



CENTRE OF EXCELLENCE  
CLIMATE AND DISASTER RESILIENCE



# Moving Back from the Edge

Changing the status quo for the most vulnerable and excluded in international climate action

## Acknowledgements

This report is made possible thanks to the support of the members of the UNDRR-WMO Centre of Excellence for Climate and Disaster Resilience.

The UNDRR-WMO Centre of Excellence for Climate and Disaster Resilience (Centre of Excellence) benefits from the participation of the following member agencies (listed in alphabetical order):

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

In particular, this report benefited from a series of inputs, reviews, and feedback from the participating agencies and others including the International Committee of the Red Cross (ICRC) and the Office of the High Commissioner for Refugees (UNHCR)<sup>1</sup>, which helped enrich the discussion. Thank you for your insightful contributions throughout the process.



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<sup>1</sup> UNHCR has become an official member of the CoE since the publication of this report.

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## Introduction

This report was written to catalyse change across the climate adaptation, disaster risk management, and humanitarian sectors to focus on the most vulnerable and excluded, who are least responsible, but most affected by the climate crisis. As such, the report aims to demonstrate examples of climate action in highly shock-prone and fragile contexts, and to make the case for more deliberate and effective allocations of climate finance in these contexts.

With this purpose, the report set out to:

1. Use case studies to showcase viable solutions for climate action in the most vulnerable and excluded communities, across the nexus between humanitarian, development and climate financing.
2. Propose ways for accelerating and scaling solutions for climate action in the most vulnerable and excluded communities in a coordinated and common manner across the nexus and different organizations.
3. Identify enabling conditions which are necessary to accelerate and scale up climate action for the most marginalized and excluded communities on the frontlines of the climate crisis.

Approximately 3.3 to 3.6 billion people live in contexts that are highly vulnerable to climate change<sup>2</sup>. Current global systems and inequalities are increasing the risks people and their environments face to climate, weather, and water hazards and natural disasters. Recurrent shocks are making it harder for people to prepare, respond, and recover from hazardous events and disasters. Millions of people have already fallen over the edge requiring external humanitarian assistance to stay alive after increasingly devastating hazardous weather events and extremes. Many more people - in highly climate vulnerable contexts - are moving towards this edge, lacking access to effective climate action that could help reverse this trend. The intent of this report is to show how these vulnerable households and communities can be enabled to move back from this edge, and which recommendations the international community can implement to prevent an escalating climate crisis.

The report is a joint product of the members and partners of the UNDRR-WMO Centre of Excellence for Climate and Disaster Resilience, which provided case studies, reflections, and insights on how climate action in fragile contexts look like from a field perspective. The case studies were thematically analysed to identify commonalities and critical enablers for further uptake and scale. As a result, the report brings together perspectives from diverse stakeholders working across the climate adaptation, disaster risk management and humanitarian sectors on how to find a viable way forward for the most marginalized and disenfranchised communities in the face of increasing climate risk, exposure, and vulnerability.

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<sup>2</sup> [Summary for Policymakers | Climate Change 2022: Impacts, Adaptation and Vulnerability \(ipcc.ch\)](https://www.ipcc.ch)



## The case for prioritizing fragility and vulnerability in climate action

When climate hazards, disasters, and conflict collide

*Many of the agencies that comprise the Centre of Excellence have reported that those who are living in places affected by fragility, conflict, and violence, are often excluded, or marginalized when it comes to support to tackle the impacts of climate change. The case studies presented in this report are largely from these contexts, demonstrating how a focus on excluded contexts is essential if we want to collectively alleviate the worst suffering from the climate crisis and foster a just and more equitable world. The case studies are set against the following realities:*

**The world is currently falling short of the Paris Agreement commitment to keep global average temperature increase below 1.5 degrees Celsius.** In fact, between 2023 and 2027, the world is on track to surpass this threshold for at least one year. In addition, there is a high likelihood that the next five-year period will be the warmest on record<sup>3</sup>. As this threshold is approached, the effectiveness of adaptation action becomes significantly constrained and development resources become vastly outpaced by humanitarian needs, especially in high vulnerability contexts.

**More people have been affected by disasters in the past five years than the previous five decades and this trend is likely to persist<sup>4</sup>.** With coping capacities exceeded in the face of increasingly frequent and intense hazardous weather events, yearly disasters are forcing over 100 million people to seek humanitarian protection and assistance and that number is expected to double by 2050<sup>5</sup>. Looking at the past decade, an average of 21.9 million displacements have been triggered by weather related hazards every year (2013-2022).

**Hazardous events and their impacts are disproportionately affecting those who are least responsible, able to adapt to climate change, and cope with the impacts<sup>6</sup>.** Of all recorded deaths from weather, climate, and water hazards between 1970 and 2021, 91% occurred in developing economies according to the United Nations country classification. The proportion remains similar for the World Bank country classification, according to which 82% of deaths occurred in low and lower-middle income countries<sup>7</sup>.

**A major threat to least developed countries is the rise of fragility, conflict, and violence (FCV), which makes it harder to address increasing risks and associated disasters<sup>8</sup>** By 2024, projections are that the total number of extreme poor in FCV-affected settings may surpass that in non-FCV settings<sup>9</sup>. Currently, of the 25 countries least able to adapt to climate change and cope with disasters, 14 are also affected by conflict. The convergence of conflict and weather-related risks is likely to continue to grow and become more complex, driving greater humanitarian needs.

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<sup>3</sup> WMO, 2023. WMO Global Annual to Decadal Climate Update (Target years: 2023-2027), [online](#)

<sup>4</sup> WMO, 2023. WMO Atlas of Mortality and Economic Losses from Weather, Climate, and Water extremes (1970-2021), [online](#)

<sup>5</sup> IFRC, 2019. The Cost of Doing Nothing: The humanitarian price of climate change and how it can be avoided. [Online](#).

<sup>6</sup> IFRC, 2023. World Disasters Report 2022, [online](#)

<sup>7</sup> WMO, 2023. WMO Atlas of Mortality and Economic Losses from Weather, Climate, and Water extremes (1970-2021), [online](#)

<sup>8</sup> UNDP, 2021. Climate Finance for Sustaining Peace: Making climate finance work for conflict-affected and fragile contexts. [Online](#).

<sup>9</sup> World Bank, 2023. Fragility, Conflict, and Violence Overview. [Online](#).

**A lack of funding and insight on the interventions that work effectively in settings affected by fragility, conflict, and violence has hindered climate action in those countries that are most vulnerable to climate change.**<sup>10</sup> Of the 32 very highly vulnerable, or highly vulnerable countries that received less than US\$1 of either climate adaptation or disaster risk reduction/resilience funding per person per year, 17 suffer from protracted crises and 27 from fragility or extreme fragility<sup>11</sup>. In addition, discussions about increasing climate funding to FCVs the argument is made that there is a lack of absorption capacity. To address this, there is a need to demonstrate the type of climate action that is feasible and impactful in FCV contexts<sup>12</sup>.

**The fragmented and overstretched system for international cooperation is presently unprepared to meet these challenges**<sup>13</sup>. Despite increasing action across the nexus between humanitarian, development, disaster risk reduction and climate adaptation, there is still a need to scale up and enhance climate-specific action in FCV contexts. Without coordinated, targeted, and sustained at-scale action, people ‘on the edge’ are at risk of being pushed towards a climate-induced humanitarian crisis, with reduced coping capacities and deepening vulnerability. This, in turn, strips people of their ability to absorb and adapt to future crises which ultimately has grave humanitarian consequences.

**Against this stark reality, there is a critical opportunity to learn from interventions which have shown to be effective in addressing vulnerability before it is too late.** This requires joint and informed action to move vulnerable people ‘back from the edge’, through building absorptive and adaptive capacity to shocks and averting maladaptive<sup>14</sup> outcomes in favour of highly vulnerable contexts.

Vulnerability as the common denominator

**Vulnerability is one of the main drivers of disaster risk**<sup>15</sup>. The extent of disaster impact depends on the severity of the hazard, the number of people or assets exposed, but also, critically, on their susceptibility to suffer loss and damage. High levels of vulnerability, help to explain why some non-extreme hazards can lead to extreme impacts, and vice versa, why some extreme events do not result in extreme impacts.

**Vulnerability differs across individuals and groups and requires specific attention.** Vulnerable groups - older people, women and girls, people living with disabilities, migrants, refugees, internally displaced persons, stateless people, Indigenous Peoples and local communities - have the least assets to draw from to manage risks and withstand disasters. In addition, they are often the most excluded from support. Over time, with recurring shocks, these vulnerable groups may exhaust completely their assets and coping capacities, leaving them even more susceptible to future hazardous events.

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<sup>10</sup> ICRC, ODI, ICVA, Mercy Corps, RCCC, UNHCR, WFP. (2022) Embracing Discomfort: A Call to Enable Finance for Climate-Change Adaptation in Conflict Settings. London

<sup>11</sup> IFRC, 2022. Where it matters most: Smart climate financing for the hardest hit people. [Online](#)

<sup>12</sup> ICRC, ODI, ICVA, Mercy Corps, RCCC, UNHCR, WFP. (2022) Embracing Discomfort: A Call to Enable Finance for Climate-Change Adaptation in Conflict Settings. London

<sup>13</sup> E.g. Hilhorst, D., Mena, R., van Voorst, R., & Desportes, I., Melis, S. (2019). *Disaster Risk Governance and Humanitarian Aid in different Conflict scenarios* (GAR19 - Contributing Paper, p. 49). United Nations Office for Disaster Risk Reduction (UNDRR). [Online](#).

<sup>14</sup> Schipper, E.L.F. Catching maladaptation before it happens. *Nat. Clim. Chang.* **12**, 617–618 (2022).

<https://doi.org/10.1038/s41558-022-01409-2>

<sup>15</sup> W. Neil Adger, Vulnerability, *Global Environmental Change*, Volume 16, Issue 3, 2006, Pages 268-281, ISSN 0959-3780, <https://doi.org/10.1016/j.gloenvcha.2006.02.006>.

(<https://www.sciencedirect.com/science/article/pii/S0959378006000422>)



Therefore, reducing vulnerability, specifically through targeting the drivers of it, such as exclusion, poverty, and inequality, is the key to addressing climate and disaster risk and managing impact.

**There is no silver bullet. Addressing vulnerability requires a systemic and holistic approach to tackle its root causes.** There are multiple dimensions to this. With reference to Figure 1 below, there are some internal and external factors that contribute to vulnerability. These vary across individuals, time, and local contexts. Thus, addressing vulnerabilities require sustained, informed, and coordinated action across different scales and disciplines. Broad networks of partnerships are key to make progress on vulnerability reduction.

**Vulnerability reduction is the common denominator.** Vulnerability reduction is a shared objective that bridges across the divide across humanitarian, development, disaster risk reduction, and climate adaptation. It must be leveraged as a means to improve coherence and impact of interventions across the continuum, while at the same contributing to the different sectoral objectives.

**Vulnerability is heightened in countries affected by FCV.** This means that in order to truly be impactful where needed most, **approaches developed to address vulnerability in the context of the climate crises, need to be adapted to the realities of countries affected by FCV.** Thus, there is a need to test, learn, and reflect on approaches that have worked in FCVs to support the scale up and accelerated implementation of these.

**Collectively, not enough action has taken place to effectively address the fundamental drivers of vulnerability,** yet this is essential for sustained, just, and inclusive sustainable development, underpinned by climate adaptation, risk management, and humanitarian action<sup>16</sup>.

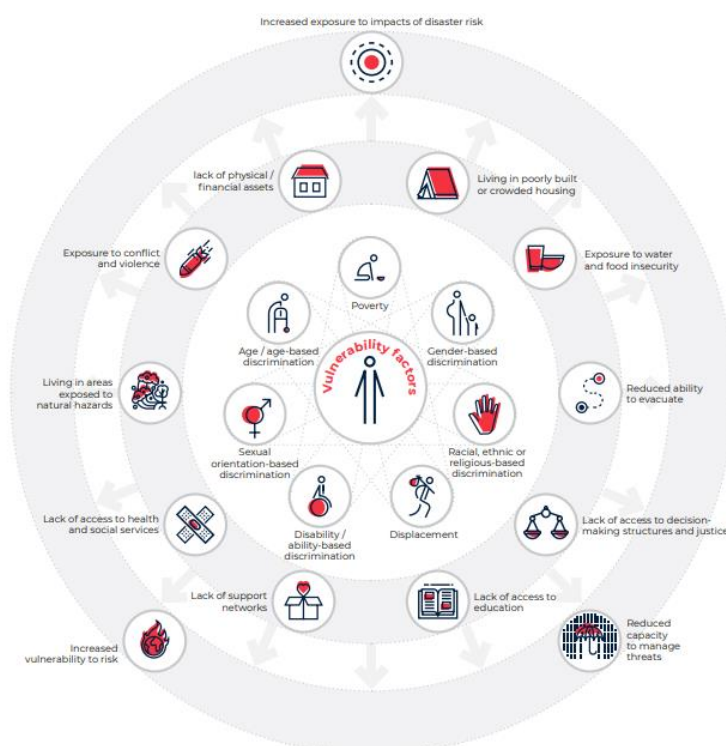


Figure 1 Vulnerability as a driver of climate and disaster impacts. Reproduced with permission from IFRC 2020

<sup>16</sup> UK Government Web Archive. (n.d.). The UK COP26 presidency Glasgow imperative: closing the adaptation gap and responding to climate impacts. [Online](#)

## Time to act on vulnerability: prioritizing those excluded from support

Drawing from the wealth of experience of the member agencies of the Centre of Excellence for Climate and Disaster Resilience<sup>17</sup>, this report presents interventions which have shown to be effective at targeting and reducing vulnerability. The interventions are based on an underlying approach of blending traditional disaster risk reduction, climate change adaptation, humanitarian and development approaches into concrete actions targeted at vulnerability reduction. In particular, these interventions focus on those people, places, or factors that are often excluded from mainstream support. If implemented in a collective, coherent, and at-scale manner, the following actions, and the underlying principles they represent, have the potential to assist the most vulnerable in moving back from the edge, or prevent them from becoming or remaining dependent on humanitarian assistance in the face of a global climate emergency.

The below interventions and principles were identified following a thematic analysis of the case studies that were shared by CoE members, which form the basis of this report (as seen in Annexes 1 - 4). When examining the case studies, several common themes emerged in terms of both the type of interventions that were resulting in positive outcomes, and the ways in which these interventions were delivered. These thematic interventions are discussed below and illustrated using examples from the case studies.

### Interventions

#### Cash, whenever possible, directly to the most vulnerable

Where markets and financial sectors are functioning, cash is one of the most effective ways to reduce vulnerability, while increasing the agency of people affected by crises. This allows communities to address their own needs, despite the socially unjust impacts of climate change.

Ranging from banknotes to e-money, and debit cards to value vouchers, cash-based transfers are already integral to many countries' social assistance programmes. It represents a versatile and powerful tool to buffer and insure against the worst socio-economic effects of disasters, shocks, and crises. As a result, the evidence-base in support of cash-based transfers delivered across a range of contexts and at different timescales is very significant<sup>18</sup>. Cash transfer programmes have also been at the frontline of national government responses to the COVID-19 pandemic all over the world<sup>19</sup>.

It is important to recognize that cash-based assistance is not always easy, and not always possible, but where cash-based assistance has been employed, the following are some of the notable benefits<sup>20</sup>:

- Strengthening the choice and agency of individuals, which yields better results in respond to their needs.

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<sup>17</sup> List of partners in the executive summary.

<sup>18</sup> See for example: De Janvry, A., Finan, F., Sadoulet, E., & Vakis, R. (2006). Can conditional cash transfer programs serve as safety nets in keeping children at school and from working when exposed to shocks?. *Journal of development economics*, 79(2), 349-373; or Asfaw, S., Carraro, A., Davis, B., Handa, S., & Seidenfeld, D. (2017). Cash transfer programmes, weather shocks and household welfare: evidence from a randomised experiment in Zambia. *Journal of Development Effectiveness*, 9(4), 419-442.

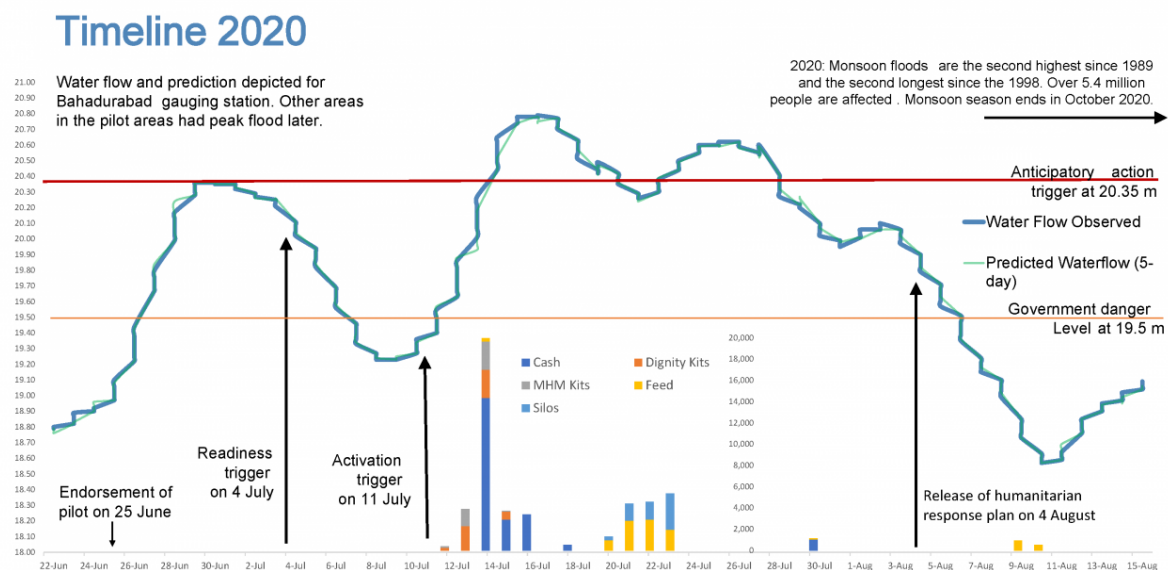
<sup>19</sup> Lowe, C., McCord, A., & Beazley, R. (2021). National cash transfer responses to Covid-19. Working paper 610. ODI.

<sup>20</sup> World Bank, 2022. What do we know about cash and in-kind transfers in humanitarian settings? Not enough. [Online](#). UNHCR, 2018. Multi-Purpose Cash and Sectoral Outcomes: a Review of Evidence and Learning. [Online](#). ODI, 2015. Doing cash differently: how cash transfers can transform humanitarian aid. [Online](#).

- Growing and consolidating of systems for the delivery of assistance, especially when leveraging on existing solutions for cash delivery.
- Increasing localization and accountability of assistance by using existing and established systems and institutions.
- Creating opportunities to improve targeting and information management systems for more effective and efficient assistance.
- Enabling the scale up of assistance in a timely manner, building on existing systems, capacities, and actors.
- Strengthening of the local economy and partnerships with private sector and financial actors, critical to recovery and resilience.
- Enabling partnerships that can result in coordinated action across different sectors, considerate of response, recovery, adaptation, and resilience.
- Facilitating a cost-effective response.

The case studies demonstrate the above, as well as show that cash can be powerful in addressing vulnerabilities in the context of the climate crisis.

The UN OCHA supported anticipatory action framework in Bangladesh demonstrates that cash can be quick and timely. The funds were released within four hours, making it the fastest-ever allocation by OCHA’s Central Emergency Relief Fund. By bringing forward the response, when compared to conventional humanitarian assistance, peaks in humanitarian need were mitigated. This was done by expanding the resources for individuals to manage the risks and address impacts, in relation to their needs.



In addition, a timely cash intervention helped curve maladaptive practices and outcomes, such as destocking of livestock when prices are low and costly borrowing to cover immediate disaster costs. This meant that the rather than having negative long-term outcomes, the longer-term impacts were rather positive, helping stabilize and improve people’s wellbeing. This was particularly the case for improved food security outcomes and dietary diversity among cash transfer recipients after the event. For

example, families who received a cash transfer through OCHA-facilitated AA had significantly improved child and adult food consumption three months after the flood<sup>21</sup>.

Furthermore, interviews reveal that 9 in 10 people reported quality-of-life improvements, effective targeting, and good reach of the most vulnerable people. Similarly, monitoring and evaluation reports show that interventions were better for people, especially by ensuring greater protection for women, girls, and transgender communities. All of this was supported by pre-agreed plans based on individual vulnerabilities to help inform the actions and way of working by the agencies<sup>22</sup>.

These gains did not come at a larger cost. OCHA estimates that more people were reached through this mechanism, at half the cost, when compared to CERF-funded rapid responses that occurred following the 2019 floods in Bangladesh. Comparing CERF reports of previous traditional allocations, the cost per person reached by the anticipatory action was \$13 USD, as compared with about \$26 USD in the 2019 humanitarian response.

Cash transfers have been successful across settings, as they are a highly adaptable intervention that place people at the centre and empower them to address their essential needs according to their own priorities. For example, while in Bangladesh, cash was mostly used by recipients for buying food and water, as well as covering evacuation costs of household members and livestock<sup>23</sup>, in the context of the World Food Programme's (WFP) Livestock Insurance for Pastoralists intervention in the Somali Region of Ethiopia (see text box), insurance payments helped with the purchasing or producing fodder, paying for veterinary services, or purchasing water or fuel for pumping irrigation water. While cash can be deployed in a variety of ways, it ultimately enables people to make strategic wellbeing and livelihood choices for themselves.

Providing Access to Livestock Insurance for Pastoralists in the Somali Region in Ethiopia  
WFP and partners developed and implemented the Satellite Index Insurance for Pastoralists in Ethiopia (SIPE) project, triggers insurance payouts to pastoralists households ahead of poor grazing conditions through a combination of mobile money and physical cash distributions. The objective is to have payouts reach dispersed households quickly enough so that pastoralists can take the necessary steps to protect their herds, be it purchasing or producing fodder, paying for veterinary services, or purchasing water or fuel for pumping irrigation water.

#### Early warning systems and early action

As weather, climate, and water-related hazardous events continue to increase in frequency and intensity, and so does the predictability of these hazards, there is an opportunity and moral imperative to act ahead of impact onset to help avert loss and damage and a rise in humanitarian need.

Yet only one third of the world's people, mainly in least developed countries (LDCs) and small island developing states (SIDS), are still not covered by early warnings systems. From another perspective, this means that only half of countries have early warnings systems in place<sup>24</sup>.

<sup>21</sup> Pople, A., Hill, R., Dercon, S., & Brunckhorst, B. (2021). Anticipatory cash transfers in climate disaster response. <https://ora.ox.ac.uk/objects/uuid:12ea16b2-edc0-4af5-8824-132aba4557bd>

<sup>22</sup> UN OCHA, 2022. Bangladesh monsoon flooding 2020: anticipatory action pilot. [Online](#).

<sup>23</sup> Pople, A., Hill, R., Dercon, S., & Brunckhorst, B. (2021). Anticipatory cash transfers in climate disaster response. <https://ora.ox.ac.uk/objects/uuid:12ea16b2-edc0-4af5-8824-132aba4557bd>

<sup>24</sup> United Nations Office for Disaster Risk Reduction, World Meteorological Organization. 2022. Global status of multi-hazard early warning systems: Target G. UNDRR Bonn Office. [Online](#).

Even where warning elements exist, coverage in full across the warning cycle remains limited. For example, less than half of countries reporting to have multi-hazard early warning systems (MHEWS), indicate that they have disaster risk information and assessments available in an appropriate manner<sup>25</sup>. This will continue to delimit the awareness and understanding of the impacts of hazards across society, which is very much needed for timely and adequate action. So naturally, less than half of the countries which have MHEWS in place report the availability of preparedness and response plans and capabilities<sup>26</sup>.

There is a need to scale up all elements that make up people-centred early warning systems. People-centred early warning systems are an integrated system of hazard monitoring, forecasting and prediction, disaster risk assessment, communication, and preparedness/response activities, all which enable individuals, communities, governments, and others to take timely action to reduce disaster risk in advance of a hazardous event<sup>27</sup>.

In addition, there is a need to adopt a multi-hazard approach. The term multi-hazard is defined as 1. The selection of multiple major hazards that the country faces, 2. The specific context where hazardous events may occur simultaneously, cascadingly, or cumulatively over time, and taking into account the potential interrelated effects<sup>28</sup>.

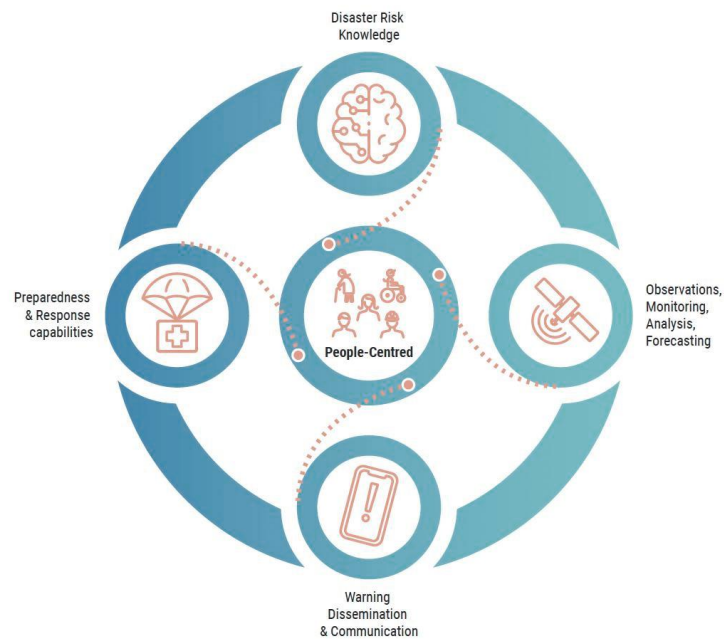


Figure 2 Visual of people-centred multi-hazard early warning systems, WMO-UNDRR

To be effective, early warning systems for climate- and disaster-related risks must rely on a sound scientific and technical basis and focus on the people, communities, and sectors most exposed and vulnerable to risk. This implies the adoption of a system approach incorporating all relevant risk factors, including social vulnerabilities and exposure to both fast and slow onset disasters. Moreover, early warning systems need to actively target vulnerable people and communities, facilitate public risk

<sup>25</sup> *ibid*

<sup>26</sup> *ibid*

<sup>27</sup> WMO, 2018. Multi-hazard Early Warning Systems: A Checklist: Outcome of the first Multi-hazard Early Warning Conference. [Online](#).

<sup>28</sup> *ibid*

awareness, employ effective risk communication, and ensure a state of preparedness linked to early action.

Group on Earth Observations (GEO) has been working to improve the availability, access and use of open observation data and solutions to provide solid scientific basis for EWS, while also contributing to coordination among donors and national stakeholders. Under its Water Sustainability Initiative (GEOGloWS), GEO worked with the Government of Malawi to improve community-based floods warning system by increasing its lead time from a few hours to 15 days, helping the local and national governments in coordination with the UN Country Team and the Red Cross Society take anticipatory humanitarian actions such as fast track relocation process, shelter setup and pre-position of food-aid. This improvement effort financed by the World Bank and NASA/USAID SEVIR was designed to complement a GCF-funded UNDP project that modernized flood warning system. Losses and damages from severe floodings caused by two cyclones over 2021-2022 were 44% less in the 8 flood-prone districts where the early warning system was implemented, compared to the previous two-year period with the similar magnitude and frequency of cyclones.

The Food and Agriculture Organization of the UN (FAO) has notable experience bringing together the different pillars of the EWS. In Mongolia, FAO worked with the Mongolian Information and Research Institute of Hydrology, Meteorology and Environment (IRIHME) to leverage their *dzud* risk maps, forecasts, and warnings systems to turn them into community dissemination and early warning actions. In partnerships with the Ministry of Social Development and the Mongolian Red Cross Society (MRCS), the criteria for best targeting vulnerable groups was defined to ensure adequate coverage of those most at need, in terms of their context and realities. Leveraging FAO's Special Fund for Emergency and Rehabilitation Activities (SFERA), an activation of the system released \$290,000 USD to safeguard the livelihoods of 504 vulnerable herders. This enabled herders to destock under favourable terms and relief pressure on their resources, while also providing them with livestock kits to care for the remaining livestock through greater access to fodder, health supplements, and animal health advice. Action was taken in a coordinated manner with MRCS enabling full coverage of the most vulnerable and at risk of the impacts of *dzud*. Based on the FAO Return on Investment assessment conducted, for every US dollar invested in early actions, vulnerable herders obtained USD 7.1 through avoided losses and added benefits.

With a growing availability of early warning information comes a growing responsibility to act on it. The scale-up of early warning systems must be matched by increased investment in anticipatory and local action to ensure the warnings are acted upon in a timely manner. Anticipatory action ties warning information to a set of pre-agreed and pre-financed actions to be implemented once forecasts have reached an agreed trigger threshold.

The effectiveness of anticipatory action is centred around preparing and protecting people from damages associated with the initial event, as well as from further compound or knock-on impacts. For example, the Mali Red Cross Anticipatory humanitarian action for floods contingency plan includes actions to mitigate initial impact, such as placing sandbags to divert flood waters and reinforcing walls of buildings, as well as interventions to mitigate the risk of cascading impacts, through distributing aqua tabs and mosquito nets to prevent water-borne diseases caused by standing water that occurs in the aftermath of flooding. Different sets of actions linked to different thresholds, or triggers, enables timely and fitting actions to be implemented according to the event being anticipated.

Evidence shows that anticipatory action can be fast, cost-efficient, inclusive, dignified, and resilient<sup>29</sup>. Acting earlier mitigates the shock impact and reduces humanitarian needs, thus helping to protect hard-won development gains and enhance resilience. However, there is a critical need to increase investment in both early warning and actions if the most vulnerable are to be made resilient to climate shocks and stresses, thereby reducing future humanitarian needs.

The evidence is clear: early action leads to a more effective and cost-efficient response. Studies on the economics of drought resilience highlight that every \$1 USD spent on safety net resilience programming results in net benefits of between \$2.3 and \$3.3 USD<sup>30</sup>. Acting early is key to reducing human suffering and losses that are otherwise unavoidable through exclusive emergency response. In addition, early action avoids resorting to harmful or maladaptive ex-post coping strategies, therein protecting long-term development gains<sup>31</sup>.

We need a shift from thinking of early warning as an information service: ‘if they know what we know, they will do what we do’ to putting people at risk at the centre of any warning systems and building their own agency to act, including through the necessary systems and resources. Early Warning for All can, and must deliver this.

#### Social protection systems

Social protection is a tool commonly used across countries to address risks, vulnerability, and deprivations<sup>32</sup>. Increasingly, the argument has been made that social protection needs to play a role in the climate change agenda to effectively address risks and vulnerability. The literature has further concluded that social protection in response to climate change has the potential to: (i) reduce vulnerability at large; (ii) respond to climate shocks and disasters; (iii) limit the negative impacts of climate change responses; and, (iv) facilitate positive mitigation and adaptation

#### Early Warnings for All

A call for action by the UN Secretary General, the Early Warnings for All (EW4All) initiative is a groundbreaking effort to ensure that everyone on Earth is protected from hazardous weather, water, or climate events through life-saving early warning systems by the end of 2027.

The Executive Action Plan for the initiative – launched at COP27– calls for scaled up investments and action between 2023 and 2027 of US\$ 3.1 billion for advancing the four pillars of MHEWS, including disaster risk knowledge, observations forecasting, and warnings, communication, and dissemination, as well as preparedness and response capabilities.



<sup>29</sup> Pforr, T., Weingärtner, L., & Wilkinson, E. (2020). The evidence base on Anticipatory Action. <https://www.wfp.org/publications/evidence-base-anticipatory-action>

<sup>30</sup> Cabot Venton, C. (2018). Economics of resilience to drought in Ethiopia, Kenya and Somalia. USAID, Washington DC. Available from: [https://www.usaid.gov/sites/default/files/documents/1867/Summary\\_Economics\\_of\\_Resilience\\_Final\\_Jan\\_4\\_2018\\_BRANDED.pdf](https://www.usaid.gov/sites/default/files/documents/1867/Summary_Economics_of_Resilience_Final_Jan_4_2018_BRANDED.pdf)

<sup>31</sup> Wilkinson, E., Weingärtner, L., Choularton, R., Bailey, M., Todd, M., Kniveton, D., & Cabot Venton, C. (2018). Forecasting hazards, averting disasters: implementing forecast-based early action at scale. Overseas Development Institute (ODI).

<sup>32</sup> Overseas Development Institute 2001. Social Protection Concepts And Approaches: Implications For Policy And Practice In International Development. [online](#)

measures. However, more efforts are needed to design, implement, and assess social protection approaches that support climate action<sup>33</sup>.

Adaptive social protection (ASP) in particular offers a unique opportunity. A crucial component of ASP is the use of climate information to trigger a scale-up in social protection as a response to or in anticipation of a climate shock according to its expected severity<sup>34</sup>. To move forward with ASP, the integration of AA and SP has been promoted, whereby SP instruments take up the main elements of AA: set of pre-agreed triggers/thresholds for action, pre-defined actions to be taken when the triggers/thresholds are met, and pre-arranged financing that automatically funds the triggered actions<sup>35</sup>.

While ASP is still a growing field, there is evidence that it is useful and impactful, while there is room for improvement<sup>36</sup>. As such, there is a need to continue to support action coupled with iterative learning and continuous improvements.

WFP has been a key actor in the ASP space, working through government run social protection systems as well as implementing safety net programmes where there is a need. For example, in Somalia, WFP was able to reach 1,200,00 people with early warning messages and approximately 100,000 people with cash transfers ahead of the predicted shock. Together, this helped mitigate and reduce drought impacts to help protect lives and livelihoods of the most vulnerable and at-risk. WFP's anticipatory action was only possible through the partnership with the government and the use of the national social protection programme, known as Baxnaano, which is operated by WFP on behalf of the Federal Government of Somalia, through the Ministry of Labour and Social Affairs (MOLSA). Participants in Baxnaano that were identified as the most likely to be severely affected by the predicted drought received anticipatory cash assistance. Baxnaano beneficiaries received \$40 USD per month for three months, in addition to the regular payment of \$20 USD. This transfer enabled people to continue to meet their immediate needs, while at the same time take mitigation actions, such as transporting livestock to pasture, purchasing suited agricultural inputs, storing fodder and water, and purchasing additional food.



<sup>33</sup> Costella, C. V., van Aalst, M. K., & Georgiadou, P. Y. (2023). Can social protection tackle emerging risks from climate change, and how? A framework and a critical review. *Climate Risk Management*, 40, [100501]. <https://doi.org/10.1016/j.crm.2023.100501>

<sup>34</sup> Kuriakose et al., 2013. Climate-Responsive Social Protection. <https://doi.org/10.1111/dpr.12037>

<sup>35</sup> Scalable and Sustainable: How to Build Anticipatory Capacity into Social Protection Systems  
Cecilia Costella, Catalina Jaime, Julie Arrighi, Erin Coughlan de Perez, Pablo Suarez, Maarten van Aalst  
<https://doi.org/10.19088/1968-2017.151>

<sup>36</sup> Daron, J., Allen, M., Bailey, M., Ciampi, L., Cornforth, R., Costella, C., Fournier, N., Graham, R., Hall, K., Kane, C., Lele, I., Petty, C., Pinder, N., Pirret, J., Stacey, J., & Ticehurst, H. (2021). Integrating seasonal climate forecasts into adaptive social protection in the Sahel. *Climate and development*, 13(6), 543-550. <https://doi.org/10.1080/17565529.2020.1825920>



GEO also works to support the expansion of ASP. Through GEO’s Global Agricultural Monitoring Initiative (GEOGLAM), primarily satellite-based, near real-time crop monitoring has been utilized in countries such as Tanzania, Uganda, Kenya, Rwanda, Ethiopia, Mali, and Mozambique. For example, the Ugandan Office of Prime Minister in partnership with GEOGLAM funded by the World Bank, developed a web-based platform for predicting harvest failure and estimating the level of resulting famine several months in advance with indicators based on historical records on crop performance. Ultimately the system allows for the objective and timely signalling for action ahead of drought-induced crop failure to benefit vulnerable farming communities. From the period 2017-2020, \$14 million of finance has been disbursed through social protection programmes making use of the triggers defined and monitored through the Ugandan Crop Monitor. This has enabled early action and mitigating measures to be taken ahead of the shock onset, contributing the reduction of the humanitarian impact and needs. Over the 4 years, 90,405 households benefitted from the finance provided, and it is estimated that the early financing released saved the government roughly \$11 million in relief food aid costs.

### Coupled response with resilience building and climate adaptation

Effective vulnerability reduction must take place now and in the future. Work on vulnerability reduction must be done across timescales, bridging the gaps throughout the DRR, CCA, humanitarian, development continuum. Figure 3 below demonstrates conceptually how these different sets of actions can come together and ultimately aid in reducing vulnerability as well as the likelihood of a hazard becoming a disaster.

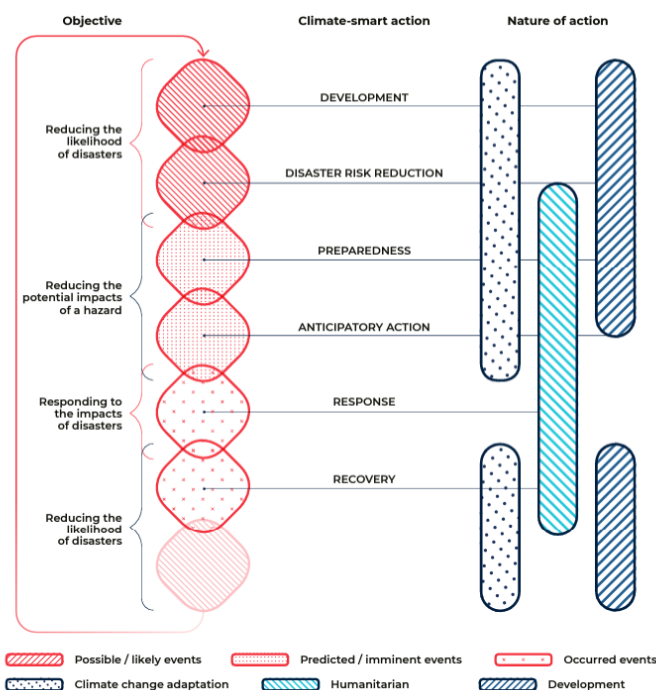


Figure 3 Set of action needed to reduce the likelihood of hazards becoming disasters, IFRC

FAO has experience bringing together longer-term resilience and adaptation measures into its humanitarian work. For example, FAO with the Ministry of Agriculture and Fisheries in Timor-Leste promoted the application of Conservation Agriculture (CA) ahead of the devastating 2015-2016 El Niño event. CA was introduced as an alternative to the harmful slash and burn practices that were driving environmental degradation and a deterioration of farm-based livelihoods. As a result of the adoption of CA, farms obtained higher yields with lower costs of production, and perhaps most notably, CA

farmer fared better during the El Niño event of 2015/2016. CA was effective in reducing the vulnerability of people and the environment to the drought that occurred, helping minimize humanitarian need.

In Niger, WFP also had a successful experience integrating CCA and resilience building into its humanitarian portfolio. Niger is among the ten countries most vulnerable to climate change yet the least ready to adapt. Niger is also plagued by conflict and has the lowest human development index rating in the world. WFP Niger leveraged its Food Assistance for Assets (FFA) multi-year programme to meet immediate food and nutrition needs of targeted, vulnerable households, while at the same time supporting landscape restoration and enhancement through asset creation activities conducted by the same participating households. The same communities were also assisted with school feeding, preventative and curative nutrition/health measures, and smallholder agriculture market [access]



support. Vulnerability and technical assessments oriented the geographic and household targeting exercise, ensuring that the most food insecure and in-need households were targeted by the integrated and sustained package of support, and that the package was suited to the risks and vulnerabilities they face. The programme has been intentional in fostering partnerships with a wide range of actors including civil society, local government, NGOs, and other UN agencies to collectively achieve large scale and sustainable impacts. Overall, this approach shows that a systemic, cross-sectoral, and multi-scaled approach to vulnerability reduction is possible even in difficult contexts, such as the Sahel.

In Mali, the Red Cross, brought together their work on the promotion of agro-sylvo pastoral techniques (these combine pastoralism, agriculture, and tree cultivation) with their work on EWS and EA (presented above). This helped ensure that vulnerable groups under the agro-sylvo pastoral programme were also provided with weather information and advice from national EWS and supported by DRM committees and village teams to help in kick starting anticipatory actions as needed, which would help preserve long term gains in adaption and resilience of their livelihoods and natural environment in the face of flood risk.

Finally, IOM has been working on flood response and longer term mitigation efforts in South Sudan. In 2022, South Sudan was affected by the worst flooding in 60 years. In the organization's response plan, it was noted that IOM is not only committed to providing life-saving responses, but also designing medium- and long-term flood mitigation programmes aimed at strengthening resilience to natural hazards in South Sudan. As part of these efforts, IOM has been integrating into its humanitarian work support to locally led early warning systems. In addition, infrastructure investment and land reclamation works are supported to make it safe for displaced people to return to flood affected areas, while at the same making these communities more resilient to future shocks and stresses. One key

achievement from this work was the reclamation of 50 hectares of land in Rubkona through the construction of over 80km of dykes with populations and shops returning to this area after the floods.

#### Interconnected Services

Sustained services and structures are key to ensuring basic needs and buffering against shocks and stressors. When they are not in place, coping strategies may be adopted, which use up resources and assets available, leaving people more vulnerable and exposed to the impacts of negative events. When multiple stressors amount, like in FCV affected contexts, this deterioration in wellbeing can be hardest felt and more destabilizing as communities' capacities and resources to cope are already stretched. As such, there is a need to consider the role that sustained services and structures have to play in addressing vulnerabilities and building resilience, recognizing the critical roles that both the natural and built environments.

The International Committee of the Red Cross (ICRC), as part of its Gaza Resilience Program, has worked to build the resilience of essential services across sectors and the people that rely on these. This work has been done across critical sectors, such as energy, food, and water.

Work by the ICRC under the energy sector was aimed at reducing the use of diesel generators, which were often used during power-outages triggered by violence and conflict. Work was done at different scales to ensure that alternative forms of energy were generated, disseminated, and made accessible to individuals and communities. These interventions are geared towards making sure that services and systems are resilient and sustainable during periods of military escalation, as well as during floods, heat waves, and dry spells. The ICRC has worked to strengthen the electrical grid and efficiently manage limited supply using photovoltaic solar panels, net-metering systems, and household smart-meters.

Under food and water, ICRC worked with farmers to access agricultural land even when militarized restrictions were in place and to implement actions that would get preserve and sustain water and soil for enhanced production and productivity, without requiring much labor. This meant that the agricultural practices were adapted to the hotter and drier context, while also becoming more fitting to the restrictions by requiring less labor and time on the agricultural fields. Some of the interventions applied include: Improved ventilation and raised floors for poultry shelters to reduce heat stress and improve animal health; Black mesh installed over plastic-covered greenhouses to absorb heat and limit damage caused by high temperatures; Passive bio-traps to counter pests and reduce reliance on pesticides; Rainwater harvesting and drainage, supported by pond rehabilitation, to reduce extraction from the over-depleted aquifer for irrigation and help avoid stormwater runoff, and Solarization of water wells.

IOM has taken similar approaches to focus on services, systems, and infrastructure strengthening to aid in their efforts to address vulnerabilities and build resilience. In Somalia, lack of access to services and supporting systems and structures, coupled with the recurring nature of shocks, meant that there was a high competition for resources, driving conflict as well as the displacement of people. In response, IOM developed a package of assistance promoting interconnected services to minimize stressors and build resilience. The integrated package of support consists of a combination of water-provision, solar powered infrastructure, enhancement of natural resource management mechanisms, establishment of sustainable and alternative agro-pastoral livelihoods, prevention of sand encroachment, and other tailored activities, all of which are interconnected. Through tangible investments in physical water infrastructure and pragmatic innovations for water and energy capture in the agropastoral sector, bolstered by sustained dialogue and enhanced natural resource management, advances are being made to lessen the impact of shocks and stressors, as well as the reduction of conflict and displacement.



## Principles

Cash-based assistance, EWS and EA, as well as interconnected services and others noted above are strategic interventions that are individually grounded on a strong evidence-base of effective vulnerability reduction. However, actions to reduce vulnerability cannot occur in a vacuum. By design, they require an implementation approach that is transformative. **It is not just about what the interventions are, but how they are implemented, that makes them effective.** The following programmatic principles aims to support such transformative approaches, once again as shown by evidence fro practice.

### Locally owned and led action

Localization is top of the agenda across humanitarian, disaster risk management, and climate change policy. However, this also needs to be a reality in practice and the climate crisis is making this even more evident.

The Inter-Agency Standing Committee (IASC) has climate, gender, accountability, and inclusion in its top priorities for 2022-2023 and has identified localization as an enabler to help achieve these objectives. The IASC further identifies localization as enabling the meaningful engagement and leadership of local and national actors - with a special focus on women-led organisations - in humanitarian response - enhancing capacity exchange and increasing direct funding.

Similarly, the UNFCCC COP recognized “the need to strengthen knowledge, technologies, practices and efforts of local communities and indigenous peoples related to addressing and responding to climate change and establishes a platform for the exchange of experiences and sharing of best

practices on mitigation and adaptation in a holistic and integrated manner. At COP22 in 2016 the parties agreed to establish the local communities and indigenous peoples' platform, which has since been operationalized. Principles for locally led adaptation have been agreed globally<sup>37</sup>.

In addition, more than 80 organizations have endorsed the principles of locally led adaptation. The G7 has welcomed the principles. The Champions Group for Adaptation Finance - now thirteen bilateral and one multilateral provider – also recognise the challenges of accessing finance and delivering it to local actors at the frontline of climate impacts. Whilst LDC 2050 Climate Change Vision, sets a target of 70% finance flows that support action on the ground in LDCs by 2030. Similarly, the climate and environment charter for humanitarian organizations, 12 endorsed by more than 300 organizations, commits to “embrace the leadership of local actors and communities”.

Against this backdrop, ODI (2021) reports that, in 2020, 4.7% of total humanitarian funding—\$1.3 billion—went directly to local and national responders. Development Initiatives puts the amount of funds going to local and national actors in 2020 at \$756 million, which represents 3.1% of total tracked funds (Urquhart et al., 2021). Whichever set of figures is used, they are well below the Grand Bargain goal of 25%.

Locally owned and led action is key for vulnerability reduction and building resilience. Local actors know best the vulnerabilities that prevail, the drivers of these, and how climate change may be influencing them. Local actors are also the first line of response and those with direct access to communities, especially vulnerable and marginalized groups. Local actors are also the ones that stay long after a disaster and response is over.

The comprehensive resilience building intervention implemented by UNESCO in Zimbabwe demonstrates the potential of a people-centred approach to designing multi-hazard early warning systems. The project implements a flood and drought early warning system developed and run directly by local communities. The system disseminates weather and climate information through community radio stations in the area in the local language providing information on how to mitigate the impacts of forecasted weather and hazard events, for both rapid and slow-onset events such as flooding and drought. This enables people to take actions which mitigate short-term risks such as flooding, as well as planning for longer term climatic changes, building adaptive capacity.



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<sup>37</sup> Principles for locally led adaptation. (n.d.). World Resources Institute. <https://www.wri.org/initiatives/locally-led-adaptation/principles-locally-led-adaptation>

In Somalia, IOM is pursuing not only locally led but also locally owned solutions through its innovative Matching Grant Mechanism which seeks to diversify funding sources through diaspora engagement. Through the SOKAAB crowdfunding platform over 8,800 individual backers have supported the co-financing of 86 development projects by communities and local authorities. The objective is to target areas with a history of inter-communal disputes, and to incentivize multiple communities to financially invest jointly on public infrastructure and services, encouraging mutual support and interdependence.

### People Centred

A focus on addressing vulnerability is best grounded in a focus on individuals. Putting people first facilitates a better understanding of their condition and needs. It enables an exchange whereby action can be informed and tailored to individuals first, then groups, and eventually communities at large. This ensures that the investments in time and other resources is better targeted and directed to fit the needs and capacities of those intended to benefit. It allows for greater accountability to the population and mechanisms for sustained engagement and feedback to support action. In more general terms, it is an approach that aids in moving away from generalized and high-level objectives towards more focused and targeted interventions that can aid in achieving planned outcomes.

UNESCO in Zimbabwe to inform action conducted extensive risk knowledge base, aiding in identifying at risk areas and individual vulnerabilities. Having this grounding, they were able to work in the short run to define early action protocols to get ahead of flood and drought, leveraging the community early warning systems, but also to develop adaptation plans, bring in also environmental and climate projections. This means that individual and community vulnerabilities are integrated effectively into short-, medium-, and long-term plans, yielding a comprehensive approach to addressing vulnerabilities and enhancing resilience and promoting adaptation.

The OCHA-facilitated AA pilot in Bangladesh demonstrated that with the right approach, women and girls in particular can benefit from anticipatory actions. With pre-planning and pre-identification of people comes an improvement of the quality of programming. Under the pilot, UNFPA for the first time specifically designed dignity kits for the transgender community, as informed by their vulnerability assessments. In addition, together with local implementing partners, dignity and menstrual hygiene kits were tailored to the specific context ahead of time, including some COVID-19 related items.

The independent beneficiary assessment revealed that all agencies were very effective in reaching the very poorest and most vulnerable people, including single female-headed households. More than 9 in 10 people agreed that the aid provided went to households in their community who needed it the most. And 7 in 10 people agreed that the aid provided to cope with the floods benefited both men and women equally. Among the poorest households, women were more likely to benefit than men.

UNFPA found that assistance provided before peak flooding had spill over effects for women and girls, including that recipients reported to have gained higher access to health care and education, as well as income-generating, social and community activities.

UNFPA also conducted key interviews with husbands and fathers of recipients of dignity and menstrual hygiene kits. These men were grateful and satisfied with the assistance their spouses and girls received, as previously, they had mostly ignored women's health issues during floods but now they realized that this support for women was really needed.

### Cross Sectoral Partnerships

A common feature across the different case studies is the broad network of partnerships needed to carry out effective climate action that addresses vulnerability in the contexts of conflict, violence, and

fragility. Partnerships are needed with the local individuals and groups that need to have ownership and leadership over the initiative to ensure the enduring benefits. Local community structures and local authorities are also key to sustainability as they will provide the individuals and groups with the information, resources, and general support to carry out sustained action. Civil society and non-governmental actors also have a role to strengthen and support the local support systems to plan, manage, and act. These networks can be reproduced from the local, to sub-national, to national levels, requiring communication, collaboration, and coordination, backed by common objectives and shared ways of working. This can be difficult to achieve across sectors, especially with different implementation arrangements, planning and implementation horizons, and supporting policies and strategies. Finding commonality, be it with the focus on vulnerability, working at the system level, and fostering win-win scenarios can help facilitate cross-sectoral collaboration.

Through multi-sectoral and cross-expertise collaboration, IOM, UNEP and SIPRI are implementing and advancing policy through the pilot programming in multiple states of Somalia. The *Breaking the Climate-Conflict Cycle in Galmudug and Hirshabelle states*, was designed to reduce environmentally induced displacement and conflict in target locations in Galmudug and Hirshabelle States through tangible investments in physical water infrastructure and pragmatic innovations for water and energy capture in the agropastoral sector, bolstered by sustained dialogue and enhanced natural resource management. This unique blend of expertise is enabling tailored approaches fitting to the context yielding very tangible results for communities.

In the case of Partners for Resilience Consortium in Mali, they note that as primarily humanitarian actors, it was key for them to connect to different sectors and experts to be able to integrate into their work ecosystems thinking and planning, enabling them to look at the vulnerabilities of people and their environment across different time and spatial scales. They note that this has proven that partnerships are key for long term and sustained change. This includes not only the partnerships established to design and implement the project, but those they developed for implementation, which were supported with tools and trainings to become able to carry forward the work initiative by the project on combating the impacts of climate change.

WFP Niger made partnerships one of the two core principles of their resilience programme. Through this, they made deliberate efforts to grow the network of partnerships that enable the programme implementation and its sustainability. This included representatives from a diverse set of actor groups, including communities, civil society, local governments, NGOs, academia, and other UN agencies. The model below demonstrates the deliberate plan and structure of partnerships contributing to the programme.



## Multi-scalar Planning

As noted above, different sectoral partners work with different time horizons. For example, humanitarian action may last a couple of months, while resilience building and adaptation measures may be multi-year initiatives. This should not act as a barrier, but rather a reason for closer collaboration. There is a need to build on the investments on addressing acute need and fragility with medium to long-term initiatives that can reduce vulnerability, building resilience, and assist with greater outcomes in the face of a changing climate. This continuum of actions and actors can be quite complex in contexts characterized by fragility, violence, and conflict. However, it is worthwhile pursuing, as it helps build a sustained and predictable channel of assistance, which yield more meaningful and impactful programming. This can help sequence the right activities, at the adequate time, supported by the expertise and resources that are needed. Thus, it can help foster the meaningful integration of action across sectors, scales, and time.

IOM in South Sudan has applied this approach. Following devastating floods in 2020, emergency construction of dikes started to protect people, the environment, and local infrastructure. Guided by their three-pronged approach, IOM expanded upon this initial work, by layering in elements of work at the medium and long term, which sought to enhance local disaster risk management knowledge, build local infrastructure, and strengthen local institutions and community-based groups. Thanks to this, 80 development committees were established, which fed into local institutions like the County Relief and Rehabilitation Commission, resulting in community-based disaster risk management plans to drive forward community-owned and lead efforts on infrastructure development and other forms of risk management, supported by evidence and information generated.

As noted already, UNESCO in Zimbabwe also followed this approach, whereby they used EWS and weather data to generate early action protocols for local communities, which were later coupled with climate and environmental projections to also serve as the foundation for adaptation plans. This was a powerful approach to take as it was grounded on sound risk knowledge and vulnerability assessments that were carried on consistently across planning and action horizons, enabling a sound continuum of activities from anticipation to action, recovery, resilience, and adaptation.

GEOGLAM is another example of effective multi-scalar planning. While in some contexts GEOGLAM is being used as an EWS for early action on imminent crop failure and food insecurity, it is also being used to inform long term adaptation planning for the sector, as part of national adaptation planning processes.

## Conflict Sensitivity

The occurrence of conflict may be a deterrent to donors and their implementing partners. Conflict is seen as a barrier to achieving planned outcomes and activities<sup>38</sup>. This can be true, where conflict sensitivity is not embedded into the project design, management, and implementation arrangements. Conflict sensitivity can be embedded to ongoing good practices of risk management. By taking this approach, it is clear that conflict is recognized and measures taken to ensure that the programme is fitting with the local context and realities of implementation. This approach is increasingly being adopted by donors and implementing partners alike and it is demonstrating to be a powerful approach to unleash funding and enabling action where needed most<sup>39</sup>.

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<sup>38</sup> ICRC, 2023. Embracing Discomfort: A Call to Enable Finance for Climate-Change Adaptation in Conflict Settings, [online](#)

<sup>39</sup> GEF Council, 2020. Evaluation of GEF Support in Fragile and Conflict-affected Situations. [Online](#)



Furthermore, as illustrated by the Lebanon Red Cross, conflict programming can be a good entry point for disaster risk reduction and resilience building to hazardous events. In parts of Lebanon, the Red Cross supported school safety programmes to teach students to stay safe during a conflict, which over time was expanded to also demonstrate students how to stay safe during hazardous events, such as flooding, fire, and earthquakes. Students learned to safely evacuate, shelter, and conduct basic firefighting and first aid. They were further supported to transmit this to their families, helping building larger community resilience. The coupling of conflict and DRR work enabled for also for the integrations of do no harm and conflict sensitive approaches to be integrated to assistance provided during hazardous events.

Notably, the Yemen Red Crescent Society applied a similar approach. When they were exploring the potential for anticipatory action, they were able to leverage their other ongoing work, notably on the areas of crisis and contingency management for economic collapse, political unrest, and civil war, which helped better inform and ground their scoping for AA.

Conflict should not be a barrier to act. Conflict sensitive approaches must be integrated to programming. Such approaches can generate enabling action to tackle both conflict and vulnerability to disasters.

#### Institutional Preparedness

Another commonly noted deterrent for action in contexts affected by fragility, conflict, and violence is the lack of institutional capacity, especially at the local levels. This can mean that the planning, monitoring, reporting, and implementation capacities may not match the requirements of the donor or implementing partners. As such, engagement with these actors, or at this scale at a whole, is foregone, resulting in missed opportunities. Recognizing it is important to be able to have these capacities in place for successful programmatic approaches, as well as sustained action beyond programmes, these capacities ought to be enhanced and supported over time. There have been successful initiatives that incorporate elements of institutional preparedness and capacity strengthening into their regular programme activities, which has worked and further contributed to the achievement of all programme objectives.

As mentioned above, IOM in South Sudan, through its Enhancing Community Resilience Programme, made great strides in building institutional capacities to help maintain peace and support resilient development. Their work on ECRP is guided by the ambition to strengthen local decision making, enable effective conflict resolution, and ensure accountability to citizens. Besides the noted establishments of local development committees and local CBDRM plans, ECRP was also successful in establishing an Early Warning Systems Technical Working Group, which not only enabled timely and informed decision making by authorities, but also enabled information sharing and communication with vulnerable communities for them to act as well. Hence, demonstrating again that institutional preparedness can be not only an enabler, but also a key component of effective climate action for authorities, communities, and individuals.

The Yemen Red Crescent Society has invested a lot of time and resources in building institutional preparedness to help reduce the humanitarian impacts of multiple disasters and crises. This has included work on developing and testing contingency plans, strengthening the capacities and tools of national response teams, enhancing information management and exchange, as well as use of risk information for decision-making.

Another notable example comes from UNHCR in Mozambique. Following Cyclone Idai, UNHCR, as protection cluster lead, facilitated the integration of protection and human rights principles

(protection mainstreaming) into the Government’s preparedness and response protection plans. This brought together the National Disaster Risk Management Authority, the Ministry for Gender, Children, and Social Protection, as well as non-governmental organizations. Concretely, this meant piloting “protection-principled” evacuation simulations and trainings, covering also related themes such as gender-based violence, disability inclusion, child protection, among others. The partnership also included the elaboration of protection sensitive early warning messages, guided by protection managers at evacuation centers as well as on referral pathways. At the local level this translated to the development and use of protection mainstreaming check lists by Local Disaster Risk Reduction Committees. The intervention package ensured that when faced by the next cyclonic season both communities and local institutions were better prepared and able to respond to hazardous events.



## Conclusion and Recommendations

In particular, the report calls for action to:

- Scale up climate action as global commitment and action is not in line with the commitments set in the Paris Agreement, among others, and a climate offshoot is becoming increasingly likely, driving great need for adaptation, resilience, and protection from losses and damages.
- Drive focused and collective action to reduce vulnerabilities systematically across the climate, disaster risk management, and humanitarian continuum with the aim of reducing the impacts from hazardous events and the incidence of large-scale crises.
- Prioritize action in contexts of high vulnerability, especially countries affected by fragility, conflict, and violence, where action is most needed.

For action that addresses vulnerability and is suited to fragile contexts, collective, coordinated, and at scale efforts are needed to:

- Enable a greater use of cash-based assistance, whenever possible, as it enables greater choice to the recipient in support of greater dignity and agency.
- Scale up of early warning systems and early action that enable at risk individuals and communities to take timely action against predictable hazards, supported by collective and concerted international assistance, when local coping capacities are surpassed.
- Enable the coupling of preventative and response measures to hazardous events, with resilience building and climate adaptation measures for addressing vulnerability and growing risks.
- Strengthen and grow social protection systems in favour of the most vulnerable and excluded, providing regular support, as needed, as well as additional assistance in case of large-scale shocks.
- Sustain interconnected services considerate of the individual, community, and larger societal needs for resilience, including the underpinning resilient goods and services required, such as sustainable infrastructure and healthy environments.

Furthermore, action must be guided by common principles that enhance the effectiveness and benefit for people, especially in contexts that are marked by fragility, conflict, and violence, aimed to:

- Place community owned and led initiatives at the centre and support a shift away from interventions that act on behalf or for the affected communities.
- Put people first as the most effective way to address vulnerabilities across marginalized groups and communities, helping ground action and support a movement away from lofty or generalized approaches that are not effective.
- Facilitate cross-sectoral partnerships that bring together actors to work in a concerted manner towards a common objective, leveraging their comparative advantages.
- Enable multi-scalar planning to bring together short-, medium-, and long-term interventions in a meaningful and impactful manner enabling the sequencing of assistance as fitting to the evolving context and objectives.
- Integrate conflict sensitivity into design, planning, and implementation, including monitoring and learning, as part of regular risk managements to better tailor plans and strategies to the local realities.
- Pursue institutional preparedness to unleash the potential for financing and programming at the local level, supported by the adequate institutions, further ensuring the suitability and sustainability of efforts.

Currently, there is funding gap that delimits progress. Between 2016 and 2020, the 40 Small Island Developing States (SIDS), the 46 Least Developed Countries (LDCs) and the 57 fragile states, respectively represented 2%, 17%, and 22% of total climate finance provided and mobilised. The yearly median of per capita climate finance provided and mobilised in these countries was USD 81 for SIDS; USD 14 for LDCs, and USD 11 for fragile states, compared to USD 21 when considering all recipient countries<sup>40</sup>.

This report argues that with proven actions, ways of working, and long-standing commitments to get climate finance to the pre-agreed levels of \$100 billion, there is no longer a rationale for continued low climate finance trends, especially for vulnerable contexts and those affected by conflict, fragility, and violence, where it is needed most. Quite the opposite, this trend must be reversed, where the last are put first and scaled up efforts are taken to ensure that needs are adequately met. This is the only way to really move away from the edge.



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<sup>40</sup> OECD, 2022. Aggregate Trends of Climate Finance Provided and Mobilised by Developed Countries in 2013-2020. [Online](#).

## Annex 1. Overview of Case Studies Submitted

### Food and Agriculture Organization (FAO)

Tackling climate change impacts through the application and adoption of farm-level disaster risk reduction good practices. Four case studies from [Bolivia](#), [the Philippines](#), [Timor-Leste](#) and [Uganda](#).

Application and adoption of early warning system and anticipatory actions to mitigate the impact of *dzuds* in [Mongolia](#).

### The Group on Earth Observations (GEO)

[Global Agricultural Monitoring \(GEOGLAM\)](#) Initiative enables agricultural monitoring and early warning for food security and disaster response, in countries such as Tanzania, [Uganda](#) Kenya, Rwanda, Ethiopia, Mali and Mozambique.

GEO under its Water Sustainability Initiative (GEOGLoWS) worked with the Government of Malawi to improve floods warning system by increasing its lead time from a few hours to 15 days, nearly halved the losses and damages from previous years.

### The International Committee of the Red Cross (ICRC)

ICRC's [Gaza](#) Resilience Program strengthening the resilience of essential service systems for greater humanitarian impact and adaptation to climate change

### International Organization for Migration (IOM)

Flood mitigation through knowledge enhancement, infrastructure improvement and the strengthening of local government and community institutions in [South Sudan](#)

Enhancing Community Resilience Programme (ECRP) in [South Sudan](#)

Breaking the Climate-Conflict Cycle in Galmudug and Hirshabelle, [Somalia](#)

### United Nations Office for the Coordination of Humanitarian Affairs (OCHA)

Anticipatory Action Frameworks in [Bangladesh](#), [South Sudan](#), [Niger](#)

### Red Cross/Red Crescent Societies (RCRC)

Preparing local communities for disaster risk in the context of conflict and fragility in [Lebanon](#)

Flood forecasting and anticipatory action in [Mali](#)

The Partners for Resilience consortium (PfR) in [Mali](#)

Tackling disaster impacts through enhanced institutional preparedness in [Yemen](#)

### The United Nations Educational, Scientific and Cultural Organization (UNESCO)

Be-Resilient [Zimbabwe](#)

### The Office of the High Commissioner for Refugees (UNHCR)

Emergency Protection Units for Climate Shocks (EPU-C) in [Mozambique](#)

### United Nations Satellite Centre (UNOSAT)

Implementation of nation-wide flood forecasting system in the Co-operative Republic of Guyana

Risk Informed Climate Change relocation for Vulnerable communities in Fiji

Strengthening Capacities in the use of geospatial information for improved resilience in Asia-Pacific and Africa

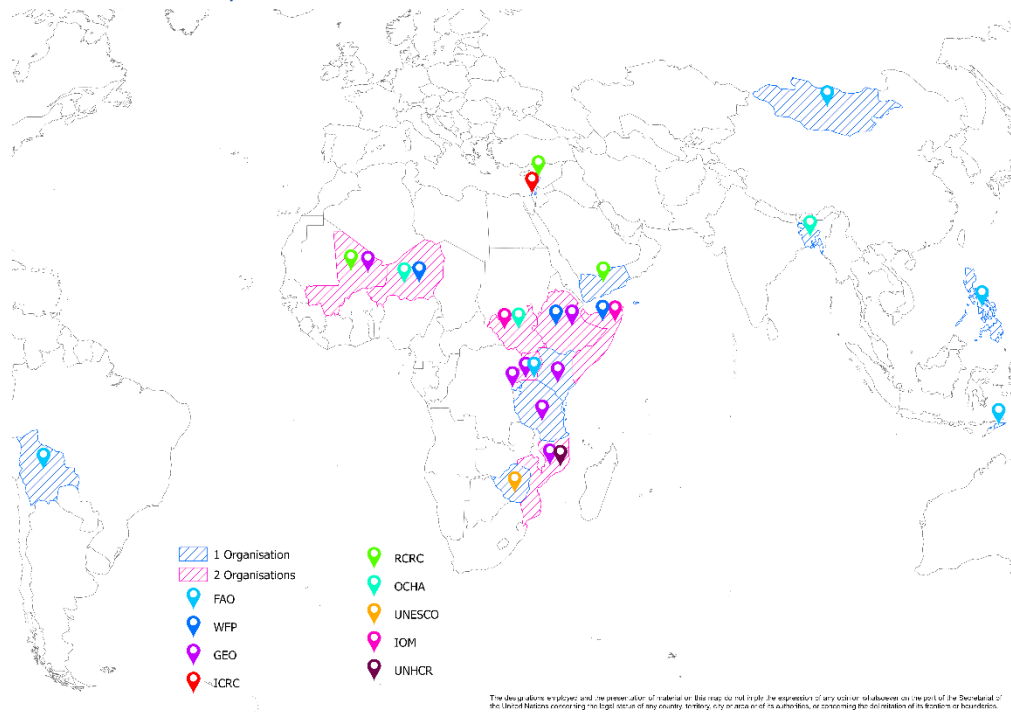
World Food Programme (WFP)

Restoring landscapes, ecosystems and livelihoods in [Niger](#)'s most fragile and food insecure areas

Providing Access to Livestock Insurance for Pastoralists in the Somali Region in [Ethiopia](#)

Delivery of anticipatory actions, including early warning information and cash-based transfers, to at-risk communities ahead of worsening drought conditions in [Somalia](#)

## Annex 2. Map of Case Studies Submitted



### Annex 3. Referenced Case Studies with Interventions and Principles Highlighted

#	Case Study	Interventions					Principles					
		Cash	EWS/EA	ASP	Coupling	Services	Local	People centred	Cross Sectoral Partnerships	Multi-scalar Planning	Conflict Aware	Institution building
1	FAO AA in Mongolia		x					x	x			
2	FAO Conservation Agriculture in Timor-Leste				x		x					x
3	GEOGLAM multi-country		x	x					x			x
4	ICRC Gaza Resilience Programme				x	x		x	x	x		
5	IOM Somalia Interconnected Services				x	x	x	x	x	x	x	x
6	IOM South Sudan Enhancing Community Resilience Programme (ECRP)		x		x	x	x	x	x	x	x	x
7	OCHA Anticipatory Action Bangladesh	x	x					x	x			
8	The Partners for Resilience consortium (Pfr) in Mali				x		x	x	x	x	x	x
9	Red Cross Mali Anticipatory Action		x		x		x	x	x	x	x	x
10	Red Crescent Society in Lebanon DRR and Conflict				x				x		x	x
11	Red Crescent Society in Yemen Institutional Preparedness		x						x		x	x
12	UNESCO Be-Resilient Zimbabwe		x		x		x	x	x	x		
13	UNHCR Emergency Protection Units for Climate Shocks (EPU-C) Mozambique		x					x	x		x	x
14	WFP Niger Integrated Programme			x	x	x	x	x	x	x		
15	WFP Somalia Anticipatory Action	x	x	x					x			
16	WFP Ethiopia Livestock Index Insurance	x	x						x	x		x



## Annex 4. Summary of Referenced Case Studies

### Food and Agriculture Organization (FAO)

Tackling climate change impacts in Timor-Leste through the application and adoption of farm-level disaster risk reduction good practices.

Conservation agriculture (CA) in Timor-Leste can contribute to inverting the trend of land and environment degradation, deforestation, loss of biodiversity, greenhouse gas emissions, and water regime degradation caused, among others, by traditional ploughing, burning, and “slash and burn” techniques for soil preparation. By maintaining soil moisture and structure and allowing for increased permeability by heavy rainfall, CA practices contrasts drought and reduce risks of soil erosion and landslides. CA allows for higher yields with lower costs of production, bringing more benefits and income to CA-adopting farmers. This has proven effective even in context of the past El Niño and the large-scale drought that affected farmers.

### Anticipatory Action against dzuds in Mongolia

In Mongolia, FAO worked with the Mongolian Information and Research Institute of Hydrology, Meteorology and Environment (IRIHME) to leverage their *dzud* risk maps, forecasts, and warnings systems to turn them into community dissemination and early warning actions. In partnerships with the Ministry of Social Development and the Mongolian Red Cross Society (MRCS), the criteria for best targeting vulnerable groups was defined to ensure adequate coverage of those most at need, in terms of their context and realities. Leveraging FAO’s Special Fund for Emergency and Rehabilitation Activities (SFERA), an activation of the system released \$290,000 USD to safeguard the livelihoods of 504 vulnerable herders. This enabled herders to destock under favourable terms and relief pressure on their resources, while also providing them with livestock kits to care for the remaining livestock through greater access to fodder, health supplements, and animal health advice. Action was taken in a coordinated manner with MRCS enabling full coverage of the most vulnerable and at risk of the impacts of *dzud*. Based on the FAO Return on Investment assessment conducted, for every US dollar invested in early actions, vulnerable herders obtained USD 7.1 through avoided losses and added benefits.

### The Group on Earth Observations (GEO)

Global Agricultural Monitoring (GEOGLAM) Initiative enables early drought response in Tanzania, Uganda, Kenya, Rwanda, Ethiopia, Mali, and Mozambique.

GEO’s Global Agricultural Monitoring (GEOGLAM) Initiative partners have developed satellite-based, custom-build crop monitor systems for near-real-time monitoring of global croplands. The tools support early warning and response programs including policies and programs, such as crop insurance, risk financing and rapid response. The crop monitor system aggregates satellite data such as vegetation, rainfall, temperature, and the Normalized Difference Vegetation Index (NDVI) for visualizing and analysing crop conditions. NDVI is a quantitative information on vegetation conditions and an objective indicator of crop damage. With automatically generates NDVI, governments can predict drought-induced harvest failure and estimate the level of resulting famine several (around 3) months in advance. Meanwhile, historical data from the Crop Monitor System allows government to set a predetermined NDVI threshold value to make rapid, transparent responses to future crop failure, for example, triggering Disaster Risk Financing to invest in public works to provide additional employment opportunities for vulnerable communities which would be affected by drought.

### The International Committee of the Red Cross (ICRC)

Gaza Resilience Program strengthening the resilience of essential service systems for greater humanitarian impact and adaptation to climate change

People in the Gaza Strip face severe and compounding shocks and stressors, such as recurrent cycles of hostilities, the longstanding closure restricting movements of people and goods, and the impact of climate change. Through the Gaza Resilience Program, the ICRC partners with local stakeholders and communities to strengthen the resilience of essential service systems in the power, water and wastewater, food production and value chains, and health sectors. These interventions contribute to a more sustainable humanitarian impact, including by supporting people adapt to the impacts of climate change. Bringing these interventions to scale requires partnership and collaboration with others to enhance collective impact.

#### International Organization for Migration (IOM)

##### Breaking the Climate-Conflict Cycle in Galmudug and Hirshabelle, Somalia

In Somalia, competition over access to land and water is the structural driver of most violent conflict. Climate change and environmental degradation further reduce scarce water resources, forcing communities to migrate and confront one another for control over diminishing ecological yields. Through multi-sectoral and cross-expertise collaboration, IOM, UNEP and SIPRI are implementing and advancing policy through the pilot projects *Breaking the Climate-Conflict Cycle in Galmudug and Hirshabelle, Somalia* designed to reduce environmentally induced displacement and conflict in target locations in Galmudug and Hirshabelle States through tangible investments in physical water infrastructure and pragmatic innovations for water and energy capture in the agropastoral sector, bolstered by sustained dialogue and enhanced natural resource management.

##### Enhancing Community Resilience Programme (ECRP) and Flood Response in South Sudan

IOM's flood response work under ECRP ensures that communities are central in preventing and responding to the impact of severe flooding. Physical investments in flood response infrastructure and capacity building for local officials and community leaders on Disaster Risk Reduction and Management enhances the resiliency of populations vulnerable to climate shocks.

Community-based disaster risk management is foundational to promoting South Sudan's ability to sustainably prevent and respond to flooding and to fostering the resiliency of local communities. IOM's Disaster Risk Management approach is centred on Strengthening the knowledge base, strengthening the capacity for effective community response to climate-related shocks and enhancing resilience through strategic infrastructural interventions.

ECRP has demonstrated the necessity for humanitarian and development organizations to rapidly, flexibly, and creatively respond to climate shocks and disasters by adapting programmatic priorities according to a population's most urgent needs.

#### United Nations Office for the Coordination of Humanitarian Affairs (OCHA)

##### Bangladesh monsoon flooding 2020: anticipatory action pilot

The UNOCHA intervention in Bangladesh uses an anticipatory cash transfer prior to extreme flooding in 2020 for the Jamuna River, a flood-prone area of northern Bangladesh. The intervention builds on existing structures and experiences by the IFRC, WFP and the Government of Bangladesh, with funding from OCHA's Central Emergency Relief Fund (CERF).

On 4 July 2020, severe floods were forecasted from 18 July onward. The framework was triggered, and funding agreed within four hours, marking CERF's fastest-ever allocation. The release of CERF funding to the World Food Programme (WFP), Food and Agriculture Organization (FAO) and UN Population Fund (UNFPA) enabled humanitarian assistance to reach 220,000 people before the water reached life-threatening levels. These three UN agencies worked with the Red Cross/Red Crescent, ten local non-governmental organizations (NGOs) and the Government of Bangladesh to provide:

- Multi-purpose, unconditional cash to 22,434 families
- Water-tight storage for 7,000 families
- Animal feed for 11,761 families.

- Hygiene and dignity kits for 10,455 women, girls, and transgender people
- Clean delivery kits that benefited 4,320 pregnant women
- 600 pre-positioned post-rape treatment kits, with a potential reach of some 36,000 people

Once the floodwaters receded, unspent CERF funding (\$2.4 million out of the \$5.2 million) was reprogrammed to provide additional multi-purpose, unconditional cash on a needs-driven basis to those people most affected by the flooding ex-post. The total reach for this intervention was 321,715 people.

A later review found that anticipatory cash delivered before the flood peak protected food security in the aftermath of the flood and helped households change their behaviour in ways that mitigated the flood impact, such as evacuating family members and livestock, and prevented the loss of productive assets. Beneficiaries were less likely to borrow after the flood and borrowed at lower rates. Three months after receiving the cash, they had higher food consumption, higher well-being and higher earning potential compared to non-beneficiaries.

The intervention case study shows how the combination of cash with an ‘early warning, anticipatory action’ approach can mitigate the worst impacts of a flood before it can occur and help to avert maladaptive actions. The case study is also strongly collaborative, building on pre-existing work and collaboration with other humanitarian agencies and government to quickly implement the cash transfer. The case study demonstrates the value of mitigating hazard impact and protecting development gains.

#### South Sudan 2022 Early Action for Flooding

In South Sudan, flooding during a rainy season typically subsides days or weeks into the dry period. Yet, in the worst-affected areas of South Sudan water had not receded even months into the 2022 dry season, leaving communities that were already surrounded by water extremely vulnerable to a projected fourth flood shock during the next wet cycle, and with shrinking prospects to escape to higher grounds. Even limited rain risked rivers coming over the dikes. Recognizing the imminent risk of major flooding in Unity state, CERF and the South Sudan Humanitarian Fund allocated a total of \$19 million for anticipatory and early action. This financing allowed, inter alia, strengthening protective dikes around vital infrastructure to maintain access for communities and humanitarians, manage storm water during heavy rains, provide shelter support to displaced people living in informal settlements, build up and flood-proof the water and sanitation infrastructure, and provide health and nutrition services to avert a public health emergency.

#### Niger 2022 Drought Anticipatory Action Framework

In Niger, the United Nations, in close collaboration with the Government as well as technical partners, developed an anticipatory action framework for drought in 2022, due to the high vulnerability of the country to increasingly frequent and severe drought shocks. In August 2022, the trigger thresholds were reached when satellite data and measuring stations in country showed that the first months of the rainfall season had been among the lowest in the last 30 years, particularly in the southwestern part of the country. The rainy season is essential for farmers and pastoralists to produce enough food to meet the food and livelihood needs of their families, communities, and livestock until next year's harvest. So, without action at this point, the situation for these communities was likely to deteriorate even further over the coming months, which was especially alarming as many of them were already highly vulnerable and food insecure. In line with pre-agreements set out in the AA framework, CERF released \$9.5 million to seven UN agencies to prevent and mitigate the immediate impact of insufficient rainfall. With the funds, the UN agencies and its partners are supporting more than 150,000 Nigeriens in the regions of Dosso and Tillabéri with a package of anticipatory action across the food security, health, nutrition, protection, and WASH sectors.

### Red Cross/Red Crescent Societies (RCRC)

#### Preparing local communities for disaster risk in the context of conflict and fragility in Lebanon

Lebanon faces low disaster risk compared to other countries in the MENA region and has experienced few major natural hazard-related disasters in its recent history, and none which have exceeded the government's capacity to respond. Although disaster risk is quite low, Lebanon is nonetheless vulnerable to several natural hazards, including earthquakes, flash floods, forest wildfires, landslides, tsunamis, winter storms and droughts. On the other hand, fragility, conflict and violence have been recurrent in Lebanon – and are fresh in people's minds. In an effort to increase disaster resilience, the Lebanese Red Cross has focused on establishing relationships and building trust among communities where there is a history of violent conflict; for example, by ensuring equal service provision, using school safety programmes as an entry point, and conducting joint activities with conflict parties using conflict-sensitive approach to DRR. Efforts to prevent and prepare for conflict have expanded over time to cover natural hazard-related hazards such as earthquake risk, flooding and fires.

#### Flood forecasting and anticipatory action in Mali

The Mali Red Cross Early Action Protocol for floods was approved in 2020. The pre-agreed plan for anticipatory action, or Early Action Protocol, is aimed at establishing flood forecasting and anticipatory action mechanism in Mali to reduce the impacts of flooding by preventing loss of life, destruction of habitats and public infrastructure and emergence of water-borne diseases. The interventions have been tested with the local communities and Mali Red Cross Society together with the Meteorological Agency, General Directorate, for Civil Protection, National Centre for the Coordination of Early Warning and Response Mechanisms and other national and international organisations. Once the Early Action Plan is triggered, pre-agreed anticipatory actions will be implemented by the Mali Red Cross including setting up emergency shelters, conducting joint assessments with local communities to identify the most vulnerable, communicating early warning messages, placing sandbags to divert flood waters, reinforcing walls of buildings, and distributing aqua tabs and mosquito nets to prevent water-borne diseases, among other activities.

#### The Partners for Resilience consortium (PFR) in Mali

The region of Mopti, Mali, located in Inner Niger Delta, has witnessed a drier climate in recent years. This has resulted in desertification and decreased water and flood surfaces during the wet season.<sup>1</sup> The Partners for Resilience consortium (PFR), of which the Red Cross Red Crescent Climate Centre, the Mali Red Cross, and Netherlands Red Cross are members, operated in Mopti to mitigate the risks emanating from this climate. This case study outlines two of the interventions that were undertaken.

In Mopti's Sobe village, desertification resulted in sand encroachment, which threatened to engulf housing, crops, communication infrastructure, waterways, etc, thereby also the survival of people and animals.<sup>2</sup> The consortium launched a dune fixation intervention to tackle these risks. The technique aims to create natural obstacles with local materials (such as using the "Euphoria Balsamifera" plant species) to decrease wind speed and therefore reduce the mobility of sand towards the town. 2,300 square meters was protected through dune fixing over 24 months with the support of 30 people per week.

Also in the Mopti region, such as in Gouraou Bozo village, farmers and cattle herders plant rice, millet and other crops and feed their animals in areas that flood during the wet season.<sup>4</sup> However, reduced flood surfaces over the past decade have decreased the bourgou grass quality. An intervention was initiated with local NGOs to rehabilitate the flooded forests and bourgou grasses, to reduce grazing pressure on trees and grasses and manage water in ways that sustain the ecosystem, on which livelihoods depend. Locals planted 15 hectares of bourgou cuttings over two years.

These interventions focusing on community-specific ecosystem rehabilitation have been key to reducing the population's vulnerability to increasingly dry climates in the Inner Niger Delta region.

#### Tackling disaster impacts through enhanced institutional preparedness in Yemen

The Yemen Red Crescent Society (YRCS) has undertaken a number of institutional preparedness activities to reduce the humanitarian impacts of multiple disasters and crises. Such interventions include developing and testing a contingency plan, strengthening the National Response Teams and improving information management in terms of collecting, analysing and using risk information for operational decision-making.

In addition, under the European Civil Protection and Humanitarian Assistance department's Pilot Programmatic Partnership (ECHO PPP) with the International Federation of Red Cross and Red Crescent (IFRC), a scoping study was conducted on anticipatory action in Yemen with the support from the YRCS. Though the study highlights the complex nature of disaster risk management in-country due to the ongoing political unrest, civil war and economic collapse, it emphasises the usefulness of anticipatory action for various natural and man-made hazards; necessity for different tools (one for the north and one for the south); and the interventions to strengthen institutional preparedness of YRCS that could become essential ingredients for scaling up anticipatory action.

#### The United Nations Educational, Scientific and Cultural Organization (UNESCO)

##### Be-Resilient Zimbabwe

In response to Cyclone Idai, UNESCO has taken a multidisciplinary approach to reduce the vulnerability of communities in the Chimanimani and Chipinge Districts, contributing to the transition from disaster recovery to long-term climate resilience. Following a risk informed and community-focused approach, flood and drought early warning system were set up for the target areas, combined with improved communication on early warning through the setup of 2 community radio stations in the area. Through a stakeholder and institutional engagement process, long-term ownership and sustainability of adaptation plans was secured, enabling the transition from disaster recovery to long term climate resilience.

#### The Office of the High Commissioner for Refugees (UNHCR)

##### Emergency Protection Units for Climate Shocks (EPU-C) in Mozambique

In Mozambique in early 2023, Cyclone Freddy has hit the southern African and coastal country twice impacting over a million people across eight provinces and displacing up to 184,000 people in 230 accommodation centers, at the peak of the crisis. In preparation for the rainy/cyclonic season, the Protection Cluster, led by UNHCR in Mozambique, has partnered with the Mozambique Disaster Risk Reduction Agency (from its Portuguese acronym "INGD") in order to ensure integration of protection and human rights principles (protection mainstreaming) of the Government's preparedness and response plans. Concretely this has meant piloting "protection principled" evacuation simulations, trainings on protection and related themes (GBV, disability inclusion, child protection, PSEA and identification of persons with specific needs) to regional focal points and local disaster risk reduction committees at the village levels in most impacted provinces. The partnership also included the elaboration of protection sensitive early warning messages, guide on protection for managers of evacuation centers and working jointly on referral pathways. During the response, the Protection Cluster accompanied the Government efforts by ensuring continuous sensitization of the code of conduct of INGD; distribution of information and education materials on PSEA and sensitization of communities to recognize and report incidents of SEA. Emergency Protection Units for Climate Shocks (EPU-C) composed of Government (INGD and DPGCAS) and protection partners (including local NGOs) are continuously visiting evacuation centers in Sofala, Gaza and Inhambane to ensure continuous protection presence as well as messaging on PSEA and protection. Continuous awareness raising on protection risks; prioritization of persons with specific needs; protection mainstreaming on-going in

all accommodation centers across three provinces. Protection Mainstreaming Audit tools are being used to support authorities adapt their on-going response to reduce protection risks. At the same time, practical protection mainstreaming check lists have been provided to Local Disaster Risk Reduction Committees of INGD for them to facilitate improvements and “quick fixes” to accommodation centers.

Evidence of the impact of these interventions has been seen in the Provinces that have undergone the trainings – especially in Sofala and Nampula – where the authorities incorporated principles from the training in the establishment of evacuation centers such as separate sleeping quarters by gender to reduce GBV, inclusion of female security guards, accessible toilets, food distribution that prioritized persons with specific needs, among others. Furthermore, the Early Warning Messages elaborated by the Protection Cluster and INGD had been transmitted by radio, community DRR committees and by text messages in the province of Sofala. The transmission of Protection Early Warning Message have ensured that populations have been better prepared by, inter alia, packing their civil documentation and other crucial products in a “run bag”, ensuring children are informed of where to meet their parents (and vice versa) in case of separation, among others. Furthermore, the Referral Pathways produced jointly by the Protection Cluster and the INGD allowed for authorities and NGO partners to have in one place contacts of both protection services and DRR (search and rescue for instance) focal points in one place.

#### United Nations Satellite Centre (UNOSAT)

##### Implementation of nation-wide flood forecasting system in the Co-operative Republic of Guyana, (September 2018 -July 2021)

In September 2018, UNOSAT has partnered with UNDP to implement a 3-year initiative: “Strengthening disaster management capacity of women in the Cooperative Republic of Guyana and the Commonwealth of Dominica” targeting problems’ drivers such as gaps in gender analysis, hazard, and risk data; limited integration of climate change, disaster risk planning and practices in the agriculture sector. To improve flood preparedness and response activities at both national and local level, UNOSAT in collaboration with project partners has implemented a nation-wide Flood Forecasting System platform (NFFS) along with different knowledge transfer activities targeting Hydromet staff and selected national stakeholders. In June 2021, an official ceremony was held to mark the closure of the project with the presence of Mr Zulfikar Mustapha, Guyana’s Minister of Agriculture, His Excellency Tatsuo Hirayama, Ambassador of Japan and Mr Jairo Valverde UNDP Resident Representative. During widespread flooding that affected large areas across several regions in Guyana (June-July 2021), the Flood Forecasting System platform (NFFS) was tested by Hydromet’s technical staff. Comparison between flood output results generated by the flood forecasting system (NFFS) and satellite-detected flood extents showed high correlation of model results with observed flood extents. Overall, the activities implemented by UNOSAT and project partners, have successfully supported Guyana’s efforts towards flood preparedness and response and have also laid a solid foundation towards the establishment of a Multi-Hazard Early Warning System (MHEWS).

##### Risk Informed Climate Change relocation for Vulnerable communities in Fiji (December 2021- May 2022)

In December 2021, UNOSAT has partnered with UNDRR to support the Fijian Government in the relocation of communities vulnerable to climate change. The overall objective of the project was to assist the Fijian Ministry of Economy (MoE) and the National Relocation Taskforce Committee in the relocation process of communities earmarked for potential relocation by conducting a preliminary risk profiling and climate change adaptation study targeting identified priority communities for relocation. In March 2022, UNOSAT team with the support of selected staff from the Climate Change Department of the Ministry of Economy (CCICD), the National Disaster Management Office and the Commissioner’s Office and iTaukei Affairs carried out a preliminary climate change adaptation study covering 17 vulnerable communities in Fiji. The overall objective of this study was to identify potential climate change adaptation interventions based on their current socio-economic status, development plans, susceptibility to various natural hazards including climate related risk drivers. Within the scope of this project, UNOSAT has implemented ad-hoc geospatial services to support with evidence-based risk related information the relocation decision making led by Fiji Government. This project was implemented under the UNDRR flagship initiative Global Risk Assessment Framework (GRAF) and ended in May 2022.

## Strengthening Capacities in the use of geospatial information for improved resilience in Asia-Pacific and Africa (August 2021 -July 2024)

Building the climate and disaster resilience of national authorities and growing population at risk in most fragile and vulnerable environments, requires a better understanding of systemic risk and operationalisation of the multi-faceted notions of resilience and vulnerability. In particular, strengthening risk governance at the local level requires in many cases not only the ability to raise risk awareness but also a better understanding of technologies and more coordinated efforts to improve evidence-based decision making. Building climate and natural disaster resilience of national authorities and the growing population at risk in the most fragile and vulnerable environments requires a better understanding of systemic risk and the operationalisation of the multifaceted notions of resilience and vulnerability. In particular, strengthening risk governance at the local level requires in many cases not only the ability to increase risk awareness, but also a better understanding of technologies and more coordinated efforts to improve evidence-based decision-making.

As part of its capacity-building activities, in 2021 UNOSAT established several cooperation agreements with selected focal point ministries in eight countries in Asia-Pacific and Africa (e.g. Bangladesh, Bhutan, Fiji, Lao PDR, Nigeria, Solomon Islands, Uganda and Vanuatu) to strengthen the technical capacities of national stakeholders in the use of geospatial information technologies to improve climate and disaster resilience, and to support these target countries in integrating risk-informed planning within and across different sectors, in line with national DRR strategies and policy frameworks.

### World Food Programme (WFP)

#### Restoring landscapes, ecosystems, and livelihoods in Niger's most fragile and food insecure areas

WFP has been implementing resilience building programmes in Niger since 2014. Leveraging on years of testing and learning, WFP Niger has designed an integrated approach to restore landscapes, ecosystems and livelihoods, centred on two core principles:

1. Providing communities with an integrated package of activities, including massive land rehabilitation at watershed level through food assistance for assets (FFA), improved access to water for productive use and setting up vegetable gardens, treatment and prevention of malnutrition, school meals, cash grants for schoolgirls, improved access to markets for smallholders, and income generating activities.
2. Fostering partnerships with a wide range of actors: civil society, local government, NGOs, other UN agencies to collectively achieve large scale and sustainable impacts.

In 2021 alone, the programme has reached 1,386 villages in all regions in the country (except Niamey) across 380 sites (each site is a cluster of several villages), benefiting more than 1.3 million overall people through such an integrated package. In 2022, the programme is expected to surpass the previous milestone by reaching 1.8 million people.

### Providing Access to Livestock Insurance for Pastoralists in the Somali Region in Ethiopia

As the climate crisis makes it more difficult for pastoralists across southern Ethiopia to grow food and care for their livestock, new long-term solutions are needed. Searching for technology solutions to help communities cope with climate shocks, WFP developed the Satellite Index Insurance for Pastoralists in Ethiopia (SIPE) project, which introduced index-based livestock insurance that uses “normalised difference vegetative index” (NDVI) technology to measure photosynthesis in vegetation and the level of productivity and growth of plants — essentially the greenness of an area. After identifying vegetation that is below the average growth thresholds, signalling that pasture and fodder

availability may be reduced for livestock, SIPE then triggers insurance payouts that are distributed to pastoralists households through a combination of mobile money and physical cash distributions (when outside of mobile service areas). The objective is to have payouts reach dispersed households quickly enough so that pastoralists can take the necessary steps to protect their herds, be it purchasing or producing fodder, paying for veterinary services, or purchasing water or fuel for pumping irrigation water.

Delivery of anticipatory actions, including early warning information and cash-based transfers, to at-risk communities ahead of worsening drought conditions in Somalia

In March 2022, WFP provided anticipatory action assistance to people living in the Bakool region of Somalia. This region was predicted to face a fourth consecutive failed rainfall season during the Gu rains (March-May 2022). Anticipatory action in Somalia was delivered at a time when humanitarian needs had escalated to unprecedented levels and were likely to further deteriorate, with crop production and livestock conditions particularly at risk.

In partnership with the Somali government, WFP implemented anticipatory actions in the Waajid and Xudur districts in Bakool region through:

1. Last-mile early warning messages, reaching approximately 60 per cent of the total population (1,200,000 people) with information on actions to reduce impacts of poor rainfall in the two districts.
2. Anticipatory Cash-based Transfers (CBT), reaching approximately 100,000 people<sup>1</sup>, ensuring that those expected to be the most affected had the necessary resources to protect their lives and livelihoods from a consecutive failed rainfall season.

WFP also operates the national social protection system, known as Baxnaano, on behalf of the Federal Government of Somalia, through the Ministry of Labour and Social Affairs (MOLSA). Participants in Baxnaano that were identified as the most likely to be severely affected by the predicted drought received anticipatory cash assistance. Baxnaano beneficiaries received US\$ 40 per month for three months, in addition to the regular payment of US\$ 20. It is one of the few real-life examples where social protection programmes were scaled-up or flexed based on weather forecasts of an impending climate hazard.



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