

Anticipatory Action in Motion: Recapping the most recent evidence and illuminating a pathway forward

A FEINSTEIN INTERNATIONAL CENTER BRIEF 

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Abstract

Early warning systems are increasingly promoted as one way to adapt to climate change, and anticipatory action (AA) initiatives are being promoted globally to act before disasters happen. AA initiatives make action plans and invest in preparedness and financing mechanisms to enable AA when a forecast predicts an extreme climate or weather event. Two recent papers assessed the evidence base and investment in AA: “The Evidence Base on Anticipatory Action” (Weingärtner et al. for ODI, 2020) and “Early Action: The State of Play 2021” (REAP, 2022b). Given the growing interest in this field, this briefing note provides an update to these two assessments by summarizing what has been published on anticipatory action since 2020 and what progress has been made on existing recommendations. We divide the recommendations from the ODI and REAP assessments into four categories, and we find slow but steady progress in the first category of “Investment in Monitoring, Evaluation, and Learning Systems.”

Several new studies document wide-ranging benefits from AA interventions, ranging from improved health outcomes to increased wellbeing. While evaluation methodologies continue to differ, there are several collaborations currently trying to build “Common Analytical Frameworks.” The advent of the Anticipation Hub has greatly facilitated “Collaboration and Exchange of Knowledge,” but there is more to be done in establishing partnerships across sectors and enabling locally led adaptation. COVID-19 emphasized the need for “Simpler Financial and Technical Assistance,” which can be achieved through a variety of funding mechanisms. We recommend continued investment in these four categories, in line with the ODI and REAP reports, as well as evaluations of AA that look across the value chain, explore multilayered complex interventions, evaluate failures, and evaluate the long-term impacts of AA programs.



Introduction

Recent acceleration of anticipatory action (AA) programming has been captured in a variety of documents, including impact evaluations, policy recommendations, and academic articles documenting outcomes, progress, and challenges associated with

AA. This brief builds on the most recent roundups of evidence and guidance written by Weingärtner et al. for ODI (2020) and REAP (2022b). The most relevant learnings from these reports are summarized in Boxes 1 and 2.

Box 1. Brief Overview of ODI's "Evidence Base on Anticipatory Action"

In 2020, ODI outlined the existing evidence base for AA, stating that "there is a growing body of evidence pointing towards the positive impact of Anticipatory Action, yet it is often fragmented, incomplete in scope, and in need of methodological improvements." In this scoping review, ODI draws specific attention to the need for:

- Greater investment in monitoring, evaluation, and learning systems;
- Common analytical frameworks;
- A focus on improving models.

Notably, ODI heavily emphasizes the importance of monitoring and evaluation as AA initiatives are continually expanded and scaled. (Source: Weingärtner et al., 2020)

Box 2. Brief Overview of REAP's "Early Action: The State of Play 2021."

In 2021, REAP compiled a "global snapshot" of progress, gaps, and opportunities on risk-informed early action that is intended to aid decision makers in the delivery of early action. REAP uses four targets, specific to their partnership, as a proxy indicator of progress towards effective early action. These targets involve:

- Integrating risk-informed early action into national laws, policies, and plans;
- Creating stronger financing and delivery mechanisms connected to effective early action plans;
- Investing in extending early warnings to the "last mile;"
- Delivering early warning information to the people and places most affected by these risks in a way that is reliable, understandable, and actionable.

REAP makes a series of recommendations related to these targets, and progress has been made on a few of these recommendations, which will be addressed in the pages to follow. REAP argues for the practical need for increasing the evidence base in this space. (Source: REAP, 2022b)

The ODI and REAP reports provide several recommendations for future investment (outlined in Boxes 1 and 2). In this brief, we consolidate these into four categories of recommendations, provide an update on what new literature and advancements have happened in each category since 2020, and make recommendations for future progress. The four categories we use are:

1. Investment in Monitoring, Evaluation, and Learning Systems
2. Common Analytical Frameworks
3. Collaboration and Exchange of Knowledge
4. Simpler Financial and Technical Assistance

Methodology

ODI and REAP's reports were selected as the building blocks of this report due to their robust and comprehensive review of AA and the recency of the reports. The four categories of recommendations for future investment that we use were selected through merging recommended steps forward in the previously described ODI and REAP reports and were prioritized based on the relevant evidence available

in these categories. Building explicitly on the key foci of the reports outlined above, we have identified the following learnings and recommendations via online literature searches of academic, policy, and practitioner outputs as well as via expert consultation. To avoid redundancy with existing reports, we only document findings published and initiatives developed since 2020.

Progress in Key Categories

Investment in Monitoring, Evaluation, and Learning (MEL) Systems

Since 2020, there have been several studies on AA actions around the world, with the greatest number of evaluations coming from flooding and cyclone events in Bangladesh. Table 1 summarizes several key studies that have emerged since 2022. All of them find some benefit of AA, including beneficiaries who reported that they could better protect their assets, had better health outcomes, and had general improvements to their quality of life (FAO 2021, Start Network 2022a, 2022b).

This table is not meant to be exhaustive but rather gives an overview of key findings from recent AA evaluation work. Evaluations performed prior to 2020 were covered in ODI's Evidence Base on Anticipatory Action (2020) and are included in Table 2, found in the annex.

Table 1. Examples of Investment in AA MEL

Country	Disaster	Intervention	Key Findings	Citation
<i>Bangladesh</i>				
	Flood	Cash transfers, asset protection for farmers, reproductive health and hygiene kits for women and girls	Households that received aid were better able to protect crop seeds and animals from the impact of floods, sold animals at higher prices at the market, and reported lower animal deaths compared to those who did not receive aid.	FAO (2021)
	Flood	Cash transfers	Households that received the transfer experienced lower asset loss, engaged in less costly borrowing after the flood, reported higher earning potential, and reported significantly higher child and adult food consumption and wellbeing even three months after the flood. Results also found that people receiving cash a day earlier than other AA recipients resulted in a small and marginally significant increase in welfare.	Pople et al. (2021)
	Flood	Evacuation assistance, cash transfers	Twenty-seven percent of forecast-based financing recipients reported that they evacuated adults after receiving an early warning vs. 11% of respondents among the non-recipient group. Recipients reported better health and wellbeing, reduced negative coping strategies, and reduced loss and damages.	BDRCS (2021b)
	Cyclone	Human and livestock evacuation, food and water provision	One hundred percent of recipients were evacuated to a cyclone shelter. The supported group reported fewer physical injuries, fewer livestock and agricultural impacts, and higher evacuation site satisfaction.	BDRCS (2021a)
<i>Mongolia</i>				
	Dzud (several very dry and cold seasons that cause livestock death)	Cash grants, veterinary kits	Early assistance was associated with reduced animal mortality and increased survival rates of newborn livestock.	Gros et al. (2021)

Country	Disaster	Intervention	Key Findings	Citation
<i>Somalia</i>				
	Drought, food insecurity	Cash transfers; nutrition assistance; water, sanitation, and hygiene (WASH) programming	This evaluation compares the actions of four implementing partners, each doing a combination of interventions. Between 64% and 80% of recipients stated that the intervention improved the quality of their life. Cash transfers generated the highest proportion of improvement of quality of life.	OCHA (2021)
<i>Sudan</i>				
	Flood	Cash-for-work, food assistance, health promotion activities, flood mitigation measures, community readiness actions	Anticipatory actions helped reduce damage to shelters, facilities, and infrastructure as well as reduce the prevalence of flood-related diseases. Anticipatory actions also had tangible benefits on livelihoods, not only reducing the damage that floods caused to crops and livestock but also improving access to income for supported communities.	Start Network (2022b)
<i>Pakistan</i>				
	Heat wave	Cooling facilities	Cooling facilities were frequently utilized and provided benefits beyond temperature control and hydration. While in facilities, people were given information about heat-related health issues that surveys suggested would improve wellbeing and even save lives.	Start Network (2022a)
<i>Senegal</i>				
	Drought	African Risk Capacity (ARC) Replica Payout (cash transfers), nutrition assistance, hygiene awareness campaigns	Supported households reported that at least 99% of children under five and 98% of pregnant or lactating women had eaten two or more meals per day during the monitoring period. Eighty-six percent of households reported that they received the cash early enough to help prepare for the lean season. Eighty-five percent of households reported improving the quality or quantity of food they were accessing. Negative coping strategies were reduced 10% or more in recipient households during the project period.	Start Network (2020)

While there is still much to be learned in the field of AA, multidisciplinary experts have agreed that early action can address the humanitarian impacts of disaster displacement before a hazard materializes (Thalheimer et al., 2022). According to the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), AA prevents or mitigates potential disaster impacts before acute impacts are felt and “reduces humanitarian needs, helping to protect hard-won development gains and enhance resilience” (OCHA, 2022). In 2021, the United Nations, in conjunction with the governments of Germany and the United Kingdom, convened a high-level event to advance AA and galvanize a collective push to act ahead of crises, acknowledging that acting early saves lives, reduces needs and suffering, and maximizes the impact of limited funding (OCHA, 2021b).

However, limitations exist for AA MEL studies. Most commonly, existing MEL studies struggle to differentiate the benefits of AA and traditional humanitarian response. One study by Pople et al. tried to capture the benefits of timing by comparing people who received early action cash transfers at different times. They found that households that received a cash transfer a day earlier than other AA beneficiaries had a small, marginally significant increase in adult food consumption, even three months after the inter-

Common Analytical Frameworks

The MEL studies that have evaluated AA to date use different methodologies in different contexts. While context-appropriateness can be a strength, common analytical frameworks could better support comparison and evaluation across interventions by creating specific standards and scope with which to assess the appropriateness and effectiveness of early actions. While there are no commonly agreed-upon principles to encourage methodological rigor in testing the appropriateness of early actions at this time, there are efforts towards collaboration, including the Anticipation Hub monitoring, evaluation, accountability, and learning (MEAL) Practitioner Group. This group commissioned the “Review of MEAL Methodologies for Forecast-based Action,” which

vention (Pople et al., 2021). Gros et al. performed a study in Mongolia (2020), which also confirmed that benefits were greater for people who reported receiving assistance earlier. Despite difficulties effectively evaluating AA against traditional aid, it would be beneficial to see more examples of such studies comparing timings of interventions.

Greater investment in MEL is still needed to understand how AA might benefit people in diverse contexts. Further details on AA evaluations would help foster faster recovery, strengthen community resilience, and pinpoint the appropriate intervention timing. The most robust evidence available is concentrated in Asia, and the outcomes being measured vary from case to case, making the results difficult to generalize (FAO, 2021; Pople et al., 2021; BDRCS, 2021a, 2021b).

Additional limitations to MEL for AA include but are not limited to: (1) different activities being implemented in different communities, creating challenges when attempting to make comparisons between communities, (2) logistical challenges related to employment, travel, commerce, health, and overall accessibility attributed to the COVID-19 pandemic, and (3) lack of baseline data in studies that makes it impossible to know if the intervention actually made a difference at all.

detailed a number of areas of overlap and synergy (Start Network, 2020). For example, targeting the most vulnerable in flood-affected areas with millions of people living at or below global poverty levels is complicated, and well-designed interventions with large sample sizes and comparison groups are often recommended to best understand the effectiveness of an intervention but AA programs often target small numbers of people.

This report also identified that, although people have common ambitions for MEL, resource constraints tend to prevent them from being carried out (e.g., two-stage data collection is not feasible in certain contexts). One of the barriers to robust MEL for AA

is a lack of time, funding, and methodological expertise for implementing organizations. In response to this barrier, the MEAL Practitioner Group commissioned a master's thesis titled, "Impact Assessment on a Shoestring: Measuring the Impacts of Forecast-based Financing in Resource Limited Settings," which outlined a low-cost methodology that could be used in a standardized way across these resource-limited settings. This suggestion included an alternative methodology, the 'success case method,' that gathers insights from program participants and non-participants and compares "success" and "failure" cases from both groups, drawing on sample survey data combined with in-depth qualitative interviews (Knudsen and Gros, 2022). While not extensive, it is designed to offer as much information as possible on how to improve AA in that context.

Collaboration and Exchange of Knowledge

Practitioners and researchers have worked to make knowledge and evidence on AA more available in recent years. The Anticipation Hub, a knowledge exchange platform on a mission to reduce the impact of disasters through anticipatory action, was launched in December 2020, providing a hub for evidence-based learning resources, tools, and expertise for practitioners, scientists, and policy makers (Red Cross EU Office, 2021). The Risk-informed Early Action Partnership (REAP), established in September 2019, has similarly brought together a range of stakeholders across a variety of sectors to share knowledge and resources related to AA, and has increased its work in recent years (REAP, n.d.). These platforms allow for concise and accessible knowledge sharing across sectors. Knowledge sharing has also presented itself in the form of formal collaborations, such as the 4As, which brings together seven universities in Africa, Asia, and North America to evaluate and investigate AA. This form of collaboration not only enhances the evidence base for AA but also provides contextual awareness, increased visibility and understanding of location-specific issues, and empowers local-level research that may not otherwise be possible due to funding constraints.

As a result of these partnerships and an overall increase in engagement with exchange of knowledge in this space as evidenced by an increase in plat-

form published "Integrating Community Voices In Anticipatory Action: A Synthesis of Complex Quantitative Data," in which they explained how they used a small number of interviews with people living in diverse geographical contexts around the country every month for six months (Anticipation Hub, 2022). This method enabled a better design of AA when people needed support the most.

The AA community is actively working towards greater coherence and quality within the evidence base, including the Academic Alliance on Anticipatory Action (4As), which is developing a large survey for common use; the MEAL Practitioner Group; and the Start Network, which is documenting novel methods.

forms users and conference attendees (Anticipation Hub, n.d.), there are a number of key learnings from recent years. These include but are not limited to:

- **Locally led adaptation and AA is important.**

The value of locally led adaptation was evaluated by Start Network in Sibi, Pakistan during the June 2021 heat wave in Jacobabad. Bright Star Development Society Balochistan (BSDSB) led a local AA response to the forecasted heat wave by providing behavior messaging in addition to cooling facilities equipped with cold water and a place to rest. Through a series of interviews, Start Network found that community members benefiting from these efforts felt that Bright Star's close consultation with the local administration and understanding of communities' needs were critical in establishing this culturally appropriate service (Start Network, 2022a).

The Local Climate Adaptive Living (LoCAL) Facility mechanism of the United Nations Capital Development Fund (UNCDF) provides performance-based climate resilience grants to local authorities in least developed countries (LDCs) to finance adaptation interventions. LoCAL aims to promote climate change-resilient communities and economies by increasing financing for and

investment in climate change adaptation at the local level in LDCs and other countries. LoCAL advocates for the direct involvement and consultation of community members in the project development process as they will ultimately be most impacted by the project implementation (UNCDF LoCAL, n.d.). This funding primarily focuses on adaptation but could and should be adapted to fit into AA to increase the prominence of locally led interventions.

Simpler Financial and Technical Assistance

- *Coordination with social protection and sovereign insurance systems can and should be used as a mechanism for scaling AA.*

One key consideration for the anticipatory action community is how to provide financial assistance to recipients through existing rather than parallel channels. Existing national or humanitarian social protection (SP) systems offer one means to provide assistance to vulnerable populations in advance of extreme weather events (REAP, 2022a).

Recently, social protection systems were leveraged quickly and effectively in some places to cover individuals affected by COVID-19. This showed that SP systems can quickly scale humanitarian action and build on past evidence and experience within the humanitarian community on shock-responsive social protection. During COVID-19, some of the main drivers of timely response were strong legal frameworks, available domestic funding, the capacity to register people quickly, the use of digital systems, and access to social registries and social protection (Poole et al., 2022). Examples of SP systems that were activated quickly during COVID-19 include:

- Philippines: The Social Amelioration Program (SAP) was expanded to cover 70% of the total population and remitted payments within 31 days using manual registration (Beazley et al., 2021).

- *G7 countries play a key role in mobilizing support and should continue to do so.*

In a collaborative brief by the Anticipatory Action Task Force (AATF), the role of G7 countries as leaders in mobilizing and scaling AA efforts is brought to light via two simple policy asks: (1) provide funds to build AA systems and (2), support the mainstreaming of AA approaches into national disaster risk management plans and climate change adaptation frameworks (AATF, 2022). These clear, actionable recommendations are an important resource for those faced with formulating or influencing policy.

- Peru: Bono yo me quedo en casa (I stay at home grant) was created using social registries and administrative data. Payments were able to be made within eight days of registration, and the program covered 68% of the population (Beazley et al., 2021).
- Chile: Bono de Emergencia COVID-19 (Emergency COVID-19 Grant) was created using social and beneficiary registry data. Sixty-one percent of the population was covered, and payments were made within 24 days of registration (Beazley et al., 2021).

Similar to how SP systems were used during the COVID-19 pandemic, sovereign insurance systems such as the African Risk Capacity (ARC) can be leveraged through replica payout programs to improve the predictability and speed of implementation timing. In 2017, Start Network and World Food Programme expanded ARC through the ARC Replica Program in Senegal, expanding the coverage of ARC while providing opportunities to test new financing tools. The first payout of this program was triggered in November 2019. Evaluation results found that, despite the added burden of the COVID-19 pandemic, beneficiaries maintained access to food and reduced use of some negative coping strategies, as seen in Table 1 (Start Network, 2020).

- *There is need for flexible financial assistance.*

COVID-19 showed that there is need for flexible mechanisms within formal anticipatory action

plans by humanitarians, which can help plans be adapted to quickly evolving situations. One study on how Red Cross Red Crescent actors managed multiple hazards during activations in the midst of the COVID-19 pandemic found that flexible funding was key to keeping populations safe from COVID-19 and extreme weather events (Tozier de la Poterie, 2021). In cases where non-earmarked funds were accessible, National Societies were able to disseminate information to affected populations in smaller groups than originally planned, build in extra staff for socially distanced distributions, and buy extra personal protective equipment (PPE).

However, many of the established country protocols detailing anticipation actions (Early Action Protocols, or EAPS, within the International Red Cross and Red Crescent Movement) provided no such flexibility. The research found that lengthy bureaucratic arrangements and some in cases delays in responses from the central funding body negatively impacted the ability to adapt anticipatory action to COVID-19 as an emerging hazard. The study highlighted the value of building flexible funding into anticipatory action plans, drawing on literature on crisis modifiers in humanitarian response for examples of how to successfully do so.

Key Takeaways and Next Steps

KEY RECOMMENDATIONS		
1	Stay the course	<i>There has been progress on the priority areas specified by ODI 2020 and REAP 2022, and we hope to see further progress in the areas explored above.</i>
2	Learn from failure	<i>Most of the studies produced today report areas of success in AA. We recommend increased transparency when early actions fail to achieve the expected result, with dissemination for widespread learning.</i>
3	Expand the scope	<i>Studies to date do not capture the full diversity of AA. We recommend evaluation of different disasters, compound events, and different actors, in different geographies, to generate comprehensive evidence that has a standardized approach.</i>
4	Evaluate complex interventions	<i>AA does not happen in a vacuum. We recommend evaluations of how AA interacts with post-disaster assistance. Researches should study the complementarity of interventions, multilayer interventions, financial incentives, and accountability.</i>
5	Conduct long-term evaluations	<i>AA bridges the humanitarian and development spheres. We recommend research into the state of harmony across disciplines, and documentation of system infrastructure that will make the forecast-based financing more effective and sustainable.</i>

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Annex

Table 2. Investments in AA MEL prior to 2020; table adapted from ODI's "Evidence Base on Anticipatory Action (2020)"

Country	Disaster	Intervention	Key Findings	Citation
<i>Bangladesh</i>				
	Flood	Cash transfer	Among recipients of anticipatory cash transfers, 93% evacuated their households, while only 80% of non-beneficiaries evacuated (however, actual urgency and needs may have differed between the groups). AA-supported households also accumulated less debt due to flood-related borrowing behavior, skipped fewer meals, and experienced less psychosocial stress.	Gros et al. (2019)
	Flood	Cash transfer	Cash transfers enabled people to take action to prepare for and cope with floods. Recipients carried out similar types of activities to non-recipients while accruing less debt.	Tanner et al. (2019)
<i>Mongolia</i>				
	Dzud	Destocking-for-cash, livestock feed distribution	Recipient households took out larger loans to cope with the dzud and were able to repay them more quickly. Recipients reported reduced mortality for small livestock, higher milk production in large livestock, and overall better body conditions of herds than non-recipients.	FAO (2018b)
<i>Sudan</i>				
	Drought	Concentrate feed and mineral licks for livestock	Compared to non-recipients, recipient households had lower livestock mortality rates and increased milk production. The body condition of the majority of livestock owned by recipient households improved, while it deteriorated for almost half of control households.	FAO (2019b)
<i>Kenya</i>				
	Drought	Supplementary feed for livestock	Ninety-four percent of recipients reported high milk production resulting from improved conditions of milking animals. Recipient households produced almost two more liters of milk daily than comparison households. Recipient households reported reduced average mortality and improvements in body condition for small livestock.	FAO (2018a)

<i>Madagascar</i>				
	Drought	Distribution of seeds, tools, and irrigation equipment	Yields were overall larger among recipient households that were often able to grow vegetables over several cycles, while the majority of non-recipient households planted once. Recipients showed higher food consumption scores than non-recipients. All households engaged in similar coping strategies that negatively affected their food security, but non-recipients resorted to more of these strategies more frequently.	FAO (2019a)
<i>Uganda</i>				
	Flood	Distribution of water purification tablets	More than four in five assisted households reported using the purification tablets, and only 5% consumed unpurified water compared to over 50% in the control group, but prevalence of diarrhea was high with minimal difference between both groups.	Jjemba et al. (2018)
<i>Malawi</i>				
	Cholera	Mass chlorination of water sources, water point analysis, training of health workers, awareness campaigns	Evidence on the impact of the awareness campaign, aimed at behavioral change, was inconclusive.	Start Network (2018)

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About the Academic Alliance for Anticipatory Action

The Academic Alliance for Anticipatory Action (4As) is a consortium of researchers from seven universities working to increase the knowledge base on anticipatory action. 4As is led by Feinstein International Center, Friedman School of Nutrition Science and Policy at Tufts University in the U.S., partnering with Bangladesh University of Engineering and Technology, Eduardo Mondlane University in Mozambique, Makerere University in Uganda, University of Namibia, National University of Lesotho, and University of the Philippines.



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Photo credit: AMISOM Photo / Tobin Jones. Original public domain image from Flickr - A mother and daughter stand with their herd of goats in El Baraf, Somalia, on March 5. El Baraf was liberated from the terrorist group Al Shabab by the Burundian contingent of AMISOM on February 23, 2016.