NOTE 4

Windows of Action

Disaster risk finance instruments can be designed to disburse funding at different points in time relative to when a disaster event occurs. Financing for anticipatory action can be released prior to the onset of an event; parametric products trigger in near-real time (e.g., hours or days after an event); and indemnity products may pay out months after an event.

This note explores the concept of "windows of action" to support choices around the timing of triggered disaster risk finance; looks at the data required to unlock different windows; and considers the trade-offs and implications for data and analytics that are associated with such choices.

Chronology of a Crisis: Early Enough for What?

One of the core value propositions for disaster risk finance instruments is that they can facilitate earlier access to funds than "traditional" ex post financing approaches (such as borrowing or humanitarian appeals). They thereby increase the speed at which responses can be implemented.

Earlier and faster response is important because the economic costs of disasters compound over time.

Low-income households hit by crises are often pushed to adopt negative coping strategies that undermine their resilience, drive them further into poverty, and make them more vulnerable to the next crisis. These negative coping strategies—such as reducing food consumption, borrowing, and selling productive assets—unfold gradually over time, and the most harmful strategies are typically deployed last (for example, months after a drought has occurred, or weeks after a flood).[1] In this context, an "early" response is one that can **assist communities *before* they resort to such negative coping**. The exact timing of such a response will vary across geographies and/or types of household. This protective window can be identified by using analytical tools such as Household Economy Analysis,[2] by conducting interviews with relevant stakeholders (such as national disaster management agencies), or by accessing reports from organizations such as the World Food Programme (WFP) or the Food and Agriculture Organization of the United Nations (FAO).

[1] Ruth Hill, Emmanuel Skoufias, and Barry Maher, "The Chronology of a Disaster: A Review and Assessment of the Value of Acting Early on Household Welfare," World Bank, Washington, DC, 2019, https://hdl.handle.net/10986/31721.

[2] Clare Harris and Laura Swift, "Disaster Risk & Forecast-Based Financing Design: A Guide to Using Household Economy Analysis," https://www.anticipation-hub.org/Documents/Manuals_and_Guidelines/Disaster_Risk__Forecast-based_Financing_-_A_guide_to_using_Household_Economy_Analysis_2019_webFINAL__EXTERNAL_.pdf.

For farmers or small and medium enterprises (SMEs), the effects of a crisis may be compounded over time due to interruptions in business and/or loss of productive assets. In this context, an early response could facilitate the replacement of assets such as seeds, tools, or fishing nets. This window for action is often determined by the **seasonal calendar**, to ensure (for example) that support to farmers is provided ahead of the relevant planting season. Seasonal calendars are readily available for most countries from organizations like FAO.[3]

For economies, there is a clear window of action in **which earlier response can minimize economic disruption**. Income losses can accrue one to three years after a disaster, but such losses can be reduced by quicker reconstruction of public and private buildings, infrastructure, and productive assets.[4] Evidence to help define the optimal timing for action can often be found in Post-Disaster Needs Assessments (PDNAs[5]) undertaken for disasters that occurred in the contexts similar to the current one.

Thus, a first step in implementing disaster risk finance solutions is to identify the protection objectives. Available contextual data can then be used to determine the types of actions that will mitigate the compounding effects of crises, along with the ideal timing for these actions.

Windows of Action and Implications for Risk Information

Using risk analytics to select a window of action for releasing disaster risk finance entails a number of trade-offs. Typically, the earlier the finance is triggered, the more opportunity there is to provide assistance that can mitigate the potential impacts of the crisis, but the less certainty there is about the data being used to trigger finance. Considerations for decision-making are described below for three common windows of action:

[3] FAO, "Crop Calendar," https://cropcalendar.apps.fao.org/#/home.

[4] Ruth Hill, Emmanuel Skoufias, and Barry Maher, "The Chronology of a Disaster: A Review and Assessment of the Value of Acting Early on Household Welfare," World Bank, Washington, DC, 2019, https://hdl.handle.net/10986/31721.

[5] Global Facility for Disaster Reduction and Recovery, "Post Disaster Needs Assessments," https://www.gfdrr.org/en/post-disaster-needs-assessments.

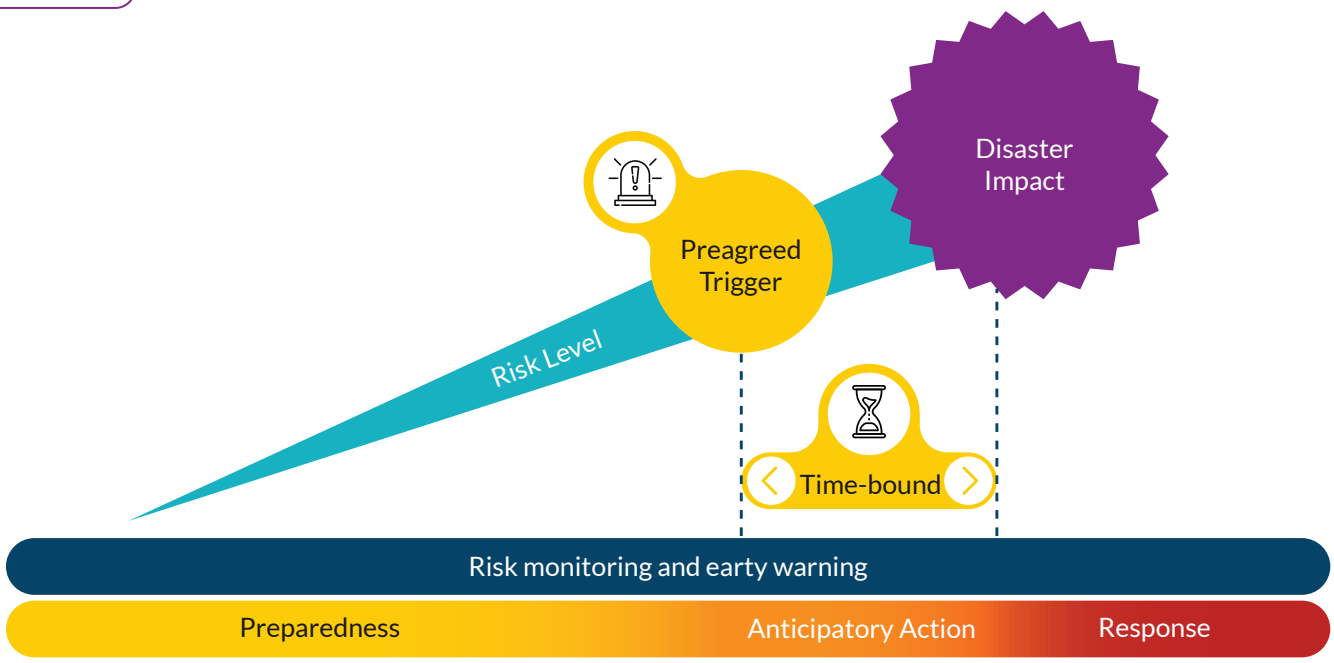
[6] This is the G7 definition; see German Federal Foreign Office, "G7 Foreign Ministers' Statement on Strengthening Anticipatory Action in Humanitarian Assistance," press release, May 13, 2022, https://www.auswaertiges-amt.de/en/newsroom/news/g7-anticipatory-action/2531236.

1 Anticipatory Action

Anticipatory action delivers assistance on the basis of forecasts, ahead of predicted hazardous events, to prevent or reduce acute humanitarian impacts before they fully unfold.[6] Action is triggered on the basis of live event forecasts of the hazard(s) of concern (e.g., forecasts of flood depth or peak gust wind speed), which are often based on a combination of local and global input data. A sample framework for anticipatory action is shown in Figure 1.

Figure 1. Anticipatory action in disaster management

Figure 1: Anticipatory action in disaster management



Source: Association of Southeast Asian Nations, "ASEAN Framework on Anticipatory Action in Disaster Management," 2022, https://asean.org/wp-content/uploads/2022/06/ASEAN-Framework-on-Anticipatory-Action-in-Disaster-Management.pdf.

The benefit of this approach is that it provides communities with support (such as cash transfers or shelter) that enables them to protect themselves ahead of the oncoming hazard, thereby safeguarding their welfare. This approach also costs less than post-event response.[7] However, the uncertainty inherent in forecasting means that there will be times when payouts are triggered and no event occurs, or vice versa. This type of outcome can be managed by designing dual-trigger structures that activate limited resources for "readiness" at an earlier stage and more substantial resources closer to the event, or by combining different sources of real-time versus forecast information (see Box 1).

[7] Ashley Pople et al., "Anticipatory Cash Transfers in Climate Disaster Response," Working Paper 6, Centre for Disaster Protection, April 2021, https://www.disasterprotection.org/publications-centre/anticipatory-cash-transfers-in-climate-disaster-response.

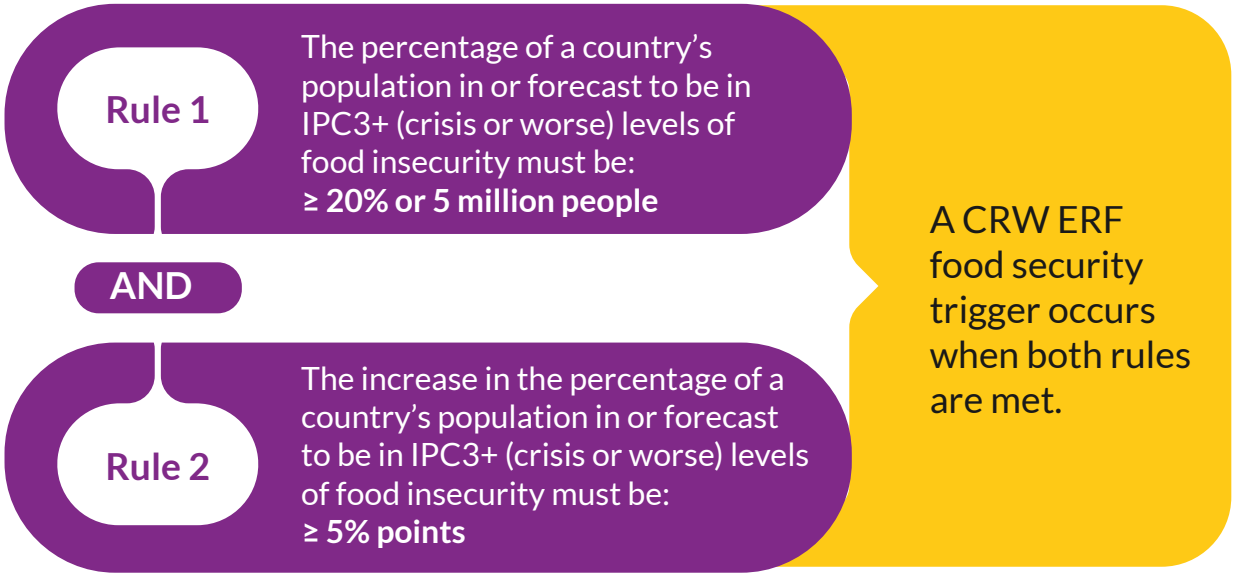
2 Near-Real-Time or Early Action Window

Near-real-time or early action products are similar to anticipatory action products; but instead of using forecast data, they use real-time data as the event occurs. An example of a financial instrument supporting early action would be parametric insurance. The relevant window can typically leverage a combination of remote sensing with in-country data—for example, to clarify the severity of the hazard at different locations (e.g., in-country streamflow gauge data for flooding, or satellite observations of rainfall or even flood extent). However, these data will not yet accurately capture the impact of a disaster, which is most accurately ascertained through detailed needs assessments. Compared with anticipatory action, a near-real-time or early action approach should reduce the level of basis risk..

Box 1. Early response financing for food crises through World Bank Crisis Response

Within the World Bank Crisis Response Window, the early response financing pre-positioned for response to food crisis straddles two windows of action: anticipatory action and early action. The connection to both windows is reflected in the design of the dual trigger, which combines the actual severity of food insecurity and rates of acute malnutrition (rule 1) with the projected situation in the coming months (rule 2); see Figure 2. This dual trigger , monitored at the global level for a subset of countries, allows for funds to be released ahead of the peak impacts of food insecurity, thus offering more time to implement actions to mitigate the effects of the crisis.

Figure 2: CRW Early Response Financing Triggers



Source:
Note: CRW = Crisis Response Window; ERF = early response financing.

3 Post-event Window

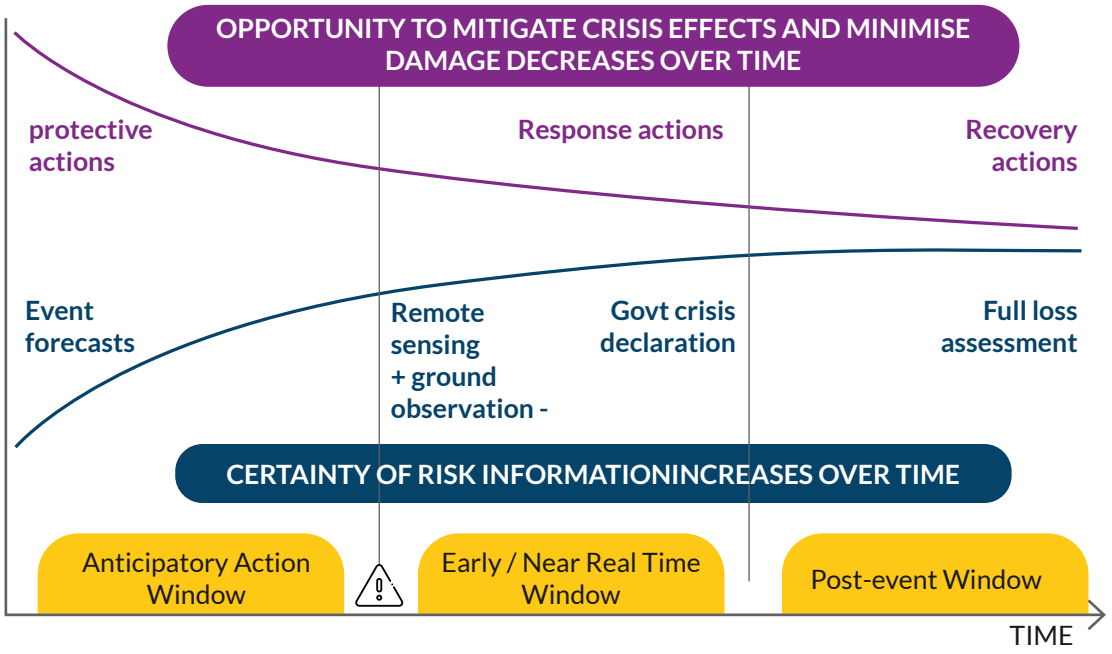
Post-event financing is the most accurate type of risk financing, as it makes use of information about the actual hazard that occurred, including real-life loss data for the assets of interest. Examples of post-event financial instruments include indemnity insurance and the traditional World Bank Crisis Response Window (excluding the early response financing window discussed in Box 1). This approach can capture the build-up of potential losses from an event, but takes a significant amount of time to implement, given that it often requires an in-depth loss assessment.

It should be noted that these post-event financing products do not entirely eliminate the risk that payouts do not match expectations. There is rarely, if ever, a perfectly accurate quantification of loss that all stakeholders agree with. In addition, in the case of insurance, certain terms and conditions can impact the payouts received by insured parties, who may not have fully understood them when they took out the policy.

summary

In summary, different windows of action draw on different sources of available data. Typically, as a crisis evolves over time, more data on its impacts become available. This trajectory increases certainty but decreases the opportunity to implement protective or early actions that mitigate harm and economic disruption. As illustrated in Figure 3, choosing the right window of action requires careful consideration of certainty versus opportunity for timely action to mitigate harm.

Figure 3: Trade-offs between certainty of risk information and opportunities to mitigate crisis impacts



FAQs

What is the optimal window of action within which to act?

The first consideration is the intended use of the disaster risk finance. Decision-makers need to understand who the envisaged beneficiaries are, what funds they need, and when they need them. Whether the funds are intended to strengthen government budgets or are to be channeled to households themselves, the timing of funds is significant for the objectives they can achieve (i.e., protection, response, or recovery).

A second consideration is the systems in place to channel funds toward the desired objective ("money out"), such as social protection systems or national response capabilities, and specifically their ability to rapidly mobilize in times of shock. Although an anticipatory action window offered by a crisis forecast may seem optimal, it is typically short (e.g., 10 days before a flood) and requires fast and robust implementation capabilities. It is important to be realistic and consider temporal risk layering, in which humanitarian actors may leverage the earlier windows of opportunity while slower but larger-scale government response systems come in after an event.

A final consideration is the instrument intended to pre-arrange finance. If the instrument has an automated trigger (as for example a parametric insurance product does), there must be confidence that the data being used to trigger the instrument accurately reflect the loss. For this reason, parametric insurance is more commonly used for early response than for anticipatory action. Financial tools such as contingency funds or contingent finance like a Cat-DDO (Catastrophe Deferred Drawdown Option) can be better adapted to "softer" triggers such as government declaration of a crisis; they thus lend themselves well to the near-real-time/early action window. Indemnity insurance, which is typically based on post-disaster loss assessments that take time to carry out, is often used for the post-event/recovery window.

Reading List

Anticipation Hub. "Anticipatory Action in the World."
https://www.anticipation-hub.org/experience/anticipatory-action-in-the-world.
Asia-Pacific Technical Working Group on Anticipatory Action. 2024. "Anticipatory Action in Asia and the Pacific: Results of the 2023 Regional Mapping."
https://www.anticipation-hub.org/Documents/Reports/TWG_AA_2023_Regional_Mapping.pdf.
Choularton, R., and E. Montier. 2023. "Windows of Opportunity for Risk-Informed Assistance: An Anticipatory, Early Action, and Disaster Risk Finance Framework." Report of the USAID Climate Adaptation Support Activity implemented by Tetra Tech and funded by the U.S. Agency for International Development.
https://www.anticipation-hub.org/Documents/Research_Reports/CASA_BHA_Part_II._Framework.pdf.
Hill, Ruth, Emmanuel Skoufias, and Barry Maher. 2019. "The Chronology of a Disaster: A Review and Assessment of the Value of Acting Early on Household Welfare." World Bank, Washington, DC.
https://hdl.handle.net/10986/31721.
Plichta, Michele, and Lydia Poole. 2023. "The State of Pre-arranged Financing 2023: Key Findings." Centre for Disaster Protection blog, November 16, 2023.
https://www.disasterprotection.org/blogs/the-state-of-pre-arranged-financing-for-disasters-2023.