

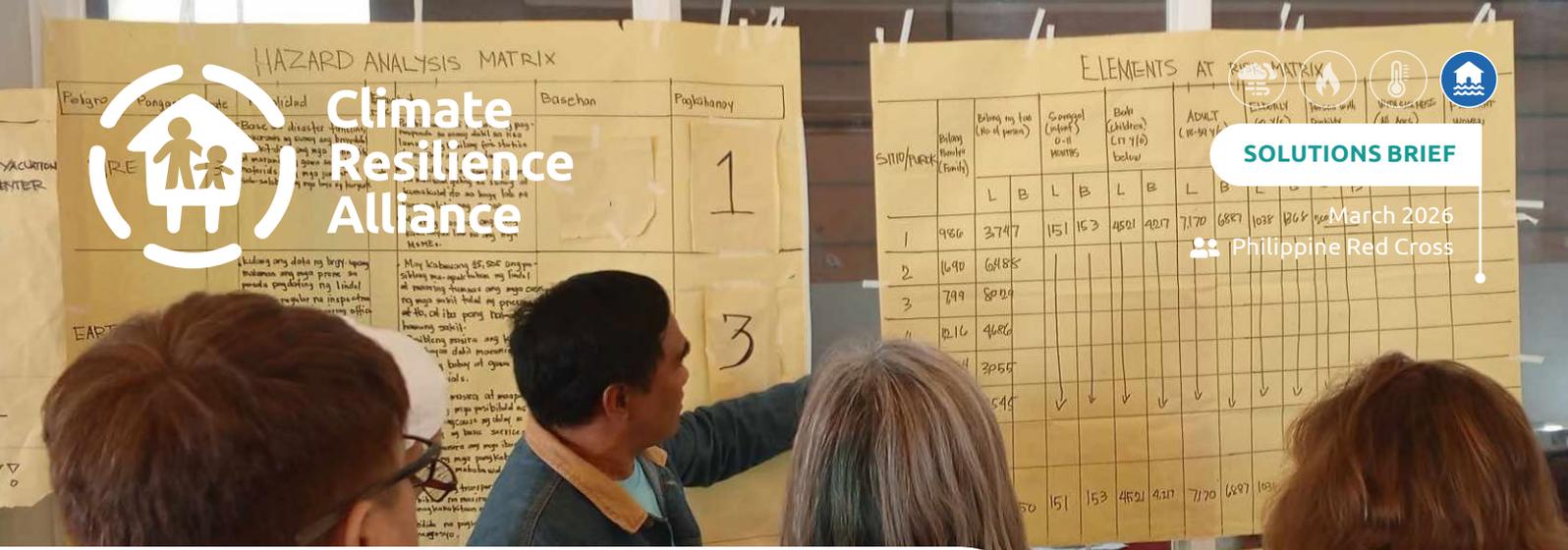


Climate Resilience Alliance



SOLUTIONS BRIEF

March 2026  
Philippine Red Cross



# Collaborative community-based early warning systems

## Summary

The Philippine Red Cross (PRC) has been working with communities and local leaders, representatives of the Barangay Flood Resilience Committee (BFRC), and key governmental stakeholders in the Philippines to strengthen flood early warning systems (EWS). By participating in community-based EWS (CBEWS) workshops and by co-developing CBEWS action plans with the PRC, communities have been able to take effective early action to minimize the impacts of floods on their lives, livelihoods, and assets.

## Our approach

Using the Flood Resilience Measurement for Communities (FRMC), which has evolved into the Climate Resilience Measurement for Communities (CRMC), the PRC, together with partner community members, identified a number of gaps in CBEWS for floods, such as inadequate accessibility and slow dissemination of flood alerts at the local level and limited knowledge on how to respond effectively. Furthermore, EWS were generally understood to be made up of physical infrastructure and equipment, coupled with little awareness of the role of the community itself in understanding risk, monitoring rainfall and river levels, communicating alerts, and taking collective action to prepare and respond.

## Facts and figures



### Cost:

Approximately US\$1,040 (PHP 60,000) per community



### Time to implement:

Three-day workshop; provision and installation of early warning equipment over three to four months



### Accountability and sustainability:

Clear roles and written agreements are key for long-term functionality



### Easy to replicate?

Yes, if there is support from community members and local leaders



Philippines



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## What was the problem?

Although national and local authorities in the Philippines, alongside development and humanitarian agencies, have worked to establish and strengthen EWS, communities continue to face limitations. Currently, flood warnings fail to reach all communities due to inadequate communication avenues between local populations and the authorities responsible for monitoring hazards and disseminating risk alerts. When warnings do get through to communities, community members report that they are unaware of or there is no plan for localized early action.

## What was the solution?

To address the capacity gaps and to make information clearer and more tangible to communities, the PRC carried out CBEWS workshops that brought together community members and leaders, representatives of the BFRC, local and regional focal points for disaster risk reduction (DRR), and the national meteorological agency. Each workshop included an orientation on concepts related to DRR and climate adaptation, a review of the key components of EWS, and comprehensive sessions on how to interpret warnings, take early action, and manage local EWS infrastructure and equipment such as radios, sirens, and loudspeakers.

Following the workshops, the PRC facilitated the development of CBEWS action plans together with communities to identify the capacities, processes, and equipment required to fill gaps and to strengthen EWS at the local level. In addition to evacuation protocols, the plans outlined the relevant budget and monitoring processes necessary for ensuring accountability and sustainability.

Using FRMC findings and the CBEWS plans, the PRC supported the BFRCs to advocate for funding from local authorities to ensure the implementation of the CBEWS action plans. Their advocacy resulted in the integration



Risk-mapping exercise carried out with community leaders, April 2024.. Photo: Philippine Red Cross

of procurement of early warning devices, such as megaphones, sirens, emergency lights, and two-way radios, into the CBEWS plan, which supported the effective communication of alerts and safe evacuation at the local level.

## How does it increase resilience?

Strengthening relationships between communities and authorities is fundamental to enhancing communication channels for the dissemination of flood alerts. As flood early warnings reach more people and risk awareness is increased, a greater part of the local population responds effectively and efficiently to flood risk. This early action minimizes the impacts on lives, livelihoods, and assets, preventing a hazard from leading to a humanitarian disaster, or at least reducing the quantity and severity of losses and damages.

The implementation of CBEWS workshops strengthens the following: human capital through knowledge transfer, training, and awareness raising; social capital



Risk-mapping exercise carried out as part of community-based DRR and management training, May 2024. Photo: Philippine Red Cross

### Climate Resilience Measurement for Communities (CRMC)

The Climate Resilience Measurement for Communities (CRMC) is a data-driven process, complemented by a web-based tool and mobile app, which helps communities to evaluate and measure how resilient they are to climate hazards. Using the results, they can identify and implement resilience-building interventions and run additional measurements to track improvements.

Find out more: [ZCRAlliance.org/crmc](https://ZCRAlliance.org/crmc)

through developing networks, establishing local communication channels, and ensuring connectivity between communities and local authorities; and physical capital through the provision of infrastructure and equipment to support EWS, early action, and locally led advocacy to support capacity-building, operational, and maintenance costs.

Through an integrated approach of strengthening risk awareness, diversifying and increasing accessibility of communication channels, and planning and preparing the local population for an organized response, this intervention supported rapid recovery and ensured that communities continue to grow and develop despite the impacts of disasters.

### Other benefits:

- The collaborative nature of this intervention through joint planning and co-financing ensures that ties between the communities and local authorities are strengthened, facilitating ongoing co-ordination and a sustainable approach to community resilience.
- Supporting local authorities to understand the risks faced by communities, as well as the local priorities for community resilience, facilitates buy-in, collaboration, and co-financing for effective, context-specific solutions.

## Early Warning Systems (EWS)

EWS are one of the best-proven and effective measures for saving lives and minimizing losses and harm caused by disasters. They help those at risk of floods, heatwaves, wildfires and other climate hazards to take risk-informed, timely, meaningful and impactful early action to keep themselves and their assets safe. The Alliance works across all eight components of EWS so that they deliver essential services for the most vulnerable women, men, and children, supporting communities to be resilient to climate hazards, enabling them to thrive.

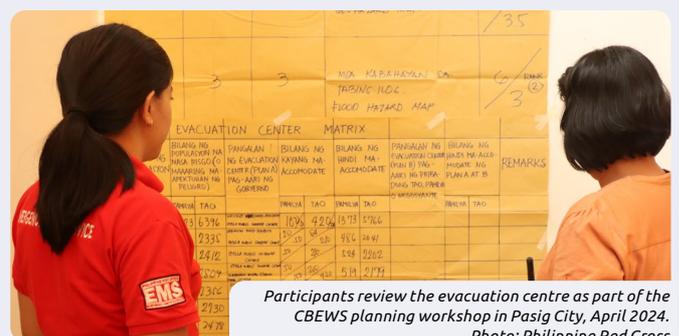


### Success story

The rural community of Dorongan Sawat barangay strengthened its local early warning dissemination through social messaging groups and by using megaphones, sirens, and two-way radios. They also increased local capacity for evacuation by upskilling the BFRC and installing solar lights to increase accessibility and safety along evacuation routes. The installation of this EWS equipment was financed by the PRC, while capacity-building, operational, and device maintenance costs have been supported by the municipal DRR budget, as a result of locally led advocacy. During Super Typhoon Carina in July 2024, the local population were able to act decisively to prepare and evacuate in a timely manner, highlighting the effectiveness of this intervention.



Local leaders and community members in Pangasinan analyse FRMC results. Photo: Philippine Red Cross



Participants review the evacuation centre as part of the CBEWS planning workshop in Pasig City, April 2024. Photo: Philippine Red Cross

## Expert view

**Steven Laranjo, DRR Technical Officer, PRC, describes how the intervention is about more than solely training and the installation of equipment:**



*It's a change of culture that started simply by informing each other through group chats ... the main purpose is to really update each other on an upcoming disaster[s] and inform each other, within the community and beyond the community, on what to do".*

## Lessons learnt

A common misunderstanding is that EWS are solely made up of physical infrastructure and equipment. Furthermore, communities and authorities often perceive EWS as an external service in which the local population does not have an active role. Developing a shared understanding of the components, roles, and responsibilities of EWS, improving the communication ecosystem and relationships between communities at risk and authorities, and empowering people to participate and take action are critical components for addressing gaps and strengthening the system.

## Common conditions for success:

**Q:** *Is this intervention appropriate for other communities?*

**A:** This intervention can be adapted to meet the context-specific needs and priorities of community EWS, based on an assessment of gaps identified by the community.

**Q:** *What conditions are needed for the interventions?*

**A:** An enabling environment relies on the interest and availability of both community members and local authorities to engage in collaborative planning, and is further strengthened when DRR or resilience funding is accessible.

**Q:** *Was there anything special about the communities where the interventions were effective?*

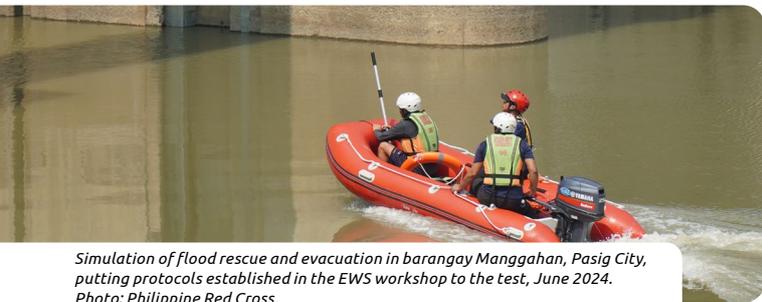
**A:** Although this intervention can be applied at any time, recent flooding events in the target communities helped to identify gaps in EWS, with a clear example of what worked well and what was lacking.

## Get in touch

If you have any questions, contact:  
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Simulation of flood rescue and evacuation in barangay Manggahan, Pasig City, putting protocols established in the EWS workshop to the test, June 2024. Photo: Philippine Red Cross

## Further reading

Philippine Red Cross and IFRC (2024) *Enhancing flood resilience: insights from the Philippines. Final report on the flood resilience program*, IFRC, Geneva.



**The Zurich Climate Resilience Alliance** is a multi-sectoral partnership, powered by the Z Zurich Foundation, focused on enhancing resilience to climate hazards in both rural and urban communities. By implementing solutions, promoting good practice, influencing policy and facilitating systemic change, we aim to ensure that all communities facing climate hazards are able to thrive. [Find out more at ZCRAlliance.org](https://ZCRAlliance.org)

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