



USAID CLIMATE ADAPTATION SUPPORT ACTIVITY (CASA)

WINDOWS OF OPPORTUNITY FOR RISK-INFORMED HUMANITARIAN ASSISTANCE

*An Anticipatory, Early Action, and Disaster Risk Finance
Framework*

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ACRONYMS AND ABBREVIATIONS

AA	Anticipatory Action
ARC	African Risk Capacity
ASEAN	Association of Southeast Asian Nations
BHA	Bureau for Humanitarian Assistance
CASA	USAID Climate Adaptation Support Activity
CERF	Central Emergency Response Fund
DREF	Disaster Response Emergency Fund
DRF	Disaster Risk Finance
DRR	Disaster Risk Reduction
FEWS NET	Famine Early Warning Systems Network
G7	Group of Seven (intergovernmental political forum comprising Canada, France, Germany, Italy, Japan, United Kingdom, and United States)
IFRC	International Federation of Red Cross and Red Crescent Societies
IR	Intermediate Result
NGO	Nongovernmental Organization
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
PREPARE	President's Emergency Plan for Adaptation and Resilience
PSNP	Productive Safety Net Programme
REAP	Risk-Informed Early Action Partnership
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
USD	United States Dollar(s)
USG	United States Government
V20	The Vulnerable 20 is a coalition of 55 vulnerable developing countries
WFP	World Food Programme

SECTION 1.0

INTRODUCTION

Over the last three decades, the number of global crises has grown, increasing in scale, scope, and duration. Climate-related disasters have increased by a factor of five over 50 years (World Meteorological Organization 2021). State conflicts are at a historic high, while non-state conflicts have stabilized at higher levels than in the past (Palik, Obermeier, and Rustad 2022). As humanitarian needs have steadily increased, funding has also dramatically increased with donors providing 29.75 billion United States dollars (USD), meeting 57 percent of global needs, in 2022 (UN OCHA 2023b). Despite this increase, the gap between needs and available funding has only grown. In 2023, global humanitarian needs reached 51.5 billion USD, a 25 percent increase over 2022 (UN OCHA 2022b) and a tenfold increase over the last two decades (Development Initiatives 2003). As a result, the need for humanitarian assistance vastly outstrips the availability of humanitarian funding and response capacities at all levels.

This gap and the pressures from climate change, conflict, and COVID-19 have generated a scramble for innovative ways to finance and anticipate humanitarian needs. Traditional disaster management frameworks focused on the cycle of risk reduction, preparedness, response, and recovery have not proven adequate in contexts where multiple shocks and stressors, often occurring in parallel or in quick succession, undermine the ability of communities to recover and return to a new post-disaster normal.

In contrast, new technologies and capacities, including improved early warning, risk modeling, innovative finance, and social protection systems, have created opportunities for new models of risk-informed action across humanitarian, development, and climate communities of practice. According to a recent analysis, over a quarter of the funding for acute humanitarian crises is going to places where early warning systems or baseline risk models are already in operation for that hazard, creating opportunities to organize plans, finance, and response capacities ahead of time (Montier, Weingärtner, and Klassen 2022). Nevertheless, only a fraction of the funding for these crises is prearranged (Weingärtner and Spencer 2019). In other words, the humanitarian system is reacting to disasters when it could be managing risks proactively.

Humanitarian organizations are turning to “risk-informed” humanitarian approaches to address these challenges. These approaches seek to bridge the gap between long-term action to reduce exposure to hazards or their impacts (the focus of traditional disaster risk reduction [DRR] programs) and reactive humanitarian response, creating systems that help communities, governments, and humanitarian actors get ahead of crises with more timely and predictable action.

Anticipatory action is one risk-informed approach that leverages the opportunities afforded by the forecast of a hazard or its impact to support communities to take action to reduce the impacts of hazards. While there is some diversity in the terminology used to describe anticipatory action (Warrick et al. 2021), there is growing consensus on the components of the approach. Anticipatory action interventions typically i) rely on forecasts, ii) are linked to short-term actions that aim to prevent or reduce impacts, and iii) require finance that is identified or arranged ahead of time (ASEAN Secretariat 2022; IFRC 2022; UN OCHA 2023a).

For example, in Bangladesh, a country with a rich history of early warning and community-based preparedness, a United Nations (UN) Office for the Coordination of Humanitarian Affairs (OCHA)-led anticipation action system was triggered in 2020 ahead of a significant forecasted flood. Over 200,000 people were reached with cash transfers days before the severe flooding. The targeted households maintained higher food consumption levels and well-being during and after the flood than those who did not receive anticipatory assistance (Pople et al. 2021).

Disaster risk finance (DRF) refers to systems and approaches to prepare financially for future crisis events and their costs. Types of DRF instruments include contingency funds, contingent loans, and insurance. DRF systems can meet a number of different objectives, including budget protection, agricultural protection, infrastructure protection, and protection of people and communities. The latter is the focus of the “humanitarian” DRF addressed in this report.

National governments and humanitarian organizations are employing disaster risk financing to reduce reliance on the “begging bowl” model of humanitarian financing, whereby funds are mobilized after an event through slow and often uncoordinated processes that can undermine national and local capacities (Clarke and Dercon 2016) and incur high process costs (Knox and Hillier 2023). DRF offers a framework by which countries and organizations can quantify disaster risk and cost different disaster risk management options ahead of time and make better informed decisions to manage risks.

For example, the African Risk Capacity (ARC) is a specialized institution of the African Union that provides disaster insurance and technical support to African countries to prepare and plan for extreme weather events. ARC provides a regional risk pool that has enabled governments and humanitarian partners to purchase over 62 insurance policies since its inception in 2014. ARC has facilitated access to rapid and predictable financing and reduced the cost of disaster response by sharing and transferring financial risk in the region and to the international insurance market (ARC 2023). The Caribbean Catastrophe Risk Insurance Facility, the first and one of the most successful regional risk pools, and its member states have also begun working with humanitarian organizations to expand coverage for humanitarian response and shock-responsive social protection.

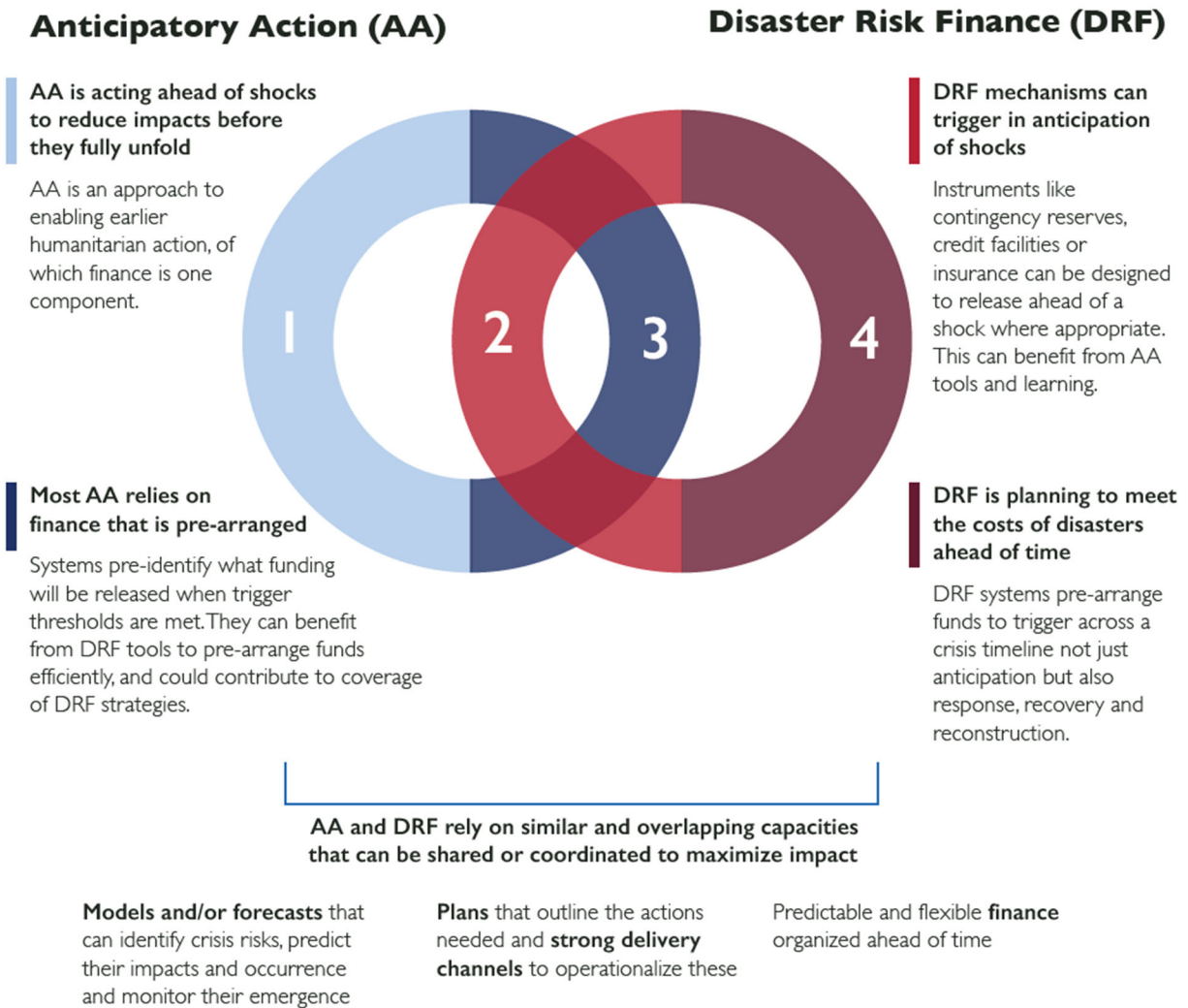
TABLE I: DEFINITIONS	
DEFINITION: ANTICIPATORY AND EARLY ACTION	DEFINITION: DISASTER RISK FINANCE
<p>Anticipatory action is acting ahead of predicted hazardous events to prevent or reduce acute humanitarian impacts before they fully unfold.</p> <p>The terms “anticipatory action,” “early action,” and “forecast-based financing/action” are often used as synonyms (Clarke 2022).</p>	<p>Disaster risk finance is the system of budgetary and financial mechanisms to credibly pay for a specific risk, arranged before a potential shock. Disaster risk finance can be used to prevent and reduce disaster risk and prepare for and respond to disasters (Centre for Disaster Protection 2023).</p>

Risk-informed approaches are being tested, scaled up, and institutionalized across the humanitarian system. These efforts are generating a growing evidence base on the value of using available risk information to facilitate earlier and more predictable assistance to climate-vulnerable populations. However, the increasing popularity of these approaches, partly driven by significant unmet humanitarian needs and the need for new tools to limit the impacts of climate change, brings challenges around clarity and coherence, the diverse mechanisms to implement such approaches, and how these can be supported.

For example, while anticipatory action and DRF share much overlap in their objectives and the capacities required to execute them effectively, they often operate in silos. Anticipatory action is driven primarily by the humanitarian community, and DRF is driven more by sovereign governments, supported by

multilateral banks and private sector actors. Despite efforts to bring the communities together (for example, through working groups), they are often treated separately in frameworks and policies, resulting in missed opportunities for collective impact (Montier, Harris, and Ranger 2019). For the purposes of this report, the two are addressed under a single framework due to significant overlaps and shared capacities (see Figure 1). In some contexts, anticipatory action’s popularity as a concept also results in small-scale, uncoordinated pilots, which risk wasting valuable resources and could result in mixed messaging ahead of forecasted crises, potentially undermining existing early warning systems.

FIGURE 1: ANTICIPATORY ACTION AND DRF: LINKAGES AND SHARED CAPACITIES



The United States Agency for International Development (USAID) recognizes that addressing the climate crisis requires long-term, transformative changes through a systems approach (USAID 2023). A broader conceptual framework for risk-informed approaches is needed to support coordinated efforts to improve the humanitarian system and take full advantage of the anticipatory action and DRF approaches. The USAID Bureau for Humanitarian Assistance (BHA) has commissioned the work outlined in this report to address this need. The report outlines a blueprint for a comprehensive DRF framework designed to support humanitarian organizations and donors as they continue to implement and scale up risk-informed and anticipatory approaches to humanitarian action. Specifically, it will help to

i) situate anticipatory action and DRF within the disaster management cycle and support discussions regarding burden share between different actors and streams of funding, and ii) support decision-making regarding when risk-informed approaches are “worth it” (recognizing the trade-offs inherent in prearranging or releasing funding ahead of crises).

The framework will also help improve the tracking of global commitments to early action (Risk-Informed Early Action Partnership [REAP]), climate adaptation (UN Framework Convention on Climate Change [UNFCCC]), the Sendai Framework (Priority 3), the Grand Bargain, and resilience building.

1.1 PROJECT OVERVIEW

While significant progress and action have taken place to test and scale up DRF, anticipatory action, and early action in the humanitarian community, fundamental questions have emerged as essential to guide the development of these tools in the future. These questions include:

- How can humanitarian actors, governments, and partners leverage innovative risk-informed approaches, risk financing tools, and climate adaptation to shape a new comprehensive DRF framework?
- Which risk management tools and funding mechanisms are appropriate for the intended results sought by governments, humanitarian organizations, and their partners?
- How can donors and humanitarian organizations build capacity and increase readiness to layer traditional preparedness and emergency response with risk-informed approaches and climate adaptation?

Addressing these questions represents an opportunity for USAID to lay out a comprehensive DRF framework for the humanitarian community to tackle the challenges of the humanitarian funding gap and the climate crisis while building up organizational capacity on risk-informed approaches and climate adaptation.

With funding from BHA’s Food Security and Livelihood division, the USAID-funded Climate Adaptation Support Activity (CASA) was tasked to develop tools to strengthen BHA’s and the broader humanitarian community’s organizational readiness for risk financing, and anticipatory and early action. CASA is USAID’s flagship adaptation support project and supports USAID Washington and USAID Missions to implement the Agency’s ambitious Climate Strategy and the President’s Emergency Plan for Adaptation and Resilience (PREPARE) initiative. Specifically, CASA has developed the following tools:

1. A blueprint for a comprehensive disaster risk financing framework and readiness assessment guidance for donors and implementing partners (this report),
2. Detailed mapping of the different kinds of risk finance instruments and initiatives (separate report), and
3. A policy brief presenting key recommendations (separate report).

This report provides the results of the framework and readiness assessment guidance, including the tools and additional relevant information on the development of the tools.

I.2 REPORT OVERVIEW

The body of this report outlines the blueprint for a comprehensive DRF framework. It includes an introduction to the paper followed by a summary of the policy environment for DRF and anticipatory action. The report then presents the blueprint for a comprehensive DRF and an anticipatory and early action framework for the humanitarian sector and discusses how to apply this framework and a humanitarian risk-layering approach.

Annex A presents a readiness assessment checklist to provide USAID and other humanitarian donors and partners with an easy-to-use guide to the requirements and considerations for establishing effective anticipatory action and DRF mechanisms and initiatives. Annex B presents the report's references.



SECTION 2.0

POLICY ENVIRONMENT FOR RISK-INFORMED ASSISTANCE

The international community, including humanitarian organizations, has been moving toward more risk-informed action for decades. The 2015 Sendai Framework for Disaster Risk Reduction and its predecessor, the 2005 Hyogo Framework for Action, clearly define the international community's commitment to anticipatory action to reduce the losses and damages caused by natural disasters (*Sendai Framework for Disaster Risk Reduction 2015-2030* 2015). This commitment is also reflected in the UNFCCC process, including Article 8 of the Paris Climate Agreement, which covers loss and damage. The Compendium on Comprehensive Risk Management Approaches developed by the Warsaw International Mechanism on Loss and Damage highlights “anticipatory action to reduce the risk of loss and damage” as part of comprehensive risk management and the value of various financial risk transfer mechanisms (WIMS 2019). Moreover, through the Climate and Environment Charter for Humanitarian Organizations, the humanitarian community has committed to increasing its focus on climate change adaptation, disaster risk reduction, and anticipatory action (Climate Charter 2022). In recent years, anticipatory action was highlighted in the Group of Seven (G7) Foreign Ministers' statement on strengthening anticipatory action in humanitarian assistance, released in 2022, which asserts that “for the humanitarian system to continue to be able to protect affected populations, to bridge the growing financing gap and protect hard-won development gains, a paradigm shift toward more efficient, effective and forward-looking humanitarian assistance is needed”(G7 2022). At a high-level event in 2021, several governments and organizations pledged concrete commitments to such approaches, including the German Federal Foreign Office, which pledged five percent of their humanitarian budget to be allocated to the anticipation of crises, looking to triple their previous investments (Maas 2021).

DRF has also received increasing policy attention. For example, the Global Shield Against Climate Risks, launched in 2022, is a joint initiative between the Vulnerable 20 (V20) and G7, including the United States, that will “increase protection for poor and vulnerable people by substantially enhancing prearranged finance, insurance, and social protection mechanisms” (V-20 2022). The Global Shield aims to bring together previously separate climate and DRF programs under one umbrella, to channel better coordinated and harmonized support, finance, and products to climate-vulnerable countries. Global Shield is a facility housed at the World Bank, with a Secretariat based in Germany that evolved from the InsuResilience Global Partnership, which the United States government (USG) joined in the margins of the G7 in June 2021.

The USG has also made a series of ambitious commitments to scale up early warning systems and DRF coverage to address the risks of climate change. The PREPARE initiative aims to help more than half a billion people in developing countries adapt to and manage the impacts of climate change this decade. PREPARE includes commitments to expanding access to risk-based insurance for the most climate-vulnerable and access to early warning systems for all of Africa.

USAID's Climate Strategy 2022–2030 emphasizes the Agency's goal of ensuring that the support provided by USAID and partners becomes more anticipatory, cost-effective, and impactful (Intermediate Result [IR] 2.4) and that comprehensive anticipatory action is inclusive and accessible (IR 1.2). USAID's Climate Strategy also specifies shock-responsive social protection systems and prearranged DRF as crucial factors in an enabling environment for climate-resilient economies and financial systems (IR 2.2).

The objectives of the USAID Climate Strategy are echoed in the USAID/BHA Strategic Framework for Early Recovery, Risk Reduction, and Resilience (ER4 framework), which states that "USAID programming helps to build resilience so that the communities where we work are prepared and able to take anticipatory and early action in the face of stresses and shocks." The framework identifies DRF as crucial to improving the absorptive capacity of communities (USAID 2022b).

The policy environment is constantly evolving, in line with unfolding climate change negotiations, opening up new opportunities for global collaboration to support countries and communities ahead of predictable shocks. Interviews held for this report identified several policy areas requiring additional clarity, highlighted in Box 1 and Box 2.

BOX 1: THE RELATIONSHIP BETWEEN DISASTER RISK REDUCTION (DRR), ANTICIPATORY ACTION, AND DISASTER RISK FINANCE (DRF)

Under the Sendai Framework and as defined by the United Nations Office for Disaster Risk Reduction, DRR is defined as the policy objective of disaster risk management aimed at preventing new and reducing existing disaster risk and managing residual risk (United Nations 2015). DRR is not a specific set of activities but rather the results of those activities (Clarke 2022). Anticipatory action and DRF, which aim to reduce and minimize the impacts of disaster risks through earlier and more effective responses, contribute to DRR as a policy objective when successfully employed.

In practice, however, DRR is often used to describe specific activities that aim to reduce the exposure or vulnerability of people to hazardous events (Clarke 2022). These long-term investments and actions usually focus on the disaster risk management cycle's mitigation and prevention elements. They are typically based on static risk assessments rather than forecasts and early warnings.

When DRR is used as shorthand for a separate activity category, practitioners often highlight the importance of these activities to enable anticipatory action and DRF. For example, early warning systems and risk assessments are essential for developing anticipatory action and DRF mechanisms. On the other hand, other long-term DRR measures, such as improved building codes and land use planning, are not directly relevant but equally, if not more important, to reduce overall disaster risk. Further descriptions of the interdependencies between DRR, anticipatory action, and DRF are explored below.

2.1 USAID HISTORY AND EXPERTISE IN RISK-INFORMED ASSISTANCE

USAID is the world's largest humanitarian and development donor. USAID's BHA is the USG's lead for international disaster assistance, reaching tens of millions of people around the world each year with life-saving aid. USAID responds to an average of 75 crises in more than 70 countries each year, providing food, water, shelter, health care, and other critical aid to people who need it most. USAID works to ensure that this assistance reaches people affected by natural disasters—including hurricanes, earthquakes, and volcanoes—and slow-onset crises, such as drought and conflict. With over 30 years of experience building local, national, and regional disaster response capacities to confront natural hazards,

BHA's leadership on many fronts of disaster risk management strengthens disaster resilience and contributes to sustainable development.

USAID and the USG have a long history of investing in early warning, DRR, vulnerability analysis, contingency planning, and DRF. For example, USAID has trained over 70,000 local emergency response personnel, supported the development of disaster management institutions (including national hydrometeorological and disaster management agencies), and supported the development of community-based early warning and disaster response systems. At present, multiple agencies within the USG support efforts to scale up humanitarian and other international DRF mechanisms, including USAID's BHA and Bureau for Resilience and Food Security, the Treasury Department, and the Department of State's Special Presidential Envoy for Climate.

BOX 2: CLIMATE FINANCE AND THE MOSAIC OF FINANCING OPTIONS

At the 2022 UN Conference of Parties, or COP27, Maldives' Environment Minister Aminath Shauna argued that the world requires a "mosaic of solutions" for loss and damage that must go beyond the "standard disaster response," which is already slow and inadequate (Warner and Weisberg 2023). Minister Shauna's statement has been taken up as a rallying call for diverse risk management mechanisms and sources of finance to tackle the complexities of climate disasters at local, national, and international levels.

Respondents interviewed for this report emphasized that the appropriate configuration of the "mosaic of solutions" should vary by country and region (led by local and national priorities). Nonetheless, greater clarity is needed on how these solutions are best financed.

Anticipatory action and DRF can serve multiple policy objectives, from protecting development gains to bolstering resilience and facilitating more timely and effective life-saving assistance. Delinking the approaches from the policy objectives can allow for greater applications in different sectors and more significant potential for developing scalable financing structures that can support multiple objectives.

Humanitarian funding is often project-based, short-term, and founded in needs-based logic, making it hard to adapt it to the longer-term approaches needed to prepare for and ensure predictable support ahead of emergent risks. Development investments are longer-term but often unequipped to absorb shocks and may be directed through channels that lack the knowledge and systems for timely, anticipatory action. Moreover, risk-based targeting is often absent from humanitarian and development investments, preventing risk-informed approaches.

Climate finance offers promising avenues of financing anticipatory action. For example, the Green Climate Fund has supported projects strengthening national capacity for anticipatory action ahead of climate shocks (GCF 2022). Despite well-documented challenges with international climate finance reaching the local level (DeMarez et al. 2022; Masullo et al. 2015), respondents felt climate funds should prioritize support to risk-informed action ahead of predictable climate shocks. Using climate finance for anticipatory action may help address concerns regarding the "cannibalization" of scarce humanitarian funding away from DRR or response to risk-informed approaches.

At the same time, current negotiations on loss and damage finance in the UNFCCC process present an opportunity to closely examine the international architecture for climate risk finance, including both the funding for the foundational capacities needed to implement risk-informed approaches, such as early warning systems, and the funds required for response. In disaster risk financing policy discussion, these two funding needs are often referred to as "build" and "fuel." Though both areas of investment are underfunded compared to the need, there tends to be less funding for fuel than building capacities. As parties to the UNFCCC assess loss and damage financing options, the mechanisms in the humanitarian system can provide important models and lessons that could be replicated.

Building off the mosaic approach, working on one front should not detract from working on the other. Increasing the funding available to address climate shocks and deploying this across multiple fronts is necessary. Caution should be taken that climate finance does not create further silos between anticipatory action, typically associated with Adaptation, and disaster risk finance, associated with Loss and Damage, given their intrinsic interconnections as illustrated in the conceptual framework below.

After the famines in the Sahel and Ethiopia in the 1980s, USAID established the Famine Early Warning Systems Network (FEWS NET) (Brown 2008). FEWS NET provides food security early warning in over 30 countries. FEWS NET combines climate forecasts and agricultural monitoring with livelihoods,

markets, and other analyses to predict food insecurity and crises. USAID has invested in baseline datasets and analytical tools that have become essential to many anticipatory action and DRF mechanisms. For example, many organizations use the climate datasets developed by FEWS NET for their monitoring activities, including the National Oceanic and Atmospheric Administration's Africa Rainfall Climatology 2.0 and the Climate Hazards Group InfraRed Precipitation with Station dataset.

FEWS NET has also supported some of the earliest examples of forecast-based action. For instance, FEWS NET supported the development of contingency planning exercises in Southern Africa and Ethiopia in 2002 and 2003 to prepare for forecast droughts. Between 2002 and 2005, through USAID's Mozambique Integrated Information Network for Decision-Making project, implemented under FEWS NET, USAID helped Mozambique establish the early warning capacity to enable tropical cyclone forecasts to trigger community and regional contingency plans that mobilized evacuations and other risk management actions in anticipation of a cyclone landfall (Chemonics 2005).

As an institution, USAID has also integrated early warning mechanisms into its internal management systems to take anticipatory action and prearrange resources to respond to emerging humanitarian crises. For example, USAID first developed crisis modifiers in Central America over 20 years ago. Crisis modifiers are contractual mechanisms built into development or other project agreements, allowing funding to be reallocated to respond to a new humanitarian crisis. Other donors have since adopted crisis modifiers to enable an anticipatory and early response to crises.

USAID was one of the earliest organizations to integrate forecast-based decision-making into its humanitarian supply chain. In 2005, USAID's Office of Food for Peace (now BHA) began integrating FEWS NET food security outlooks into their monthly procurement decision-making process, linking their resource allocation directly to forecast changes in humanitarian food needs in countries monitored by FEWS NET. Other organizations, such as the World Food Programme (WFP), have replicated this approach. WFP developed an anticipatory procurement process during the 2015/16 El Niño event.

USAID was also instrumental in piloting the first sovereign DRF mechanisms designed to enable an early response to drought-related food crises. In 2006, USAID funded WFP to develop the first humanitarian insurance product. The pilot (implemented in Ethiopia and insured through AXA Re) ultimately informed the development of the DRF mechanism for Ethiopia's Productive Safety Net and the ARC. In addition, USAID was one of the original donors, with Swiss Re and the Rockefeller Foundation, to the Oxfam/WFP R4 Rural Resilience Initiative, which integrated insurance with community DRR and adaptation.

However, while USAID is already investing in the foundational components of risk-informed action and leading on many fronts, key informants interviewed for this report identified that the links are not always being made systematically to the policy agenda for this area of work. As a result, opportunities are being missed to connect investments to achieve greater impact. For example, USAID's investments in early warning and climate information systems through initiatives such as SERVIR¹ have been essential to developing anticipatory action and sovereign DRF schemes. The conceptual framework described in the following section aims to facilitate this broader understanding and piece together investments and outcomes contributing to the agenda within USAID and the wider humanitarian community.

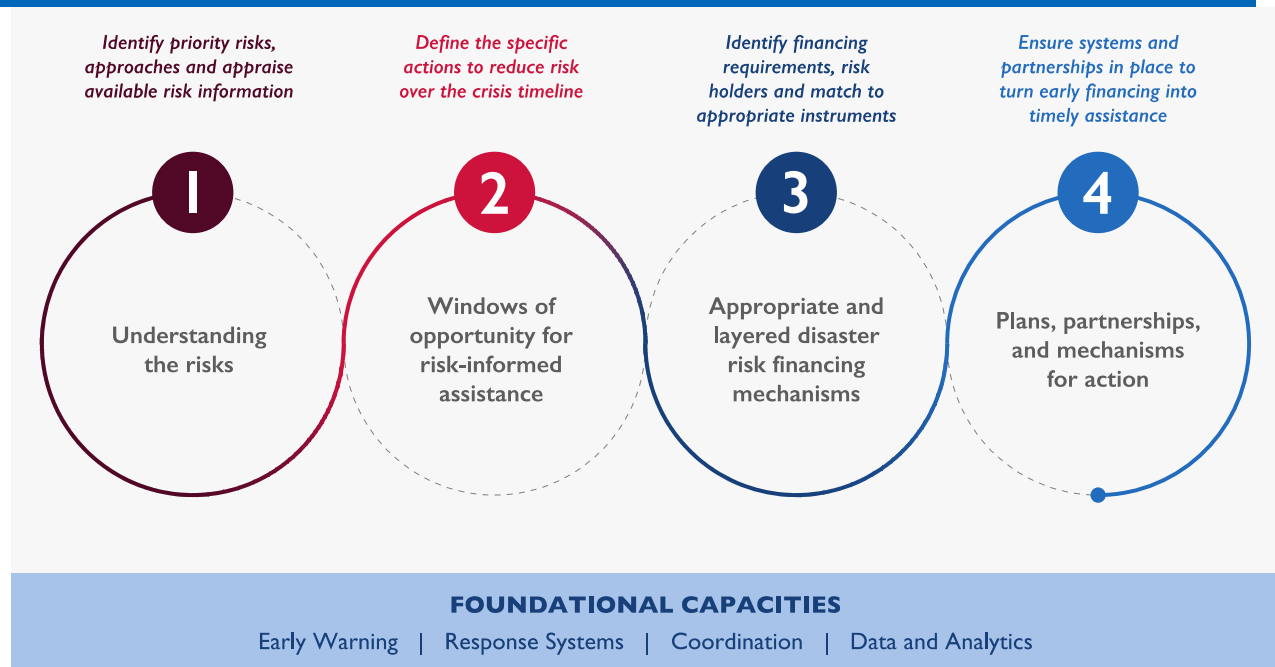
¹ SERVIR is a joint initiative of the National Aeronautics and Space Administration, USAID, and leading geospatial organizations in Asia, Africa, and Latin America. SERVIR partners with countries and organizations in these regions to address critical challenges in climate change, food security, water and related disasters, land use, and air quality.

SECTION 3.0

A BLUEPRINT FOR A COMPREHENSIVE DRF FRAMEWORK

As risk-informed approaches to humanitarian assistance have developed, valuable efforts have been made to standardize the language and concepts. The glossary of key anticipatory action terms produced by REAP (Clarke 2022) and the Association of Southeast Asian Nations (ASEAN) framework on Anticipatory Action (ASEAN Secretariat 2022) are excellent examples. In the DRF community, tools and frameworks that support sovereign governments in choosing between disaster risk management options and financing instruments ahead of time have also been developed (Calcutt, Maher, and Fitzgibbon 2021; Clarke et al. 2016, 201). The conceptual framework outlined below builds on these approaches, bringing them together into a blueprint that allows for a more holistic understanding of DRF for humanitarian action. The framework includes four main components, as illustrated in Figure 2 below.

FIGURE 2: COMPONENTS OF AN ANTICIPATORY, EARLY ACTION, AND DRF FRAMEWORK



3.1 COMPONENT 1: UNDERSTANDING RISK

Understanding risk is the first component of this conceptual framework. Understanding risk is essential to identifying opportunities for anticipatory or early action and designing triggers and financial mechanisms that enable this action. Understanding risk is also critical for understanding how different types of action, such as long-term DRR efforts and short-term anticipatory or early response measures, can work together in a comprehensive disaster risk management system.

BOX 3. DEFINITION: DISASTER RISK

The potential loss of life, injury, or destroyed or damaged assets, which could occur to a system, society, or community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability, and capacity (United Nations Office for Disaster Risk Reduction 2023).

3.1.1 ASSESS RISKS AND VULNERABILITY

Risk and vulnerability assessment is foundational for developing anticipatory action and DRF mechanisms. Baseline risk information, including climate data sets, loss databases, and demographic surveys, allows practitioners to analyze, and in many cases, quantify risks. For a hazard to cause a disaster, people and assets must be exposed to the hazard. Exposure to hazards can be mapped and understood before disasters occur and inform planning for anticipatory action, such as identifying where displacement from floods might be highest and where affected populations would benefit most from anticipatory cash transfers or pre-distribution of relief supplies.

The impact of a hazard will also be determined by physical, social, economic, and environmental factors, which increase a person's or community's susceptibility. Understanding vulnerability is essential for planning longer-term development and risk reduction actions to reduce the impact of hazards, as well as for understanding the dynamics of disaster impacts and identifying short-term ways to anticipate and respond to these impacts as the disaster cycle unfolds. Practitioners should be careful to understand how post-disaster impacts manifest over different time frames, given the growing evidence of the long-term effects with severe humanitarian consequences related to malnutrition, infant mortality, and reductions in income (see Box 4).

BOX 4: THE HIDDEN HUMAN IMPACTS OF TYPHOONS IN THE PHILIPPINES

The Philippines is highly exposed to typhoons and their aftermath. While the immediate impacts are often clearly visible, there are also significant longer-term impacts of typhoons. One rigorous demographic study (Anttila-Hughes and Hsiang 2013) found that unearned income and excess infant mortality in the year after typhoon exposure outnumber immediate damages and death tolls roughly 15-to-1. The researchers found that typhoons destroy durable assets and depress incomes, leading to broad expenditure reductions, including in health care, education, and food quality. Infant mortality after typhoons is highly gendered, with girls accounting for 80 percent of the additional infant mortality. Infants conceived after a typhoon are also at risk, indicating that this excess mortality results from household decisions while coping with post-disaster economic conditions. The research estimates that post-typhoon "economic deaths" constitute 13 percent of the overall infant mortality rate in the Philippines. This kind of study has profound implications for humanitarian programming, highlighting the critical need for action over at least two years to prevent the bulk of infant mortality cases by typhoons. Similar data emerging from resilience measurement work illustrates similar dynamics in other countries around the world.

Government and donor investments in risk and vulnerability data sets continue to grow and enable improved risk models to be developed. For example, USAID's investments in baseline climatologies, such as the Africa Rainfall Climatology, have been instrumental in many insurance and anticipatory action mechanisms. In addition, livelihood baselines, such as those maintained by FEWS NET, provide in-depth information on the seasonality of hazards and the coping strategies of different populations. Many countries have completed national-level risk assessments, providing the basis for DRR strategies or National Adaptation Plans. Together this information is used to understand who will likely be impacted, why, and when.

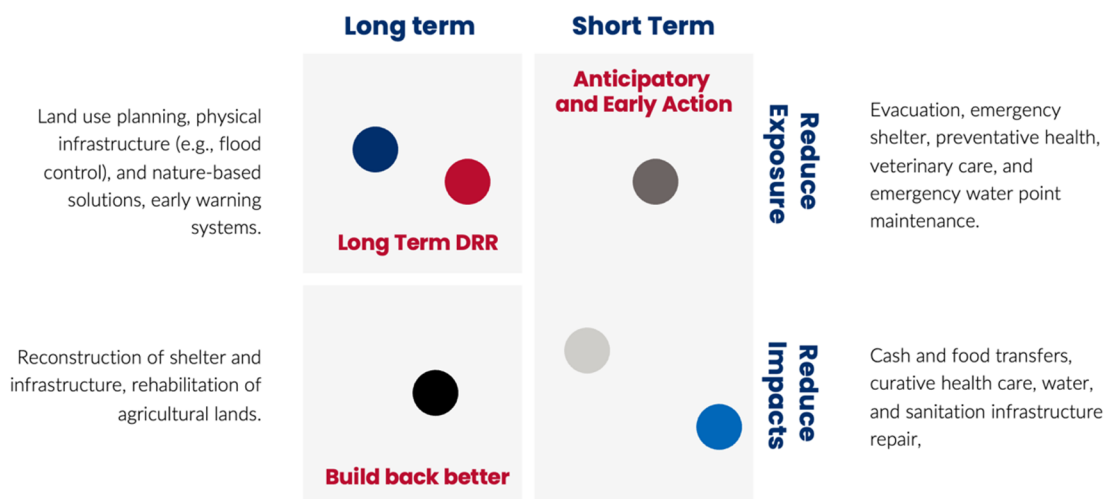
3.1.2 IDENTIFY OPPORTUNITIES TO REDUCE RISK

Building on baseline risk and vulnerability assessment, practitioners can identify opportunities to reduce risks through the disaster cycle. These opportunities may be long-term or short-term actions taken before, during, and after a hazard occurs.

While every context is unique, the processes for identifying opportunities for long- and short-term action to reduce exposure to hazards or their impacts are similar. Longer-term action that can be taken before a hazard occurs is typically the focus of DRR programs. Longer-term action after a hazard is generally integrated into recovery and reconstruction efforts using a build-back-better approach.

Short-term action to reduce exposure (e.g., evacuation or preventative veterinary care) and reduce impacts (cash transfers to help households meet basic needs) are the focus of anticipatory action as well as the timely response facilitated through DRF mechanisms. It is important to note, especially in persistent or complex humanitarian emergencies, that long- and short-term actions to reduce risk and the impacts of shocks may be implemented in parallel. In addition, the approach should not be conflated with who is delivering the action (e.g., government versus international entity). This is discussed further under Component 3.

FIGURE 3: OPPORTUNITIES FOR LONG- AND SHORT-TERM ACTION TO REDUCE DISASTER RISK



In practical terms, there are several ways in which short-term risk-informed humanitarian assistance strengthens and complements longer-term DRR interventions, including the following:

- **Accelerating risk reduction.** Using forecasts of a hazard or outcome that signals escalating risk can be a basis to accelerate and target longer-term risk reduction priorities or activities; for example, riverbank strengthening ahead of a forecasted flood (see Box 5) or distribution of drought-resistant seeds ahead of an oncoming drought.
- **Managing residual risk.** Longer-term risk reduction efforts can never fully remove all risks; risk-informed humanitarian assistance can further reduce residual risk, for example, by minimizing exposure through evacuation ahead of a hazard.

- **Reducing impacts.** Despite efforts to reduce risks, loss and damage may still be sustained. Providing timely, prearranged assistance to meet basic needs will reduce impacts before they unfold.

In an ideal scenario, all three risk reduction strategies are deployed in tandem. In reality, many countries, particularly the poorest and most exposed to climate risks, are trapped in cycles of humanitarian response and lack DRR investment. In these scenarios, the third model is particularly important: to reduce the worst impacts, try to blunt the escalation of humanitarian needs and finance to create the space for longer-term resilience building and risk reduction activities.

BOX 5: SCALING UP LONGER-TERM DISASTER RISK REDUCTION ACTIVITIES AHEAD OF FORECASTED FLOODS

In Tajikistan in 2017, several Start Network nongovernmental organizations (NGOs) with longstanding DRR programs identified that the higher-than-normal winter snowfall combined with a hot summer resulted in forecasted risks of above-average flooding. The organizations alerted the anticipation window of the Start Fund, which released GBP 150,000, enabling them to work with communities on disaster preparedness through training and awareness campaigns on procedures to stay safe and construction of disaster mitigation works, such as gabions along rivers to strengthen the embankment at-risk rivers. These activities, already ongoing as part of longer-term community-based DRR programs and activities, were scaled up using the additional finance rapidly and, together with the forecasts, were targeted at the most at-risk locations to mitigate the impact of the oncoming flooding (ACTED 2017).

3.1.3 APPRAISE AVAILABLE RISK INFORMATION

Anticipatory action and DRF approaches typically use risk information, including risk models and early warning systems, to establish pre-agreed thresholds, processes, and triggers for action linked to financial, planning, and operational arrangements to implement this action.

Different approaches are possible based on the level, quality, and type of risk information available. In addition, the available capacities to generate, interpret, and utilize the risk information are critical in determining whether and what anticipatory action, early action, and DRF approaches will be effective. Crises driven by a meteorological, hydrological, climatological, or geophysical hazard, such as cyclones, riverine floods, heatwaves, or earthquakes, are often easier to quantify and model ahead of time, albeit to different levels of accuracy and predictability (see Section 3.1.4). In contrast, economic and social hazards, such as conflict, are more challenging to model, as are complex emergencies where multiple shocks and stressors interact to drive a humanitarian crisis.

Typically, a country or humanitarian portfolio consists of multiple categories of risk based on the risk information and early warning systems available to inform disaster risk management efforts. Each category presents options for developing anticipatory and early action mechanisms and the DRF approaches to support them. First, the level of risk is essential. At a basic level, disaster risk can be considered intensive (high severity, low frequency), extensive (low severity, high frequency), and/or persistent (high baseline levels of humanitarian need that will fluctuate if compounded by additional hazard events). Second, the extent to which risks can be modeled and forecasted is critical. Finally, the extent to which risk and vulnerability translate into humanitarian needs is essential. Figure 4 illustrates the categories of risk that are most important for anticipatory and early action and the implications for DRF. While these categories are not mutually exclusive, they provide practitioners with a way to assess what is feasible in each context. Component 3 of this framework offers additional guidance on linking risk information to DRF options.

FIGURE 4: LINKING RISK INFORMATION TO ANTICIPATORY ACTION AND DRF

		Modellable	Forecastable	Complex	
Severity of Risk	Intensive	High severity, low to medium frequency events	Hazards and their impacts can be modeled to quantify risks, financial impacts, and frequencies of return	Inadequate risk information to model and forecast	
	Extensive	Localized, high-frequency events			
	Baseline Risk Low → High			Includes probabilistic climate forecasts as well as scenario development using other approaches	
DRF		Disaster risk finance implications	Required for structured disaster risk finance mechanisms, such as insurance	Required for forecast-based action and finance	Prepositioned flexible funds

Some risks can be modeled (“modellable”), especially climate and other natural disaster risks. These risks can be quantified to generate a *probabilistic* estimate of the likelihood of occurrence in the future. The probability can be modeled on a statistical curve so that crisis managers can quantify the likelihood of different-magnitude events happening in any year and prearrange the funds and capacities needed to respond. These models underpin many DRF approaches and are prerequisites for market-based DRF instruments such as parametric insurance. While risk models available in developing countries are rapidly improving, they are often built on limited information and therefore include high levels of uncertainty that need to be carefully managed (see below for additional information).

Some hazards and their impacts can be forecast (“forecastable”) days, weeks, or months ahead of time. Forecasts can either be “hard” (based on objective indicators, such as water levels rising) or “soft” (based on subjective analysis, such as a group of experts identifying the most likely conflict scenarios). The availability of high-quality weather and climate data from earth observation systems, global investment in climate services, and improvements in national hydrometeorological services and early warning systems are driving improved climate and weather forecasts. These forecasts are being used, in combination with localized exposure and vulnerability data, to develop trigger systems for anticipatory and early action mechanisms. However, forecast skill and performance are variable, with some forecasts performing well in some geographies and during certain times of year but others performing with less skill. Practitioners need to carefully assess the usability of forecasts and realistically assess their likely performance. Continued investment in national early warning systems and hydrometeorological services is also essential to enable the scale-up of anticipatory action and DRF approaches. Beyond climate forecasts, the standardization of food security early warning systems, such as FEWS NET’s Food Security Outlooks and Integrated Phase Classification analysis, has enabled the systematic use of this information to trigger anticipatory action and DRF.

Many risks or risk landscapes are too complicated to model (“complex”), or there is insufficient information to understand the risks beforehand. These risks may be driven by multiple complex drivers resulting in compound effects that are hard to model or anticipate before their emergence. While this

type of risk is prevalent, it is estimated to make up less than half of acute humanitarian crises and a much lower percentage of overall humanitarian assistance once the “known” persistent caseload is considered (Montier, Weingärtner, and Klassen 2022). Unfortunately, most crises are treated by the humanitarian system as “unknown,” with assistance only provided once populations feel their full impact.

3.1.4 MANAGE UNCERTAINTIES IN RISK INFORMATION

The extent to which risks can be modeled and forecasted varies. Even in advanced forecasting systems with good data and proven models, forecast skills can be low. The closer the hazard event, the more confident a prediction or forecast will likely be. In contrast, the closer the hazard event, the less time exists to implement actions to prevent or reduce the risk. The skill (accuracy) of climate forecasts is not uniform, even in the same country. Nor are climate models uniform over time. Some climate models perform better during certain times of year than other times of the year, and some models perform much better when global climate conditions, such as the El Niño Southern Oscillation, are affecting the global climate. Models or forecasts will never represent the full complexity of a live crisis situation.

For example, in May 2017, Jamaica experienced significant floods amounting to approximately 400 million USD of damage (Muir-Wood 2017, as cited in Hillier 2017). However, the Caribbean Catastrophe Risk Insurance Facility model, which primarily focused on housing and infrastructure loss rather than agricultural loss, estimated damages at 100 million USD, which fell below the threshold required for payout (Hillier 2017). This mismatch between a model and actual losses and damages is a form of “basis risk,” which can have multiple drivers as per Table 2.

PRODUCT BASIS RISK	CONTRACT BASIS RISK	SPATIAL BASIS RISK
Index or model does not correlate with losses.	Triggers and exists incorrectly set and do not capture loss.	Index or model does not capture spatial variation of losses (especially a challenge with remote sensed products).
COMPOUND HAZARD BASIS RISK	SINGLE PERIL BASIS RISK	TEMPORAL BASIS RISK (IN-SEASON AND LONG-TERM)
Losses or livelihood impacts are driven by compounding risk factors which amplify the impact of modeled risk in unanticipated ways.	A model or index for a single peril (e.g., drought) does not capture losses from other perils (e.g., floods).	The model or index does not capture the periods which related to loss (e.g., start of season, mid-season dry spells, etc.) or the model does not adequately account for climate trends and change which that alter present and future probabilities of perils/hazards).

For forecast-based anticipatory action systems, there is also uncertainty in the risk information. For example, in February 2022, as forecasts warned of Cyclone Batsirai approaching Madagascar, the Start Fund released 500,000 USD of anticipatory financing to member NGOs to support communities to reduce the impacts and meet basic needs. The damage was not as severe as expected, so only half of the funding was used on “no regrets” actions (see below), and the rest was returned (Start Network 2023b). Examples like these (the first a false negative, the second a false positive) signal the importance of managing the uncertainty inherent in risk-informed approaches carefully, including the following kinds of actions (Harris and Cardenes 2020; Lohrey 2023):

- **Reduce uncertainty.** Continue investment to improve understanding and modeling of the various drivers of risk. Risk models and forecasts should be open, and the logical steps for decision-making should be clear to specialists and non-specialists alike. Program design choices can also reduce

uncertainty. For example, mechanisms that trigger finance at a wider geographical resolution (e.g., at the national level), which is then targeted to communities or individuals using predefined assessment and targeting schemes, require lower skill (accuracy) than triggering funding for a single community or farmer.

- **Communicate uncertainty clearly.** Sources of potential uncertainty should be acknowledged and communicated to decision-makers at all levels, including the risks of false negatives and false positives.
- **Manage uncertainty.** Triangulate models or forecasts with real-time information to identify misalignment and have processes in place to minimize the financial and human impact. This could be through double-trigger approaches that reduce the chances of false positives. Implement cheaper “no regrets” actions like training volunteers or preparing beneficiary lists further from the event, making false positives less costly, while implementing more expensive actions, like cash transfers closer to the hazard event, when forecasts are more reliable (used by the International Federation of Red Cross and Red Crescent Societies [IFRC] and OCHA). Layering “hard” trigger-based finance (like insurance) with more flexible “soft” triggered contingency funds can also provide a way to absorb overpayments or top-up underpayments.

Given the uncertainties described and ways to manage them, the challenge for both donors and practitioners is to be systematic in determining when and where it is worthwhile to prearrange funds (in the case of DRF) and release funds (in the case of anticipatory action) ahead of a crisis. This determination should be driven by a detailed and context-specific understanding of the expected outcomes of proposed interventions in reducing the impacts of crises on communities (i.e., the “windows of opportunity”). In other words, the risks posed by uncertainty in forecasts and risk models should be outweighed by the expected benefits of more timely interventions. These are described in the following section.

Finally, practitioners should assess the historical performance of forecasts, trigger indexes, and other analyses being used to trigger action. Where possible, this assessment should be quantified so that it can be used to inform cost-effectiveness and calibration of trigger systems, as well as be communicated to decision-makers.

3.2 COMPONENT 2: WINDOWS OF OPPORTUNITY FOR RISK-INFORMED ASSISTANCE

Traditional humanitarian assistance models have focused on improving early warning, preparedness, and coordination to support effective and more rapid emergency response. In protracted humanitarian crises, response models have evolved around seasonal cycles, including lean seasons and winterization. More recently, early lean season assistance approaches to food crises have become more prominent, with earlier windows of response driven by annual assessment cycles. Understanding the timing of the impacts of disaster risk before, during, and after hazards occur is critical to managing different categories of disaster risk and improving the effectiveness of humanitarian action.

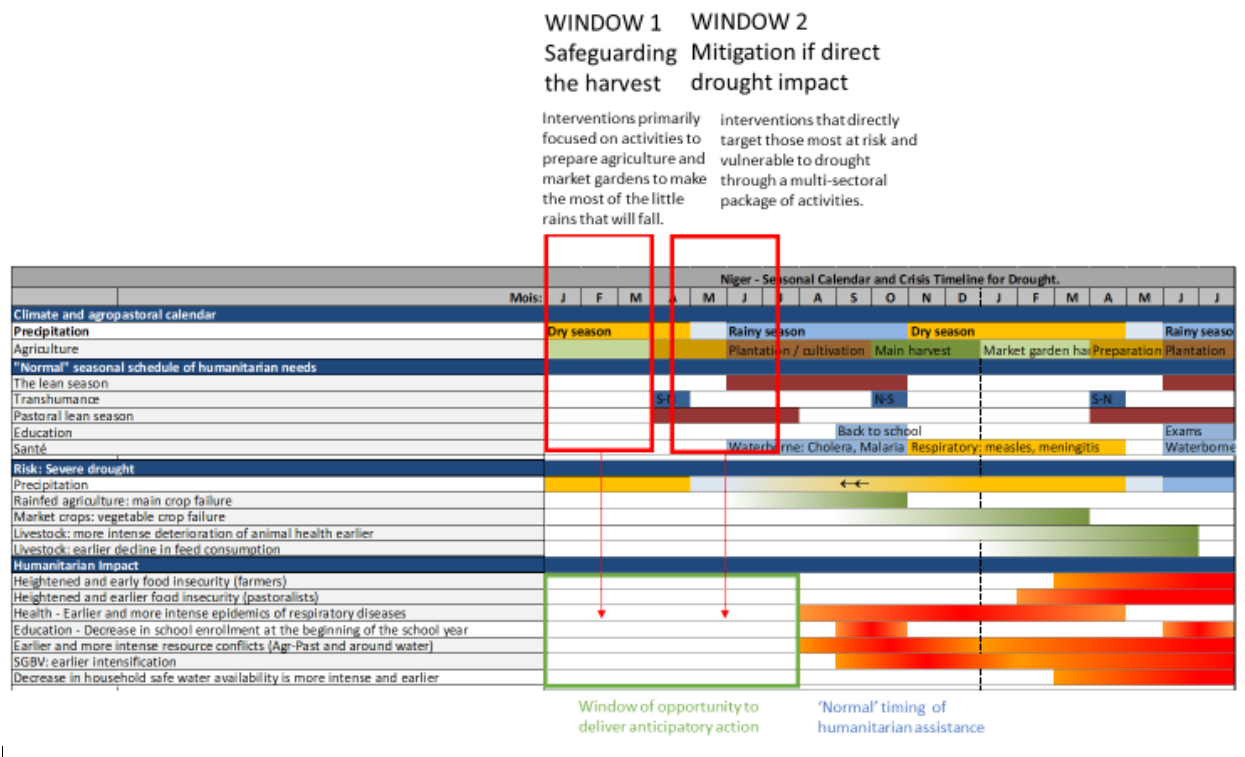
Building on our increased understanding of how humanitarian crises incubate and evolve, organizations increasingly use timeline or response window approaches (see Box 6). These approaches are highly useful for finding the balance between the accuracy of risk information and having sufficient time to take action. Practitioners have built on seasonal and hazard calendars commonly used in early warning

systems² by adding the periods when actions can be taken to reduce hazard impacts and the periods required to deploy finance for these actions.

Thus, windows of opportunity are specific periods before, during, and after a hazard or hazards occur when action can be taken to reduce the impacts of that hazard on a population. These are typically short-term actions that complement longer-term DRR and development actions. These actions are often only made possible through long-term investment in DRR, such as early warning systems. Systematizing this concept across the humanitarian system provides a robust framework for identifying concrete opportunities for anticipatory action and DRF, as well as for post-hazard early action, response, and recovery.

BOX 6: EXAMPLE OF TIMELINE APPROACH APPLIED BY OCHA NIGER

In Niger, OCHA is working to mitigate the impact of severe drought on individuals and communities through collective, cross-sectoral anticipatory action. A critical part of the ongoing design process is linking knowledge of Niger’s seasonal calendar (what farmers are doing and when) and how this changes in years of severe drought, together with knowledge on how and when impacts are felt and the mitigation actions that could be taken to alter the course of the crisis. OCHA worked with UN agencies to map the operational start-up time that each activity would require, overlaying this with the periods when action was needed. This process resulted in the identification of two relevant trigger windows when resources could be released based on precipitation forecasts. During the first window of opportunity, activities aim to safeguard the harvest by enabling farmers to make the most of a poor season. During the second window of opportunity, activities aim to mitigate drought impacts on affected households. The timeline approach is illustrated below (adapted from (UN OCHA 2022a):



² For examples, see USAID’s FEWS NET activity’s seasonal calendars and livelihood profiles. Also, see World Food Programme. (2011). *Seasonal and hazards calendar*. <https://www.preventionweb.net/publication/seasonal-and-hazards-calendar> or OCHA (2022, February 26) (World Food Programme 2011). *Sudan Seasonal Hazards Calendar for a Typical Year*. <https://reliefweb.int/report/sudan/sudan-seasonal-hazards-calendar-typical-year> (UN OCHA 2022b).

Windows of opportunity generally need to meet a set of preconditions to be effective:

- **Adequate time for planned interventions to be implemented.** The window between a reliable forecast and the event materializing must be sufficient to allow for actions to be initiated and delivered.
- **Adequate data, analysis, and early warning capacity.** For windows of opportunity to be viable, sufficient baseline data and operational early warnings, such as weather and climate forecasts, must be available to identify the window and trigger action within it.
- **Adequate operational capacity to respond in the window.** Turning early warning into early action requires functional systems to deliver assistance within an identified window of opportunity.

Each window of opportunity has unique features, opportunities for action, and challenges. Windows are best defined in relation to hazards and their impacts as these evolve. Windows of opportunity may also overlap. While windows of opportunity are context-specific, typical windows are outlined in Figure 5.

Windows of opportunity are closely linked to seasonality and annual cycles in livelihoods, migration, and hazard occurrence. This link is especially valid for climate disasters, where seasonality drives the hazard occurrence and its impacts. Seasonal monitoring and forecasting based on global climate models and conditions (e.g., the El Niño Southern Oscillation) have provided some of the most reliable early warnings that underpin many anticipatory action mechanisms. Seasonality is also vital for other hazards. For example, an earthquake may occur before the winter, or a conflict may intensify during the agricultural season. When a hazard occurs, people's opportunities to recover are often driven by seasonal livelihoods and other patterns.

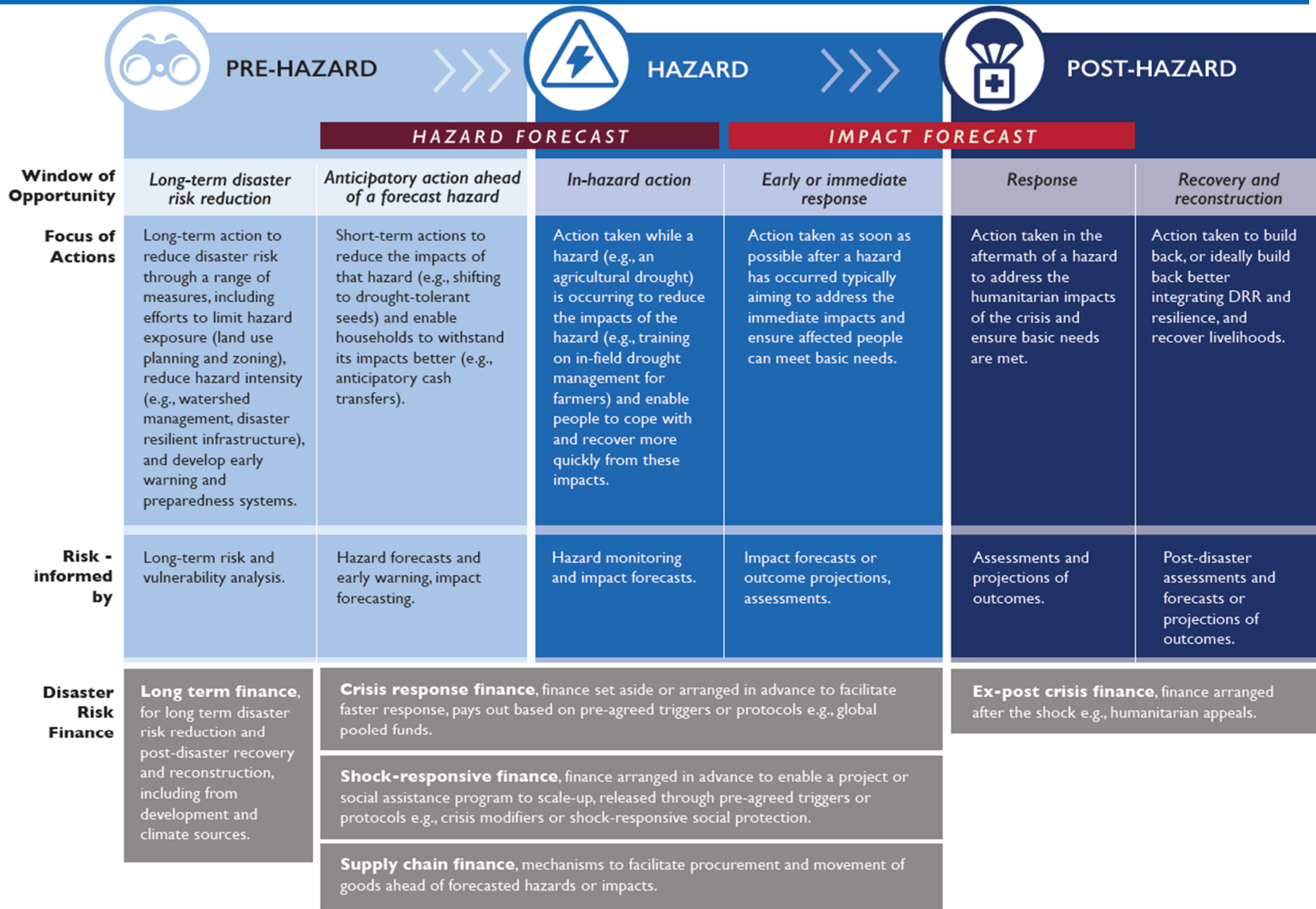
At the same time, seasonal humanitarian crisis outcomes are a common annual occurrence in the most climate-vulnerable places. While these crises are persistent and often referred to as chronic, they can worsen with more severe impacts in bad years following intense hazards. In these complex contexts, windows of opportunity allow for a more comprehensive approach to limiting humanitarian crises, protecting resilience-building and developmental gains, and breaking cycles of persistent humanitarian crises.

For example, early lean season assistance has become a standard programming approach for many food security programs. Many populations face periods of reduced access to adequate food after household stocks run out and market prices increase in response to lower food availability. This period is called the lean or hunger season. When drought, floods, or other shocks affect crop and livestock production in a bad year, this period is extended, and households face more severe food security outcomes. Many governments and humanitarian organizations mobilize early lean season assistance to address household needs earlier and reduce the occurrence of more severe food security outcomes, such as reduced consumption, distress migration, school dropouts, acute malnutrition, and extended labor migration. The early lean season period represents a critical window of opportunity where anticipatory action can have significant impact, limiting the need for more costly late interventions.

3.2.1 ADDRESSING GENDER AND INCLUSION

Windows of opportunity are context-specific—not just between communities but also between individuals—as the impacts of hazards and peoples' abilities to address them differ depending on socioeconomic, gender, demographic, political, cultural, and other intersectional factors. For example, in many pastoral communities, women and children in the family homestead experience a drought

FIGURE 5: COMMON WINDOWS OF OPPORTUNITY



differently from men and boys on the range with their livestock. Different livelihood groups or households will experience crisis impacts differently within a specific context or crisis, offering differing windows of opportunity to take action. In some situations, the most climate-vulnerable may already be beyond the window of opportunity to prevent severe humanitarian outcomes and need life-saving assistance, thus reinforcing the importance of a mosaic of solutions that can be deployed in tandem (see Box 7 on targeting).

The mapping conducted in tandem with this framework found little evidence of DRF and anticipatory action mechanisms that go beyond gender neutral. This fact is likely linked to the instrument-focused design of many initiatives, which start with the instrument (insurance or forecast-based finance) and default to existing humanitarian assistance options, such as cash transfers. In identifying risks and defining specific windows of opportunity to implement actions ahead of time, explicit decisions are being made about who is assisted, what is provided, who provides assistance, and when. In turn, these decisions affect who benefits from the assistance significantly and provide an opportunity to integrate gender considerations (Clements et al. 2021) and Do No Harm principles.

BOX 7: RISK VS. NEEDS-BASED TARGETING

With limited humanitarian resources, pivoting toward risk-based targeting creates a challenge for humanitarian stakeholders in deciding between providing life-saving assistance for an assessed need versus potentially life-saving assistance for a projected demand. In practice, the distinction is less clear, as many humanitarian assessments already integrate forward-looking projections over a 3–12-month period following a disaster. For example, interventions for displaced persons typically include water and sanitation measures in anticipation of the spread of communicable diseases rather than observable evidence of these diseases. However, risk-based targeting is fundamental to managing rather than reacting to shocks.

In situations with existing high life-saving needs, such as Somalia or Yemen, it can be hard to justify risk-based targeting. However, donors and practitioners should be careful of overly rigid representations of the sequencing of crisis response activities and recognize that multiple solutions may need to be deployed in tandem.

For example, in major crises, humanitarian needs will evolve. At any given time, some areas may face worse conditions and then improve, and others may face better conditions that then deteriorate. For instance, in the Horn of Africa, including Ethiopia, Kenya, and Somalia, some areas within countries see humanitarian needs peak between June and September (e.g., long, also known as Gu, rains and meher-dependent cropping areas) while others see needs peak between March to May (e.g., bimodal pastoral regions dependent on the short or Gu rains). Within these variations are also variations in the severity of humanitarian outcomes faced at different times, depending on vulnerability and resilience capacities. Areas that seem better off can rapidly deteriorate in line with the larger crisis, generating the need for a rapid mobilization of resources to address emerging acute humanitarian needs. Practitioners often use hotspot mapping in these major crises to predict, identify, and manage these complex responses, allocating and reallocating resources rapidly to contain and limit the crisis outcomes.

To address these dynamics, combinations of needs-based targeting and risk-based targeting can provide an overall more effective way to manage the crisis by using cheaper, earlier, and often simpler interventions to prevent populations from slipping into severe crisis conditions where much more costly and complex responses are needed (e.g., food and cash assistance vs. therapeutic feeding to treat acute malnutrition).

3.3 COMPONENT 3: DISASTER RISK FINANCING

The third component of this framework is the financing arrangements that are fundamental to enabling earlier, risk-informed action ahead of predictable crisis risks. This section outlines why this is important, the determinants in establishing what funding approach and instruments are appropriate for which kinds of crisis risks, and how these can be arranged efficiently.

Significant evidence highlights the cost-effectiveness of early response to humanitarian crises (Idris 2018). For example, a 2018 study commissioned by USAID assessed the cost savings that could result from an earlier and more proactive response to drought in Kenya, Ethiopia, and Somalia. The study found that donors could save 30 percent on humanitarian aid spending through an earlier and more proactive response; this is equivalent to savings of 1.6 billion USD when applied to USG spending over the last 15 years in these three countries alone (Cabot Venton 2018b).

Many windows of opportunity to reduce the impact of shocks on communities cannot be met through appeals-based humanitarian funding. Under traditional appeals-based financing, the international financing architecture mobilizes once a crisis has occurred and human suffering is observed. This system can often result in months of delay in assistance delivery (Centre for Humanitarian Change 2022; Maxwell, Howe, and Fitzpatrick 2023; Save the Children and Oxfam 2012). First, the appeals process is too slow, and assistance would not arrive in time to meet early windows of opportunity before the disaster's most severe humanitarian outcomes begin. Second, decision-makers find it hard to allocate funding based on uncertain information, leading to a default "wait and see" attitude (Maxwell, Howe, and Fitzpatrick 2023).

Prearranged finance has therefore become an essential part of risk-informed assistance. Anticipatory and early action systems rely on finance arranged ahead of time. When signals of an emerging crisis are received, funds can be swiftly released according to pre-agreed protocols to support timely and protective action. In the humanitarian sector, this has primarily been achieved through pre-positioned contingency funds or crisis modifiers held at the country level (an approach widely adopted by USAID in Ethiopia) or through pooled funds at the global level (such as the IFRC Disaster Relief Emergency Fund or the UN Central Emergency Relief Fund). A fundamental consideration of prearranged finance is the balance between ensuring predictable funds are available at a sufficient scale when required to mitigate the impact of emerging crises while avoiding tying up too many funds ahead of time. This consideration has led humanitarian actors to explore more sophisticated approaches, such as those tried and tested by the DRF community of practice.

A DRF approach seeks to arrange funds ahead of a shock where possible, complementing efforts at mobilizing funding after a hazard occurs. Numerous sovereign governments are already deploying such approaches, with lower and middle-income countries receiving increasing support from multilateral development banks and the international donor community, for example, under the Global Shield Against Climate Risks (V-20 2022).

Using sophisticated financial strategies can minimize the opportunity cost of funds sitting around unused. Risk modeling techniques are used to quantify the likelihood of different-sized events happening in any one year and to identify the funds that would likely be needed to respond. The most efficient way to prearrange the finance will vary depending on how much funding is needed (scale) and how often funds will be required (frequency). The best practice in DRF is to avoid reliance on just one instrument (e.g., contingency funds or insurance) and take a layered approach, with multiple sources and types of finance identified according to the nature and scale of risk.

Prearranging funding for the full cost of a severe and infrequent response or recovery is rarely financially efficient. For example, the economic costs of the Ebola virus outbreak in West Africa in 2014 are estimated to have reached 53 billion USD (Huber, Finelli, and Stevens 2018), a financial impact that would be prohibitively expensive to pre-finance. Nonetheless, it is well recognized that opportunities were missed to contain the crisis and mitigate its impact, which would have reduced the response costs. A World Health Organization study estimated that a response taken just one month earlier could have averted half of the cases in Sierra Leone (World Health Assembly 2015).

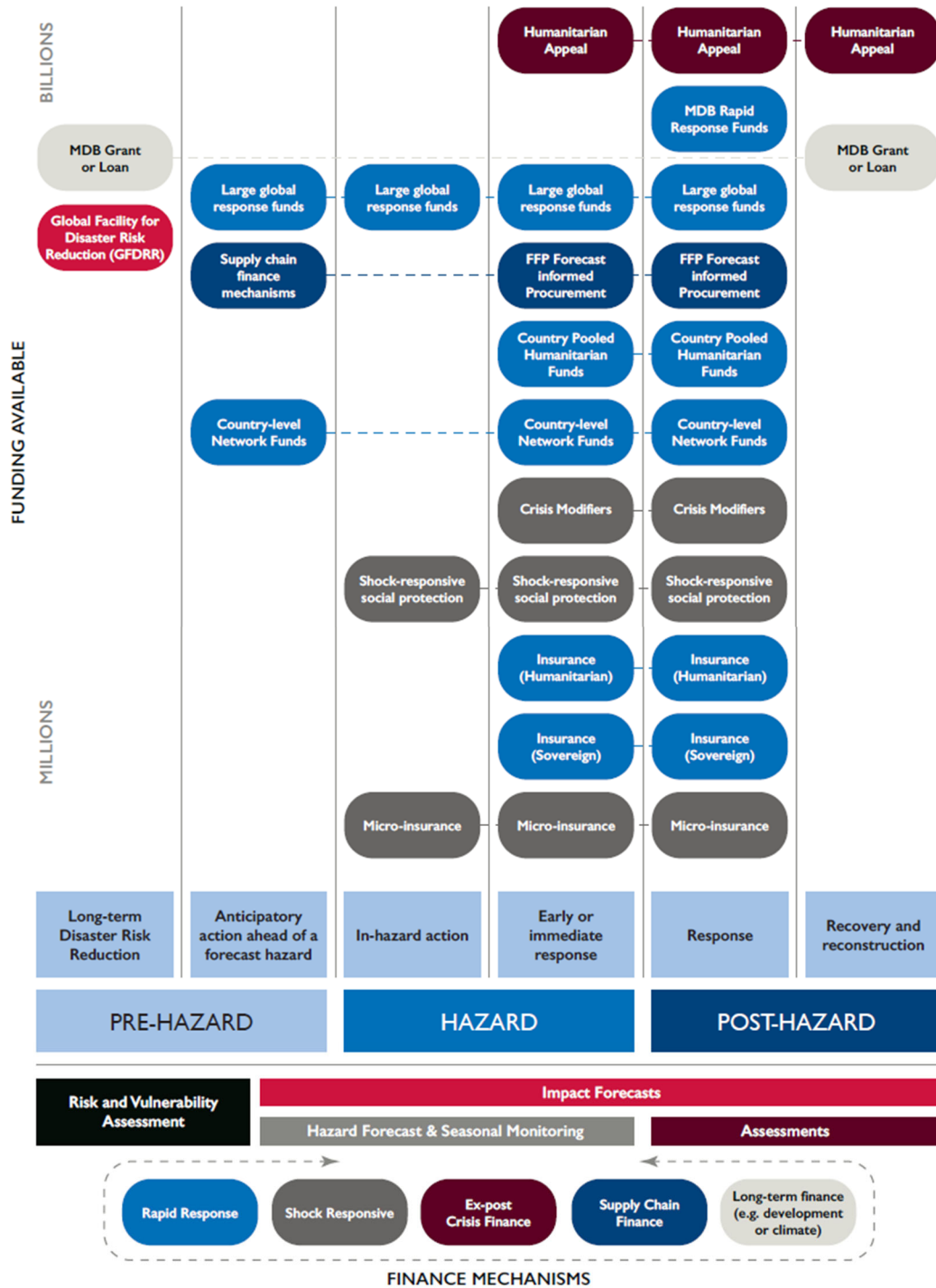
3.3.1 THE DISASTER RISK FINANCE TOOLKIT

Applying DRF as an approach involves defining risks ahead of time, identifying what it will cost to put in place actions to mitigate their impact, and identifying where the financing will come from. There are two main types of disaster finance. *Ex post* finance is mobilized after the shock, for example, through humanitarian appeals, and is currently the default for most humanitarian finance. *Ex ante* finance is prearranged ahead of the shock and is the focus of DRF efforts. Recently, the types of disaster finance have been viewed as less binary and more of a sliding scale, with the goal of shifting crisis financing toward prearranged approaches that are faster and can offer earlier support to at-risk communities (Scott 2022). This shift is already happening within the humanitarian sector, with many implementing multiple layers of prearranged approaches, albeit on a small scale compared to overall humanitarian financing.

Over 30 humanitarian DRF mechanisms and instruments were mapped and assessed to inform this framework. Figure 6 below summarizes the broad categories of finance that emerged from the mapping exercise conducted for this report, and the accompanying mapping report provides detailed information on the results. The mapping exercise identified a number of key findings relevant to this framework:

1. ***Ex post* finance continues to dominate humanitarian finance.** In 2023, humanitarian appeals total over 51 billion USD. Emergency Needs Assessments, and Post Disaster Needs Assessments are conducted to inform these needs. The allocation of funding is not done ahead of time and does not classify as a DRF instrument. Nonetheless, this type of finance will continue to form an important part of the crisis finance toolkit that is available to countries putting in place financial protection strategies that look to balance predictable *ex ante* instruments with flexible *ex post* sources of finance.
2. **There is positive evidence that risk layering approaches are happening in practice.** In line with best practice, global humanitarian contingency funds (such as the OCHA Central Emergency Response Fund [CERF], Red Cross Disaster Response Emergency Fund [DREF], or Start Fund) are acting as a springboard for innovation, developing anticipatory windows or integrating new forms of finance instruments into their portfolios (such as re-insurance). This underscores the importance of avoiding the categorization of humanitarian DRF by type of instrument, including discussions about who should fund what.
3. **Three categories of humanitarian DRF mechanisms emerged from the mapping.** These delivery mechanisms present an alternative to typologizing by instrument. These categories crosscut the risk holders (sovereign governments, humanitarian organizations, and others) and can be facilitated through various financial instruments. These are:
 - a. **Rapid response mechanisms** whereby finance is set aside or arranged in advance to facilitate faster, more effective responses. The finance may be set up to release ahead of a hazard based on a forecast or after it emerges before impacts are fully felt. This category includes global pooled funds such as WFP's Immediate Response Account, the CERF, and the DREF, collectively capitalized at over 1 billion USD, as well as national calamity funds and ARC policies oriented toward rapid response. The unifying feature of rapid response finance is its intent—a faster and more effective response—facilitated through funds set aside or arranged ahead of time.

FIGURE 6: CATEGORIES OF HUMANITARIAN DISASTER RISK FINANCE³



³ Note: Most current insurance schemes are linked to planned rapid response activities, although some are linked to shock-responsive social protection scale-up, particularly in government schemes.

- b. **Shock-responsive and/or scalable mechanisms** deploy DRF to enable a project or social assistance program to scale up, typically to protect development gains and prevent human suffering. In humanitarian organizations, this kind of finance is personified by crisis modifiers (see Box 8), and in governments, the finance arrangements for shock-responsive social protection. There is growing interest in this finance category to link resilience-building efforts with more timely short-term actions to mitigate the impacts of shocks using established programs and delivery channels. Levels of investment in this category are presently not reported or collected in an aggregate manner.
- c. **Supply chain mechanisms** facilitate the procurement and movement of goods ahead of forecasted hazards or impacts. These are among the largest and least known humanitarian DRF mechanisms. They include WFP’s Global Commodity Management Facility and USAID’s Bill Emerson Trust, estimated to be capitalized collectively at over 1 billion USD. These mechanisms primarily support food assistance supply chains by enabling earlier procurement of commodities to reduce the time it takes to ship and deliver food assistance.

BOX 8: CRISIS MODIFIERS

Crisis modifiers are financing mechanisms included within a development or other program that enables the program to surge or scale up assistance rapidly to beneficiaries when a crisis shock materializes. Crisis modifiers can take different forms: (i) as pre-approved budget reallocation mechanisms (often 10 percent variance), (ii) as fast-track access rules to donor financing, or (iii) as contingency funds held as reserves at the program or project level (Lung 2020). USAID was instrumental in the emergence of this approach over 20 years ago. For example, USAID Ethiopia has integrated crisis modifiers into its food security and resilience programming over the last two decades and in recent years to protect investments in health programming (Yared et al. 2022). Crisis modifiers are widely recognized as an essential financial tool in ensuring the shock-responsiveness of development programs, particularly against small-scale recurrent shocks.

Nonetheless, evaluations have revealed challenges with the speed of release of funding and the limitations imposed by the limited quantity of funds available. Implementing partners hesitate to deploy funds for fear of using them too soon due to these challenges (Centre for Humanitarian Change 2022; Lung 2020).

There is significant untapped potential to scale up crisis modifiers and link more concretely to risk-informed approaches that have successfully overcome delays in early action through anticipatory, trigger-based design (thereby addressing the issues of timing) and broader DRF strategies (that go beyond setting aside 10 percent of the budget) to ensure that financing is available at the right time and in the quantities required to protect development investments.

3.3.2 SELECTING AND LAYERING INSTRUMENTS

The categories of *ex ante* financing outlined above take advantage of a range of financial instruments. A number of factors can be considered when determining what approaches and instruments are appropriate to arrange funding ahead of time, depending on policy priorities such as value for money, timeliness, government ownership, or others. Nonetheless, several key parameters come to the forefront that correspond to these various priorities. These include i) the type of risk information available, ii) the severity/frequency of the risk, and iii) the risk holder. These factors are explored in more depth below and summarized in Figure 7.

FIGURE 7: DISASTER RISK FINANCE INSTRUMENT TOOLKIT

			Ex-Ante			Ex-post	
	Severity/ Frequency	Risk strategy	Risk information required	Household/SME	National Governments	Humanitarian Organizations	All risk holders
Reduce crisis impact	Large, infrequent shocks	Transfer risk	Probabilistic risk model with objective trigger	Micro- insurance	Catastrophe bonds	Catastrophe bonds	Appeals Multilateral allocations Borrowing Diversion/ Reallocation
	Small, frequent shocks	Retain risk	Hard triggers or soft decision- making protocols	Cooperatives, savings	Parametric insurance Risk pools Contingent credit, contingency/ calamity funds Budget reallocation	Parametric insurance (replica arrangements) Supply chain mechanisms Pooled funds, risk pools, crisis modifiers, contingency funds	
Avoid risk	Varying severity	Long- term DRR	Static assessment of risk and vulnerability	Micro-credit	Loans, bonds, grants, subsidies, and tax incentives	Impact bonds, grants	Recovery and reconstruction finance

3.3.2.1. Risk information available (“hard” versus “soft” triggers)

As discussed in Component I, the nature of the risk information available will play a significant role in determining the approaches and instruments that can be deployed to provide predictable and timely financing. Where rigorous risk models and forecasts are available, hard triggers can be developed, opening up the possibilities of using a number of financial tools. For example, the Red Cross Forecast-Based-Finance approach and the CERF Anticipatory Action pilots use data (such as rising water levels or cyclone windspeed) to allow finance to be prearranged and finance mechanisms to pay out based on pre-agreed thresholds. There are multiple benefits of hard triggers. First, the risk can more easily be quantified by combining historical analysis of past events using statistical techniques to generate probabilistic assessments of the likelihood of a crisis occurring at different scales in any year. Where adequate risk information is unavailable, this quantification is much harder, and triggers tend to be subjective, often based on a committee decision. Second, the trigger is third-party verifiable and subject to less manipulation. These two criteria must be satisfied to unlock the benefits of more structured DRF instruments, such as risk transfer through parametric insurance. Nonetheless, it is crucial to recognize that the more automated a trigger-based system is, the greater the upfront investment needed in the data, trigger design, and plans to be able to have full confidence in the risk information signaling emerging or future crises. In addition, while hard triggers are rigorous and extremely useful, they are imperfect. Hard triggers and DRF mechanisms that use them must consider basis risk (see Section 3.2.1).

Systems based on “softer” triggers, such as the decision of an expert committee (a method used by the Start Fund) typically incur lighter start-up costs and provide greater flexibility to adjust to evolving conditions as a crisis emerges. Such systems can be well adapted to meet the needs of frequent, small-to medium-scale crises, for which having flexible crisis response funds set aside in advance can be a cost-effective solution.

3.3.2.2. Scale and frequency of financial risk (how much funding is required, and how often)

A key determinant in the value for money or efficiency of different approaches to prearranging finance is how much finance is required and how often. There is broad consensus that different scales and severity of financial risks are best met through different DRF strategies (Calcutt et al. 2021; Clarke et al. 2016; Meenan et al. 2021; Sirivunnabood and Alwarritzi 2020):

- **Small-scale, frequent risks** are typically retained by the risk holder. Finance can be arranged in contingency funds, budget lines, or by reallocating from existing programs. Some level of flexible funding for small-scale, frequent shocks is typically the foundation of a DRF system and should be the first investment. Many global humanitarian contingency funds or rapid response funds include small, easy-to-access windows that local managers can activate with delegated authority or fast-track approvals to access between 50,000 to 500,000 USD. In addition, numerous social protection system budgets have a contingency budget, enabling a first layer of scale-up when needed. The advantage of this layer of financing is that these systems are cheap to set up and can be fast to disburse. But the disadvantage of these systems is that they can also be quickly overwhelmed or depleted by larger-scale crises. In addition, outside the global mechanisms, humanitarian organizations may find it harder to attract donor interest in this type of DRF tool compared to other sophisticated solutions such as insurance (see Box 8 on crisis modifiers).
- **Medium-sized risks** may benefit from more sophisticated strategies, such as prearranged credit lines, that can provide immediate liquidity in a crisis. For example, World Bank Catastrophe Drawdown Facilities or Catastrophe Deferred Drawdown Options (Cat DDOs) provide rapid access to credit for governments in the aftermath of a disaster. In the humanitarian sector, risk-sharing agreements, for example, through global pooled funds such as IFRC's DREF or risk pools such as Start Ready may fall into this category. The advantage of this layer of finance is that when crises occur that exceed national reserves, the external entity (loan provider or global source of funding) can support leveraging the natural risk diversification that exists at a regional or global level (as some parts of the portfolio fall, others rise) (see Box 9 on local to global approaches).
- **Large-scale, infrequent risks** involve holding large volumes of prearranged funds in preparation for rare events and incur a high opportunity cost. The public and private sectors have used risk transfer instruments such as insurance for hundreds of years to manage this layer of risk. The risk transfer provider and risk holder will enter into a contract specifying the conditions under which a payout will be provided, typically in return for an annual premium payment. The advantage of such a system is that fast funding disbursements at scale can be facilitated without holding too many funds on standby. But the disadvantage of this kind of instrument is the complexity and cost of such schemes and the possibility that they may not always capture the needs on the ground (see Table 2 on basis risk).

3.3.2.3. Risk holder: Who is the right entity to manage this risk?

A third key determinant in the appropriateness of a funding approach or instrument for a particular risk is the risk holder. A robust disaster risk management system is typically multi-layered, with the capacity to manage small-scale recurrent risks at the household and community levels, capacity to manage medium and larger risks at the sub-national and national government levels, and finally, access to international assistance only for very large and infrequent risks. While this multi-level layering of disaster risk capacity is the model, it is often unrealistic in fragile states with limited state presence or capacity. In these cases, the international system often plays an outsized role in filling gaps and ensuring that humanitarian principles are respected.

BOX 9: LOCAL TO GLOBAL APPROACHES TO LAYERING DRF

The “layering” of finance by combining national contingency funds/reserves with international surge financing is financially efficient and can promote localization. At the Start Network, locally led coalitions of humanitarian responders are developing their own anticipatory and DRF mechanisms in partnership with communities, local hydrometeorological agencies, and disaster management agencies.

In Pakistan, Start Network has supported the coalition of majority local and national NGOs to develop a trigger-based mechanism that releases predictable funds ahead of floods, heatwaves, and droughts to enable them to intervene early to help communities with mitigation and response actions (Start Network 2023a). The finance for this mechanism is held at three levels: (i) in a contingency fund at the national level for easy access to flexible funds, including for preparedness activities, (ii) in a global risk pool providing trigger-based financing to multiple locally led systems when risk thresholds are met, and (iii) through re-insurance that will trigger when the risk pool is exhausted ensuring that the facility can pay out when required (re-insurance will go live in 2023) (Start Network 2023c).

The arrangement reflects the trade-off between ensuring autonomy and access to funds at the national level as an essential part of locally led action but avoiding the opportunity costs of too many funds sitting unused by pulling the majority of funds together at the global level to share risks across countries. As payouts from the risk pool are based on objective pre-agreed triggers, the decision-making around when and how much funding will be released is made ahead of time through participatory and locally led processes. Also, the mechanism allows for re-insurance to be put in place to ensure predictability in meeting commitments.

In practice, many climate-vulnerable countries are also extremely poor, fragile, or conflict-affected and thus may not benefit from such a robust disaster risk management system. Nonetheless, careful consideration should be given to where and at which levels prearranged risk finance can be deployed strategically. This consideration is critical, acknowledging that the ultimate risk holders or insurers of last resort are people and communities who suffer greater losses and damages when effective disaster risk management and finance mechanisms are not in place.

The locally led adaptation and development principles advocate for a shift in the status quo from top-down approaches to new models where local actors have greater power and resources to build resilience to climate change (Vaselli 2022). These principles are fully integrated into the Core Commitments of the World Humanitarian Summit and the Grand Bargain (World Humanitarian Summit 2016), which commit to greater levels of funding and decision-making for local organizations and actors. USAID has also redoubled its commitments to localization which emphasizes the importance of putting local actors in the lead, strengthening local systems, and being responsive to local communities (USAID 2022a). Localization affects decision-making regarding the appropriate entity to carry risks and which DRF mechanisms are most appropriate and sustainable. National governments and local institutions are typically recognized as the primary duty bearers for crisis risks and international assistance (Gibbons et al. 2020). Where the capacity exists (noting that this can be a limitation), government and locally led systems should be prioritized, especially for small-scale, recurrent crises, which existing evidence tells us are typically already being met through informal and community-based mechanisms that could be strengthened (see Box 10).

International assistance exists to reinforce national and local capacities exceeded during a crisis. Therefore, an assessment of the limits of national and local disaster risk management capacity, as evidenced by responses to previous crises, should influence decisions around the role and thresholds at which international actors like the UN, Red Cross, or NGOs might act as additional ‘risk holders’ with their own prearranged finance to complement the support provided by national or local structures. In addition, there are efficiency arguments for attracting and holding finance at the global level for certain kinds of risk, particularly those that are infrequent but severe and are not contained within national borders (for example, pandemics, famine, or displacement).

BOX 10: ANTICIPATORY ACTION DRIVEN BY LOCAL AND INFORMAL SYSTEMS

A recent report by the Centre for Humanitarian Change tracking drought impacts and aid responses in Kenya and Somalia found that informal community systems such as family members, local leaders, diaspora, or others were typically the earliest sources of assistance reaching at-risk households, including examples of anticipatory action. The role of local NGOs was also highlighted. For example, the arid and semi-arid land network was instrumental in highlighting the worsening of the drought situation and lobbying the President of Kenya to declare the drought a national disaster early while also providing protective cash transfers to support at-risk communities. There were documented examples of small-scale anticipatory action among international humanitarian actors. However, bureaucracy, lack of dedicated financing, and lack of a strategic vision for anticipatory action were found to have limited its reach. In this context, the government was reported by communities interviewed as the slowest responder due to the limited capacity of institutions (Centre for Humanitarian Change 2022).

Regardless of the balance between risk holders, for a tiered disaster risk management system to function effectively, DRF mechanisms at all levels are needed, and the more they are coordinated and explicitly layered, the better the actors in the system can function together. As presented in the following section, humanitarian risk layering is a practical approach to “joining the funding dots” (Rockefeller Foundation 2023) to ensure that long- and short-term actions to reduce risk and emergency responses work alongside and complement each other and national priorities. Where possible, this should be informed by national plans and strategies (such as National Adaptation Plans) and connected to processes such as the Global Shield country engagement. At the minimum, and where national capacity is absent, this can be done at the mission level to connect USAID initiatives to each other.

Finally, the allocation of international assistance can often be disempowering for local institutions and communities with little understanding or control over what is being spent and where. Anticipatory action and DRF approach present a unique opportunity to counter this challenge because decisions are being made ahead of time, such as which are the priority risks and for whom, what actions are needed, how much will this cost, who will pay for it and who is best placed to deliver it? (Start Network 2021). While this opportunity exists, there is limited evidence of this happening in practice. More could be done by drawing on the systems and lessons learned through community-based DRR programming on ways to facilitate such approaches. In addition to considering the level at which the risk is best held (local/national/international), an important consideration is whether the identified risk holder is leveraging the opportunity offered by prearranged finance to devolve decision-making to those most affected by the crisis risk.

3.4 COMPONENT 4: PLANS, PARTNERSHIPS, AND MECHANISMS FOR ACTION

The fourth component of the framework relates to the operational setup that underpins risk-informed approaches. This setup is critical to facilitate the timely assistance envisioned by anticipatory action and DRF approaches to meet earlier windows of opportunity to support communities to take mitigative action ahead of crisis impacts.

Over the past two decades, the documented experiences and challenges in converting “early warning into early action” have fed the operational design of the anticipatory action and DRF systems we see today (Save the Children and Oxfam 2012). Many humanitarian organizations have begun to shift toward automated pre-agreed trigger thresholds to avoid well-known biases in human decision-making that tend to prompt a “wait and see” approach to emerging crises and prearranging finance to avoid long delays with the humanitarian appeals process. While some success has been achieved by addressing these fundamental barriers to early action, several new operational challenges must be met through robust plans, partnerships, and mechanisms for action to ensure that risk-informed approaches can deliver impact for countries and communities at risk.

3.4.1 SYSTEMS FOR “MONEY-OUT”

The windows of opportunity to support households with short-term action to reduce exposure and the impacts of shocks (as outlined above) are time limited. Therefore, strong money-out systems are needed to convert early financing into early assistance for at-risk communities within the identified window (Centre for Disaster Protection 2020).⁴ Notably, a recent evidence review of sovereign DRF and insurance schemes revealed that capacity failures in money-out systems are limiting impact. While quick payments to governments were found to be triggered, there is little evidence that this translates into prompt support to households (Weingärtner and Wilkinson 2019). In the humanitarian community, the evidence of prearranged plans and financing resulting in timely assistance to households is more favorable (Weingärtner and Wilkinson 2020). However, the risk of missing windows of opportunity remains significant (Lohrey 2023). This challenge is being addressed in several ways:

- **Plans.** Clear plans identifying what actions should be taken and for whom if a given risk materializes is a fundamental part of most “trigger-based” anticipatory action systems. The advantage of such plans is that they help inform discussions ahead of time on whether it is realistic to try to deliver assistance within identified windows of opportunity, what would need to be in place to enable this to happen, and how much the actions would cost. When the crisis hits, having plans in place can also reduce bureaucratic delays. Planning processes also increase internal and external coordination, reinforce relationships, and clarify procedures (Choularton 2007). As a result, for example, ARC requires countries and humanitarian partners to develop and submit for review a contingency plan outlining how funds will be used. Nonetheless, plans alone have limitations unless accompanied by robust delivery systems and adequate preparedness measures⁵.
- **Delivery systems.** Recent evaluations highlight the importance of the operational channels needed to turn early financing into early assistance. Social safety net programs have become a promising tool that can be adapted to scale up in times of shock, offering robust channels to funnel assistance to pre-identified beneficiaries quickly (see Box 12). However, such schemes take a long time to establish, and their coverage is limited, particularly in the most fragile states (Lung 2022). In the humanitarian community, delivery systems are often well equipped to deliver rapid assistance. For example, investments are being made in mobile transfer technology for cash programs, providing platforms for delivering assistance much more quickly (Oxfam Philippines 2021). There is significant potential to leverage the strengths of existing humanitarian delivery channels to facilitate improved money-out of sovereign DRF, particularly where social protection schemes have limited coverage (see Box 11). Unfortunately, this is not happening in many places.
- **Preparedness actions.** Preparedness measures typically accompany effective plans and delivery channels. Some of these are “softer” measures, such as pre-identifying beneficiary lists, prearranging contracts with suppliers, or ensuring that the treasury has the proper administrative processes to release prearranged finance quickly. Others are “harder” measures, such as pre-positioning supplies, and require dedicated funding. As one respondent identified, “if you remove readiness and preparedness, your anticipatory action options are hugely reduced, we don’t have the capacity to hold stocks unless this is supported, so it limits us to actions like evacuation.”

BOX 11: SHOCK RESPONSIVE SOCIAL PROTECTION

⁴ For example, the flood anticipatory action mechanisms surveyed for this report typically triggered around 10 days ahead of the hazard, and for cyclones this was even shorter at three days. In a drought-induced food security crisis, these timelines can look very different, there may be several months between the hazard (failed rains) and its impact being felt (heightened food insecurity).

⁵ A recent evaluation of the ARC drought insurance mechanism found that the sampled payouts were late in reaching households, typically missing the assumed window of opportunity for mitigative action to prevent negative coping strategies at household level. This was despite having pre-agreed contingency plans in place (UK Aid and ePact 2022).

Social protection encompasses a wide range of public assistance interventions (e.g., school feeding, benefits, and public labor programs) intended to lower inequality and reduce the poverty gap. Programs with a “shock-responsive” component can scale up rapidly to provide timely and well-targeted assistance to existing or new beneficiaries. DRF approaches can facilitate this scale-up by calculating the funds likely to be required ahead of time and ensuring that they are prearranged efficiently to be released rapidly and at the scale necessary (addressing the challenge of timeliness). In turn, the strong delivery channels offered by social protection systems can ensure that timely financing will translate into timely action (addressing the DRF money-out challenge) (Calcutt et al. 2021).

While offering great potential, shock-responsive social protection suffers from the challenges facing wider risk-informed approaches, as detailed in this report, including barriers to institutionalizing risk-informed thinking, coordinating between the different sectors involved (development, humanitarian, social protection), and the limited availability of existing funding and lack of clarity on the appropriate sources of financing (Longhurst et al. 2021).

There is significant potential to link DRF more closely to shock-responsive social protection, which is also recognized at the policy level, as evidenced by the nascent Global Shield (V-20 2022).

3.4.2 COORDINATION AND PARTNERSHIPS

Coordination is fundamental to enable risk-informed approaches to go to scale. According to the Sendai Framework, disaster risk governance requires “clear vision, plans, competence, guidance, and coordination within and across sectors as well as the participation of relevant stakeholders” (United Nations Office for Disaster Risk Reduction 2023). Coordination is salient in anticipatory action systems because competing early warning signals can sow confusion and undermine existing community efforts to act ahead of forecasted events. Coordination is also essential to maximize limited short- and long-term finance use. In many contexts, early warning systems exist and are being used by local institutions. In these contexts, humanitarian partners should focus on strengthening local systems rather than parallel structures.

In the DRF community, prearranged finance has been touted as the “glue” that could address many of the typical coordination failures of “normal” *ex post* crisis response. Current efforts at preparedness ahead of future crises are understood to be limited by the default appeals-based funding model whereby different entities (government departments, UN agencies, civil society) do not know what funding will or will not be received and are therefore unable to commit to playing a specific role in response plans (Clarke and Dercon 2016).

Unpredictable and volatile funding also limits the effectiveness of post-disaster recovery and resilience-building efforts. Funding typically goes down in the months and years after the initial crisis, whether or not households and communities have recovered. Analyzing risks, identifying actions needed, and prearranging financing ahead of the event opens up an opportunity for new forms of coordination between different actors, such as joint risk assessment, trigger design, or contingency plans backed by prearranged finance, and then acting in concert to save lives and build resilience through earlier and better-coordinated action in emergencies (Montier, Harris, and Ranger 2019) (see Box 12 on humanitarian and sovereign collaboration).

The right place for this coordination to happen will vary by country. Coordination may be attached to national disaster risk management processes, social protection processes, National Adaptation Plans, or under the Global Shield process. In contexts of limited government capacity, coordination within the Inter-Agency Standing Committee cluster system may also be appropriate. Importantly, coordination will not be realized if humanitarian efforts at risk-informed approaches, including anticipatory action, remain siloed from sovereign DRF efforts. Unfortunately, at present, limited coordination between sovereign DRF processes supported by multilateral development banks and humanitarian DRF exists outside initiatives, such as ARC Replica (Box 13). At the donor level, for risk-informed systems to “dock” with these nationally led plans and for humanitarians to play a pre-identified subsidiary role in future

nationally led crisis responses, long-term, reliable funding is required that goes beyond the current default of short-term project-based approaches.

BOX 12: HUMANITARIAN AND SOVEREIGN COLLABORATION ON DRF

Under the ARC Replica mechanism, launched in 2018, humanitarian partners (WFP and Start Network) take out matching “replica” insurance policies from the ARC risk pool using donor funding. The partners work with the government to customize ARC’s risk model and develop separate but harmonized contingency plans. When payouts are triggered, Replica partners receive a separate payout from early action taken alongside the government.

The program is expanding with replica policies purchased in seven countries in 2021–2022 (African Risk Capacity Group 2022). Independent evaluations have shown that the ARC countries greatly value the technical expertise replica partners bring to the ARC process, that replica responses have been timely in delivering assistance, and that the partnerships have greatly expanded the capacity and coverage of ARC than would be possible by the government acting alone (UK Aid and ePact 2022).

In a different model of collaboration, in Nicaragua in 2021, WFP provided a 700,000 USD top-up to the government’s tropical cyclone insurance policy with the Caribbean Catastrophe Risk Insurance Facility Segregated Portfolio Company aimed at protecting the country’s largest social safety net, the school meals program (Gonçalves et al. 2023). WFP receives a portion of the finance to work alongside the government on complementary response activities. WFP has employed a similar model in Ecuador, but the government alone will implement the payout, with advisory support from WFP.

These examples demonstrate how humanitarian partners can bring additional capacity (operational, technical, and financial) to government efforts at financial preparedness ahead of future crisis risks and, in turn, how these financial tools provide a framework to facilitate coordination between governments and humanitarian.



SECTION 4.0

IMPLEMENTING A HUMANITARIAN RISK LAYERING APPROACH

This section outlines how the conceptual framework detailed above can facilitate a strategic and joined-up approach to anticipatory action and DRF. Specifically, it presents an adapted model for risk layering. In the DRF community, risk layering is an approach to selecting and efficiently arranging financing instruments ahead of future crisis risks. It takes the total potential cost of risk (e.g., drought) and compares it to the financing available. For example, practitioners analyze responses to previous crises to understand what funds were available and when. Risk layering aims to identify gaps and the relevant risk finance strategies that could be deployed to meet those gaps.

Risk layering typically accompanies a strategy that outlines the policy objectives of an entity such as a sovereign government, humanitarian organization, or network of organizations. Based on the policy objectives, the risk is quantified and modeled so that the response costs and likelihood of different severity events happening in any period, typically a year, are understood. For example, a government policy objective might be to ensure timely and effective responses to drought-induced food insecurity in an identified population. Historic drought events and response costs are analyzed to determine the costs of providing assistance. In this case, the costs are calculated to range from 100 million USD in an average year to 500 million USD in a severe crisis. A government can compare this amount against their contingency budgets, credit lines, insurance policies, and reserves, and identify the gaps in funding that need to be addressed.

Risk layering is typically applied by putting in place the cheapest sources of financing first (for example, budget reserves or contingency funds) for small-scale recurrent risks, working toward the more expensive financing, such as insurance for larger-scale, less frequent risks.

A similar process can be undertaken by Humanitarian partners and donors, ideally in coordination with government efforts, as a strategic approach to identifying the resources required to facilitate risk-informed approaches. Practitioners can draw on existing strategies and plans, such as National Adaptation Plans or national DRF strategies, to identify policy objectives and assess how and where the humanitarian community can add value. Practitioners can then analyze the costs of previous crises through needs assessments and appeals, identifying what funding arrived and when and where critical gaps were apparent. For example, windows of opportunity for short-term actions to mitigate disaster risk may have been missed or underfunded. Practitioners can then map the availability of funds for future crises to assess how existing DRF meets the needs of different layers or risks.

To be fully adapted to anticipatory humanitarian action approaches, risk layering should include not just the total funding required but also when it is necessary to meet the windows of opportunity for risk-informed assistance. The cost of mitigating and responding to hazards and their impacts will vary over

the timeline of a crisis. For example, the 500 million USD estimated to be needed to respond to a food crisis could achieve very different results if released at different moments in a crisis timeline.

BOX 13: APPLYING A RISK LAYERED APPROACH IN ZIMBABWE

WFP and Tetra Tech developed a strategy for disaster risk financing and shock-responsive social protection in Zimbabwe in 2021. The team first assessed recent humanitarian needs and funding to develop this strategy. Using this analysis, they created a strategy of layering instruments through different windows of opportunity.

In 2020, Zimbabwe’s humanitarian food security and livelihood needs exceeded 480 million USD, of which only 27 percent was actually funded. DRF mechanisms met about two percent of the requirements. Approximately 2 million USD came from *ex ante* sovereign DRF, including the ARC and ARC Replica payouts. An additional 7 million USD came from humanitarian finance sources, such as the CERF and WFP’s IRA. Complementing these macro-level DRF mechanisms, WFP’s micro-insurance policies through the R4 Rural Resilience Initiative paid out 49,500 USD.

An essential factor in assessing DRF needs is the cost-benefit ratios of early action, estimated at between 4:1 and 9:1. Therefore, assuming that early finance results in an earlier response, 2 million USD of payout in 2020 from ARC could be the equivalent of 8–18 million USD in late finance—6–13 percent of the actual funding provided. While DRF, in this case, did not come close to filling the funding gap for the 2020 crisis in Zimbabwe, it did provide early, more effective funding that cost-effectively closed some of that gap.

Based on this analysis and consultations with government, donor, and humanitarian partners, the strategy proposed aligning DRF with windows of opportunity to manage years with extraordinary needs effectively.

RESPONSE WINDOWS FOR ZIMBABWE					
Response Window	Anticipatory Action	Early Action	Early Lean Season	Lean Season	Recovery
Period	September - March	May - August	August - November	November - March	Post shock
Trigger Approach	Based on the risk of shock	Triggered by shock and scalable		Seasonal/Scalable based on assessment	Assessment
Timing	Before forecast shock (e.g., drought or flood)	As soon as a shock is detected (e.g., right at the end of the primary production season in Zimbabwe)	Before the traditional lean season	During lean season corresponding to Lean Season Assistance programs	As soon as possible, with a more extended 2-3 year vision
Illustrative Finance Mechanisms	Anticipatory Action Funds (e.g., DREF FbA Window), Contingent Finance	Contingent finance, rapid response funds (IRA, CERF), insurance (ARC)	Contingent finance, rapid response funds (IRA, CERF), insurance (ARC), Appeals	Contingent finance, rapid response funds (IRA, CERF), insurance (ARC), Emergency Appeals	Government budget allocations, Emergency Appeals, Loans
WFP DISASTER RISK FINANCE ACTIVITIES AND PILOTS - ACTUAL RESPONSE TIMING					
Actual Response Timing	2015 FoodSECuRe Forecast-based Finance pilot	R4 Rural Resilience Initiative micro insurance payouts	ARC, ARC Replica, and R4 Payouts, CERF, IRA?	ARC, ARC Replica, CERF	Beyond the scope of review

Source: WFP/Tetra Tech Think Piece on Disaster Risk Finance and Shock Responsive Social Protection

While the benefits of earlier mitigative action have been well documented (Cabot Venton 2018a), we are still far from having analytical tools to help decision-makers identify *how much* funding should be distributed across different windows of opportunity. In the meantime, we can use past experience and rules of thumb. For example, operational logic suggests that the short windows of time for anticipatory action afforded by a forecast (from months to several days) mean that the absorption capacity is lower, and the funding requirements are likely to be lower than response or recovery windows of action.

The advantage of taking a risk-layering approach is that it provides a systematic framework for evaluating the funds that are or are not available. The approach grounds discussions on how a new mechanism or instrument, such as a proposed insurance contract or crisis modifier, would meet an identified funding gap into a broader strategy, what gaps remain uncovered, and who is best to address them.

As a worked example, the framework has been used to capture the outputs of the Global Mapping of Humanitarian Disaster Risk Finance accompanying this framework. The mapping is not exhaustive but provides a snapshot of how a subset of known instruments can be sequenced across the windows of opportunity and layered to illustrate the size/scale at which they are making disbursements. A second example in Box 14 shows how the government, World Bank, USAID, and other donors in Ethiopia have supported this approach.

The risk-layering approach can be applied to different scales and types of schemes, from analyzing the risks and funding available within the confines of a district to global or regional schemes focusing on a particular hazard. Key to the approach is having a clearly defined impact objective informed by the component parts outlined in this framework, an understanding of risk, identified windows of opportunity where earlier action can make a difference, clarity on the finance required, and the mechanisms and partnerships for action needed. From this foundation, practitioners can compare the need to the finance, the mechanisms available across the different risk holders (community level, government level, humanitarian), and identify where, when, and through which instruments DRF could be deployed most strategically ahead of future crises to meet identified gaps.

BOX 14: RISK LAYERING TO ADDRESS FOOD INSECURITY AND FOOD CRISES IN ETHIOPIA

Ethiopia is highly exposed to climatic shocks and has a long history of droughts, which have increased in magnitude, frequency, and impact since the 1970s (IFRC and REAP 2022). Between 2017 and 2021, humanitarian appeals ranged from 844.5 million USD to 2.8 billion USD, of which only 47 to 76 percent were received (Financial Protection Forum 2023). Funding from appeals is typically slow to materialize, and research in Ethiopia found the cost of a late humanitarian response to be approximately seven times that of an early response (Cabot Venton 2018).

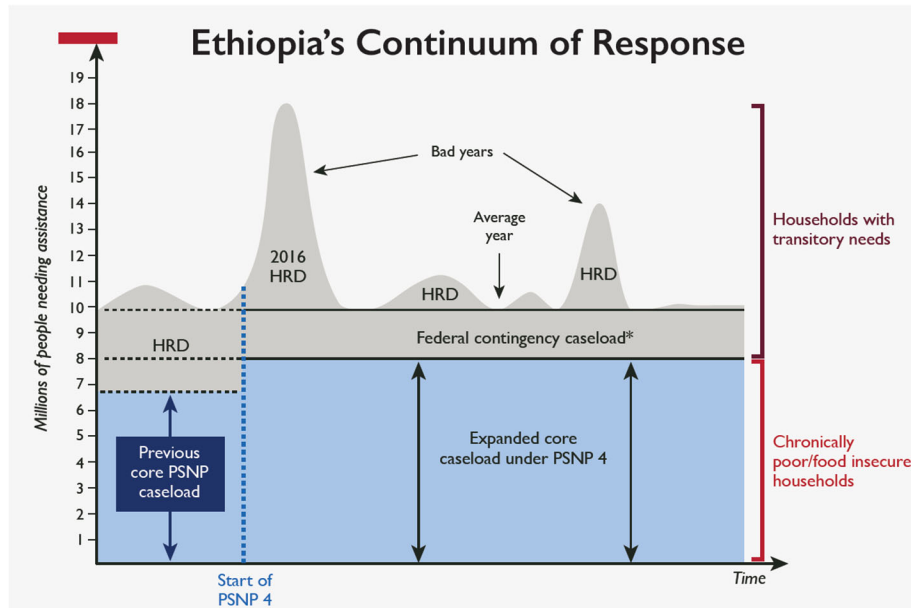
At the government level, significant efforts are underway to reduce reliance on appeals and to invest in *ex ante* approaches. Ethiopia's Productive Safety Net Programme (PSNP), supported by USAID, is central to these efforts, providing an ongoing safety net, livelihood, and nutrition services to chronically food insecure households (USAID 2021a). The PSNP has shock-responsive capabilities, allowing for a temporary scale-up of beneficiaries backed by national and regional contingency budgets. When needs surpass 10 million people (capacity covered by contingency funds), the humanitarian system complements the PSNP providing assistance to the additional people in need (IFRC and REAP 2022), offering a "continuum of response."

The PSNP was designed with several DRF mechanisms, including contingency budgets and a contingent finance facility of between 160 and 260 million USD triggered by a drought index. Ongoing efforts are being made to increase the sophistication of the financing available to backstop this process. The government is also developing a broader risk-layered strategy with investments in insurance for pastoralists, local contingency funds, and early warning capabilities to ensure that prearranged funds can be released at earlier points in the crisis timeline (Financial Protection Forum 2023).

A USAID learning review in 2021 generated early, preliminary evidence that disasters of similar type and magnitude to previous events are having a reduced impact in Ethiopia, potentially due to the interventions put in place. Nonetheless, many urgent recommendations were made, including greater investment at the sub-national and community levels into data reliability, the importance of coordination, and clarity on roles and responsibilities ahead of future crises (USAID 2021b).

As demonstrated through this example, rather than the goal of sovereign disaster risk management being to move away from humanitarian assistance as a competing and opposed concept, there are opportunities to bring humanitarian efforts further into scope within the national DRF strategy. This is done by considering the available humanitarian mechanisms and financing instruments (this would ideally extend beyond appeals to also consider crisis modifiers, rapid response funds, or other *ex ante* measures) and the capacities available (such as early warning systems and delivery channels). At the donor level, advocating for and supporting the inclusion of international assistance as a tool to be included within risk-layering strategies opens the potential for a more significant collective impact across humanitarian and sovereign efforts to prepare for and mitigate the impacts of future crises.

BOX 14: RISK LAYERING TO ADDRESS FOOD INSECURITY AND FOOD CRISES IN ETHIOPIA



Source: World Bank Global Facility for Disaster Risk Reduction



CONCLUSION

Improving the effectiveness and cost-efficiency of the humanitarian system has never been as vital as it is today. Rapidly accumulating disaster risk driven by climate change, rapid increases in populations and assets in hazard-prone areas, conflicts, and other factors underlie the urgency of humanitarian reform. DRF and anticipatory action are two critical approaches that contribute to addressing the challenges faced by populations, communities, and countries worldwide.

This paper provides a blueprint for a comprehensive disaster risk financing and anticipatory and early action framework for the humanitarian sector. The blueprint provides a framework that humanitarian practitioners, policymakers, and donors can use to develop and scale up efforts to improve humanitarian action before, during, and aftershocks occur.

By focusing on the risks people face and understanding how these risks translate into losses, damages, and human suffering, humanitarian actors can better identify windows of opportunity to take action to minimize or avert these humanitarian impacts. Using this understanding, humanitarians can better align DRF tools with early and anticipatory action systems and, in partnership, ensure the delivery of high-quality assistance to affected populations.

This paper provides the critical elements of a framework for anticipatory action and DRF in the humanitarian sector, exploring current practices and knowledge. It addresses some significant challenges and conceptual issues that need to be resolved to enable scale-up. The paper includes a checklist for donors and practitioners (Annex A) to use in developing DRF and anticipatory action systems and projects, applying the concepts outlined in the framework.

This paper is complemented by a policy brief that provides more direct recommendations to humanitarian policymakers to address the challenges and opportunities identified in this work. The report is supplemented by a mapping exercise examining current humanitarian DRF instruments and trends.

ANNEX A

DISASTER RISK FINANCE AND ANTICIPATORY ACTION READINESS CHECKLIST

The checklist below provides a simple guide for practitioners to review disaster risk finance (DRF) and anticipatory action initiatives. The checklist has been developed using the conceptual framework above. The checklist is designed to assist donors and implementing partners to ensure they have considered the primary factors needed to develop and implement effective disaster risk financing and anticipatory and early action.

DISASTER RISK FINANCE AND ANTICIPATORY ACTION READINESS CHECKLIST

Component I: Understanding Risk

The types of disaster risk will influence the most appropriate risk management strategy, and specifically, when and where risk-informed humanitarian assistance should be applied. Risk and vulnerability assessments, early warning systems, and coordination mechanisms are all essential building blocks for effectively developing and implementing anticipatory action and DRF activities.

CAPACITIES AND PROCESSES	CHECKLIST	NOTES
DISASTER RISKS IDENTIFIED AND VULNERABILITY ASSESSED	<ul style="list-style-type: none"> <input type="checkbox"/> Priority risks have been appropriately identified, for example, through nationally or locally led processes. <input type="checkbox"/> The vulnerabilities and capabilities of populations have been assessed, and the most climate-vulnerable groups and their capacities and needs have been mapped. <input type="checkbox"/> The disaster risk management capacities of national duty bearers are known, and the types/thresholds of crisis that require external assistance understood. 	
RISK INFORMATION AND EARLY WARNING AVAILABLE	<ul style="list-style-type: none"> <input type="checkbox"/> Key institutions and organizations working on relevant risk analytics and forecasting in a given context are known. <input type="checkbox"/> Availability and quality of risk information, including baseline risk models, early warning information, climate, and other forecasts, and seasonal monitoring, have been assessed (for example, by comparing to historical events), and limitations documented. <input type="checkbox"/> The quality, continuity, and length of risk data have been assessed to determine whether they are adequate to meet market standards for risk transfer (in case this will be required). 	
COORDINATION OF RISK INFORMATION IN PLACE	<ul style="list-style-type: none"> <input type="checkbox"/> Risk information and early warning are connected to coordination and decision-making processes and mechanisms. <input type="checkbox"/> Coordination and decision support processes able to use risk information and early warning to take action have been identified and assessed. (Note: this 	

should be done alongside the assessment of response capacities and mechanisms in Component 4 below.)

DISASTER RISK FINANCE AND ANTICIPATORY ACTION READINESS CHECKLIST

Component 2: Windows of Opportunity for Risk-Informed Assistance

The impacts of disaster risk unfold over a crisis timeline presenting different windows of opportunity before, during, and after hazards occur to mitigate crisis impacts before their effects are fully felt. Identifying and evaluating these opportunities is central to defining if, how, and why assistance should be targeted based on risk before crisis impacts are fully felt.

CAPACITIES AND PROCESSES	CHECKLIST	NOTES
TIMELINE OF HAZARD OCCURRENCE AND IMPACTS	<input type="checkbox"/> Documented understanding of how impacts are felt over a crisis timeline. <input type="checkbox"/> Understanding of how impacts may vary by livelihood group, gender, or other vital characteristics.	
DEFINED WINDOWS OF OPPORTUNITY FOR SHORT- AND LONG-TERM ACTION	<input type="checkbox"/> Documented understanding of effective short- and long-term actions to support communities at risk and the windows of time relevant to those actions. <input type="checkbox"/> Identified timing required to put actions in place (based on operational mechanisms), and thus at what point(s) the system will need to initiate these.	
RISK INFORMATION SUFFICIENT TO MEET SYSTEM REQUIREMENTS	<input type="checkbox"/> Assessment of whether available risk information is sufficiently accurate at the point(s) at which the action needs to be initiated.	

DISASTER RISK FINANCE AND ANTICIPATORY ACTION READINESS CHECKLIST

Component 3: Appropriate and Layers Disaster Risk Finance

The current appeals-based system for mobilizing crisis financing is too slow to meet windows of opportunity for risk-informed assistance. Finance arranged ahead of time can facilitate more timely assistance. Disaster risk financing tools and approaches can be deployed to match risks to appropriate financing to minimize the opportunity costs of unused funds.

CAPACITIES AND PROCESSES	CHECKLIST	NOTES
DEFINED FINANCING REQUIREMENTS	<input type="checkbox"/> Understand the costs of planned mitigative actions and, therefore, what crisis financing is needed and when for different severities of crisis.	
UNDERSTANDING OF FINANCING AVAILABLE AND GAPS	<input type="checkbox"/> Assessment of what crisis finance has been available and when in previous crises and how this has varied by the severity of the crisis. <input type="checkbox"/> Finance requirements compared to the availability of crisis financing and gaps identified.	
APPROPRIATE RISK HOLDER(S) IDENTIFIED	<input type="checkbox"/> Most appropriate entities to address the crisis risk are identified, following principles of localization and subsidiarity.	
RISKS MATCHED TO AN APPROPRIATE FINANCING VEHICLE	<input type="checkbox"/> Crisis risks matched to the correct financing instrument(s) for the risk holder, drawing on best practices in risk layering to ensure funds are arranged efficiently.	

DISASTER RISK FINANCE AND ANTICIPATORY ACTION READINESS CHECKLIST

Component 4: Plans, Partnerships, and Mechanisms for Action

Ensuring that investments in risk information and timely financing lead to timely assistance for at-risk communities depend on having solid operational plans, delivery systems, and preparedness, as well as coordination and partnerships.

CAPACITIES AND PROCESSES	CHECKLIST	NOTES
ROBUST DELIVERY SYSTEMS IN PLACE	<input type="checkbox"/> Delivery systems are in place to turn timely financing into timely assistance for at-risk households. These are complemented by plans and preparedness actions where relevant/needed.	
WIDER PLANS AND COORDINATION STRUCTURES IN PLACE	<input type="checkbox"/> Systems dock with broader national plans and coordination structures to avoid duplication in efforts, maximize impact, and support local and national disaster risk management capacities.	

ANNEX B

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