project impact review and learning process to identify impacts and lessons learned.

SECTION 6: ANNEXES

Annex 1 – Disaggregated FCV typology proposed by the Coalition for Climate Action in Conflict and Fragile Settings

Terminology and Constraints by the Coalition for Climate Action in Conflict and Fragile Settings[31]	
Institutional fragility – IF	This includes often post-conflict settings and countries or territories with high levels of violence. The World Bank (Nd) describes countries with high institutional and social fragility as those "facing deep institutional crises, that have very poor transparency and government accountability, or that have weak institutional capacity."[32] **Constraints:** In situations of high institutional fragility, the consistent implementation of plans, laws and policies to build resilience, protect the environment and strengthen adaptation to current and future risks tends to be hampered by financial and capacity constraints, as well as by competing and changing priorities. Government services may be under-resourced and concentrated in urban settings, leaving out large portions of the population.
Contested territories – CT	'Contested territories' can be defined as situations where a state opposes the claims of the de facto authority or that of one or several armed groups to a part of its internationally recognised territory, often—but not constantly—engaging them militarily to reassert its control. **Constraints:** Challenges to designing and implementing adequate responses in conflict settings tend to be exacerbated in territories under non-state armed groups' complete or fluid control. The lack of governmental presence and services, significant access challenges, rapidly changing security situations and even more stringent restrictive measures that reduce the potential for funding result in a tendency to exclude territories that are not under the control of the government for anything beyond an emergency response. The maintenance of essential services tends to be limited; the economy tends to be severely disrupted, and data gaps tend to be particularly important – even if a meteorological station remains operational, it often stops transmitting data.
High-intensity conflict – HI	The World Bank defines high-intensity conflict as widespread and intense violence across many parts of the country, measured by the absolute and relative number of deaths. **Constraints:** The challenges in high-intensity conflict are severe. Humanitarian access is significantly reduced, critical infrastructure and services are extensively destroyed, and development activities are commonly halted. Action is often limited to emergency relief to ensure people's survival. Areas near the front line, usually receiving displaced people, are typically insecure and unstable but allow for a greater depth of action.
Protracted conflict – PC	Protracted conflicts are characterised by their longevity and intractability. They may be episodic, with variations in the intensity of the violence over time and space. They are often marked by fragmentation and mutation, involving the rise of new armed groups and the splintering of armed forces. **Constraints:** Prolonged conflicts worsen the limitations of institutions in fragile situations. They also have negative impacts on the environment, essential services, economy, and access to affected areas. This leads to weakened governmental presence and limited development efforts. As a result, areas affected by conflict experience greater suffering, including displacement, injuries, and disrupted services. Although violence may be localized, long-lasting conflicts weaken governance and institutions, diverting the government's focus towards restoring security at the expense of other priorities. This contributes to a lack of reliable historical data, making longer-term planning and projections challenging. Additionally, the weakness of institutions, limited absorption capacity, and restrictive measures hinder access to adequate finance.

Annex 2 – List of HDP nexus actors

Humanitarian Organizations	**International/ Global**	UNHCR (United Nations High Commissioner for Refugees) - WFP (World Food Programme) - UNICEF (United Nations Children's Fund) - OCHA (Office for the Coordination of Humanitarian Affairs) - IOM (International Organization for Migration) - Médecins Sans Frontières (MSF) - Oxfam - Save the Children - World Vision - CARE International - ICRC (International Committee of the Red Cross) - IFRC (International Federation of Red Cross and Red Crescent Societies) - Start Network - Anticipation Hub, Mercy Corps, People in Need (see ReliefWeb for a more detail list).
	National/Local	Global Network for Disaster Risk Reduction (GNDR), Local NGOs, Community-Based Organizations (CBOs), Civil society groups, Grassroots movements, Local Leaders, Faith-based Organizations and Religious Leaders, etc.
Development Organizations	**Donors/ Philanthropic**	German Federal Foreign Office (GFFO), Foreign, Commonwealth and Development Office (FCDO), Agence française de développement (AfD), Japan International Cooperation Agency (JICA), Swedish International Development Cooperation Agency (SIDA), European Commission, Bill & Melinda Gates Foundation, The Rockefeller Foundation, The Ford Foundation, ClimateWorks, Adaptation and Resilience Collaborative Funders (ARC), and Corporate Social Responsibility (CSR) initiatives, etc.
	Multilateral Banks	World Bank, African Development Bank, Asian Development Bank, Islamic Development Bank, Inter-American Development Bank, etc.
	Governmental (regional and national), Cooperation Agencies and others	NDMAs, NMHSs, regional organizations such as the Intergovernmental authority on development Climate Prediction and Applications Centre (ICPAC), Regional Integrated Multi-Hazard Early Warning System (RIMES), Centro de Coordinación para la Prevención de los Desastres en América Central y República Dominicana (CEPREDENAC), the AGRHYMET regional centre, Secretariat of the Pacific Regional Environment Programme (SPREP). Deutsche Gesellschaft für Internationale Zusammenarbeit, Germany (GIZ) - United Nations Development Programme (UNDP) - ActionAid - Practical Action - Oversees Development Institute, etc.
Peace organizations (and conflict-related actors)	**International. National, governmental or non-governmental organizations, academics, think tanks and others.**	International Crisis Group, Centre for Humanitarian Dialogue, Inter Peace, Chatham House, Search for Common Ground, The Carter Center, Geneva Centre for Security Policy (GCSP), United States Institute of Peace (USIP), UN Peacebuilding Commission, United Nations Department of Peacekeeping Operations (UNDPKO), United Nations Department of Political and Peacebuilding Affairs (DPPA), Organization for Security and Co-operation in Europe (OSCE), Peacebuilding Fund, Organization of American States (OAS), Peace Direct, Centre on Armed Groups, The Peace Alliance, Geneva Call, Nonviolent Peaceforce, European Institute for Peace, Insecurity Insight, Peace Research Institute Oslo (PRIO), Stockholm International Peace Research Institute (SIPRI), Adelphi, Concordis, Ministries of Defense, Army, Non-state Armed Groups, etc.

This list gives a general overview; it is recommended that other HDP nexus stakeholders be considered at the regional and national levels.

Annex 3 – Impact of FCV conditions in Early Warning Systems programming

This annex is a synthesis of information from interviews conducted with EWS actors as part of the development of these operational procedures.

1. Access and Security Risks

EWS actors and activities have historically suffered the direct and indirect impact of FCV conditions, with significant challenges related to insecurity regarding staff, assets, data and infrastructure.

Under FCV circumstances, for example, gang violence in cities, EWS staff across the value chain is not able to move freely to access office facilities. In some cases, staff members are unable to commute to their offices due to demonstrations and violence. In the case of NMHSs, this has limited the ability to produce forecasts, as staff do not have the necessary resources to work from home (internet, computers, data, etc.)

In some settings, the vehicles used for transporting personnel to conduct maintenance or repair of equipment or to design EWS with communities get vandalized by NSAG.

It is very common that in FCV settings, specifically those with violence and insecurity, EWS infrastructure suffers decay and damage, as staff are not able or are unwilling to travel to certain areas due to the fear of being attacked.

Some national EWS actors who have been in the middle of confrontations have experienced traumas, limiting their interest in returning to the areas where they faced an insecure situation.

A conflict could directly impact local radio stations, making them close their services to communities, which affects the ability to disseminate warning messages, hence messages not reaching communities, even if they are produced at the national level by the NMHS and NDMAs.

Due to insecurity and access issues, CREWS IPs often opt to partner with United Nations Agencies and non-governmental organizations to deliver services in certain contexts. Yet, such organizations also face severe access and security risks that limit EWS delivery.

2. Data loss and sharing

Historical EWS-related data is highly vulnerable to FCV conditions, and there have been cases in which government departments have lost their historical observation data entirely due to direct storage to their servers. Cloud-based systems to store data are not fully implemented in FCV settings.

Data collection in areas affected by FCV conditions, in particular those insecure, is highly challenging, and people collecting data, whether hydro-meteorological or vulnerability and exposure data, are at high risk of being attacked by NSAG. In the context of high-intensity conflict, government and non-government staff might have fled to protect themselves and their families, leaving their duties unattended, which in turn creates severe data gaps (for example, people in charge of collecting data from manual hydrological or meteorological stations). This also applies to staff who work with communities to conduct surveys, focus group discussions and other activities as part of the EWS setup process.

Data collection is thus limited, and its quality can be affected by, for example, the inability of NMHSs to comply with WMO standards.

3. Regional, Global Collaboration and the pitfall of EWS coordination

There is a lack of pre-arranged strategic planning with EWS regional and global partners to adapt rapidly to changing volatility conditions. This pitfall makes it challenging to develop quick cooperation arrangements that allow for the swift functioning of institutions during an FCV-related crisis.

In settings where there is a transition from a state of fragility to high levels of violence/high-intensity conflict, there is often a vacuum of support for national institutions, as EWS global partners face security restrictions to operate (for example, travel) and funding gets diverted due to a low risk appetite[9]. Therefore, due to the lack of a contingency plan to deal with such situations, this leaves the institutions often more defenceless when they need international partners the most.

9 Risk appetite in these Operational Procedures draws from the UK's Risk appetite guidance note.

Regional organizations play a pivotal role in collaborating with national EWS partners in FCV, as they serve as the primary backup option for support. Yet, they are often left behind in the funding allocations for EWS as part of global initiatives.

A lack of strategic coordination among donors, international EWS Anticipatory Actions (EWS/AA) partners from various initiatives, and regional or national EWS/AA actors, is a critical pitfall in the current EWS/AA planning and implementation landscape. The impact of a lack of a coordinated and harmonized investment and operational plan includes: duplication of efforts, waste of resources, lack of sustainability of EWS activities, lack of trust by national and regional actors, staff turnover in national organizations and ultimately, the lack of the effective implementation of a system that triggers early action for the most at-risk populations.

In the context of limited national hydro-meteorological capabilities due to FCV conditions, strategic regional technical cooperation among peer institutions could fill the gaps in national forecast and warning message production. There is significant progress in this areas, for example in South East Asia where the joint weekly output of weather forecast is conducted in partnership by countries such as Thailand, Sri Lanka, Nepal, Myanmar, Afghanistan, Pakistan etc., the strong NMHSs balance the gaps of the weakest NMHSs. The shared regional data and human resources result in the production of better services that benefit each of the countries. This is not yet fully operational in the context of EWS, but it has a lot of potential to fill the forecast gaps by the NMHSs experiencing complex circumstances.

4. Sustainability, long-term impact

In countries with high levels of volatility, EWS programming is often reduced to staff training, many of whom are invited to participate in international events. Although this is recognized as an essential activity, there is a lack of a sustainable and long-term capacity-building approach in these settings. This challenge is closely tied to a lack of long-term and sustainable funding. It is recognized that without a substantial long-term investment (at least 5 years) in human resources within government institutions or national non-governmental institutions, EWS could go to waste. For example, in some fragile settings with high levels of violence and very weak government institutions, there is not enough staff to lead and implement actions from the EW4All initiative and other EWS/AA initiatives. With the lack of sufficient and competent staff, it is likely that EW4All-related activities will not be sustainable. This includes the long-term maintenance and utilization of risk knowledge platforms, data collection from meteorological stations, issuing warning messages, programming with mobile network companies, and the logistic capacity to reach communities and support early action in the most complex areas.

Significant differentiation needs to be considered in the design of EWS. Many countries have different realities within their borders, ranging from very insecure to safe. Often, EWS are established in safer areas of the country, rather than in the most at-risk locations. EWS long-term impact requires that systems are equally implemented for the whole population while understanding the different settings within the same country.

There is a general lack of strategic planning for post-war reconstruction of EWS. EWS actors across all levels are not proactively considering planning for post-war reconstruction and rehabilitation of systems, which constitutes a missed opportunity. For example, advanced planning in the context of Sudan with an EWS post-war reconstruction plan could lead to a faster and more effective coordination system that could in turn rapidly put EWS back in action when the institutional and security conditions improve.

EWS design in FCV settings historically did not include FCV context analysis, which has led to the waste of resources and time. For example, the activities designed do not consider how a change of government with political instability can impact EWS feasibility during project implementation.

EWS investments in FCV settings lack engagement and long-term support for local actors; these local actors are often the only ones who can access certain places and communities due to their knowledge of the settings and conflict dynamics, as well as the trust they have with community members.

5. Funding systems and lack of long-term investment

Investment appetite differs from one FCV context to another. Fragile settings tend to be more exposed to funding; however, risk appetite changes once volatility and instability increase, in particular in high-intensity conflict, when donors and implementing institutions stop programming and divert funding to other countries or activities.

EWS in FCV settings require a long-term investment approach. Short, one to two-year projects are not suited for local complexities, as volatile circumstances, in particular weak governance, could easily damage or deteriorate outcomes.

There is a lack of funding for the sustainability of specific EWS activities after the completion of projects. For example, SMS warnings require long-term funding and an agreement with mobile operators.

Whenever a government in an FCV context faces fiscal challenges, EWS-related institutions tend to suffer funding reductions, limiting their capacity to deliver on the element of the EWS value chain.

Governments in FCV settings often do not prioritize EWS investments. EWS government actors then use government funds to pay for utilities (electricity, water, internet, etc.) and some of the staff (in many cases, as few as one or two staff members), who are responsible for different parts of the EWS value chain elements. This lack of substantial funding limits the capacity of EWS governmental institutions to progress, adapt, cope with volatile conditions, innovate, and maintain a sustainable workforce and technical infrastructure that can ensure business continuity under different FCV scenarios.

6. Capacity gaps, staff retention and the role of international consultants

National capacity is one of the most pressing challenges in FCV settings. There is a wide range of impacts on capacity, including 1. Lack of sufficient staff involvement across the value chain of EWS, often, NMHSs have two or three staff members, National Disaster Medical System (NDMS) and national NGOs, as well as staff tasked with multiple priorities, EWS not being the most important. 2. Staff retention is very low; in some countries, staff is trained abroad and remains abroad, while others have to flee due to extreme violence. 3. Governmental institutions are not given enough funds to pay for essential staff, salaries tend to be very low compared to the market. For EWS to function in FCV, this is a structural issue that must be tackled by joint EWS programming between Governments and international cooperations.

Often, trained staff prefer to look for other staff rather than continue with the respective EWS government agencies. Investment in capacity-strengthening is lost.

In some FCV settings, volunteers make manual weather observations and are a key part of the early action process. Without a robust financial system, even to maintain the small payments given to volunteers, elements of the EWS tend to fail. This is often the case when capacity arrangements, even with volunteers, depend on project-based funding.

International consultants are employed to design EWS in FCV settings and due to security constraints, they are not allowed to travel to certain parts of a country, which results in a lack of understanding of the local context necessary to design an EWS investment. This leads to the design of EWS that are focused on the most stable areas, or for example, to procuring hydro-meteorological equipment that cannot be installed or maintained.

7. Political buy-in

EWS are often not a priority in complex crises. In high-intensity and protracted conflicts, attention is mostly focused on life-saving and humanitarian measures. Even in fragile settings, EWS are often not seen by government leadership as a priority. NMHSs are usually not autonomous authorities, limiting independent financial management, adaptability, fundraising and business continuity.

High-level political support for EWS differs from country to country; on one hand, countries with protracted conflicts comprise institutions that are independent with some level of financial autonomy; on the other hand, countries with institutional fragility, yet more stable circumstances, suffer more restrictive conditions which limit their EWS delivery. EWS investments by external partners often do not consider the particular political circumstances, thus increasing the risk of failed investments.

8. Institutional and Political Challenges

Some FCV settings face the impacts of sanctions, or internal regulations that limit the procurement/import of equipment or assets. This limits the capacity of projects to deliver on specific activities necessary for the functioning of EWS.

National regulations during conflict times often limit the ability of institutions to share data and knowledge outside the country. An example is when NMHSs cannot share observation data with European Centre for Medium-Range Weather Forecasts (ECMWF) and other global/regional centres.

In some settings of contested territories, government departments are divided into different territories, which limits technical cooperation and interaction across regions. For example, in Yemen, the NMHS WMO permanent representative office in Aden cannot collaborate with its counterparts in Sanaa.

In FCV context, private forecast providers commonly produce forecasts based on statistics and not actual weather observations. This creates an incongruence or lack of alignment that can affect the decision-making process for early action.

Election-related violence and demonstrations are in some FCV settings a reason of concern for EWS actors as these events can have implications in the ability of staff to fulfil their responsibilities: not being able to go to the office, lack of internet and equipment that would allow for teleworking, not being able to reach communities with timely action support. Communities at risk of disasters, during situations of election-related violence and demonstrations, can have reduced access to hazards-related warning messages; curfews could also pose challenges in case of evacuations.

9. Infrastructure Damage

Hydro-meteorological infrastructure is severely impacted by conflict, both directly and indirectly. There have been reported attacks by NSAG, in some cases as there is a perception that such infrastructure is for espionage or that it is simply attacked for being government equipment. Indirect impact includes limited capacity for EWS actors (NMHS, NDMA and other actors) to travel to the insecure areas, as there is risk of direct attacks, kidnapping, etc., in particular to government officials.

Logistics costs to repair and maintain infrastructure are very high, for example, in some settings, helicopters are the only alternative.

Military escorts are used in some settings to access insecure areas; however, this can pose security risks, and increase a lack of trust by communities and local actors.

Local communities do not protect EWS infrastructure in some countries as they are not informed of its use, its benefits, or its operation.

Telecoms infrastructure is particularly vulnerable to NSAG attacks, which jeopardize warning communication and the transmission of observation data from automated meteorological stations.

10. Technical capabilities

In countries where climatology varies from region to region, the ability to produce reliable forecasts and warnings is reduced when infrastructure is affected or when, in the first place, there is limited infrastructure due to the unsafe conditions. In countries where topographic characteristics contribute to a more stable climate across the whole territory, forecasting tends not to be fully impacted.

Although the global weather and climate framework enhancement has enabled access to the improvement of forecasts for NMHSs in FCV settings, there are still severe limitations to the full use of global models such as ECMWF. Challenges to achieving this are a lack of qualified staff and computing capacity. For settings where data scarcity is a challenge, creating open cloud-based computing capacities can be a lifeline for NMHSs in producing national forecasts that can be reliable for early action and decision-making.

As the world advances using Artificial Intelligence (AI) for EWS, from forecasting to enhancing risk understanding, FCV countries are behind technical discussion and progress in these areas. There is a need to support these countries to take part in this technological advancement, as applying any new AI technology that supports understanding risks, forecasting, warning, communication, and even early action could be a game changer to reach the most at-risk communities.

EWS is a multisector effort. In FCV settings, EWS investments often do not support all the pillars necessary for the smooth operation of EWS. Technical solutions tend to be prioritized by cooperation projects, while the ability to respond ahead of hazards in insecure areas is neglected.

EWS institutions, in particular NMHSs, tend to focus on technological solutions as a way to enhance their capacities and international partner investments often tend to focus on those preferences. Yet, there is a general lack of exploration of innovative alternatives such as a move from the increase of computing equipment, radars or hydrological and meteorological equipment, towards potential regional and global political and technical collaboration, for example for the joint use of cloud-based computing systems, remote sensing, AI, etc.

11. Trust, public perception and people-centred focus

In some FCV settings, media outlets commonly do not use the forecast and warnings from the NMHS. There is a lack of trust in NMHS services, and people often prefer access to private sector weather service providers.

Installation, safety and sustainability of EWS equipment in remote, often insecure areas (controlled by NSAG) tend to be inadequate due to the lack of community involvement in the decision-making and installation process. Without investment in a community-led process, the lack of trust and lack of ownership by the communities is high, putting EWS asset investments in a very high risk of damage, vandalism, etc. This leads to communities living in insecure and poor settings; therefore, part of the EWS equipment set-up process can ensure protection and sustainability of investments.

EWS design and implementation are not fully inclusive of the most vulnerable population in FCV settings. EWS are often not tailored and designed with and for at-risk people, including:

- Orphans, child soldiers, children living in conflict zones, children separated from their families, unaccompanied minors, street children
- Elderly: elderly living alone or with chronic illnesses in conflict areas
- People with disabilities: physically disabled individuals, visually impaired individuals, hearing impaired individuals, individuals with intellectual disabilities, individuals with substance use disorders
- Internally Displaced Persons (IDPs): families in informal settlements, individuals living in idp camps, displaced agricultural workers
- Refugees and asylum seekers: urban refugees, refugees in camps, stateless persons, asylum seekers in detention

12. Contingency planning for FCV scenarios

EWS actors lack a programmatic integration of contingency planning for different FCV scenarios. This reduces the possibilities of adaptive programming, thus increasing missed opportunities to continue programming under different complex scenarios.

There are learning opportunities from the existing cases where rescue plans were designed after different FCV scenarios; these could be used to develop contingency plans.

EWS actors do not consider FCV conditions and solutions to address potential challenges into the design and implementation of EWS.

Scenarios such as the exit of peacekeeping operations from a conflict-affected context are often not considered in EWS programming. The impact of such scenarios can include the lack of protection of existing EWS equipment previously protected by United Nations missions, as well as a vacuum on disaster evacuations when peacekeeping operations played a logistic role after warnings. On the other hand, the departure of peacekeeping missions (due to improvement of security or government decisions) in some settings has also enabled the institution of new equipment, as security conditions improved.

13. Non-state armed groups

NSAG represent a significant challenge to the implementation of EWS. Gangs and religious or political oriented NSAG jeopardize project design and implementation at all levels, by limiting its access, directly attacking staff, destroying infrastructure, creating wrong perceptions about disasters in the communities they control etc. There are lessons to apply from engagement with NSAG outside of the EWS sphere that could enable climate action in FCV settings.

When conflicts and violence have a religious background (NSAG having a religious cause), EWS can be impacted as hazards can have a religious connotation, for example, hazards are seen as acts of god. Therefore, acting upon them is against god's will.

In some settings, NSAG tend to be very mobile, and they have very strong camouflage techniques to avoid detection by other parties in a conflict. In addition to the political complexities of interacting with them in the context of EWS, this camouflage or high mobility characteristic can limit the possibility of engaging with them for EWS.

Accessing NSAG is difficult and even impossible for government staff working on EWS. This poses several challenges to translate early warnings into early action in NSAG controlled territories: for example, in some settings, NSAG provide their communities with IDs to be able to move across the controlled territories, if early-warning and early-action related equipment or items need to be transported to such areas, only people with NSAG IDs could access the areas. Warning messages could also be limited as NSAG can also control local radios.

Politically, it is challenging for government staff to interact with NSAG even in a "neutral" EWS situation contact. Local actors with access to NSAG are not empowered and supported with EWS capabilities.

Humanitarian protection agencies with access to NSAG-controlled territories are not commonly part of any EWS design or set-up process. This represents a missed opportunity as they could be key partners in the design, implementation and sustainability of EWS (for example, they are not part of strategic or operational discussions in the context of EWS investments by the EW4All initiative, Refugees in Effective and Active Partnership (REAP), CREWS, Systematic Observations Financing Facility (SOFF), etc.).

Annex 4 – List of sources of information to include in CREWS Project and Pipeline Countries programming step[10]

Category	Explanation	Source/ Actors	Description	Link
Think tanks and research institutions	Institutions that conduct in-depth research and provide data on conflicts, peace, and security trends.	Insecurity Insight	Provides data and research on the impact of insecurity and violence on humanitarian action. Some sources of information include social media.	Insecurity Insight
		International Crisis Group	Provides analysis and reports on the world's conflicts and crises to support peace and security solutions.	International Crisis Group
		Stockholm International Peace Research Institute (SIPRI)	Arms transfers, military expenditure, and conflict trends, among other conflict-related topics, for example, climate security.	SIPRI
		Global Conflict Tracker (Council on Foreign Relations)	Conflict trends and real-time updates.	Global Conflict Tracker
		The Armed Conflict Location & Event Data Project (ACLED)	Conflict event data (violence, protests, political instability).	ACLED
		Institute for Economics and Peace (IEP)	Global Peace Index monitoring conflict levels and peace indicators.	IEP
		ACAPS	Provides analysis and reports on humanitarian crises, including needs assessments and humanitarian response planning.	ACAPS
		Google Crisis Response	Aggregated real-time crisis data.	Google Crisis Response
		Small Arms Survey	Data on arms proliferation and conflict risks.	Small Arms Survey
		Conciliation Resources	Information on peace processes and conflict resolution.	Conciliation Resources
Satellite and geospatial data providers	Providers of satellite imagery and geospatial data that support monitoring conflict zones and territorial changes.	European Space Agency (ESA)	Satellite imagery monitoring of conflict zones.	ESA
		GeoIQ	Spatial analysis using geo-data for crisis monitoring.	GeoIQ
		Humanitarian OpenStreetMap Team (HOT)	Mapping support in disaster and conflict areas.	HOT
		Planet Labs	Satellite imagery and mapping for territorial changes in conflict zones.	Planet Labs

10 Each of these sources should be verified to ensure they are contextual and useful for the country and region it is intended to be used for.

Peacebuilding and conflict resolution platforms	Platforms focused on peace processes, conflict resolution, and data on conflict dynamics and peacebuilding efforts.	Uppsala Conflict Data Program (UCDP)	Conflict data, including political violence and peace agreements.	UCDP
		Conciliation Resources	Information on peace processes and conflict resolution.	Conciliation Resources
		Peace Research Institute Oslo (PRIO)	Research and datasets on conflicts and peacebuilding.	PRIO
		Berghof Foundation	Conflict transformation insights.	Berghof Foundation
Publicly accessible databases and indexes	Databases and indexes that provide accessible, comprehensive conflict data, peace metrics, and global crisis trends.	Global Database of Events, Language, and Tone (GDELT)	Tracking media and social media events signalling conflict.	GDELT
		Global Peace Index (Institute for Economics & Peace)	Measures global peace and conflict risks.	Global Peace Index
		Conflict Barometer (Heidelberg Institute for International Conflict Research)	Annual reports on global conflict dynamics.	Conflict Barometer
		Fragile States Index (Fund for Peace)	Measures and reports on countries' fragility, including social, political, and economic instability indicators.	Fragile States Index
		World Bank Governance Indicators	Measures governance, political stability, and control of corruption across countries.	World Bank Governance Indicators
		Mo Ibrahim Foundation Ibrahim Index of African Governance (IIAG)	Tracks governance and development progress across African countries, focusing on political stability and economic performance.	IIAG

Annex 5 – Examples of FCV Scenarios

These examples were developed, inspired by real cases that have jeopardized EWS in the past. However, the explanations are fictitious to help EWS actors identify different FCV scenarios that are pertinent to consider for contingency planning. It is recommended that scenarios are co-developed with EWS and HDP nexus partners in each country or territory.

Category	Scenario	Description	Examples of implications for EWS programming
Political instability	Military coup	The military seizes power overnight, overthrowing the government in power. Protests erupt in the streets, including violent repression. Chaos follows different factions within the government and the armed forces clash over leadership. Foreign countries impose sanctions, businesses pull out, and economic crises increase. Meanwhile, non-state armed groups (NSAG) take advantage of the situation's complexity to expand their presence across many territories.	EWS strategic and operational arrangements with the overthrown government stop. Government agencies change management staff. Operational constraints increase for international agencies.
	Disputed elections	A controversial election leads to accusations of fraud. Rival factions claim victory, triggering protests that quickly escalate into riots, mainly in the largest cities. Police crack down with force. Attacks on infrastructure, businesses, and roads impact cities. Basic services are severely affected, and the country generally experiences high economic and political uncertainty levels.	Programming is delayed. Insecurity affects the EWS-related staff and delays forecasting and warning production. Alerts are delayed, limiting the capacity to conduct early action. Suppliers of EWS items cannot deliver on time.
	Political chaos	An influential political leader is assassinated, creating a dangerous vacuum. Government officials, military and opposition leaders, fight for control, leading to violent clashes. Protests explode in the capital and other large cities. The situation worsens as foreign powers take sides, pushing the country toward more profound instability.	EWS, supported by international cooperation related to the foreign powers in question, could suddenly stop Engaging with high-level government actors could be challenging, and EWS could be deprioritized during the crisis.
Wars	Ethnic divisions ignite war	Historical ethnic tensions escalate to open conflict. Militias form along ethnic lines, attacking rival communities in an intense cycle of violence. The government loses control over entire regions and many communities are attacked, people are forcibly displaced, and human rights violence increases. Regional powers intervene, however, different countries back different sides.	Transmitting warning messages and reaching isolated communities can be highly challenging. EWS might not be tailored to people in a displacement situation.
	NSAG fragments	What began as a unified rebellion against the government is fragmented into competing factions. Bitter infighting weakens the opposition, but violence against civilians rises. NSAG seeks foreign backing, shifting alliances and turning the war into a multi-sided conflict.	Insecurity increases in certain areas, making it difficult to access local radios, which are shut down, making warning communication difficult. EWs infrastructure gets is damaged by collateral effects, communities do not have the technical knowledge to repair them.
	NSAG expand territories	NSAG expands territory for the control of land, it then expands into cities, overwhelming the government military forces. Civilians face mass killings, forced displacement, forced recruitment and extortion.	NSAG groups are likely not to understand the role of EWS. Ongoing programmatic efforts might need to stop in the NSAG controlled areas.

Religious, clan and sectarian conflict	Religious extremists fuel regional crisis	An NSAG claims religious legitimacy and attacks rival communities. Religious sites are destroyed, and the government's crackdown fuels further radicalisation of the population, especially the youth.	Religious beliefs can jeopardise the use of early warning for early action. Some religiously oriented NSAG might believe that hazards are acts of God, hence not allowing EWS to exist. EWS related government staff could face travel restrictions due to insecurity.
	Blasphemy accusation triggers mobs	A religious leader accuses a prominent figure of blasphemy, inciting mobs to attack minority communities. Authorities hesitate to intervene, fearing extremist backlash, hence human violations are rampant	Already vulnerable communities are made even more vulnerable. EWS previously implemented might not be fit for purpose anymore as they are not suited to the changing context.
	Clan feuds destroy stability	Tribal disputes over land and natural resources escalate into conflict. Armed clans attack villages, infrastructure, forcibly displacing thousands of people. The fragile government fails to maintain order, hence the NSAG start to take territorial power, controlling the economy and the population's movements	EWS infrastructure could be damaged or destroyed.
Terrorism and insurgency	Coordinated bombings & assassinations	A terrorist group carries out bombings in major cities and assassinates key government officials and military personnel. The population live in constant fear, expecting the next attack, which creates movement restrictions.	EWS infrastructure, especially telecommunications, could be impacted. Difficult to engage or reach the population with EWS messages, as this might not be a pressing priority.
	Insurgency crosses borders	An insurgent group backed by a neighbouring country launches cross-border attacks. The military struggles to contain the situation, leading to a refugee crisis.	Relationships between EWS technical agencies could stop, which could impact the joint production of warnings, stop transboundary EWS data sharing, etc.
	Radicalization of isolated communities	Government neglect and poverty fuel radicalization in rural areas that are isolated and have little access to basic services. Extremist NSAG establish control over the territory, collect taxes, give identification to the populations, and enforce their own laws, which also restrict movements.	Government EWS staff cannot reach these populations for the EWS setup. Community Disaster Risk Reduction groups are still active but do not have all the items necessary to conduct early action based on the forecast they received from NMHS via mobile phones.
Resource conflicts and economic collapse	Oil fields or natural resources areas become conflict zones	NSAG seize oil-rich or mineral-rich areas, cutting off government revenue. Foreign companies halt production, and black markets thrive. Local communities are forced to support the NSAG group, which controls the territories.	Government revenue reduction has an impact on the budget of EWS-related government agencies. NDMA counts with a standing risk management system, but information from NSAG dominated areas is not shared anymore.
	Economic meltdown	Sanctions, corruption, and war trigger financial collapse. Hyperinflation makes essentials unaffordable, leading to riots and black-market expansion.	Logistics/procurement and imports of EWS related assets can be limited or not possible.
	Insurgents profit from the natural resources boom	A region with valuable natural resources reserves sees insurgents exploiting local grievances to gain control. Foreign companies suspend operations, worsening conditions.	Foreign companies that used to play a role in EWS leave a vacuum.

Foreign interventions and proxy wars	Mercenaries fuel conflict	A foreign power deploys private military contractors to support a faction, escalating violence. Reports on war crimes complicate diplomatic efforts.	Foreign aid is suspended, hence EWS programming supported by international partners related to the "foreign power" is stopped.
	Foreign airstrikes devastate some regions and infrastructure.	Airstrikes target rebel-held areas, causing civilian casualties and infrastructure damage. Opposition groups use the attacks as propaganda, prolonging the conflict.	EWS infrastructure is damaged. Community-based early warning systems continue working but telecommunications are damaged, limiting warning communication.

Annex 6 – Strategic and operational Recommendations

This section describes additional measures that CREWS can implement to ensure the delivery of CREWS investments and activities in FCV-affected countries.

1. The CREWS Steering Committee and Secretariat encourage the proposal of EWS projects tailored to the needs of Refugees and Internally Displaced People (IDPs) in FCV countries. Other FCV-affected population groups to be prioritized by CREWS projects are included in Annex 8.

2. CREWS allocates funding for regional operational EWS co-created by leading regional entities and NMHSs to produce short-term forecasts that can benefit FCV-affected countries with limited forecast capabilities, in particular in times of high-intensity conflict.

See Annex 7 for additional potential measures to include in EWS projects.

Annex 7 – Activities to help enhance EWS in FCV settings

This section describes ideas that could be used to inspire EWS programmes and projects in FCV settings. As part of the consultation process to develop these FCV operational procedures, EWS actors identified the critical issues presented in the first column.

Critical issue	Recommendations and Measures for EWS investments to achieve expected goals in FCV settings.
1. Access and security risks	• Staff involved in any part of the EWS value chain should have the assets and resources to work from home in case of crisis escalation. • EWS projects invest in increasing connections and relationships between EWS staff and key community members (experts in the context and with strategic connections, for example, by regular trainings and awareness sessions, in the most at-risk communities • Staff are supported with psychological support before, during, and after the crisis, for example, staff who have experienced trauma. • Protocols and measures to protect local radio stations are prioritised. EWS programming for natural hazards should work in tandem with FCV-related EWS. Systemic risk perspectives should be part of any EWS process.
2. Data loss and sharing	• Create FCV informed, EWS data management protocols across all elements. • Include cloud-based services for data backups. • Map out ongoing EWS data investments across all actors and identify joint protection plans for different FCV scenarios. • Increase remote sensing to enhance EWS-related data, such as mapping exposure and vulnerability using OpenStreetMap[33]. • At the global level, evaluate and explore how data standards differ in FCV settings and how EWS-related organisations can be supported to meet standards under different circumstances.
3. Regional, global collaboration and the challenges of EWS coordination	• Strategic and tactical partnerships between regional EWS organisations and implementing partners should be reinforced or created. These should be coordinated among all IPs and the CREWS secretariat, with specific funding allocation for regional actors to play a key role in activities necessary under different FCV conditions (see FCV scenarios), for example, in high-intensity situations of violence and political turmoil. • An EWS Investment round table can be organized at the national, regional, and global levels, prioritising FCV countries, to define 4W in investments, increase synergies, and develop a financial contingency plan for critical FCV scenarios. • Identify historical and ongoing good practices and lessons for EWS cooperation and integrate them into CREWS-funded EWS projects (for example, the South East Asia regional short-term forecast).
4. Sustainability, long term impact	• Fund longer-term EWS projects, at least 5 years, focusing on improving specific institutional challenges necessary for the sustainability of EWS, such as activities that help EWS-related Government institutions have financial autonomy and increase the number of qualified staff. • Set up joint targets among IPs to reach out to the most FCV-affected areas in a country. • Create post-war/crisis reconstruction plans, jointly among IPs and other EW4All actors. • Include context analysis across the entire EWS development process. • Substantial investment should be made in local actors so that they can participate in the EWS design, implementation, and post-project sustainability.
5. Funding systems and lack of long term investment	• Dept conversion[34] In FCV settings, this could be a potential mechanism to enhance financial flows for countries. There is potential to explore the role this can play in planning for EWS financial sustainability. • Short-term EWS investments have the potential to be sustainable if designed in tandem with other investments. (Better donor and IP investment coordination can transform the impact and sustainability of EWS in FCV. • Support national EWS actors with business development plans in partnership with the private sector when possible. • Coordinate EWS actors rescue plans by harmonising investments, ensuring transparency with national and regional actors. • Invest in peer-to-peer national and regional EWS capabilities to enhance or create a strong network of national actors who support each other in moments of crisis. • Create country-level 4W for EWS and Anticipatory Action funding to identify duplication, reduce it, align investments, and ultimately achieve the mutual goals. • Create a window of funding focused on local organisations in FCV settings, potentially focusing on those with access to the most complex areas.

6. Capacity gaps, staff Retention and the role of international consultants	• Develop staff retention plans within EWS projects. • Increase capacity-building opportunities. Train more people, acknowledging the risks that some are likely not to stay with their institutions (instead of training 1-2 people, train 5-10). • Create long-term financial models to ensure volunteers and low-cost staff can still be active in EWS after projects end. • Enhance the roster of national EWS experts/consultants by investing in national universities/polytechnics' EWS courses.
7. Political buy-in	• EWS projects can invest in developing tailored political strategies for different FCV settings to enhance political buy-in by creating laws that support EWS. • For Governments that have recently started EWS, such as Iraq, the political process needs to be supported to get the necessary long-term support from high-level Government officials. • Create spaces to engage high-level government officials in the EW4All initiative and Sendai Framework, as well as partnerships such as REAP and other relevant processes, to increase visibility, ownership, and commitment to advanced EWS. • Pay particular attention to new governments that have NSAG or Military (after coup d'état) in power, as DRR/EWS is likely not on their political agenda. Of particular relevance are Afghanistan, Myanmar, Mali, Sudan, Yemen, and Burkina Faso.
8. Institutional and political challenges	• On a case-by-case basis, set up pre-arranged partnership with actors who can do legal workarounds to navigate sanctions and logistics restrictions that can limit EWS delivery. In some countries, this can include humanitarian actors, special licenses for specific materials or via neutral third-party countries. • When a country is politically divided (for example, Yemen), explore diplomatic avenues to support the technical collaboration of EWS actors. • The role of the private sector, for example, weather providers, is important, yet it can undermine the mandate of NMHS in the FCV context. EWS projects can support building legitimacy and agreements with the private sector and the government to avoid that weather providers jeopardise the future of NMHS. • Pay attention to election violence and demonstrations. EWS actors should monitor these closely within their internal systems, as elections and demonstrations can produce severe disruptions of natural hazards related EWS (and others).
9. Infrastructure damage	• Develop a national-level mapping of critical EWS infrastructure at risk of destruction, damage, and vandalism (keep it updated). This mapping should include information from all EWS pillars. • For NMHS-related infrastructure, conduct a SWOT analysis of infrastructure, assets, and data for different FCV conditions. Identify measures for maintenance and repairs under different scenarios. • Advocate for the integration of EWS critical infrastructure under active protection under International Humanitarian Law; for example, IHL actors should mention the importance of protecting this infrastructure for NSAG[35]. • Invest more in community engagement and participation in the set-up, care, and sustainability of EWS critical infrastructure. This will ensure investments are protected and ultimately create effective EWS[35]. • Include into projects, extra logistical costs for setting up, maintaining, and repairing EWS infrastructure in FCV costs, as these are likely to fluctuate or increase suddenly under different security circumstances. • Ensure there are telecommunications backups for EWS, as NSAG tends to attack them the most.

10. Technical capabilities	• For FCV-affected places with very different topography and climatology, ensuring sufficient hydro-meteorological infrastructure to enhance weather forecasts is important. For example, in Colombia, most stations are located in mountainous areas (relatively safer ones), while areas such as the Pacific and the Amazon (in conflict) have minimal observation coverage, reducing the reliability of the forecast. • Increase political support for global sharing of data and forecast capabilities with FCV-affected countries. Building on existing global climate services processes, there is potential to gain more from sharing data and computing capacity. • Invest in AI-related capacity building for NMHS and NDMA so that they can play an active role in the development of AI solutions tailored to their needs rather than being left behind to wait for solutions to come from other settings. • Investment in technical capacity should be made equally across all EWS pillars or higher in pillars with lower capacity. EWS projects should fund all parts of the technical value chain, as a lack of capacity in any of the elements would jeopardise the entire system (for this, investment coordination is pivotal; see point 5). • Under different critical FCV circumstances, CREWS and others donors can focus on safeguarding the core technical functions of Governmental EWS.
11. Trust, public perception and people-centered focus	• Invest more in improving public perception of EWS. For example, in a national education campaign, include EWS in school curricula. For the most remote FCV-affected areas, include EWS public campaigns in existing humanitarian programming, and when appropriate and safe, coordinate with faith-based organisations. • Invest in community engagement in the EWS process for all EWS pillars. Building on decades of community-based early warning systems (CEWS), invest in large case projects (geographically) that reach all at-risk communities in a given territory. Faith-based organisations, local NGOs, and some international humanitarian organisations can play a key role in cost-effectively rolling out CEWS. • Develop partnerships with private sector companies that can access NSAG-dominated territories. These companies can play a key role in improving public perception of EWS. For example, some logistics companies are allowed to enter complex territories (this can only be done following a rigorous FCV sensitivity analysis). • Working with specific groups of the population who are more susceptible to disasters due to impacts of FCV conditions, must be part in the EWS design and implementation process (see Annex 8)
12. Contingency planning for FCV scenarios	• Develop FCV contingency plans at different levels: 1. For project implementation, ensure adaptability during the roll of an EWS project. 2. If it exists for EWS institutions as part of their existing risk management approach, otherwise, there is a need to create it. 3. For the EWS, embrace a multi-hazard EWS (including FCV conditions as a hazard). • Conduct a comprehensive review of actions taken by EWS actors at the country level during complex FCV circumstances and, based on what has been learned, develop the above-mentioned contingency plan. • The EWS actor should be prepared (in a coordinated way) for the worst FCV case scenarios. Given current and potential future disruptive events, it is unacceptable not to be ready to adapt EWS projects and investments to changing conditions.
13. Non-state armed groups	• On a case-by-case basis, explore the potential of interactions with NSAG to improve the roll out of EWS in controlled territories. This must be done with expert actors after a robust FCV sensitivity analysis. • It is important to note that NSAG might become a ruling government in some settings. If feasible, it is important to engage such actors in Climate change (including EWS discussions) whenever possible, during or after a conflict. • For EWS projects where NSAG controls territories, include NSAG analysis as part of the project design to explore the possibilities and impossibilities of rolling out elements of EWS as part of the projects. • Consider the future sustainability of EWS investment in the given context, particularly in countries where NSAG are very mobile and change from region to region. For example, an EWS is set up in a region that did not have an NSAG; however, a few months later, an NSAG can enter the territory. Would it happen to the EWS investments there? • Invest and strengthen significantly in local actors able to operate in NSAG-dominated areas. These are likely to be the most relevant part of the EWS value chain, as without them, it is unlikely to be possible to translate early warning into early action.

Annex 8 – FCV-affected populations that required access to Early Warning Systems

Population group	Population Sub group in FCV settings key for the co production of EWS
1. Children and Adolescents	Orphans
	Child soldiers
	Children living in conflict zones
	Children separated from their families
	Unaccompanied minors
	Street children
2. Women	Pregnant women
	Mothers with young children
	Survivors of sexual and gender based violence
	Female headed households
	Widows
3. Elderly	Elderly living alone
	Elderly with chronic illnesses
	Elderly caregivers
4. People with Disabilities	Physically disabled individuals
	Visually impaired individuals
	Hearing impaired individuals
	Individuals with intellectual disabilities
5. Ethnic and Religious Minorities	Indigenous populations
	Minority religious communities
	Minority ethnic communities
	Migrant workers
6. LGBTQ+ Individuals	Transgender individuals
	Gay, lesbian, and bisexual individuals
	Non binary and gender non conforming individuals
7. Internally Displaced Persons (IDPs)	Families in informal settlements
	Individuals living in IDP camps
	Displaced agricultural workers
8. Refugees and Asylum Seekers	Urban refugees
	Refugees in camps
	Stateless persons
	Asylum seekers in detention
9. People with Mental Health Conditions	Individuals with severe mental illnesses (e.g., schizophrenia, bipolar disorder)
	Individuals with anxiety and depression
	Individuals with substance use disorders

Population group	Population Sub group in FCV settings key for the co production of EWS
10. Combatants, Veterans and people in detention	Former child soldiers
	Veterans with PTSD
	Disabled veterans
	Demobilized combatants
	Individuals deproved of liberty (in detention centres/jails)
11. Civilians in High Intensity Conflict Zones	Rural villagers
	Urban residents
	Business owners and workers
	Farmers and agricultural workers
12. Health Care Workers	Doctors and nurses
	Paramedics and emergency responders
	Community health workers
	Mental health professionals
13. Humanitarian Aid Workers	Local NGO staff
	International NGO staff
	Volunteers
	Logisticians and support staff
14. Journalists and Media Personnel	War correspondents
	Local journalists
	Freelance reporters
15. Rural and Isolated Communities	Farmers (e.g for example involved in illigal crops)
	Indigenous communities
	Nomadic groups
	Fishing communities
16. Urban Poor	Slum dwellers
	Informal sector workers
	Homeless individuals
	Squatters

Annex 9 - List of International Humanitarian Law actors

It is recommended to explore other global, regional and national actors as described in point 15 of the Operational Procedures.

Organization	Scope	Headquarters	Website
International Committee of the Red Cross (ICRC)	Humanitarian (Global)	Geneva, Switzerland	https://www.icrc.org
Norwegian Refugee Council (NRC)	Humanitarian (Global)	Oslo, Norway	https://www.nrc.no
Harvard Law School Program on International Law and Armed Conflict (PILAC)	Academic (Global)	Cambridge, Massachusetts, USA	https://pilac.law.harvard.edu
Geneva Academy of International Humanitarian Law and Human Rights	Academic (Global)	Geneva, Switzerland	https://www.geneva-academy.ch
Geneva Academy	Academic (Global)	Geneva, Switzerland	https://www.geneva-academy.ch
Centre for Human Rights - University of Pretoria	Academic (Africa)	Pretoria, South Africa	https://www.chr.up.ac.za
African Centre for the Constructive Resolution of Disputes (ACCORD)	Regional (Africa)	Durban, South Africa	https://www.accord.org.za
Asian-African Legal Consultative Organization (AALCO)	Regional (Asia/ Africa)	New Delhi, India	http://www.aalco.int
Centre for the Study of Law, Justice and Society (Dejusticia)	Academic (Latin America)	Bogota, Colombia	https://www.dejusticia.org
Comisión Mexicana de Defensa y promoción de los Derechos Humanos (CMDPDH)	National (Mexico)	Mexico City, Mexico	https://cmdpdh.org
Bangsamoro Human Rights Commission (BHRC)	Regional (Philippines)	Cotabato City, Philippines	https://bhrc.bangsamoro.gov.ph

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