

Analytical Paper to guide the development of Operational Procedures on CREWS Programming in FCV settings

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This analytical paper commissioned by the UNDRR-WMO Center of Excellence, in support of the CREWS initiative, aims to guide the development of Operational Procedures on CREWS programming in FCVs. The analysis focuses on identifying gaps and opportunities based on screening crucial CREWS documents and interviews with key stakeholders, accompanied by tactical and strategic recommendations for the existing operational procedures and other documents. The document ends with two sections. One provides a detailed description of key thematic areas that CREWS could consider for the design of their next 2026-2030 strategy with topics such as climate security, protection of hydrometeorological infrastructure, EWS for conflict and other situations of violence, etc., and finally, it provides a road map and outline for the design of CREWS Operational Procedures for programming in FCV contexts.

Key Messages

CREWS FCV integration in operations requires the following:

- Build on the current political and strategic momentum of expanding climate action in FCV settings to leverage funding, partnerships, and knowledge to achieve CREWS expected results by 2030.
- Update all existing CREWS operational procedures and other relevant documents to include FCV considerations and create dedicated FCV operational procedures.
- Enhance FCV awareness internally at the CREWS secretariat, steering committee level, and IPs. Promote a better understanding of challenges in EWS support in FCV contexts, including need for augmented surveillance of programmatic risk and adjustment in operating models to mitigative risk with Implementing Partners and Country Partners.
- Support EWS academic research, given the significant gaps in FCV settings.
- Engage strategically in emerging topics, expanding attention to and investment in EWS in the context of climate security, conflict prediction, the role of non-state armed groups in climate action, the potential role of EWS to contribute to national peace dialogue in FCV settings, etc.
- Lead the way to enhance the protection of hydrometeorological infrastructure in FCV settings.

Design of CREWS FCV operational procedures:

- Reconsider the approach to formulation of pipeline countries, including concrete targets to reach FCV countries per year.
- Integrate FCV sensitivity analysis and/or screening criteria into project design and implementation.
- Enhance FCV scenario planning into the CREWS risk management approach.
- In line with CREWS's people-centered approach, ensure the selection of countries and project activities starts with understanding the risks of FCV-affected populations and to what extent EWS can support risk reduction and effective disaster response, while contributing to efforts and pathways to conflict resolution.
- Provide directions to guide IPs on the course of action in case of FCV-related challenges, disruptions and suspension of programming.
- Encourage joint programming among IPs in FCV settings, as each has a critical role in contributing their expertise while including critical partners that can deliver an FCV-sensitive, people-centred approach to EWS.

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Background

By 2030, nearly 60% of the world's extreme poor will reside in countries affected by FCV. Violent conflict has spiked dramatically since 2010 in several regions, and the fragility landscape is becoming more complex. The world has seen a series of setbacks to stability in regions across the world: from Asia and Africa to Latin America and the Caribbean, and more recently in Eastern Europe and the MENA region. Fragility is intertwined with other global challenges like climate change, pandemics, and food insecurity: 15 of the top 25 countries most vulnerable to climate-related impacts are FCV countries. Over the past two decades, significant strides have been made in improving Early Warning System (EWS) policies, strategies, and practices. While these advancements have saved countless lives, crucial policy, science, and practice gaps must be addressed to fully institutionalise EWS in Fragile, Conflict, and Violence (FCV)- affected settings.¹⁻³ In recent years, attention has turned to the need to ensure that countries and territories affected by FCV can reduce the risks of disasters⁴ and within that, can implement and sustainably maintain Early Warning Systems and Anticipatory Action (AA) investments⁵.

There has been a noticeable shift in focus towards protecting people living in complex conditions through EWS. This shift is a response to the recognition that climate change, combined with other complex risk drivers, poses a high likelihood of social, health, economic, infrastructure and other impacts in FCV settings due to heightened vulnerabilities, low resilience to (recurrent) shocks, and shortfalls in governance⁶⁻⁸.

There has been a significant change at the policy level, particularly since adoption by UN member states of the Sendai Framework for Disaster Risk Reduction. FCV dynamics have also as a significant consideration during the midterm review of the Sendai Framework conducted in 2023.

1. Fragility, Conflict and Violence disaggregated typology.

As FCV represent a broad spectrum of contexts, this analytical paper uses the disaggregated typology proposed by the Coalition for Climate Action in Conflict and Fragile Settings, which is inspired by terminology already used by the World Bank and the International Committee of the Red Cross. Table 1 describes the four types of contexts and their respective constraints for operations⁹. Please note that this paper follows the official World Bank FCV definition, which is the one used officially by CREWS; however, for practical use, we applied these four typology to allow a more detailed analysis as described in Annex 1 and other sections of the report:

| Terminology and Constraints by the Coalition for Climate Action in Conflict and Fragile Settings | |
|--|--|
| Institutional fragility – IF | <p>This includes often post-conflict contexts 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.”¹⁰</p> <p>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.</p> |
| Contested territories – CT | <p>‘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.</p> <p>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.</p> |

| | |
|-------------------------------------|--|
| <p>High-intensity conflict – HI</p> | <p>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.</p> <p>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.</p> |
| <p>Protracted conflict – PC</p> | <p>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.</p> <p>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.</p> |

Table 1 - Fragility, Conflict and Violence disaggregated typology

To provide a more detailed tool for CREWS to develop its FCV Operational Procedures, Annex 1 provides a comprehensive and disaggregated list of constraints and ideas across the value chain of EWS (see diagram 1). This exhaustive compilation builds on the WMO-UNDRR Center of Excellence Handbook on EWS in FCV settings (*forthcoming*), the GFDRR report on EWS in FCV settings¹, the Red Cross Red Crescent Disaster Risk Reduction (DRR) Practitioner Handbook "Navigating Fragility, Conflict, and Violence to Strengthen Community Resilience (*forthcoming*), and the Anticipation Hub/CGIAR - Anticipatory Action in Conflict tool kit (*forthcoming*), as well as other academic literature, grey literature, and expert knowledge. Annex 1 could be used to identify specific solutions that CREWS partners can support to enhance EWS in FCV contexts.

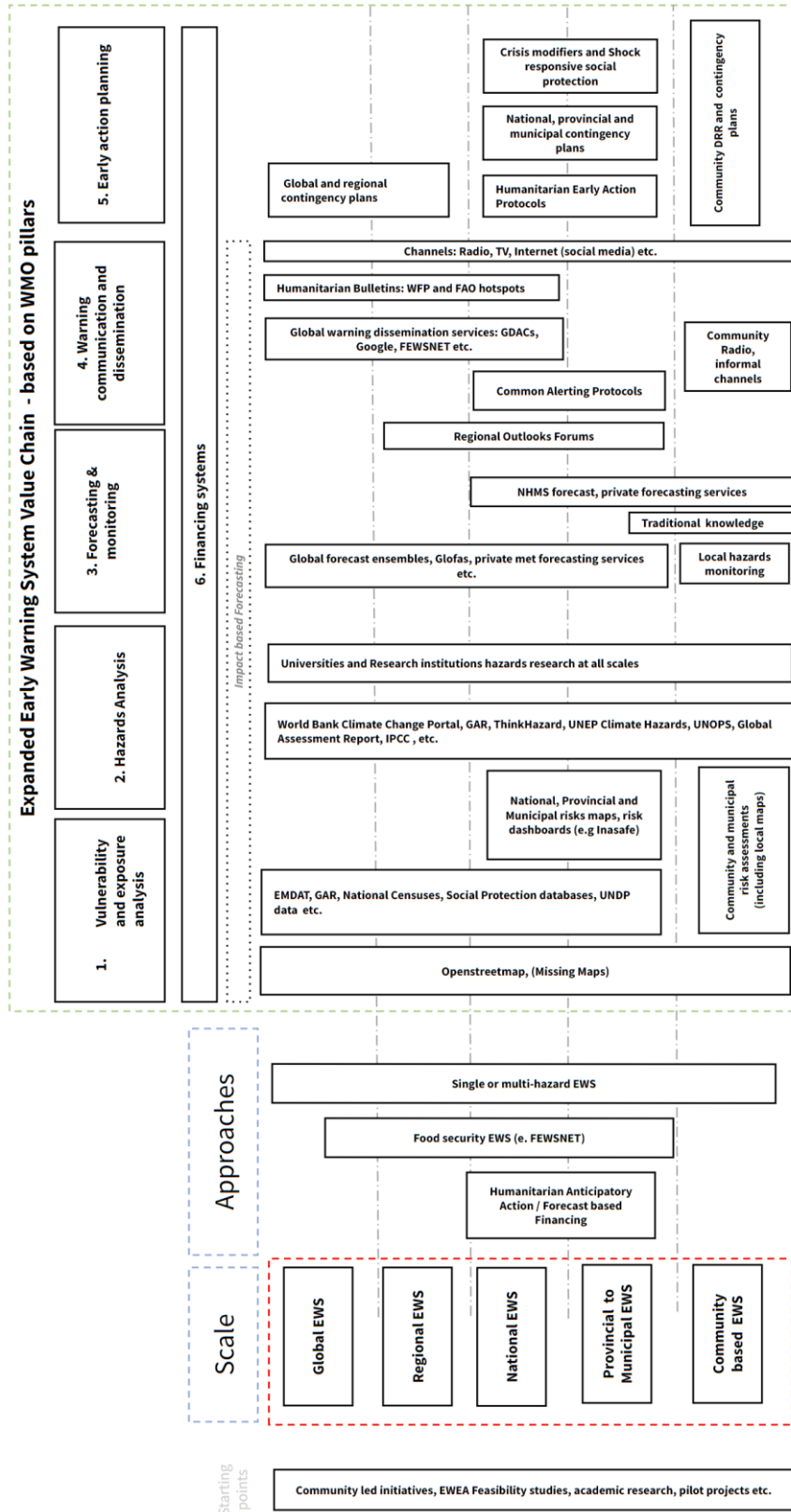


Diagram 1: Expanded EWS value chain (Jaime et al. 2024 forthcoming)

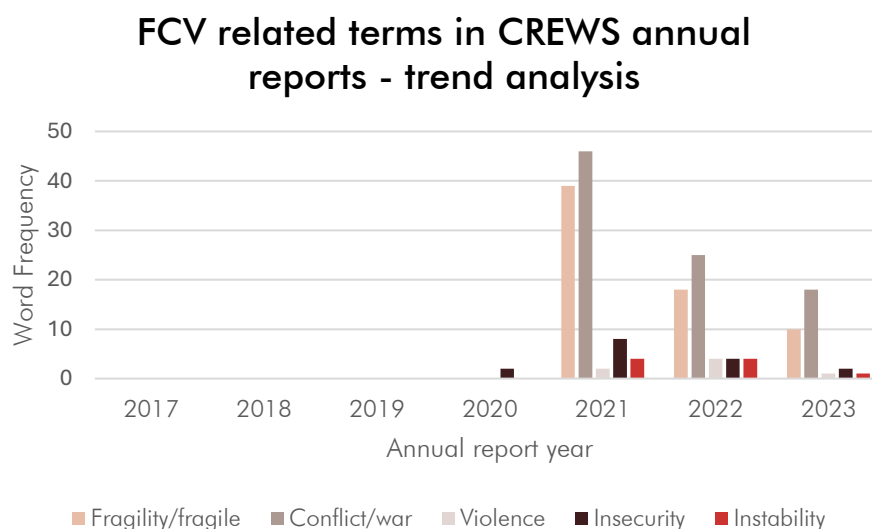
2. CREWS engagement in FCV settings: review of existing CREWS portfolio

Analysis of CREWS annual reports with an FCV lens

The following section describes relevant findings from CREWS annual reports (2017-2023) and interviews with implementing partners¹. It shows progress in integrating FCV conditions into programmatic processes, as well as gaps and opportunities for future CREWS programming.

2.1 Progress

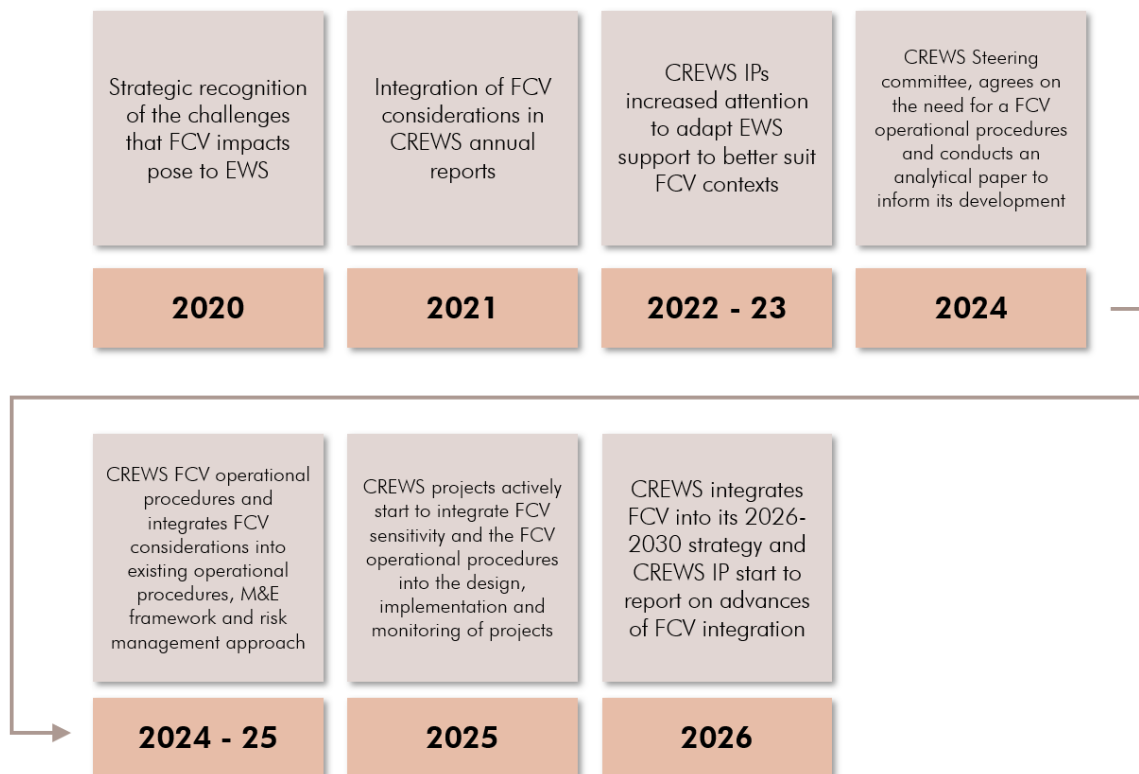
CREWS has supported projects in FCV settings since its establishment. In the 2021 annual report, the CREWS Secretariat recognised the importance of reflecting on the complexities that FCV conditions posed to its projects; special attention was placed on adding a typology of conflict for each country and describing the FCV situation. This trend has continued (see graphic 1); for example, the 2023 annual report includes a dedicated section on the impact of conflict in Sudan and the relevant role that CREWS has played in helping to maintain essential forecasting services amidst a complex crisis. CREWS growing description of FCV in their annual reports seems to be a result of an increasing political ambition in enhancing climate action in FCV settings, combined with an ever-increasing programmatic effort of implementing partners to support FCV-affected countries.



Graphic 1 - FCV related terms in CREWS annual reports (2017 to 2023)

¹ IPs: UNDRR and WMO interviewed (6 people) and CREWS Chair and FCDO (3 people).

- CREWS efforts to rescue hydrometeorological data in FCV settings and share it globally are significant actions. Continuing doing this, global forecast models would be able to provide even better information in areas with limited national weather and climate services 10.
- CREWS recognises the importance of fluidity and adaptability in implementing activities vis-à-vis changing security and complex political conditions. Some examples outlined below show how CREWS could modify its plans under these circumstances.
- Despite several challenges faced by FCV countries supported by CREWS, the reports highlight some vital policy and law improvements achieved.
- Special attention has been given to improving EWS evaluations, contributing to monitoring the Sendai Framework for DRR and the Early Warning for All (EW4A) initiative.
- From 2021, CREWS reports acknowledge the complex nature of multiple, compounding and cascading crises affecting the capacity for EWS delivery by national actors.
- CREWS played a crucial role in increasing funds for EWS in FCV settings².
- CREWS has achieved key milestones for FCV consideration into operations (see graphic 2).



Graphic 2: Evolution of FCV consideration in CREWS since 2020 towards 2030

² It is important to explore further the ratio of funds transferred by IPs to national governments for EWS, vs. how much they retain for delivery of support/technical services? And the ratio between IPs?

2.2 Gaps and Opportunities

- By analysing the reports through an FCV lens, CREWS reports show a gap of investment in sub-elements of the EWS value chain (see diagram 1), as outlined in Table 1. Most reported projects and examples of CREWS-funded projects focus on advancing risk analysis by crucial actors such as NDMAs (e.g. multi-hazard risk mapping), enhancement of hazard detection, monitoring, forecast production and forecast communication by NHMS (e.g. hydrometeorological capacity building at all levels, hydro met infrastructure with a focus on particular hazards such as floods, droughts and tropical cyclones etc), as well as warning dissemination to end users (e.g. in the agricultural and disaster risks management sectors). See Table 1 for details on EWS in FCV context gaps.
- EWS research and partnerships with academic and research institutions are not reflected in the annual reports (see this recent study that shows evidence of gaps in EWS research in conflict settings¹¹).
- Although key informants acknowledge the adaptability and fluidity of CREWS activities, there is a need for pre-designing detailed FCV scenario planning before a project starts (this can adapt the climate storyline approach integrating FCV scenarios). The expenditure rate of CREWS projects could improve in FCV settings by anticipating FCV-related capacity constraints and having contingency plans, crisis modifiers and pre-determined actions to inform decisions before, during and after a complex situation.
- The CREWS Accelerated Support Window has the opportunity to enable FCV and context analysis research to inform CREWS design projects (see section 3.4).
- CREWS IPs could enhance coherence and collaboration in practice when they all work in the same FCV country. Linking their CREWS projects with their broader interventions , and those of other actors in the country..
- Based on CREWS reports, this paper suggests that further investment and attention are needed for EWS in FCV settings across these elements and sub-elements of the EWS value chain (see Table 2 and Annex 1).

| EWS pillars | CREWS EWS Investment opportunities |
|--|--|
| Disaster Risk Knowledge | Advance complex risk analysis integrating multiple FCV considerations. In FCV, where multiple risks collide simultaneously, it is essential to enhance the capacity to understand and monitor risk fluctuation. This would be a key for impact-based forecasting and early action planning. |
| | Increase and improve multi-hazard exposure and vulnerability data for EWS, focusing on granularity, quality, and maintenance (updated data and systems). Concentrate on territories with extreme risk data gaps. This could be seen as a daunting process. However, partnerships with key actors already advancing on vulnerability and exposure data in the FCV contexts are a key opportunity. (e.g., International Displacement Monitoring Centre – IDMC, initiatives such as CRAF'd, and OpenStreetMap ¹²). |
| | Expanding support to research organisations as a temporary custodian of risk data in FCV settings where government circumstances make direct support to them difficult. IPs can explore partnerships with these actors as part of the EWS process. (See table 1 for more details) |
| Detection, observations, monitoring, analysis and forecasting of hazards | Protecting hydro-met infrastructure from damage and decay due to FCV conditions (see section 4.2 for more details). |
| | Enhancing hazard analysis of heatwaves, dust storms and other hazards under-researched in FCV settings ¹¹ . |
| | Strengthen the business continuity of NHMS in highly volatile contexts. Although WMO launched in 2024 a BCG, there is a need to reinforce the support for FCV-related crisis ¹³ |
| Warning dissemination and communication | Ensure FCV sensitivity in warning message design and selection of dissemination channels such as community radios (see Annex 5). |
| | Protecting telecommunications infrastructure from damage and decay as a result of FCV conditions ³ . |
| Preparedness to respond | FCV-sensitive early action planning, building on retrospective disaster analysis and robust context analysis. |
| | Co-producing Early Actions across various actors in the Humanitarian, Development, Peace and Climate (HDPC) nexus. In practical terms, this includes that all EWS investments of CREWS projects supporting NHMS should be connected to the trigger mechanisms for Anticipatory Action planning, such as the one supported by the Central Emergency Relief Fund (CERF) managed by OCHA, the similar fund DREF, by the IFRC and the Start Fund/ Start Ready of the Start Network. The AA processes can be enablers of connections between HDPC partners. |
| | Detailed scenario planning for all possible events in FCV settings (e.g., Coup d'état, election violence, the sudden escalation of insecurity, civil unrest, protracted conflict with high levels of violence fluctuation, community tensions, etc.). Scenario planning can be done in different ways. For the situations described before, a combination of decision tree and foresight accompanied by a screening checklist could be used in the scenario planning process. |

Table 2: Enhancing the EWS value chain in FCV settings

³ Consider CAP, digital connectivity mapping by ITU, and working through civil society in FCV settings for warning communications.

In addition to the responsibility that the CREWS Secretariat has in integrating FCV considerations into the CREWS strategic and tactical process, CREWS implementing partners (IPs) have a critical role to play, as indicated in the M&E operational procedures. IPs are responsible for applying their risk management policies and practices to mitigate risk in their projects. However, as described in Table 3, there are still FCV-related gaps that need to be addressed by the IPs to ensure that CREWS' expected results are achieved in FCV contexts.

The table below uses a risk colour code to show to what extent the lack of these levels of FCV integration represents risks to achieving CREWS results. This analysis needs to be expanded further in the next phase of the CREWS FCV operational procedures development to reflect, in more detail, IPs' FCV integration progress.

| CREWS IP/Level of FCV integration | FCV strategic guidance | FCV sensitivity in project design | Capacity to adapt rapidly operations and plans in case of conflict-related disruptions | FCV-related contingency plans |
|-----------------------------------|---|---|---|--|
| UNDRR | FCV has been integrated into the Sendai Framework mid-term review. | The Center of Excellence of UNDRR-WMO acknowledges the importance of conflict sensitivity in EWS; an example is the Handbook on EWS in FCV contexts. | Limited capacities to adapt to sudden changes in context. Security restrictions limited UN personal mobility/access in some FCV contexts. | There are no contingency plans for FCV situations potentially affecting CREWS projects. |
| GFDRR | In 2018, GFDRR created an FCV unit focused on advancing DRR in FCV settings, recently focus on EWS ¹ . The connections between CREWS projects and the FCV unit need to be better understood. | In 2021, the WB did a detailed analysis of WB projects with an FCV lens; the assessment recommends that the WB enhance FCV sensitivity in their programmes. More analysis is needed to understand to what extent CREWS projects include FCV sensitivity. | Limited capacities to adapt to sudden changes in context. Often, operations are on hold when political tensions and violence escalate. | The World Bank's standard approach in high-intensity conflict or complex political crisis is to stop operations. |
| WMO | No specific policies or strategic guidance were found related to FCV settings. | The Center of Excellence of UNDRR-WMO acknowledges the importance of conflict sensitivity in EWS. The Handbook on EWS in FCV contexts is an example of this. However, the broader WMO operations do not apply FCV sensitivity in design and implementation. | WMO has limited capacities to adapt to sudden changes in context. However, WMO NHMS members often adjust to the changing conditions. | There are no contingency plans for FCV situations potentially affecting CREWS projects. |

To what extent does the lack of these levels of FCV integration represent risks for CREWS investments:



Table 3. IPs levels of integration of FCV considerations into CREWS projects

These are some recommendations highlighted in the interviews conducted with IPs:

- IP staff designing and implementing CREWS projects need capacity building to deal with FCV situations and ensure accountability and delivery.
- In the case of WMO, CREWS projects depend on the needs identified by NHMS. When critical FCV situations emerge, WMO is subject to NHMS priorities.
- SOFF and CREWS' strategic cooperation is needed to safeguard hydro met investments and protect historical hydro met data in times of crisis.
- There is potential to advance further the use of remote sensing and Artificial Intelligence (AI) in territories with very limited forecasting and risk analysis.
- IPs highlight the need for flexibility in CREWS processes during FCV crises.

2.3 Key questions CREWS reports raise from an FCV perspective.

The questions below emerged from the screening of CREWS reports. Section 4 includes recommendations related to these topics. It is recommended that these questions be included in the development process of the FCV operational procedures (see section 5).

1. To what extent are the hydrometeorological stations supported by CREWS projects protected from potential damage and decay due to FCV conditions? To keep them functioning, are there contingency plans for different instability and security scenarios to ensure their maintenance?
2. To what extent do risk analyses supported by CREWS projects integrate compound and cascading risk analysis in the design of EWS? In FCV settings, the co-occurrence of multiple hazards (natural, biological, technological) and cascading effects, such as food insecurity, are critical drivers of disaster impacts and could be a threat multiplier for tensions.
3. Is mental health due to conflict considered during the design of EWS, particularly warning communication and dissemination plans and the early action process?
4. Do CREWS projects target people in situations of forced displacement?
5. Do CREWS projects include an analysis of how conflict dynamics might impact warning communication, dissemination, and early action?

6. Do the CREWS projects reach isolated, difficult-to-access areas where FCV-affected vulnerable populations live? (see Annex 3)

7. Given the policy moment to increase climate funds in FCV contexts, with processes such as the COP28 Climate, Relief, Recovery and Peace declaration, to what extent are CREWS projects ready to reach at-scale⁴ FCV settings with an FCV-sensitive approach?

8. To what extent do the CREWS secretariat and IPs collaborate and coordinate with peace and security actors in implementing CREWS projects in conflict-affected contexts as part of the ambitions for HDP nexus programming agreed upon at the 2015 World Humanitarian Summit?¹⁴

⁴ In this report, scale in the context of EWS in FCV refers to 1. Expand EWS to additional geographical areas, to all at risks areas in a country 2. Move from small community-based EWS interventions to CBEW that reach all at-risk areas. 3. Expand the hydro-met observation network to areas in a country with poor coverage (see section 4).

3. Review of existing CREWS Operational Procedures in the context of FCV settings

The section below presents action points based on the gaps identified during the screening process of CREWS operational procedures and other documents. These are strategic, tactical, and specific recommendations for integrating FCV into existing CREWS documentation, planning for the 2026-2030 strategy, and general CREWS ways of working in FCV settings. The numbering of each document was kept to facilitate the CREWS team's review process, only sections relevant to FCV considerations are listed). A phased approach is highly recommended when/if the recommendations provided are implemented.

3.1 CREWS Operational Procedures Note No.1 - Programming and Project Development

CREWS Programming Principles

- Include an FCV-sensitive principle. Proposed text: "CREWS recognises the complexities and dynamic fluctuations of risks faced by Fragile, Conflict and Violence-affected countries; therefore, CREWS projects integrate an FCV sensitive approach to promote adaptability, flexibility and sustainability in times of crisis".
- Principle of coherence and coordination: CREWS implementing partners have the opportunity to strengthen tactical alliances with humanitarian actors in FCV-affected countries given their long-term engagement, context and institutional knowledge, particularly in protracted conflicts, contested territories and high-intensity conflicts. Coherence and coordination with humanitarian programming are especially relevant given the growing Anticipatory Action focus. CREWS secretariat could play an enabler role for HDP and climate nexus actors to move beyond traditional coordination (meetings) to establishing protocols for sharing activities status, information, funding opportunities, etc. One critical outcome of meaningful coherence and coordination is the lack of duplication of efforts and funds, which is unfortunately common in the EWS space.
- Table 3 describes the likelihood of applying CREWS principles in FCV settings. This analysis is based on the author's expert knowledge. It is recommended that this table be used for the next steps of the FCV operational procedures development, and it should be updated based on discussions with the CREWS secretariat and relevant stakeholders.

| Principles | FCV typology | Institutional Fragility | Protracted Conflict | Contested Territories | High-Intensity Conflict |
|--------------------------------------|--------------|-------------------------|---------------------|-----------------------|-------------------------|
| Country ownership | | | | | |
| Targeting lifesaving needs | | | | | |
| People-centered early warnings | | | | | |
| Gender-sensitive | | | | | |
| Leveraging resources | | | | | |
| Integrated and inclusive programming | | | | | |
| Coherence and coordination | | | | | |

Likelihood of principles application

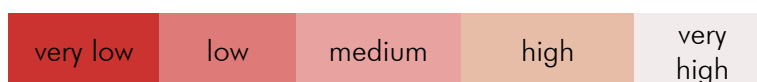


Table 3: CREWS principles application in FCV settings

Roles and Responsibilities

Implementing Partners:

- Lead and assist relevant stakeholders in the design of the projects and implementation (add, integrating FCV sensible programming)

Steps and Timelines for CREWS Project Development and Approval

CREWS Project and Pipeline Countries

- Mapping of LDCs and SIDS status and needs should include FCV analysis at different timescales (e.g., during project implementation and in the long term); this could be done in partnership with specialist institutions such as the International Crisis Group, which could support the CREWS secretariat with foresight processes for country-level FCV risk analysis. Note: the UN has foresight and risk analysis products for most FCV, including the UN Common Country Assessment
- CREWS has the opportunity to enhance its selection process of pipeline countries, making it more participatory with IPs and other actors. Barriers such as risk aversion and political complexities that might influence the decision to exclude certain FCV countries require evaluation with a different lens, especially from a

people's needs and risk perspective, as often countries that might be excluded for political reasons have higher EWS need (see section 4.1)

CREWS Investment Plan

- Given the biennial review of the Investment Plan and the Programming Framework, explore the possibilities for ad-hoc revisions that might be necessary due to fluctuations in contexts (including safety and security).

CREWS Project Development Process

- See below Annex 1 and 2 recommendations, specific to Note No. 1.

Schematic Presentation of CREWS Project Development

- Include “FCV risks” in this box: Joint and continuous mapping of priority countries, needs and FCV risks.

Project Template

- See Annex 2 recommendations specific to Note No. 1.

Project Implementation

- If an FCV-sensitive principle is added to Note No. 1 in section 7, it is recommended to modify paragraph 19, proposed text: CREWS Projects are implemented and administered following CREWS principles and the guidelines of the Implementing Partners.
- In section 21, based on past experiences, evaluate whether changing conflict dynamics fit into the time it takes for approvals by the steering committee. The new FCV operational procedures should include specific activities and examples of scenarios to ensure smooth changes of project plans due to conflict intensity, violence, and political changes with security implications.

Partner Engagement

- Relevant stakeholders in FCV settings should include non-traditional EWS actors, such as peace and protection actors (e.g., international crisis group, ICRC, Danish Refugee Council, Norwegian Refugee Council, etc.), and governmental institutions, such as the Ministries of Defence, Armed Forces and the police. Critical actors are those ones that can reach areas with difficult access, often faith-based organisations, the ICRC and RCRC National Societies, as well as the private sector (telecommunications, infrastructure and mineral extraction; however, a conflict sensitivity analysis must be conducted before engagement, such actors).

No. 1 - ANNEX 1: Criteria for Mapping of Early Warning Systems Status and Needs in SIDS and LDCs

Paragraph 2: "The mapping addresses an identified need by Development Partners". In FCV settings, EWS needs must be identified by actors in the Humanitarian, Development, Peace and Climate (HDPC) nexus.

Criteria mapped: Proposed amendments and additions

- 1.** Exposure to risk and institutional capacity for early warning
 - Include a capacity assessment of other actors implementing EWS in the HDPC nexus. This capacity assessment could be available through existing processes conducted by actors implementing anticipatory action (see Anticipation Hub feasibility study resources); if nothing is available, such assessment could be conducted as a collaborative process between CREWS IPs.
 - New: Consideration of EWS research gaps. A 2024 peer-reviewed paper demonstrates the EWS research gaps in conflict-affected contexts.
 - New: FCV context analysis, including FCV risks affecting programme/project implementation.
- 2.** Level of priority given to early warning systems by countries
 - Requests for support by country: in some FCV contexts, non-governmental institutions play a vital role in EWS as they might have the capacity for large-scale EWS support. In exceptional circumstances, would CREWS be able to support projects even when the government has not requested support?
- 3.** Potential for leveraging additional resources and aligning programmes
 - For example, consider including the Complex Risk Analytics Fund (CRAF'd) as this directly contributes to the enhancement of EWS.

No. 1 ANNEX 2: Template for CREWS Project Presentation Note to the Steering Committee

- Initial state of play - project rationale:
 - Include the current state of EWS research
 - Include challenges associated with implementing in FCV settings
- Project viability and sustainability
 - Include FCV risks affecting programme/project design, implementation and M&E based on the FCV typology presented in this paper.
 - Include worst-case scenarios in which project implementation could undergo radical changes due to high levels of violence, lack of access at all levels, institutional collapse, etc.
 - Include FCV risk mitigation measures, including for the worst-case scenarios, as described in point b and based on the proposed FCV typology.

3.2 CREWS Operational Procedures Note No. 2 - Monitoring and Evaluation

Annex 2 – Reporting Timelines for CREWS Implementing Partners and Secretariat: Consider officially including in this procedure one ad-hoc reporting period in cases when programming is severely affected (e.g. coup de état and severe cases of violence).

Table 4 describes the constraints and recommendations of CREWS core programme indicators in FCV settings (excluding the gender indicator as this analysis does not propose changes for it). Followed by additional recommendations for the CREWS Complete Results Framework.

| Programme indicators | Constraints in the FCV context | Recommendations |
|---|---|---|
| # of people living in areas covered by hazard forecasts and warnings for a given hazard. | NHMS service hazards forecast capacity is limited due to a lack of resources, limited human resources, including a brain drain of qualified staff, and a lack of hydrometeorological observations, particularly in areas with difficult access due to security, where often hydrometeorological stations are limited, are damaged due to direct impact of conflict or decay. People affected by conflict living in difficult areas to access are often left behind of early warning and early action. | CREWS investments in conflict areas where hydromet infrastructure could be impacted directly or indirectly are protected under International Humanitarian Law, as they are critical civilian infrastructure (see section 4.2). In the absence of national hazard forecasts in conflict-affected areas, global forecast models are an important source of forecasts to cover this gap. CREWS projects could support NHMS in integrating global models into their national forecast processes. Enhancing communication and dissemination of warnings from such models is an opportunity to achieve CREWS programme indicators. People displaced by conflict or other causes are extremely exposed to natural hazards. CREWS could scale up its support of EWS for this population. Similarly, deploying geo-observation tools in cases where ground-observations on hazards, demographics, displacement, etc, is not feasible can be a quick-win and/or viable stand-in measure for EWS ¹² . |
| # of LDCs and SIDS that have generated risk information to enhance the early warning system | Risk data access, quality, granularity and regular updates are significant challenges in FCV settings. In this context, where there are vast numbers of operations by many actors, there is a trend to duplicate risks in data generation and analysis. Yet, the fundamental challenges mentioned before are prevalent. Government institutions often lack the resources and technical expertise to | CREWS can play a key role in ensuring donor coherence when funding risk data collection, enhancement, and risk analysis processes (for example, the creation of risk dashboards and maps). CREWS projects can strengthen the capacity of academic institutions, in coordination with Government agencies in FCV settings, to play a strategic and tactical role in the sustainable and long-term production of risk data and risk analysis. |

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| | <p>generate and/or maintain risk information; hence, they depend on external actors for risk analysis.</p> <p>Risk data related to conflict impacts is often not considered in disaster risk datasets⁵, which is a missed opportunity. In the FCV context, understanding how FCV conditions exacerbate vulnerabilities and exposure can make risk analysis more accurate and useful for impact-based warning development and early action planning.</p> | <p>-CREWS can request IPs to integrate FCV-related risk information into EWS-related risk analysis processes. For example, data related to people with mental health due to conflict should be considered as critical vulnerability information for the set up of an EWS, as often mental health jeopardises the capacity of a person to act upon a natural hazard forecast.</p> |
|--|--|--|

| | | |
|--|--|---|
| <p># of at-risk people accessing early warning systems and services through their preferred channels</p> | <p>Channels of warning dissemination in FCV areas, especially HI and CT, tend to be weak. In some contexts, there is limited Internet and mobile network access, and not all at-risk people have mobile phones.</p> <p>Community leaders, often faith-based, such as churches, mosques, etc., are respected sources of information, especially in areas where trust is low due to tension between conflicting parties. Yet this communication channel is fragile, and warning dissemination can be jeopardised rapidly in changing contexts.</p> <p>There is limited research on the challenges and opportunities of warning communication and dissemination in conflict contexts.</p> | <p>During the design stage of CREWS projects, it is recommended that IPs conduct robust assessments of communication channels that include historical analysis and a future-looking scenario planning that presents potential future disruptions to warning communication and dissemination, as well as mitigation measures.</p> <p>CREWS projects can promote the protection of telecommunication infrastructure, which is essential for early warnings in complex territories (See the IHL section below).</p> <p>Strengthening the warning communication and dissemination process with critical local actors is essential. CREWS projects can pay special attention to ensuring such actors have the training, equipment, tools, and well-defined processes to ensure that at-risk people receive warnings in a timely manner, even in the most complex contexts.</p> |
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Table 4: CREWS core programme indicators with an FCV lens

3.3 CREWS Operational Procedures Note No. 3 - Gender-Sensitive Programming

This section proposed FCV considerations as part of the four EWS elements:

- o Understanding risk:
 - Political factors are critical in the creation of risks; from an FCV perspective, changes in political dynamics that lead to tensions, including conflict and violence, have the potential to exacerbate gender-related vulnerabilities.

⁵ UNDRR's promotes loss and damage accounting which includes societal risks such as conflict. However, governments often choose not to report on loss and damage from conflict.

- Gender-based violence (GBV) should also be analysed in the context of disaster risks and EWS, noting that violent conflict affects men and women differently. While men make up the majority of combatants during conflict and are more likely to die from the direct effects of violence, women also face a continuum of insecurity before, during, and after conflict. Sexual and gender-based violence tends to be higher in conflict and post-conflict settings, and women are often excluded from early warning messaging and, therefore, miss opportunities for preventative or preparedness action to avoid or minimize loss and damage from hazardous events.
- In some FCV settings, LGBTQ+ communities tend to be discriminated against and suffer direct and indirect violence. This, in turn, exacerbates vulnerabilities and exposure, which could lead to higher disaster impacts in this minority population.
- o Observing and monitoring climate risk
 - In FCV settings, women and children often take on the responsibilities of forecast and risk monitoring in the absence of men, for example, when they are called to serve in the armed forces, join non-state armed groups (NSAG) or in contexts where fatalities of men are high due to conflict and violence.
- o Communicating and disseminating alerts and climate information
 - In contexts of protracted conflict, high-intensity conflict, and contested territories, it is possible that the majority of the population consists of women, children, and the elderly (see Annex 3). When telecommunication infrastructure is compromised due to attacks or lack of maintenance, these population groups can be left behind without access to warnings.
- o Responding to warnings and climate information:
 - Early action planning requires the participation of diverse population groups, and it is crucial to support the participation of women, girls, and the LGBTQ+ community in an FCV-sensitive way.
 - Contingency planning at all levels, from national to community level, must include scenarios in which conflict and violence exacerbate gender-related vulnerabilities, leading to higher disaster risks. For example, a sudden escalation of conflict could lead to men being recruited, leaving women and girls responsible for all duties, including disaster evacuation (particular attention should also be given to pregnant women, who in the absence of health services in conflict settings are at highest risks). If, during peace times, women do not participate in simulation exercises, evacuation processes can likely fail.

The Implementing Partners could include these FCV considerations:

- When conducting a gender analysis in the design and implementation of CREWS-supported projects, include gender-based violence considerations as a result of past and present FCV dynamics.
- When working with women's groups and conducting women-only workshops, ensure a conflict sensitivity analysis before activity implementation to understand and minimise conflict risks.

3.4 CREWS Operational Procedures Note No. 4 - Accelerated Support Window

- o Eligibility and Funding Prioritization Criteria:
 - c. include FCV sensitive if a principle is added
 - j. Prioritisation will be given to actions that:
 - iv. Include target integration of FCV sensitivity
- o Action Development and Approval Stages
 - Stage one: submission of Action Presentation Note. In the same way, it is recommended to update the project template for larger projects, and it is crucial that at this stage, partner countries and IPs identify potential FCV considerations and scenarios that could jeopardise and severely delay implementation and delivery (consider this to adapt Annex 1 - Template for CREWS Action Presentation Note).
- o Risk Management
 - 27. To maintain all OP with standard terminology, include FCV instead of only fragile.
 - 28. Although it is practical for CREWS to demand that IPs apply their own risk management systems, this analysis recommends that this procedure is enhanced; IPs primarily focus on adapting to already materialised FCV challenges but do not fully anticipate and plan from the design phase a robust FCV risk analysis/ scenario planning and mitigation measures. Therefore, it is recommended that CREWS request a stronger FCV programming focus for its IPs.

3.5 CREWS Operational Procedures Note No. 5 - People-Centered Risk-Informed EWS

In contexts of high-intensity conflict and where the state does not have control of territories (contested territories), people-centred approaches are incredibly challenging, as access is limited and interventions of all types could exacerbate existing conflicts if not done in a conflict-sensitive way. For CREWS IP and sub-grantees to ensure a people-centered approach, it is essential to 1. conduct rigorous

and regular context analysis and 2. ensure collaboration with actors at the local level. Local leaders play a crucial role in understanding conflict risks, community tensions, power dynamics, people's access to information, as well as the capacity to deliver early action.

In FCV settings, special attention should be put on co-creating EWS with displaced populations living in camps, irregular settlements and peri-urban areas in high-risk locations, people with physical and mental disabilities due to direct or indirect FCV causes, people in remote areas with difficult to access with the presence of armed groups, people impacted by gender-based violence, people's whose livelihood and access to essential services are very limited. A more exhaustive list is found among other vulnerable populations facing the impacts of FCV (See Annex 3 – a detailed list of population groups).

The following sub-section analyses and recommends actions for the FCV inclusion in this Operational Procedures.

Rationale and Background

- Consider including “ CREWS projects design and implementation follows an FCV-sensitive approach, to ensure adaptability, flexibility and sustainability in the event of contexts specific challenges that can jeopardise CREWS funded operations”.
- Impact-based forecasting (IbF) in FCV settings requires special attention to the legacy of past political, conflict, and violent events. Understanding how these factors exacerbate risks is often an oversight when setting up IbF⁶. Conducting forensic investigations of disasters is a helpful approach for understanding how the impacts of fragility, conflict, and violence exacerbate disaster risks and for building impact tables that NHMS and NDMOs can use for IbF.
- 7. Consider acknowledging in this section that in most CREWS-supported countries, even low-intensity hazard events can have devastating consequences for the most vulnerable population, whose vulnerabilities have often been exacerbated due to FCV conditions.
- In the “People” description section, consider adding “people affected by armed conflict and violence”

Operationalising People-Centered Risk-Informed Early Warning Systems in CREWS

- 16. Context analysis and FCV sensitivity analysis are essential to ensure that people at risk do not suffer negative repercussions due to EWS interventions. For example, community EWS planning in territories with the presence of

⁶ It is important to recognize that investment in IbF in FCV settings requires a long-term process. Currently, many NMHS in FCV settings are limited to traditional hazard forecast services and warnings and are not yet in the process of developing IbF.

Non-State Armed Groups (NSAG) of different ideologies or backgrounds could put people in danger due to a lack of trust, misunderstanding of the objectives of the EWS process, etc. At the same time, if an EWS process at the community level is implemented with a sound understanding of context dynamics and it is FCV sensitive, it could be a conduit for dialogue among different parties to a conflict as it can be of interest for everyone to have a functional EWS.

- 17. See 4.2 Partner engagement recommendation.
- 19. End users of EWS, whose lives and livelihoods have been affected by conditions of fragility, for example, countries in post-conflict or ongoing conflict situations, including forcibly displaced populations, as well as people affected by gang violence, represent a part of the most vulnerable population where implementing a people-centred approach is very complex. Hence, co-production with strategic partners with characteristics like knowledge of the context, access to complex territories, and trust by communities and parties to a conflict is essential for effective EWS. It is recommended that IP map the critical actors with these characteristics and establish opportunities for collaboration.
- 20. Tools such as OpenStreetMap, which offer one of the most extensive data sets of exposure and, at some level, vulnerability information, are crucial in FCV settings where data is limited. OSM is a people-centered process by design and has the potential to be scaled up in the FCV context to enhance risk data by the people at risk themselves.
- 21. It is suggested to add FCV sensitivity to this section, as follows: “Understand and integrate local and traditional knowledge, risk perceptions, context analysis and FCV sensitivity on an ongoing basis during the implementation phase”
- 22. As indicated in point 22, resource allocation should also include resources in case of changes in context dynamics that might jeopardise people-centered processes; for example, in some contexts, workshops planned in a particular area might not be possible due to security. Hence, the project might incur higher costs.

Recommendations for methods and indicators to measure the success of people-centred risk-informed early warning systems.

- Proposed additional recommendations integrating an FCV lens:
 - In FCV settings, establish strategic alliances with national or subregional academic/research institutions during the design and initial stages of CREWS projects. These institutions could have better access and knowledge of complex territories to conduct M&E activities. For example, in a contested

territory where NSAG have control, a regional academic institution is more likely to be able to conduct surveys with the population than other actors. FCV sensitivity analysis should be conducted before minimising risks.

- IPs can integrate retrospective, forensic investigation of disasters into their M&E processes to more robustly inform the design of EWS in complex territories, following already existing methodologies (See the Honduras tropical storm Eta and Iota forensic analysis that integrates an analysis of the impacts of violence concerning disaster risks).
- A key to successful early action is clearly understanding the risks that can be reduced in a given context in the time window between a warning and a shock. In FCV settings, early action prioritisation must consider 1. Who is more likely to be impacted based on historical trends, what risks could be immediately reduced, and what actions would enable such reduction of those risks to avoid or minimise loss and damage? 2. What safety, security, political and logistical barriers exist under different scenarios that could jeopardise the implementation of actions? 3. Are early actions FCV sensitive? Could any early action exacerbate tensions at the local level? 4. Who are the critical trusted actors by parties to a conflict who could play a key role in warning communication and early action? 5. To what extent could early warning and action enhance community cohesion, dialogue and peacebuilding in FCV settings?

3.6 CREWS Operational Procedures Note No. 6 - Private Sector Engagement

- 2. Definitions: Private sector engagement should not be limited to the ones with experience and/or expertise in EWS. For example, in FCV settings, transport companies with no EWS experience could be strategic allies that enable early action.
- 4. Guiding principles: in the FCV Operational procedures, it is recommended to add this additional principle: “DO NO HARM¹⁵ – CREWS implementing partners will assess any “do no harm” concerns before engaging with the private sector”
- 6. Operationalisation
 - iii. Initial consultations: At this stage, it is recommended that potential private sector partners be evaluated with an FCV sensitivity lens. For example, 1. It is crucial to understand if the potential private sector partner has links to any non-state armed group or other parties to a conflict and if that represents a political and/or security concern. 2. Could any relationship with this private sector partner jeopardise the safety and security of EWS end users or any other stakeholder involved in the EWS value chain?

- The role of private sector media in FCV contexts: CREWS IPs and sub-grantees should consider strategic partnership with local radio stations in FCV contexts, as they are often the most reliable channel of communication (see Annex 5 for examples of local private radios in FCV countries)

3.7 CREWS Risk Management Approach

- 5. Any changes to the risk context: See recommendation in section 4.1 CREWS Operational Procedures Note No1 Programming and Project Development Annex 2.
- 6. In FCV settings, security, access and capacity of implementation can change rapidly, for example due to sudden escalation of conflict. Therefore, a six-month period to update on project risk contexts might not be sufficient to make necessary, timely strategic decisions.

Overall, this CREWS Risk Management Approach document is recommended to explicitly mention safeguarding concerning fragility, conflict and violence impacts. CREWS projects have experienced challenges in implementation due to the escalation of conflict, complex political changes (e.g., coup d'état), and exacerbated violence situations. Additionally, in the new FCV operational procedures, a safeguarding section should be included following recommendations already described in this analytical paper.

4. Context-specific strategies to enhance the effectiveness of CREWS operations in FCV for consideration in project design

4.1 Beyond LDCs and SIDS: CREWS pipeline countries prioritisation

This section offers direct recommendations for CREWS new strategy

The CREWS 2026-2030 strategy is an opportunity to expand CREWS coverage to FCV settings, which are not recognised under the LCD and SIDS categories. Regions such as the Middle East are highly vulnerable to the impacts of Climate Change due to their high levels of FCV related vulnerability and exposure. Yet, CREWS is only supporting one country in the Middle East (Yemen).

Countries affected by recent conflict, those not historically classified as LDCs (pre-conflict), are currently suffering extreme social, economic, environmental and political vulnerability. However, under the criteria of classification of LDC¹⁶, they are not eligible for CREWS support. LDC selection takes a historical perspective in the classification, based on long-term structural criteria rather than recent crisis. Yet, in cases like Syria, which was not considered an LCD before 2011, currently, after more than a decade of protracted, high-intensity conflict with contested territories, the economic and social indicators are similar or even lower than other LDCs. This fact raises a critical red flag for CREWS to reconsider its criteria for selecting countries eligible for EWS investment support. The change in the political environments and the growing interest of donors in supporting FCV contexts offer CREWS an opportunity to take a bold approach to more consistent and long-term support of FCV countries.

Additionally, this analytical paper argues that from a climate security perspective (see section 4.3), it is critical to support FCV settings to minimise the exacerbation of future disaster risks, that if not managed, could act as threat multipliers, increasing grievances, tensions, insecurity, and political volatility.

4.2 Protection of CREWS Hydrometeorological Infrastructure Investments

This section offers direct guidance and ideas for CREWS secretariat to engage, however it is also intended to inform a wider set of actors, including IPs, as well as protection relation organizations.

It is essential that hydrometeorological infrastructure is safeguarded in FCV settings for the protection of the population. Direct or indirect consequences of FCV conditions can impact CREWS investments in infrastructure⁷.

Table 5 describes the type of hydrometeorological infrastructure that can be affected and the negative impacts these assets can endure under four types of FCV settings. This is followed by recommendations for CREWS to enhance its role in protecting and safeguarding its investments⁸. It is important to mention that in FCV settings, especially those affected by protracted conflicts, infrastructure is very limited compared to safe, non-conflict-affected territories.

⁷ Note that CREWS only invests on small scale procurement, which of course is equally important to be protected and safeguarded when conflict arise. The investments referred in this section are the ones procured by the IPs.

⁸ Disasters occurring in FCV contexts can also directly damage or destroy hydromet infrastructure, and in FCV contexts, the wherewithal to rebuild/repair them can be a challenge (lack of access, finance, absence of local installers, procurement into country, insecurity, etc.)

| Hydrometeorological Infrastructure* | Institutional Fragility potential impacts | Contested Territories potential impacts | High Intensity conflict potential impacts | Protracted conflict potential impacts |
|--|--|--|---|---|
| <p>Weather Stations: Equipped with instruments to measure temperature, humidity, wind speed, and direction, atmospheric pressure, and precipitation.</p> <p>Rain Gauges: Devices that measure the amount of rainfall over a specific period.</p> <p>Hydrological Stations: Facilities that monitor water levels, flow rates, and quality in rivers, lakes, and reservoirs.</p> <p>Radar Systems: Used for detecting and tracking weather patterns, particularly precipitation.</p> <p>Doppler Radar: Specialized radar used to measure the velocity of precipitation, helping to predict severe weather events like tornadoes.</p> <p>Buoys: Floating devices equipped with sensors to measure sea surface temperature, wave height, and other oceanographic data.</p> <p>Automated Weather Observing Systems (AWOS): Systems that provide real-time weather data at airports.</p> <p>Climate Monitoring Networks: Networks of stations and sensors dedicated to long-term monitoring of climate variables.</p> <p>River Gauging Stations: Measure the flow and discharge of rivers, critical for managing water resources and flood forecasting.</p> | <p>1. Not maintained due to lack of financial resources by the NHMS, as well as limited human resource capacity able to reach all territories in a country where infrastructure is located.</p> <p>2. In some contexts vandalism and pillage can render the infrastructure inoperable.</p> <p>3. In some context, there are not enough resources for the wide range of hydro met infrastructure, therefore it is limited to few options.</p> <p>4. These governmental infrastructure is often not prioritized compared to other critical infrastructure such as roads, dams, health centers etc.</p> <p>5. Regular power failures that cause interruptions of power supply, common in these contexts, could also have an impact in the damage and decay of AWOS or other equipment that requires electricity.</p> <p>6. The private sector (hydro met) tend to install their own hydro met infrastructure, offering services to NHMS, yet such infrastructure tends to be located in areas of economic interest and not necessarily where the most vulnerable people live, however there are exceptions for example in the cases of territories with petroleum and mining extraction.</p> <p>7. Some hydro met infrastructure in fragile contexts is located at the airports or military facilities, hence it tends to be protected.</p> | <p>1. Often infrastructure is non-existent due to access restrictions by NSAG to government personnel, for example NHMS staff.</p> <p>2. If it exist, maintenance is limited due to security concerns making it more challenging to both access and replace necessary parts due to potential damage and/or looting, creating logistics concerns also due to NSAG presence.</p> <p>3. Hydro met infrastructure in contested territories is not well known by parties to a conflict, making it vulnerable to attacks, pillage etc. (Note: some of the impacts described in IF can be applicable to CT)</p> | <p>1. Direct or collateral damage due to bombs, missiles, landmines etc. (There is no evidence that weather stations are directly targeted by parties to a conflict), informal evidence suggest that in some contexts they are cases of damage, more research is needed to understand this.</p> <p>2. Due to lack of access and other priorities, infrastructure is neglected and as a result damaged over time.</p> <p>3. EWS investments are on hold during high intensity conflict, due to high levels of risks, therefore hydro met infrastructure installation and maintenance is stopped. (Note: some of the impacts described in IF can be applicable to HI)</p> | <p>1. In addition to the impacts mentioned in IF contexts, hydro met infrastructure in contexts of protracted conflict are often not installed in all parts of a country, they are limited to areas with easy access and less security concerns.</p> <p>2. Infrastructure can be also damage directly and indirectly by acts of war, as described in High intensity contexts.</p> <p>3. Military forces tend to have their own hydro met infrastructure and EWS capacity, however this resource is not shared with other actors and communities. (More research is needed to understand at what extent military forces collaborate with NHMS on weather forecast).</p> <p>4. In PC sudden changes in governance (new governments, coup d'état etc), can have serious implications in the capacity of the NHMS to deliver services, linked to the impacts mentioned in IF contexts.</p> <p>5. Some hydro met infrastructure in fragile contexts is located at the airports or military facilities, hence it tends to be protected.</p> |

* A similar analysis is recommended for telecommunications infrastructure. (WMO pointed out that destruction/damage of this infra is often more in danger than hydro met infra.

Table 5: Potential impacts on hydrometeorological infrastructure in FCV settings

The role of International Humanitarian Law in the protection of hydrometeorological infrastructure

Hydrometeorological infrastructure is increasingly becoming more and more relevant under our changing climate; predicting hazards in the short/medium term and advancing climate modelling for future climate projections are critical for society's well-being. In this context, it is also essential to consider the strategic protection of this infrastructure from a climate security perspective. Applying an International Humanitarian Law (IHL) lens, Hydrometeorological infrastructure is considered a civilian objects. Hence, it should be respected and protected in situations of armed conflict. Even during high-intensity conflict, this infrastructure should continue performing its function. For this, it should not be attacked or endure indirect damage. Recording observations (see type of infrastructure) and maintenance should be possible under the necessary safety and security protocols.

Yet, in practical terms, this infrastructure is not on the radar of institutions and people focused on the awareness, application and study of IHL. This represents an opportunity for CREWS and other partners to:

- Engage in strategic discussions with organisations such as the ICRC, the International Institute of Humanitarian Law, the Norwegian Refugee Council, the International Criminal Court, and others to identify avenues of cooperation to create resources and strategic and tactical plans to educate conflict parties, NHMS, other EWS actors, and civilians on IHL⁹.
- Collaborate with relevant stakeholders to identify and map vulnerable hydrometeorological infrastructure in FCV settings, especially those in conflict. This would provide valuable information to conflict parties and other relevant actors on the essential nature of such infrastructure and the need to protect it.
- Encourage, through collaboration with IHL actors, that parties to a conflict take measures to minimise the risk of damage or destruction of hydrometeorological infrastructure, as mentioned above.

Programmatic recommendations for CREWS projects

During project design:

- Comprehensive risk analysis indicating to what extent CREWS infrastructure investments could be affected (see Table 5) and under which scenarios.
- Strategic thinking about where infrastructure should be placed due to the prevalence/likelihood of conflict.
- Designing mitigation measures to reduce risks of damage and decay due to the impacts mentioned in Table 5.
- Identify strategic partnerships with actors that could support the protection and safeguarding of hydrometeorological infrastructure under the different scenarios.

⁹ Note: A key role for CREWS in relation to IHL could be on increasing awareness of the entities of CREWS, rather than engaging directly on the topic.

- Along with climate-related stress testing, FCV stress testing¹⁰ should also be integrated into a sample of infrastructure investment.
- Align strategically with the Systematic Observations Financing Facility (SOFF) on how to jointly safeguarding infrastructure investments in times of crisis.

During project implementation:

- Establish partnerships with the identified actors in the design phase and define protection and safeguarding protocols¹¹. Partners could include local private companies, civil society organisations, military forces, the ICRC (or other IHL-related humanitarians), and others. The selection of partners must follow a strict FCV sensitivity analysis.
- Set aside financial recourses (e.g. crisis modifier) to enable adaptable programming to safeguard infrastructure. For example, in exceptional cases, reaching specific infrastructure for reparations or critical maintenance might require helicopters to transport specialised staff. When possible, a cost-benefit analysis of potential increases in the budget due to FCV conditions is recommended to identify the economic viability).
- Identify to what extent infrastructure could be uninstalled and stored temporarily in case of high-intensity conflict and high likelihood of damage.
- Update FCV contingency plans regularly to ensure NHMS staff and partners can anticipate and react promptly to any FCV situation, following the established protocols.

4.3 EWS in the context of Climate Security

This section is intended to offer ideas to CREWS secretariat, it has a policy focus that could be also used by IPs and other actors working on EWS.

Climate change does not directly cause conflict. The increase in fragility conditions, conflict dynamics and levels of violence are due to a multitude of political, cultural, economic, and social factors that affect society in a multifaceted way. In a warming world, such factors can be influenced differently, some becoming treat multipliers that can contribute to a change in FCV conditions. Structural risk reduction strategies and practices at all levels, from DRR Governance to community DRR enhancements, can be crucial contributors to reducing the risk of disasters, directly influencing FCV conditions¹⁷⁻²⁰. With this perspective, EWS can play a crucial role in minimising the risks that can exacerbate FCV dynamics.

In recent years, climate security discussions have been predominantly led by Ministries of Defence, focusing on the greening of the military and the geopolitical implications of climate change, such as scenarios of new transport routes in the Arctic and the drastic changes this can make in the world²¹. In July 2024, NATO established a Center of Excellence on Climate Security, focusing primarily on supporting NATO member countries to prepare for the future

¹⁰ FCV Stress Testing refers to the process of evaluating individual projects to identify if activities and the expected outcomes are robust enough to resist the impacts experienced in FCV settings (see Table 1)

¹¹ During the design of the CREWS Operational Procedures, it is recommended that a safeguarding protocol for CREWS-supported assets be developed.

implications of Climate Change. In parallel, the UN Security Council's permanent and non-permanent members, such as the United States, Germany, and Switzerland, have championed climate discussions exploring future security challenges under a changing climate. More recently, the selection of Somalia and Pakistan as non-permanent members will likely influence the Security Council discussions on climate security from an adaptation perspective¹². Given the Early Warning for All (EW4A) agenda of the UN Secretary-General, it might be the case that both political agendas converge at a certain point.

The field of environmental peacebuilding has also tackled the challenges of a changing climate concerning security and instability, especially looking at the linkages between environmental degradation and conflict, with an essential role for water in this discussion²². Meanwhile, in the field of EWS, climate security is a nascent topic. With this perspective, this analytical paper argues that it is crucial for CREWS and its implementing partners to recognise that the emerging field of climate security is an important one to engage by:

- Recognising that EWS can significantly contribute to the reduction of preconditions of FCV. *(Intended for CREWS secretariat and IPs)*
- Understand that the processes applied in the design, implementation, and sustainability of EWS are unique in enhancing social and political cohesion at all levels. *(Intended for IPs and other actors in the EWS/AA space)*
- Exploring opportunities for collaboration with actors such as the NATO Center of Excellence, the Climate and Security Advisory Group (CSAG), the Stockholm International Peace Research Institute (SIPRI) and other emerging Climate Security actors, including the military, who can play a crucial role in EWS. *(Intended for CREWS secretariat)*

4.4 CREWS' attention to displaced populations

This section is intended to highlight attention to the need of more attention to displaced population in the EWS process. CREWS can play a political and strategic role by funding EWS for displaced population, while IPs have the role to design interventions tailored to this population group in collaboration with the respective governments and non-governmental partners.

Forcibly displaced populations, internally or refugees, have often been absent from EWS planning. However, communities in situations of displacement and humanitarian actors have advanced in the dissemination of warning messages in some contexts; overall, EWS and humanitarian Anticipatory Action processes are not tailored to displaced populations. Yet, natural hazards often severely impact people living in camps or other at-risk locations, given the high levels of vulnerability. Fortunately, the political and practical recognition of the need to enhance EWS has grown, especially as humanitarians who often support these populations recognise that it is essential to have a system that allows communities to

¹² Based on expert knowledge from the author.

anticipate already very complex crises. The Anticipation Hub developed a working paper on this topic, highlighting the challenges and opportunities to anticipate disasters in these contexts²³. For CREWS, increasing its focus on reaching out to displaced populations in collaboration with programmes such as WISER MENA²⁴, which focuses on climate and weather services for Internally Displaced Population (IDPs), is a crucial opportunity to achieve its expected 2030 results. In addition to enhancing access to forecast warnings, there is a crucial need to improve vulnerability and exposure data, especially open source such as OpenStreetMap²⁵. It is also essential to integrate systems that can track people's mobility within the EWS process, as this is essential for a functional EWS in these contexts; for example, in Honduras in 2020, during tropical storms Eta and Iota, the migrant and violence related displaced population were left behind EWS, this was a wake-up call to make efforts to change the way EWS support these populations²⁶⁻²⁸.

4.5 Prediction of conflict and other situations of violence

This section is intended for CREWS to evaluate in relation to their priority thematic areas.

The CREWS complete results framework is the only document screened for this analytical paper that refers to man-made hazards. As described in the Sendai Framework for DRR, societal hazards also refer to conflict and violence, including terrorism, armed conflict and other forms of violence²⁹. It is recommended for CREWS to clarify if these hazards apply to the context of CREWS projects, as this can open a critical strategic discussion related to:

- Need to consider new IPs specialised in conflict-related EWS.
- Funding for conflict EWS projects. Although EWS for conflict and other violent situations are not new, attention has grown to this area in recent years and is also related to the growing focus on climate security. Suppose this is a direction CREWS is interested in including in its new strategy, it is recommended to collaborate with actors such as the Peace Research Institute Oslo (PRIO), the Uppsala Conflict Data Programme (UCDP), the Conflict Prevention and Early Warning Network (CEWARN), the Early Warning Project of the U.S Holocaust Memorial Museum and Dartmouth College, among others.
- Humanitarian organisations are exploring the possibilities of expanding Anticipatory Action approaches to conflict prediction, , focusing on anticipating the humanitarian impacts of conflict. Although this is a nascent topic, it is of high interest to organisations such as OCHA, FAO, and Start Network, among others. The Anticipation Hub's Anticipatory Action in Conflict working group includes this topic in its focus areas. A key question for CREWS is whether interest is in supporting and advancing these humanitarian efforts.
- Increasing attention is given to developing methodologies and establishing EWS for compound crises. In FCV settings, this means integrating natural hazards and conflict monitoring as a single or coherent EWS. More research and support are needed to advance this emerging priority of EWS.

4.6 EWS role in social cohesion in FCV contexts

This section is intended to offer ideas to CREWS secretariat for their new strategy and future funding priorities in FCV contexts, and importantly to support IPs integration of this topic in their programming.

As EWS continue expanding in FCV settings, there is an opportunity to explore from a research and practical perspective to what extent EWS processes could positively impact enhancing and preserving social cohesion, particularly those activities involving dialogue among different stakeholders, including parties to a conflict. Social cohesion refers to the strength of relationships and the sense of solidarity among community³⁰. It involves mutual trust, shared value and a sense of belonging, which helps maintain social stability and promote cooperation and support in a community. Research has shown how social cohesion variables such as social capital, sense of community, social participation, and place attachment are crucial in the context of recovery and post-conflict³¹. At the same time, evidence shows that in the wake of conflict, activities to enhance social cohesion require considering aspects across race, ethnicity, gender, class and generation, which are essential for building sustainable peace³².

The environmental peacebuilding¹³ community and research institutions such as the Overseas Development Institute (ODI) have highlighted the critical role of Disaster Risk Reduction as a channel for social cohesion. In the context of EWS, this is a thematic area that is nascent and not documented. However, there is evidence that development interventions in post-disaster and post-conflict contexts have enhanced social cohesion. Could this be the same for EWS processes? This analytical paper argues that CREWS investment could be essential for strengthening social cohesion in FCV contexts by designing project activities that integrate learnings from other developmental social cohesion experiences. This point is connected to the arguments described in the Climate Security section of this paper.

CREWS investments could support social cohesion by:

- Integrating learnings from social cohesion processes in development interventions into EWS projects. This will require the production of guidance, training of IPs, and more generalised awareness raising by the CREWS Secretariat, IPs and others to begin to exercise this expertise in EWS projects. IPs tend to be attuned to natural actor dynamics more so than broader social cohesion dynamics.
- Ensuring CREWS projects in FCV settings include actors who are experts in social cohesion and peacebuilding to inform EWS programming. Secretariat could bring in these experts to undertake specific analyses and support broader advocacy work through seminars, network meetings, community of practice on contributions of EWS to pathways to peace/social cohesion.

¹³ <https://www.environmentalpeacebuilding.org/>

4.7 GCF growing focus on FCV settings and its potential for EWS

This section is intended to provide ideas to CREWS secretariat, as this is a key strategic topic.

As the Green Climate Fund increases its support to FCV settings, demonstrated by the recent developments in Somalia¹⁴, where GCF will invest 100 million USD in climate action. The strategic partnership between CREWS and GCF³³ offers a significant opportunity for CREWS to increase its reach and delivery in FCV settings. As described in section 4.1, CREWS's new strategy is an opportunity to define its strategic priorities for FCV settings, which can be done in collaboration with GFC.

This momentum also aligns with the GFC's growing support for development and humanitarian actors to help governments design and implement EWS. See Annex 6 for a detailed list of GCF EWS-funded projects describing LDCs and FCV-affected countries. Under the leadership of the respective governments¹⁵ GFC and CREWS could support FCV-sensitive and well-coordinated projects jointly, in partnership with implementing partners, to avoid duplication of efforts and investments. Ensuring strategic investments are part of broader climate adaptation and risk reduction investments that would contribute to social cohesion and peacebuilding.

4.8 Additional context-specific topics relevant to CREWS

This section is intended to offer ideas to CREWS secretariat for new funding priorities, and it can be used to influence donor and other organizations in the EWS space.

Several topics deserve more analysis and attention for the set up of effective EWS in FCV settings; this analytical paper recommends CREWS further analysis of:

- Levering remittances in FCV settings to enhance EWS.
- Post-conflict reconstruction as a crucial opportunity for EWS.
- Non-State Armed Groups (NSAG) role in Early Warning Systems.
- Potential of expansion of Artificial Intelligence advances by Global North NHMS (including ECMWF) to FCV contexts.
- Inclusion of displaced populations in EWS.

¹⁴ <https://www.greenclimate.fund/news/green-climate-fund-and-somalia-accelerated-usd-100-million-investment-partnership>

¹⁵ It is important to note that under specific guidelines, the World Bank may limit its ability to work directly with Governments where governance issues exist. For example, as demonstrated in recent years in Afghanistan, Syria, Venezuela, Myanmar, Yemen, South Sudan, Niger, Mali, Haiti and Ethiopia (it is recommended to review this information with the CREWS- WB implementing team)

5. Recommendations on Steps to Develop Operational Procedures on CREWS Programming in FCVs

5.1 Road Map

This analytical paper, along with the document prepared for the 19th Steering Committee, sets the foundations for the design of the FVC operations procedures. **This section recommends steps to achieve the Steering committee's request to the CREWS Secretariat.**

- Conduct interviews with country partners in at least 10 FCV countries to identify the root causes of EWS failures in each country and the priority investments needed to enhance FCV-sensitive EWS (See proposed questions in section 2.3). This should include discussion with experts involved in developing the EW4All Roadmaps in FCV countries.
- Send a survey to country project managers and coordinators from the three IP organisations in all FCV countries supported by CREWS (countries included in Figure 2³⁴). This survey will provide robust evidence and concrete examples of project cancellations, 'drops', and modifications in the FCV context of the last years.
- Conduct interviews with universities and research institutions of at least 5 FCV contexts to identify research priorities.
- Conduct a sample of 3 or 4 forensic investigations of disasters in FCV settings to inform priority areas of programme development and investments. If possible, it would be ideal to conduct such a process for all CREWS-supported FCV countries (e.g. [Retrospective analysis of the 2018-2020 humanitarian food and water crisis in Western Province, Zambia](#))
- At a more strategic level, CREWS could enable global, regional, and country partners to engage in round-table workshops to advance the exchange of lessons and a way forward for coordination and coherence in EWS in FCV settings. This analytical paper, the new GFDRR report on EWS in FCV settings, and the UNDRR-WMO Center of Excellence handbook on EWS in FCV offers the right evidence-based approach to creating meaningful space for discussion, collaboration, and action planning. Results from this could contribute to developing a detailed Annex of activities for the FCV Operation Procedures that CREWS could fund.
- Develop the operational procedures in close collaboration with GFDRR, Disaster-FCV Nexus Global Program and WMO-UNDRR Center of Excellence team.
- Conduct a short FCV sensitivity training for CREWS secretariat staff (and other WMO staff) tailored to CREWS programming.

5.2 Proposed Outline

This is a sample of an outline informed by other CREWS operational procedures, integrating unique FCV-relevant elements.

Title - CREWS Fragility, Conflict and Violence-affected Settings Operational Procedures

Intro text

- Describe what FCV is, the terminology, and the typology to be used by CREWS. Building on already existing literature used in this paper.

Rationale and background

- Decision by the Steering Committee on why this procedure is necessary, building on the 19th Steering Committee FCV document.
- Describe global, ongoing processes, such as the COP28 Climate, Relief, Recovery, Peace Declaration, the Sendai framework mid-term review of FCV considerations, the Coalition for Climate Action in Fragile and Conflict contexts, the Anticipation Hub, AA in conflict practitioners group.
- Describe to what extent CREWS plans to enhance operations in FCV settings align with other partners' FCV plans, such as the GCF and the Global Environmental Facility (GRF).
- Include important actors, mentioning the role of the HDP nexus in EWS in FCV contexts.
- Include a short description of lessons from previous CREWS projects in FCV.
- Finalize with a short description of the plans to integrate FCV in the new 2026-2030 CREWS strategy.

FCV programming in CREWS projects

- Draw from the recommendation provided in this analytical paper and the activities described in the road map (section 5.1). Describe approaches that CREWS might adopt, such as:
 - FCV sensitivity, including do no harm principles.
 - Safeguarding of CREWS investments, including the potential role of IHL.
 - Enhanced FCV scenario planning and FCV stress testing for projects.
 - Flexible, adaptable planning
 - Joint strategic and tactical planning with HDP and climate nexus partners.
 - Reinforcing inclusive and people-centered approaches with people affected by FCV for the design and implementation of projects.
 - Long-term EWS capacity building of local actors, especially those that can operate in difficult-to-access places.

Roles and Responsibilities

- A standard description is presented in other operational procedures, including specific responsibilities to ensure the strategic design and implementation of FCV programming recommendations given in the previous section.

Measuring the success of CREWS in FCV settings

- Draw from M&E recommendations provided in the analytical paper and discussion with CREWS Implementing Partners.

Recommended Annexes

Annex 1 – CREWS priority activities to be funded in FCV settings. Building in table 1 of this analytical paper.

Annex 2 – Examples of scenarios and contingency planning to be used by CREWS IPs during the design and implementation of projects. This could build on the climate storyline approach but with an FCV focus.

Annex 3 – List of FCV policies and strategies of CREWS implementing partners.

Annex 1 – Detailed analysis of FCV implications in the EWS value chain (click here to see details in Excel document)¹⁶

*Sample image – not legible for review. For review see Excel Document

Annex 2 – Key EWS in FCV settings literature¹⁷

| Year | Resource | Type | Institution | Authors | Background |
|------|--|----------------|--|--|---|
| 2020 | An Agenda for Expanding Forecast-Based Action to Situations of Conflict | Working Paper | GPPI and Red Cross Red Crescent Climate Centre | Marie Wagner and Catalina Jaime | This paper argues that Forecast-based Action (FbA) could be expanded to conflict situations and outlines practical. Considerations for how to approach this complex endeavour. |
| 2021 | Compound Risk Analysis: Climate & Conflict in Sudan Hot Spot Mapping to inform Anticipatory Action and OpenStreetMap mapping | Story Map | Red Cross Red Crescent Climate Centre | Cornelia Scholz, Catalina Jaime and Mark Weegmann | This story map presents OSM as a tool to enhance exposure to information in conflict settings, in the case of Sudan. |
| 2022 | What was known: Weather forecast availability and communication in conflict-affected countries | Academic Paper | University of Twente and Red Cross Red Crescent Climate Centre | Catalina Jaime Erin Coughlan de Perez Maarten van Aalst Emmanuel Raju Alexandra Sheaffer | This paper examines whether global forecast models predicted historical floods in conflict-affected regions and whether weather forecast information was communicated for droughts by retrospectively analysing the most severe disaster events and historical forecast information. |
| 2023 | Anticipatory action in refugee and IDP camps: challenges, opportunities and considerations | Working Paper | Anticipation Hub | Evan Easton Calabria, Catalina Jaime and Benjamin Shenouda | In the past decade, the number of climate disasters and people displaced by conflict has risen globally, illustrating a pressing need to understand better how already displaced people are impacted by climate disasters. Drawing on case studies from Bangladesh and Syria, this report from the anticipatory action in |

¹⁶ By the author, this table will continue to be developed to enhance it further.

¹⁷ By the author. This can be expanded further to include other relevant literature.

| | | | | | |
|------|--|----------------|--|--|--|
| | | | | | conflict working group identifies some factors to consider when designing anticipatory actions in refugee and internally displaced persons camps. |
| 2023 | Early warning systems and early action in fragile, conflict, and violent contexts: Addressing growing climate & disaster risks | Policy Paper | WMO and UNDRR Center of Excellence | WMO and UNDRR Center of Excellence | This policy paper presents key considerations and calls for action to ensure that all relevant EWS stakeholders, especially donors, humanitarian and development agencies, and civil society actors, support countries in contexts of fragility, conflict, and violence. |
| 2024 | Beyond the forecast: Knowledge gaps to anticipate disasters in armed conflict areas with high forced displacement | Academic Paper | University of Twente and Red Cross Red Crescent Climate Centre | Catalina Jaime, Erin Coughlan de Perez, Maarten van Aalst and Evan Easton-Calabria | This paper answers the question: What is the state of knowledge of EWEA for climate hazards in countries affected by armed conflict and high levels of forced displacement? Findings demonstrate that most research focuses on climate science rather than social science across six elements of the EWEA value chain: 1. hazards analysis, 2. understanding vulnerability and exposure, 3. Warning communication and dissemination, 4. forecasting availability and monitoring, 5—early action planning, and 6. financing systems. |
| 2024 | EWS in FCV settings | Report | GFDRR | Lara Loussert, Moussa Sidibe, Karima Ben Bih and Esesua Olubukola Ikpefan | This study, led by the Global Facility for Disaster Reduction and Recovery (GFDRR) teams working on the Disaster-FCV Nexus thematic area and the Hydromet Services and Early Warning Systems thematic area aims to contribute to GFDRR's overarching objective: to help low- and middle-income countries understand and reduce their vulnerability to natural hazards and climate change. More specifically, the purpose of this report is to provide valuable insights into the nuances of early warning systems (EWS) implementation within fragile, conflict, and violence (FCV)-affected contexts against growing natural hazards, offering practical recommendations and identifying entry points for enhancing stakeholder coordination, optimising resource allocation, and fostering community resilience. |
| 2024 | Handbook on Early Warning Systems and Early Action in Fragile, Conflict, and Violent (FCV) Contexts: Addressing growing climate and disaster risks | Handbook | COE - WMO and UNDRR | COE - WMO and UNDRR | This document aims to identify the basic requirements for EWS in fragile-, violent, and conflict-affected countries and provide considerations and guidance to further the implementation of EWS in FCV contexts. The Handbook can help: <ul style="list-style-type: none"> • Support the implementation of EWS in FCV contexts • Foster common understandings and expectations of EWS in FCV contexts • Enable joint planning and approaches • Support multi-stakeholder and cross-sectoral collaboration • Strengthen monitoring of EWS in FCV contexts. |

Annex 3 – Population groups at high risk of disasters in FCV settings¹⁸

This list is a sample of people impacted by FCV conditions and likely to be impacted by hazards, which could further exacerbate their vulnerability. These sub-populations groups should play an active role in the design of people-centered 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 |
| 2. Women | Street children |
| | Pregnant women |
| | Mothers with young children |
| | Survivors of sexual and gender based violence |
| | Female headed households |
| 3. Elderly | Widows |
| | 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 |
| 10. Combatants, Veterans and people in detention | Former child soldiers |
| | Veterans with PTSD |
| | Disabled veterans |
| | Demobilized combatants |
| | Individuals deprived of liberty (in detention centers/jails) |
| 11. Civilians in High Intensity Conflict Zones | Rural villagers |
| | Urban residents |
| | Business owners and workers |
| 12. Health Care Workers | Farmers and agricultural 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 illegal crops) |
| | Indigenous communities |
| | Nomadic groups |
| 16. Urban Poor | Fishing communities |
| | Slum dwellers |
| | Informal sector workers |
| | Homeless individuals |
| | Squatters |

¹⁸ By the author, building on multiple grey and academic research and expert knowledge.

Annex 4 - Example of Non-State Armed Groups (NSAG) in FCV countries, some of them supported by CREWS¹⁹

| Examples of FCV countries | Non-state armed groups (NSAG) |
|---|---|
| Syria | Various Rebel Groups and ISIS: Different factions, including the Free Syrian Army, Kurdish forces (SDF/YPG), and remnants of ISIS, have controlled various regions. |
| Yemen | Houthi Rebels: Control significant parts of northern Yemen, including the capital, Sana'a. |
| | Southern Transitional Council (STC): Control parts of southern Yemen. |
| Somalia | Al-Shabaab: Controls rural areas and some towns in southern Somalia. |
| Nigeria | Boko Haram: Controls areas in the northeast. |
| | ISWAP (Islamic State West Africa Province): Splinter faction of Boko Haram with control in the Lake Chad region. |
| Colombia | ELN (National Liberation Army): Controls remote rural areas. |
| | FARC Dissidents: Some factions continue to control territories despite the peace agreement. |
| Iraq | ISIS: Though largely defeated, remnants still control some areas. |
| | PMF (Popular Mobilization Forces): Some groups within this umbrella have significant control, especially in Shia-dominated areas. |
| Myanmar | Ethnic Armed Groups, such as the Kachin Independence Army (KIA), Shan State Army (SSA), and others, control various regions. |
| DR Congo (Democratic Republic of the Congo) | Various Armed Groups, including the Allied Democratic Forces (ADF), Mai-Mai groups, and others, control parts of the eastern provinces. |
| Mali | Jihadist Groups: Various factions, including those affiliated with Al-Qaeda and ISIS, control parts of northern and central Mali. |
| Central African Republic | Seleka and Anti-Balaka Militias: Control different parts of the country. |
| Libya | Various Militias and Factions: Control different regions post-Gaddafi, including parts of Tripoli and eastern Libya. |
| Mexico | Drug Cartels, such as the Sinaloa Cartel, Jalisco New Generation Cartel, and others, control parts of various countries, especially in the west and north. |
| Philippines | Abu Sayyaf and Other Islamist Groups: Control parts of the southern region, particularly in Mindanao. |

¹⁹ OpenAI. (2024). *ChatGPT*. Reviewed by the author, it is recommended to expand to other countries and sub-regions within countries for operational purposes.

Annex 5 - This list is a sample of local radios critical for Early Warning communication and dissemination in FCV contexts²⁰.

| Country | Radio stations and their focus |
|----------------------------------|--|
| Afghanistan | Radio Azadi: Operates to provide news. |
| | Radio Killid: Part of the Killid Group, offering local news and programs. |
| Somalia | Radio Ergo: Focuses on humanitarian issues and is operated by the International Media Support group. |
| | Radio Shabelle: One of the leading community radio stations. |
| Yemen | Radio Lana: Provides educational programs and news updates, focusing on local communities. |
| | Radio Yemen Times: Focuses on peacebuilding and conflict resolution. |
| Democratic Republic of the Congo | Radio Okapi: A UN-backed station that provides news and peacebuilding programs. |
| | Radio Maendeleo: Focuses on local development and community issues. |
| Central African Republic | Radio Ndeke Luka: Supported by Foundation Hironnelle, providing news and information. |
| Mali | Studio Tamani: A network of community radios providing news and fostering dialogue. |
| | Radio Kledu: Engages in discussions on social and political issues. |
| South Sudan | Radio Miraya: UN-run, providing news and information to local communities. |
| | Eye Radio: Offers a mix of news, education, and entertainment. |
| Myanmar | DVB (Democratic Voice of Burma) operates both in the country and from abroad to provide news to Myanmar citizens. |
| | Mizzima: Engages in community reporting and news distribution. |
| Colombia | Radio Nasa: Run by the indigenous Nasa people, focusing on local issues and cultural content. |
| | Radio Guatapurí: Serves local communities with news and educational programs. |
| Philippines | DXUP FM: A community radio station in Mindanao focusing on peace and development. |
| | Radyo ni Juan: Provides news and public service programs. |
| Haiti | Radyo Lekol: Focuses on education and community issues. |
| | Radio Tele Ginen: One of the popular community stations providing local news. |
| Syria | Radio Rozana: Offers independent news and information, often operated from outside the country due to safety concerns. |
| | Radio Fresh: Operated in opposition-held areas, focusing on local news and community issues until it was forced to close due to attacks. |

²⁰ OpenAI. (2024). *ChatGPT*. It is recommended to review and expand by Implementing Partners.

Annex 6 – List of GFC-funded EWS projects and implementing partners²¹

| Country | GCF IP | Project | LDC | FCV |
|--------------------|--------|---|-----|-----|
| Malawi | UNDP | Enhancing the resilience of vulnerable communities to climate change through EWS. | Yes | Yes |
| Madagascar | UNDP | Strengthening the climate resilience of rural communities through enhanced EWS. | Yes | No |
| Senegal | CSE | Strengthening climate resilience through improved EWS. | Yes | No |
| Zambia | UNEP | Climate-resilient infrastructure and EWS. | Yes | No |
| Mauritania | UNDP | Improving climate resilience through integrated EWS. | Yes | Yes |
| Niger | WMO | Strengthening climate information and early warning systems. | Yes | Yes |
| Uganda | UNDP | Building resilience to climate change through EWS. | Yes | Yes |
| Benin | UNDP | Enhancing EWS for climate risk management. | Yes | No |
| Sudan | UNDP | Strengthening climate information and EWS. | Yes | Yes |
| Bangladesh | KfW | Climate-resilient infrastructure and EWS for coastal communities. | Yes | Yes |
| Sri Lanka | UNDP | Developing and implementing national EWS. | Yes | No |
| Vanuatu | UNDP | Strengthening national and regional EWS for disaster risk reduction. | Yes | No |
| Fiji | SPREP | Regional projects are enhancing EWS across the Pacific. | No | No |
| Solomon Islands | SPREP | Strengthening EWS as part of climate resilience efforts. | Yes | No |
| Nepal | UNDP | Strengthening EWS in mountainous regions. | Yes | No |
| Mongolia | UNDP | Enhancing EWS for extreme weather events. | No | No |
| Bhutan | UNDP | Strengthening EWS for climate adaptation and disaster risk management. | Yes | No |
| The Philippines | LBP | EWS for disaster preparedness in vulnerable regions. | No | No |
| Papua New Guinea | SPREP | Regional EWS initiatives for climate resilience. | Yes | Yes |
| Timor-Leste | UNDP | Enhancing early warning systems and climate resilience for rural communities. | Yes | Yes |
| Moldova | UNDP | Implementation of advanced EWS for climate risks. | No | No |
| Armenia | UNDP | Strengthening national EWS to manage climate hazards. | No | No |
| Georgia | UNDP | Development of EWS for flood and landslide risks. | No | No |
| Tajikistan | UNDP | Enhancing resilience through improved EWS. | Yes | No |
| Kyrgyzstan | UNDP | EWS as part of national climate adaptation strategies. | No | No |
| Uzbekistan | UNDP | Development of climate-resilient EWS. | No | No |
| Cuba | UNDP | Strengthening of EWS for hurricane and climate risk management. | No | No |
| Honduras | UNDP | Development of community-based EWS for disaster preparedness. | No | Yes |
| Guatemala | UNDP | Enhancing EWS to manage climate-induced hazards. | No | Yes |
| Haiti | UNDP | EWS to build resilience against hurricanes and floods. | Yes | Yes |
| Jamaica | PIJ | Development of EWS for better disaster management. | No | No |
| Dominican Republic | UNDP | Strengthening EWS for climate resilience. | No | No |
| El Salvador | UNDP | Strengthening national EWS as part of disaster risk reduction strategies. | No | Yes |
| Panama | UNDP | Development of EWS as part of broader climate adaptation efforts. | No | No |
| Peru | UNDP | Implementation of EWS in flood-prone regions. | No | No |
| Morocco | AFD | Development of EWS to address climate risks in vulnerable regions. | No | No |
| Tunisia | UNDP | Development of EWS as part of national climate adaptation efforts. | No | No |
| Jordan | UNDP | EWS to manage water-related climate risks. | No | No |
| Lebanon | UNDP | Strengthening EWS for disaster risk reduction and climate resilience. | No | Yes |
| Egypt | WFP | Enhancing EWS to manage climate risks, especially in coastal regions. | No | No |

This list complements Figure 2 of the CREWS 19th Steering Committee FCV document.

²¹ OpenAI. (2024). *ChatGPT*. Enhanced and reviewed by the author.

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