

The role of early warning early action in minimizing loss and damage



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About this working paper

This paper for loss and damage policy makers and negotiators outlines how early warning early action (EWEA) can contribute to improving communities' resilience in the face of rising risks. EWEA must be holistically and effectively designed and implemented; take a locally led, people-centred, and inclusive approach; be sustainably governed with clear roles, accountability, and coordination across stakeholders; be strategically embedded within a wider disaster risk management portfolio; and be supported by appropriate and complementary investments in risk reduction and sustainable development over the medium and long term.



Tharu woman © Practical Action

Summary

Climate change and compound crises highlight the need to strengthen communities' and systems' resilience to rising and interrelated risks to avoid climate hazard-induced losses and damages. If this does not happen, the scale of losses and damages – already overwhelming in many cases – will continue to grow within our overstretched and underfunded humanitarian system. 'Strengthening resilience' includes taking action to anticipate and prepare for disasters and manage residual risks that have not been averted due to insufficiently ambitious cuts to greenhouse gas emissions and inadequate disaster risk reduction and adaptation efforts.

This paper for loss and damage policy makers and negotiators outlines how early warning early action (EWEA) can contribute to improving communities' resilience in the face of rising risks. The paper aims to address global policy discussions; there will be a need to follow up with recommendations to national-level decision-makers in this space. This will be the subject of further work.

This paper argues that to achieve improved resilience, EWEA must be effectively designed and implemented; take a locally led, people-centred, and inclusive approach; be sustainably governed with clear roles, accountability, and coordination across stakeholders; be strategically embedded within a wider disaster risk management portfolio; and be supported by appropriate and complementary investments in risk reduction and sustainable development over the medium and long term.

EWEA must be holistic in its approach – if any one element is missing, we lose an opportunity to minimize loss and damage and build resilience to increasingly frequent and severe climate-related hazards. The paper also argues that EWEA must be supported by adequate, reliable, and pre-arranged financing to maintain the service over the long term, and that national and local governments have a duty of care to provide this service for communities at risk from natural hazards.

Terminology

Different stakeholder groups use a variety of terms to refer to the implementation of risk-informed early action approaches towards crises and disasters. In this paper, we will be using the following terminology:

- **Early warning early action:** the actions taken based on a forecast in advance of a hazardous event that are meant to avert or minimize impacts (REAP, 2022a).
- **Resilience:** the ability of a system, community, or society exposed to hazards to resist, absorb, accommodate, adapt to, transform, and recover from the effects of a natural hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management (UNDRR, n.d.). In this paper, we use resilience to refer to resilience to climate change-related natural hazards.

Call to action

Climate change resilience is a growing need, which can be supported by early warning early action, so long as it is done well. We must ensure that EWEA is elevated, designed, governed, and funded in ways that truly contribute to resilience.

- **Parties must recognize the importance of EWEA as a contribution to minimizing losses and damages, while understanding that it is not a stand-alone solution.** Growing and intensifying natural hazards and changing patterns of vulnerability, particularly in the face of and driven by climate change, are increasing the relevance of EWEA to reduce the impacts of extreme weather and longer-term climate change.
- **Budget holders and financial mechanisms must allocate funding to establish people-centred EWEA systems, actively enabling co-design of systems between institutional stakeholders and vulnerable and marginalized communities, to ensure EWEA is effective and contributes to improved resilience.** EWEA must be people-centred, end-to-end, holistic, and proactively include the most vulnerable and marginalized in their design and implementation to be able to contribute to resilience in both direct and indirect ways. This requires locally led and informed processes, coordination between stakeholders and across sectors, and sustainable governance across the system with clear roles, accountability, and coordination. All elements of an EWEA system must be operating effectively for it to build resilience.
- **Technical experts and policy makers must ensure that EWEA is jointly governed and mainstreamed across the disaster risk and climate change continuum.** EWEA is a necessary tool to break the disaster cycle and reduce immediate impacts and losses. However, its strength is in addressing residual risk at short timescales, and therefore it must connect to longer-term disaster risk management to support reduced vulnerability and exposure over time. Attention must also be paid to the design of EWEA to make sure that it supports resilience rather than undermines it.
- **Those in a position to influence international or regional financial institutions and mechanisms must use their influence to ensure that the broad mosaic of funding is aligned, coherent, and complementary. Having this funding in place ensures that end-to-end EWEA is effective and co-designed by and for those who need it most.** It is imperative to improve governance and increase funding to develop coordinated, end-to-end EWEA, designed particularly for the most vulnerable and marginalized people and communities. Indeed, EWEA often falls between pre- and post-disaster funding, without clear responsibilities and jurisdictions, which undermines both its general effectiveness and its contribution to resilience. Large and well-positioned investments that are accessible and coordinated across the range of stakeholders and sectors necessary to build effective EWEA will be needed to meet targets and effect change.

Climate resilience is essential

The climate crisis, along with socioeconomic and political crises, is stretching the capacities of national disaster response and humanitarian funding. Given this, the toll exacted by rising losses and damages from climate impacts is likely to become ever more severe. EWEA can help to minimize the losses and damages from climate impacts – especially sudden-onset impacts – by enabling action ahead of potentially harmful events (Anticipation Hub, 2022). Under the right conditions, and over time, EWEA can support increased resilience, reducing the potential future losses and damages from climate change-related natural hazard impacts that cannot be avoided by mitigation, adaptation, and ‘classic’ disaster risk management (Figure 1).

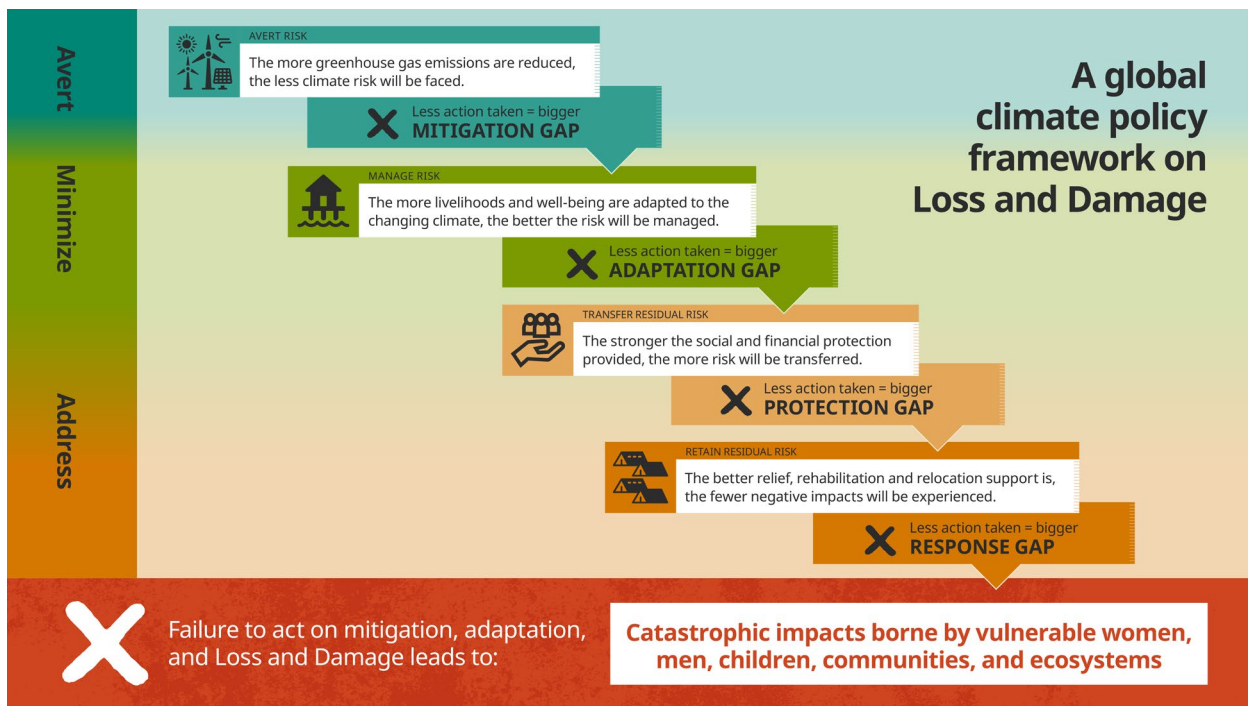


Figure 1. A global climate policy framework on loss and damage. EWEA directly contributes to minimize the losses from climate change-related disasters

Source: McQuistan et al., 2022

This paper aims to discuss how EWEA can and could support longer-term resilience building to minimize loss and damage experienced by global communities at risk from climate change-related disasters. It will explore what is needed to achieve that impact and review what we know and do not know about how to design and implement effective EWEA programming to contribute to improved resilience. It will attempt to extract the key principles of how to do EWEA well to build resilience so that it becomes an integral part of dealing with climate change-induced loss and damage.

EWEA can contribute to building climate resilience...

Early warning early action can result in a wide range of activities including evacuating to a safe place, provision of cash advances in response to a hazard forecast, and prepositioning or provision of resources and supplies (IFRC, 2021). EWEA can directly and indirectly contribute to improved resilience of individuals, communities, institutions, and systems, if designed and implemented effectively (Figure 2).



Figure 2. Links between the core components of effective early warning systems and direct (green) and indirect (orange) benefits to resilience

Source: Budimir et al., 2023, after UNISDR, 2006

EWEA direct benefits to resilience

- **EWEA can help to minimize the impacts of climate hazards by supporting well-planned, locally led early actions that take place before a hazard hits or impacts are felt.** It can potentially even prevent a hazard from leading to a humanitarian disaster by preventing losses of lives and livelihoods; it can help break the vicious cycle between repeated response to and recovery from often-predictable shocks (UNDRR, 2022).
- **Acting early can also offer medium- to longer-term benefits, for example preventing the need for negative coping mechanisms** such as taking children out of school (CERF, 2020) and selling assets to support short-term needs (IFRC, 2021), while reducing secondary impacts such as disease outbreaks and health-related problems (CERF, 2020).
- Reducing these impacts, and therefore reducing the investment needed in disaster recovery, can **enable communities and economies to bounce back quicker** (Clatworthy, 2022), and can **support the utilization of scarce resources in climate-resilient investments** (Anderson et al., 2018) that would otherwise have been spent picking up the pieces after a disaster.

EWEA indirect benefits to resilience

- **EWEA can be used as the linchpin to bring sometimes disparate sets of actors (even within a single government) together around the shared aim of coordinated risk reduction** (REAP, 2022b). Effective EWEA requires buy-in and cooperation from a broad range of stakeholders; the outcome of this, if managed well, can be improved governance and stronger collaboration (Figure 2) (de la Poterie et al., 2023). This approach can promote and strengthen communication, relationships, networks, and trust vertically within and horizontally between organizations (Harrowsmith et al., 2021). Beyond crisis events this can lead to improved data sharing and collaboration on other initiatives related to resilience, including the COVID-19 pandemic, livelihood development, and monitoring local crime (Begg and Budimir, 2023; Clatworthy, 2023).

Heatwave early warning early action in England

England has had a comprehensive Heatwave Plan since 2004 which connects heatwave risk reduction at different timescales with targeted actions for each of these, linking forecasts and early warnings with longer-term planning and seasonal preparedness. The plan follows a tiered approach, with levels of heatwave alert services and predetermined actions which different stakeholders, individuals, and institutions should take. An evaluation of the Heatwave Plan in 2019 showed that longer-term attention to climate change resilience (beyond rapid-onset early warning early action, including community-level plans, building design, and business continuity) was essential. The evaluation also highlighted that enhancing public and first responder (e.g. healthcare workers) awareness would be a key component to increasing the plan's effectiveness. (Williams et al., 2019).

- **EWEA can also be an opportunity to implement meaningful participatory processes** with local communities and to provide opportunities for vulnerable and marginalized groups to influence EWEA decision-making processes that directly affect their lives (Figure 2) (Yore et al., 2023). EWEA can also support community and individual empowerment. EWEA often provides opportunities for women's leadership, empowering them to be seen as agents for change and local leaders (Begg and Budimir, 2023), working towards gender transformation and addressing social inequalities (Bharadwaj et al., 2022).

EWS programming in Peru and Nepal leads to improved resilience

An impact study by Practical Action reviewing their programmatic work on early warning systems (EWS) in Peru and Nepal found that their people-centred approach had led to multiple indirect resilience-building benefits. There was improved public disaster risk knowledge and understanding particularly around the causes, effects, and risks of climate-related weather hazards, which has also resulted in improved psychosocial welfare of community members. Communities also reported improved trust in government sources of forecast information. The EWS project work has strengthened community networks and they have been used beyond disseminating early warning messages for other purposes, such as reporting robberies, health campaigns, and COVID-19 response. Community participation networks have also created opportunities for women's leadership which are not traditionally available to them.
(Begg and Budimir, 2023)

In the longer term, effective EWEA can also lead to improved risk-informed decision-making by communities at risk. It enables democratized and equitable access (Yore et al., 2023) **to other types of information** beyond hazard forecasts and warnings, such as information and advice that can support improved livelihoods and agriculture resilience (Figure 2) (Practical Action, 2022). This can lead to a culture of improved disaster risk knowledge, improved understanding of hazard, vulnerability, and exposure, and lead to better risk reduction action.

EWEA can incentivize a shift away from the current emphasis on post-disaster response towards including proactive risk reduction that can minimize and, in some cases, altogether avert losses and damages (Figure 1) (de la Poterie et al., 2023). It offers an opportunity to harness people's short-term risk thinking and acts as a hook to change behaviours and/or gain attention to sudden-onset events. EWEA initiatives provide a way to open discussion and improve awareness, clearing a pathway to strategies that tackle longer-term resilience issues. EWEA can form a bridge from purely humanitarian response to preparedness and long-term development as well as improving relationships across pre- and post-disaster silos.

...if it is done well

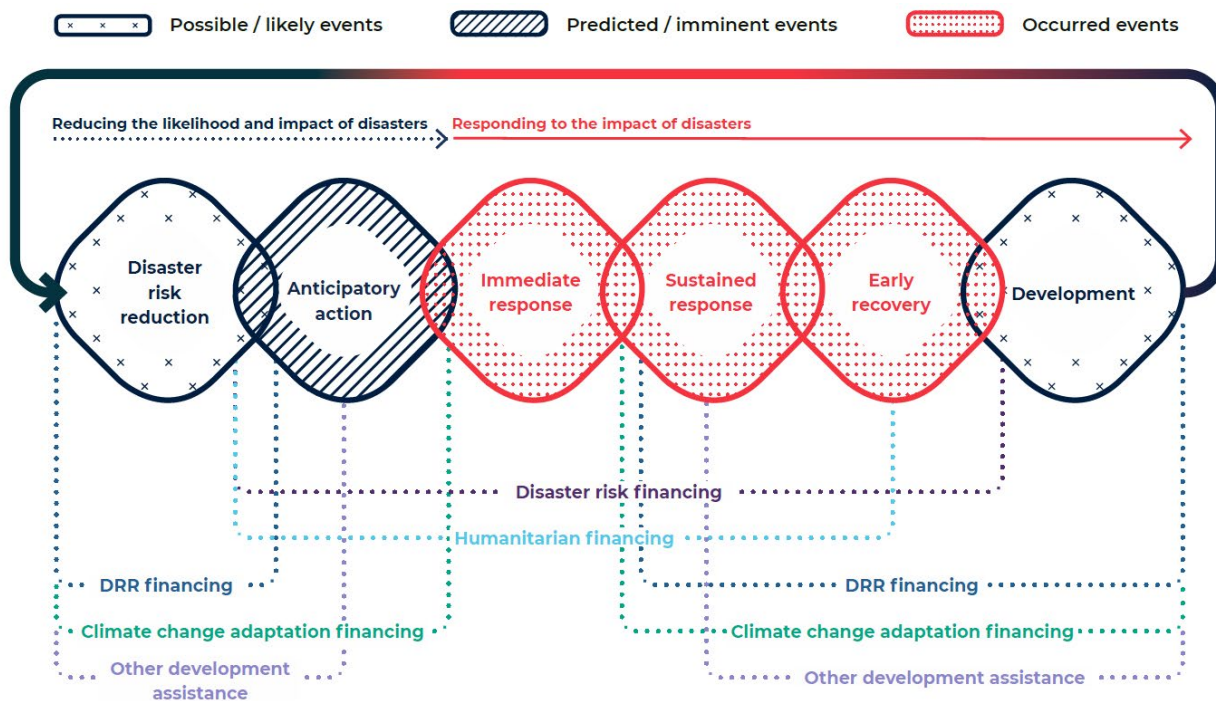
EWEA does not automatically, by itself, lead to improved resilience. It is not a silver bullet. We have the evidence of what approaches are necessary to ensure that effectively designed EWEA directly and indirectly contributes to improved resilience. The following are the building blocks that are essential in the design of effective EWEA that can contribute to resilience:

Programming must take a whole-system approach to EWEA. The system needs to be built from early action backwards to ensure all stakeholders and systems are collectively working towards a common goal of early actions to reduce risks. If one element is missing from EWEA programming, or there are gaps in the value chain, or if it fails to result in early actions that reduce risks, then it will not improve resilience. Common programmatic challenges and hurdles that can result in ineffective EWEA include working in silos across sectors, hazards, and/or stakeholders.

EWEA must be people-centred. A people-centred approach means fundamentally taking a participatory and inclusive approach, proactively reaching out to hear from and include the most vulnerable and marginalized in the design and implementation of EWEA throughout the process. Processes need to be locally led and informed from the beginning and throughout the implementation with continual and iterative engagement.

EWEA needs to be well-governed and institutionalized to ensure it can cover everyone and be sustainable. This requires collaboration across sectors and stakeholders as EWEA requires multiple roles and expertise to achieve end-to-end systems. In best-case scenarios, these activities should be the responsibility of the state; however, there are many cases where there are gaps in government capacities. NGOs can bridge this gap temporarily, but EWEA needs to be built with sustainability and institutionalization in mind from the beginning to avoid project-cycle gaps in services and to ensure longevity and responsibility of every part of the EWEA value chain.

EWEA must have a mosaic of funding that supports pre-arranged finance linked to forecasts and EA protocols (Anticipation Hub, 2023). There is a lack of sufficient, specific, and accessible funding for EWEA to respond to growing and intensifying climate hazards and changing patterns of vulnerability. While there is funding available, EWEA often falls between pre- and post-disaster funding, without clear responsibilities and jurisdictions, which undermines both its general effectiveness and its contribution to resilience (Figure 3) (REAP, 2022c). There are also investment and implementation gaps (WMO, 2020) and significantly less progress made in fragile and conflict-affected states (REAP, 2022c).



Note: This simplified figure does not represent the scale nor precise scope of each category of funding but is intended as a broad representation of the relevant domains of each to the risks and effects of climate change-related disasters.

Figure 3. How anticipatory action (referred to as early warning early action in this paper) fits in with the financing landscape

Source: IFRC, 2020: 311

EWEA must be part of an overall resilience-building portfolio within the continuum of disaster management and not obscure the critical need for long-term adaptation (Figure 4) (Šakić Trogrlić et al., 2022). For example, it can be combined with nature-based solutions to reduce the hazard risk, and with addressing unavoidable losses, such as through insurance (Figure 4). A coordinated, layered, and overlapping approach between stakeholders, responsibilities, and financing is needed.

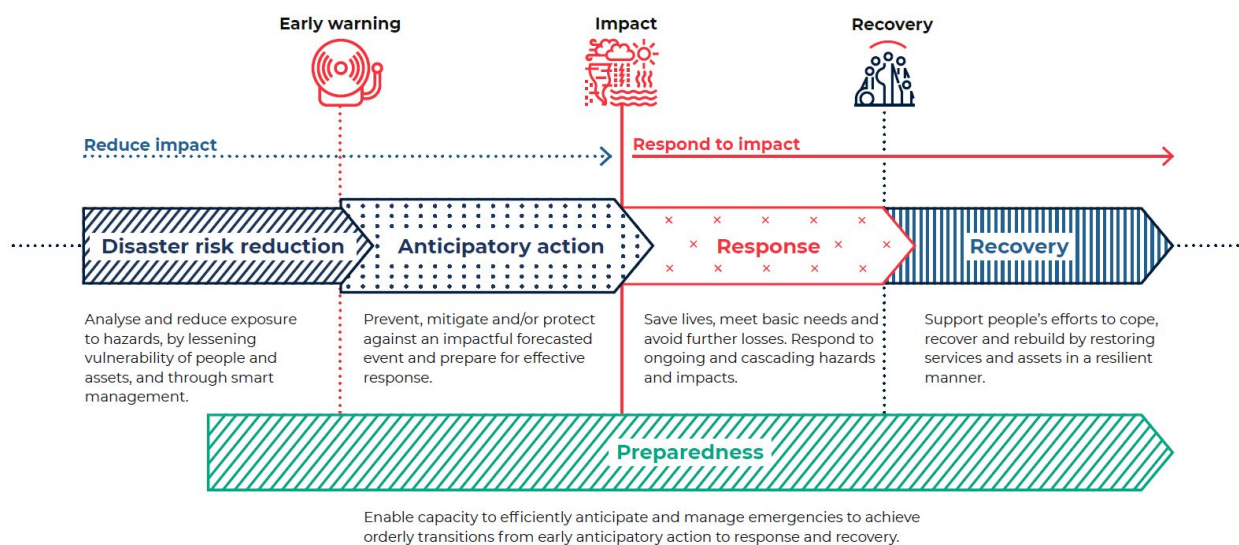


Figure 4. Anticipatory action (in this paper referred to as early warning early action) and how it fits in to the disaster risk management continuum

Source: IFRC, 2020: 206

But if it is not done well...

If EWEA systems are not designed effectively, **programming risks at best not contributing to resilience** and at worst decreasing long-term adaptation, failing to adequately support the communities at the front-line of climate change.

We must do EWEA well to achieve improved resilience of communities at risk from changing natural hazards, provide evidence and results that achieve improved resilience, and pay attention to the design of systems, so they are effective in a different climate future.

We must **invest both in EWEA as an essential tool to minimize risk and in vulnerability and exposure reduction** to truly reduce the losses and damages incurred by climate shocks at different timescales.

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