



# CHILD-CENTERED EARLY WARNING SYSTEMS: EXAMPLES AND GOOD PRACTICE

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# INTRODUCTION

The impacts of climate change are no longer theoretical. According to the World Meteorological Organisation, 2023 was the hottest year on record. Extreme weather events—including major floods, cyclones, extreme heat and drought, and associated wildfires - are driving humanitarian crises across all continents. The world's children are bearing the brunt of the climate crisis. Children are more vulnerable to extreme temperatures, the immediate and lasting impacts of undernutrition, bodily harm. Secondary impacts such as loss of education will last a lifetime. What's more children who are already at risk will be the most impacted. Over the last 50 years, nearly 70 per cent of all deaths from climate-related disasters have occurred in the 46 poorest countries.<sup>i</sup>

While we may not be able to curb the growing frequency and scale of extreme weather- and climate-related events in the short-term, Early Warning Systems can provide vulnerable populations with information that may enable them, and their duty bearers, to prevent predictable crisis impacts. To be effective, early warning systems must be designed for and together with the populations that use them. Not only should children's needs and specific vulnerabilities be taken into account in designing early warning and early action-- but experience has also shown that children can and should play a critical role in designing, testing and maintaining these systems.

This document outlines examples of Save the Children's experience with child-centred early warning systems, linked to the four pillars of the Early Warning for All initiative. It is intended as a starting point for discussion and further identification of good practice examples to ensure meaningful participation of children in development and implementation of early warning systems.



*Dieih, 14, plays with a traditional Wayuu toy made from cactus in the northern most tip of Colombia in the arid area of La Guajira. Photo: Angela Ponce / Save the Children*

## Early Warning Systems

There is increased global recognition of the vital role of weather and climate services, including multi-hazard EWS (MHEWS), in strengthening capacities to anticipate and adapt to current and emerging climate-related risks. As of September 2023, 19% of submitted National Adaptation Plans (NAPs)<sup>1</sup> specifically mentioned 'Early Warning and disaster risk reduction' as a key adaptation sector to address a wide range of hazards, including drought, floods and increasing temperatures as the three most commonly cited.<sup>ii</sup> According to UNDRR and the WMO, however, as of 2023 less than half of the world's least developed countries (LDCs) and only just over one-third of Small Island Developing States (SIDS) have a MHEWS.<sup>iii</sup>

In order for MHEWS to be effective and enable early action for at-risk communities, they must be **inclusive, accessible and actionable for diverse population groups**.<sup>iv</sup> This includes children, youth, women and men of all ages, gender identities, disability status, ethnicities, language groups and socio-economic positions. The effectiveness of EWS depends on the relevance and accuracy of the information provided, a populations' ability to access and understand messages, trust the source of information, and available resources to act on the information provided. Children in particular have an essential role to play in ensuring that warning information is informed by the risks they face. To this end, schools and broader education systems are a prime avenue for the dissemination of risk information and preparedness to build the capacity of the communities of the future.

## The Early Warnings for All Initiative

In 2022, the United Nations Secretary-General António Guterres called for a global effort to ensure that all people on Earth are protected by early warning systems within five years. The Early Warnings for All (EW4A) aims to bring together the broader UN system, governments, civil society and development partners across the public and private sectors to support the development and implementation of people centred MHEWS for all countries.

The EW4A initiative is built on four pillars, each with a dedicated lead organisation:

- 1. Disaster Risk Knowledge and Management | Led by UNDRR**  
Ensuring all countries have access to reliable, understandable and relevant risk information, science and expertise.
- 2. Detection, observation, monitoring, analysis and forecasting | Led by WMO**  
Ensuring all countries have robust forecast and monitoring systems (both soft and hardware infrastructure) and enabling policies to support optimization and sustainability of hazard monitoring and early warning systems.
- 3. Warning dissemination and communication | Led by International Telecommunications Union (ITU)**  
Using a people-centered approach to ensure that early warnings are effectively and timely communicated to reach everyone, especially those most at risk.
- 4. Preparedness and response capabilities | Led by IFRC**  
Ensuring local governments, communities and individuals at risk have the knowledge and means to take pre-emptive early actions to prepare for and respond to incoming disasters upon receiving warnings.

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<sup>1</sup> UNFCCC's COP 16 established the process to formulate and implement NAPs to enable the LDC Parties to formulate and implement NAPs with a view to identifying medium- and long-term adaptation needs and developing and implementing strategies and programmes to address those needs.

The *Early Warnings for All Executive Action Plan 2023-2027* was launched at COP27 in 2022 to provide a framework for implementation. In 2023 an initial 30 countries were identified as priority countries in which to start work on the initiative across the five 'regional associations'.<sup>2</sup> Following global and regional-level planning efforts in 2022-23, implementation of the initiative at the national level, starting with the development of national plans, is set to begin in 2024.

## The importance of having child-centered multi-hazard early warning systems

Seeing and treating children as passive victims or as a homogenous group misses the vast potential of their unique and collective capacities to drive solutions.<sup>v</sup> Children, and particularly those from least developed countries and small island developing states, are often the most affected by and the least responsible for humanitarian disasters. In 2023, 29.8% of the world's population of more than 8 billion people were under the age of 18<sup>vi</sup>. Six of the top ten countries with the highest vulnerability, however, are also among the ten countries with the highest child population, ranging between 46.64% (Democratic Republic of Congo) and 48.85% (Niger).<sup>vii viii</sup>

As published in Save the Children's *Born into the Climate Crisis* paper in 2022, under Paris Agreement pledges, a child born in 2020 will experience on average twice as many wildfires, 2.8 times the exposure to crop failure, 2.6 times as many drought events, 2.8 times as many river floods, and 6.8 times more heatwaves across their lifetimes, compared to a person born in 1960.<sup>ix</sup> Children are more likely to be physically affected by climate-related events than adults, because anatomically, immunologically, physiologically and metabolically, they are more vulnerable.<sup>x</sup>

*"Please listen to us and give additional importance to our voice. We promise you to become part of the solution."*

– Diya, 16 year old girl, Bangladesh (excerpt from *Born into the Climate Crisis*)

People-centered MHEWS must necessarily also be child-centered. If children are not actively included in all four EW4A pillars, it is impossible for the initiative to meet its goal. As we look towards a future with increasing frequency and severity of climate-induced hazard events, children of this and future generations will bear the brunt of future impacts. Failing to actively seek out and listen to the voices of children and youth in preparedness and early warning efforts can negatively impact their ability to not only be prepared for, but also recover from the crisis and undermine efforts to increase their resilience to future shocks and crisis events.<sup>xi</sup>

Child-centered disaster risk reduction (CCDRR) efforts increased following the adoption of the ten-year Hyogo Framework for Action 2005-2015 by 168 countries, which highlighted the need to "use knowledge, innovation and education to build a culture of safety and resilience at all levels".<sup>xii</sup> The Sendai Framework for Disaster Risk Reduction 2015-2030<sup>xiii</sup> and the accompanying *Words into Action: Engaging children and youth in disaster risk reduction and resilience building*<sup>xiv</sup> guide cemented not only the need to, but also the benefits of, including children and youth in efforts to protect vulnerable communities from disasters. Further highlighting the role of education in global DRR efforts, the Comprehensive School Safety (CSS) Framework, developed in 2012 and updated in 2022, in support of the Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector (GADRRRES)

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<sup>2</sup> RA 1: Chad, Comoros, Djibouti, Ethiopia, Liberia, Madagascar, Mauritius, Mozambique, Niger, Somalia, South Sudan, Sudan, Uganda; RA2: Bangladesh, Cambodia, Lao PDR, Maldives, Nepal, Tajikistan; RA3: Ecuador, Guyana, Guatemala, Haiti; RA4: Antigua Barbuda, Barbados; RA5: Fiji, Kiribati, Samoa, Solomon Islands, Tonga

specifies “risk reduction and resilience education” as one of its three core pillars. In 2019 the Declaration on Children, Youth and Climate Action was developed and subsequently signed by 46 countries, marking a first-of-its-kind commitment to accelerate inclusive, child and youth-centered climate policies and action at national and global levels.<sup>xv</sup> In 2023 the Committee on the Rights of the Child adopted General Comment No. 26 on children’s rights and the environment, with a special focus on climate change, three articles of which specifically reference the role of early warning systems in protecting children’s rights, as well as children’s ability to “enhance the quality of environmental solutions... by providing valuable insights into issues such as the effectiveness of early warning systems for environmental hazards”.<sup>xvi</sup>

*“We are the ones who are going to take up responsibilities in the future. We can use this knowledge and reduce the risks of disasters in our schools and villages”*

– a school boy from a Save the Children child-led Disaster Risk Reduction program in Sri Lanka

As with CCDRR initiatives, efforts to include children and youth in MHEWS efforts should aim to balance child-focused initiatives that acknowledge the specific vulnerabilities, needs and rights of children and youth (MHEWS *for* children and youth) with strategies that aim to collaborate with and empower children and youth (MHEWS *with* children and youth).<sup>xvii</sup> Whilst children and youth can play lead roles with the support of adults in their households, schools and communities, the responsibility and accountability for preparedness, mitigation and response still lies with adult stakeholders and duty bearers.<sup>xviii</sup>



Community members being consulted about the impact of climate change on their lives in a remote village North Epi, Vanuatu. Photo: Nikiatu Kuautonga/Save the Children

# SAVE THE CHILDREN'S ROLE IN CHILD-CENTERED MHEWS

Save the Children works in 116 countries and has been supporting last-mile community access to EWS for decades through extensive community-based disaster risk reduction, emergency preparedness, early recovery and more recently climate change adaptation and anticipatory action programming. Emphasised by our role as the global co-lead of the Education Cluster, Save the Children continues to be at the forefront of school-based child-centered programming, including through participation in the development of the Comprehensive School Safety Framework, Schools Safe from Disaster approach and membership of the Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector (GADRRRES) and the Children in a Changing Climate Coalition.

Save the Children believes that children have a central role to play in shaping early warning systems. Our programming works with stakeholders to promote a child centric approach to climate risk management and coordinates with community groups to expand not just access to early warning communication, but the development of early warning communications with children for children. Through our programs spanning the development, disaster risk reduction and humanitarian sectors, we work to secure the protection of the most vulnerable children, including out of school children, children living on the street, children who are married, children in detention and other marginalised populations.

Save the Children is increasingly engaging directly with weather and climate information services to extend the reach of national meteorological agencies through existing partners, projects and networks. This includes bringing together the knowledge of communities, Save the Children technical experts and meteorological agencies to co-develop relevant, accessible and timely weather and climate services that support key livelihood decision making processes. This can include the co-development of impact-based forecasting.

As a leading voice for children, Save the Children has developed a range of guidelines and tools that promote child participation and provide practical guidance on how to ensure child consultations are both meaningful and ethical. These include, for example, *The Nine Basic Requirements for Meaningful and Ethical Children's Participation*<sup>xix</sup> and *Children's Consultations in Humanitarian Settings*<sup>xx</sup> guidance.

Save the Children's accountability approach contributes to building trust with children and communities most at risk of climate hazards. Identifying trusted sources of information for different groups, supporting the co-design of early warning communication with children and community members using a range of formats, including visual, oral means of communication and creative ways of engaging, including theatre forum, that are accessible both for children and other marginalized social groups, including people with disabilities, people with limited literacy, and piloting key messages with different groups of children contributes to AA messages that are relevant, timely, and actionable. Participation includes identifying risks collaboratively with children and adults, supporting and facilitating child and community planning and implementation, ensuring participation in the design of information sharing approaches and materials as well as feedback channels, and engaging children and communities into the ongoing monitoring and evaluation of the impact of early action interventions.

These principles build upon the **Children's Charter, an action plan for disaster risk reduction an action plan for disaster risk reduction for children by children**.<sup>xxi</sup> Through Risk Communication and Community Engagement (RCCE) adaptation with children and for children, stakeholders must:

1. Prioritize child protection before, during and after a disaster.
2. Ensure schools are safe and education is not interrupted.
3. Enable child participation in the development and adaptation of EWS communications/RCCE.
4. Promote the safety of community infrastructure.
5. RCCE must reach the most vulnerable<sup>xxii</sup>

## Save the Children and the Green Climate Fund

In November 2019, Save the Children Australia was accredited on behalf of the Save the Children movement and can now access the Green Climate Fund as an International Accredited Entity. Currently, Save the Children is the only development NGO accredited to the GCF. The GCF portfolio focuses on meeting the needs of those most climate vulnerable and includes last mile communities as well as a focus on children (first 1,000 days, school and out of school), youth, women, people with disability and indigenous people, often through a locally led adaptation approach. SC focusses on climate adaptation and resilience projects in the areas of health and wellbeing and food and water security, most vulnerable people and communities (as this relates to livelihoods, green jobs, social protection, health and education), ecosystems protection/conservation and ecosystem services, and education, and integrates environmental and social safeguards within all projects.

The GCF portfolio focuses on climate adaptation interventions that change the enabling environment to achieve sustained benefits and reduced vulnerability. Climate change adaptation incorporates a range of actions including disaster risk reduction, Early Warning Systems (EWS) and anticipatory action. A primary focus of the GCF portfolio is climate risk informed planning and action through the improved coordination, content and timely delivery of EWS with communities (including schools, health centres and agricultural structures) and governments (including Ministries of Environment, Education, Health and National Disaster Management Authorities) from national through to local levels. We work to strengthen existing EWS systems and communications, while establishing new initiatives where needed to reduce climate vulnerability.

Save the Children's current GCF pipeline is robust. As of Feb 2024, the total projects and pipeline is approximately USD340M and includes 3 approved projects: "Vanuatu community-based climate resilience project - VCCRP", "Solomon Islands, Knowledge-Action-Sustainability for resilient villages project - SOLKAS", and "Strengthening climate resilience of the Laos People's Democratic Republic Health System". There are a further 5 funding proposals in progress including Sierra Leone, Mozambique, Mali, Malawi, multi-country Climate and Education. From this list, "Increasing the climate resilience of Sierra Leone's Coastal Communities" is iTAP endorsed and is earmarked for GCF Board approval in March 2024. Additionally, within the portfolio is 1 concept note approved (Senegal) and 3 concept notes in progress (Indonesia, Somalia, Zimbabwe).

# PILLAR 1: DISASTER RISK KNOWLEDGE

Building children and youth's foundational knowledge of disaster risk is the first step in enabling creative solutions to shared problems. For example, child-centered hazard, vulnerability and capacity analysis (HVCA) is a cornerstone of Comprehensive School Safety (CSS) and enables children to both map and analyse their immediate environment. Children may, for example, identify risks on the way to or from school or in play areas that adults would not consider. They may also be more cognisant of differing levels of vulnerability among children and adults in the community.

Children and youth play a pivotal role in many communities due to their growing access to information from school, media and information technology. Given their access to both formal and non-formal education opportunities, children and youth are also often more conscious of the implications of wider scale processes such as climate change than adults.<sup>xxiii</sup> In many 'last mile' rural communities, children and youth may be the most - or only- literate members of their household and therefore serve as critical linkages to external information and knowledge more broadly. Evidence shows that children and youth actively want to be involved in positively influencing household and community risk reduction, and many are eager to share what they have learned with family members, friends and neighbours.<sup>xxiv</sup> School-based or community-based disaster risk reduction programming, with a focus on disaster risk knowledge and preparedness, works to not only develop knowledge and skills of children and youth that directly participate in activities but also has the benefit of reaching other members of the household and community through informal peer-to-peer learning.

Child consultations conducted by Save the Children, Plan International, UNICEF and World Vision following the Nepal earthquakes in 2015 emphasised the importance of building children's disaster risk knowledge and understanding of local hazards. Many children spoke about the lack of information and understanding about earthquakes which meant they were underprepared. They also pointed to the way in which lack of information, incomplete understanding and rumours have exacerbated fears. In the aftermath of the earthquake, children highlighted issues that were gender- and age-specific, demonstrating the importance of ensuring children are both informed and consulted. Almost all children said they wanted to know more about how to protect themselves in the future.<sup>xxv</sup>

## Enabling an all-hazard approach to school safety in the Philippines

The Philippines consistently ranks as the country facing the highest levels of risks from natural hazards, including extreme weather events and the impacts of climate change.<sup>xxvi</sup> Multi-hazard early warning systems are therefore critical to mitigate the impact of predictable hazards and protect lives and livelihoods. Schools in the Philippines are recognised as a central component to inclusive and child-centered disaster risk reduction and emergency preparedness across the country. In line with the CSSF, Save the Children has implemented a wide range of school-based disaster risk reduction projects to ensure better informed, prepared, and resilient communities.

The Comprehensive School Safety Ecosystem (CSSE) project was launched in 2018 and piloted in 40 schools with an aim to strengthen the resilience of the Philippines school system to all hazards, including the impact of the climate crisis. Since its launch, the CSSE Project has already reached over 620,000 people across the Philippines through different interventions that leverage innovation, technology, data, collaboration, and children's participation. It also serves as a sustainable and scalable strategy for protecting all 47,000 schools in the Philippines against disasters, including the effects of climate change. In partnership with the Department of Education (DepEd) and the Prudence Foundation, CSSE created the Disaster Risk Reduction Management Information System (DRRMIS) which featured three digital apps to increase data collection for school safety response and planning.

One of these apps, the School Watching App (SWApp) engaged children in the process of mapping the school environment and identifying hazards. Using SWApp on a mobile phone or tablet, children were able to identify risks that were often overlooked by teachers and other adults, such as a damaged road that could cause harm if a child were running. As a component of the project's child capacity building activities, the initial pilot schools selected 15 learners per school to be part of the Batang Empowered and Resilient Team (BERT)/School Watching Team (SWT). Students selected to be part of the BERT/SWT were from Grades 3 to Grade 5 in Elementary school and Grade 7 to Grade 11 in High school, and represented a diversity of age, gender, religion, disability and social backgrounds.

Recognising the contribution of the CSSE project and other DRR initiatives, Save the Children in the Philippines was awarded the 2022 UN SASAKAWA Award, which promotes inclusive and accessible DRR practices in line with the Sendai Framework. Best practices from the CSSE Project were also recognized at the COP 27 in 2022, the Asia-Pacific Ministerial Conference for Disaster Risk Reduction in 2022, and the UK Forum for International Education and Training (UKFIET) Conference in 2023.

## **Strengthening Child-centered community flood awareness in Sudan**

The national conversation on early warning systems in Sudan was gaining momentum prior to the outbreak of conflict in 2023. Recognising the unprecedented increase of frequency and widespread floods and droughts in the country and their destruction of livelihoods, the Sudan Meteorological Authority (SMA) hosted a stakeholder engagement workshop to mark World Meteorological Day in 2022 with the theme 'Early Warning Early Action'. The workshop acknowledged the urgent need to improve early warning systems and impact-based forecasting in the country, as well as the need for collaboration and coordination across all state and non-state actors.

Despite a standstill at the national level due to ongoing insecurity, efforts continue at the local level to build disaster risk knowledge and the capacity of children and communities to act ahead of hazard events. Working with local partners and authorities, Save the Children is implementing a series of disaster risk reduction and anticipatory action projects focusing on flood preparedness in at-risk communities. As part of a project funded by ECHO, Save the Children established School Disaster Management Committees (SDMCs) comprised of 15 primary level students, two teachers and three members of the school's Parent Teacher Association (PTA). The key role of the SDMCs was to disseminate disaster risk knowledge to their communities and to emphasise the importance of early action in response to early warnings to mitigate damage. SDMC members were trained on basic information and skills related to the four stages of a disaster event: pre-, during, post- and recovery. While flood was the priority hazard identified, children also identified fire and conflict as additional risks in their schools and communities.

Community Disaster Committees (CDCs) were also established at the community level to develop Community Action Plans in response to multi-hazard early warning systems. These plans specifically outlined the responsibilities of various community members and structures, and determined the specific contributions of the community and the sectors which would need support from humanitarian actors or local government.

## **Building risk knowledge in student and migrant populations in Mexico**

Mexico is vulnerable to a range of predictable weather and climate-induced hazards, including tropical storms, hurricanes, floods and, more recently, heatwaves. In the face of recurring extreme weather events, there is a growing culture of prevention that aims to review, strengthen and improve the existing tools that safeguard the lives of the population in Mexico.



A child affected by Hurricane Otis in Mexico in 2023 makes an artwork in a Child Friendly Space. Photo: Miguel Vera/

Save the Children Mexico is committed to strengthening the resilience of children and communities, including those on the move, to natural and human-induced hazards. Building knowledge and understanding of hazards that children face in their everyday lives is a key first step in developing their ability to respond to early warnings and protect themselves, their peers and their families.

Save the Children Mexico has worked with primary schools to promote disaster risk knowledge and other elements of school safety that fall within the CSSF. The projects involved active participation of children, adolescents, parents, teachers and the local community to identify multiple hazards, vulnerabilities and capacities within both the school and community environments. Children participated in disaster risk reduction clubs and led the development, socialisation and monitoring of emergency response and preparedness plans. These plans included mitigation actions, communication of existing early warnings in their community, generating alarms in their educational and community spaces, and conducting drills to provide timely warning of rapid-onset hazards.

To ensure that emergency prevention and preparedness is continued in schools, an educational curriculum has been developed to include knowledge on DRR for preschool, lower and upper primary levels. All activities and materials developed have kept children at the centre of planning, design and rollout, ensuring that activities are engaging, materials are easily understood by a young audience, and adequate opportunity is given for children to identify and explore their own perspectives of risk.

Disaster risk knowledge, preparedness and early action are especially crucial for populations with additional vulnerabilities, including children and their families who are on the move. With funding support from ECHO, Save the Children Mexico implemented a two-year initiative aimed at strengthening comprehensive protection and addressing humanitarian needs for the asylum-seeking and migrant refugee population on the northern and southern borders of Mexico. This was achieved by scaling up disaster risk reduction practices to promote community resilience and a safe environment in migrant shelters. Children, adolescents and adults were actively involved in the risk identification process and contributed to the development of shelter and community-level preparedness plans. Just as in static community based DRR programming, DRR committees led the communication of local early warnings and conducted drills to build the early action capacity of the child and adult migrant population.

## PILLAR 2: DETECTION, OBSERVATION, MONITORING, ANALYSIS AND FORECASTING

The most effective child-centered approaches are those that include learning formats and programs that allow children to have leadership and decision-making roles, are interactive, and allow them to learn by reflecting on their experiences.<sup>xxvii</sup> Opportunities to include children in detection, observation, monitoring, analysis and forecasting efforts varies widely between contexts, including factors such as access to technology and use of indigenous knowledge systems at the community level.

In settings with widespread access to information technology at the school or household level, children can contribute to observation and monitoring of local hazard markers through child-friendly applications on smart phone or tablet, such as air quality monitoring or the SWApp application in the Philippines. In both high- and low-resources settings, the installation and monitoring of rain gauges at schools is an effective method of child-centered early warning as children are able to monitor evolving risks in periods of heavy rainfall and understand first-hand when anticipatory actions need to be triggered. These interactive activities, combined with educational sessions facilitated by a trained adult (and often in partnership with representatives from weather and climate information services), allow children to use their own judgement and initiate peer-to-peer conversations.

In addition to activities that actively engage children in experiential learning, scientific and data-based approaches such as impact-based forecasting should consider the specific impact of predicted hazards on children, including education, access to health care and child protection services.

### Monitoring rain gauges to warn of flood risk in the Solomon Islands

The Solomon Islands is a least developed country<sup>xxviii</sup> and small island developing state vulnerable to the many impacts of climate change, including increased intensity and frequency of natural hazards as well as rising sea levels. Save the Children has deep experience working with schools and communities across the Solomon Islands to strengthen local capacity to prepare for and mitigate the impact of natural hazards. Community-based disaster risk reduction programming has seen the widespread development of local participatory risk mapping through HVCAs, with children meaningfully involved in the process of identifying risk zones and safe zones that are often different to those identified by adults.

*“Now I know where I can run to and evacuate myself, my siblings, and my family in case there is a natural hazard strikes in my community... I learn[ed] a lot of new things and knowledge on natural disasters such as cyclones, floodings and landslides. Now I understand how to prepare and protect myself from these disasters and the knowledge and skills before, during and after any natural disaster occurrences.”* James, 16, Isabel Province

Using schools as an entry point for educating children on disaster risk reduction, climate change adaptation and early warning has proved a successful approach in the Solomon Islands. A strong member of the Pacific Coalition for the Advancement of School Safety (PCASS) and a proponent of the Comprehensive School Safety Framework (CSSF) approach, Save the Children in the Solomon Islands continues to work with students, teachers, communities and local authorities to implement a range of activities outlined in the Participatory School Disaster Management (PSDM) handbook. Activities in the handbook including building knowledge of students and teachers about dangers in and around schools, such as cyclones, flooding and earthquakes, and developing child-led solutions and response skills such as earthquake, fire and cyclone drills and evacuation protocols.

To further strengthen children’s knowledge and skills in early warning, Save the Children has worked with select schools at risk of flash flooding and the Solomon Islands Meteorological Service to install rain

gauges outside classrooms to monitor rainfall and develop early warnings. Students and teachers were trained by the Met Service on how to read, monitor and maintain the rain gauges and at what point to trigger early actions. Once that trigger level was reached, students and teachers understood that there was a high likelihood of flooding in the nearby river and that students should be sent home immediately or advised not to come to school until the risk has subsided. In addition to using the rain gauges, school personnel listen in to early warning messages broadcast by the Meteorology Service which have been improved to include both English and Pidgin versions. In addition, Save the Children shares these early warning messages and weather warnings directly with schools and communities.

Building on this success, Save the Children is scaling up the CSSF approach through the *Solomon Islands Knowledge-Action-Sustainability for Resilient Villages Project* (SOLKAS) project funded by the Green Climate Fund. SOLKAS will directly benefit 185,000 children, youth, women and men in 170 rural and remote communities across six province and will strengthen emergency preparedness and response capacities and ensure climate change is on the curriculum of 16% of schools nationwide. Beginning in 2024 and implemented over six years, SOLKAS will also promote the use of the School Climate and Disaster Risk Assessment (SCDR) app annually for action planning, support the Ministry of Education and Human Resource Development (MEHRD) with the development of roll-out of micro-learning modules, and support MEHRD and the National Disaster Management Office (NDMO) to identify key priorities for school safety and resilience planning and Provincial and National levels.



Fiona, 18, walks to school in Malaita Province, Solomon Islands. Photo: Conor Ashleigh/  
Save the Children

## Using Household Economic Analysis for child-sensitive early action

Understanding the potential impact of slow-onset crises, such as drought, requires an understanding of livelihood strategies in the area at risk. If we are able to understand markers that indicate difficulties for households to meet their basic needs before the onset of a crisis, we are able to work with local populations to mitigate the predicted impact at a household level.

Household Economy Analysis (HEA) is an effective tool for early warning and triggering early action. Developed by Save the Children in the 1990s, HEA is a livelihoods framework that details how households meet their needs. Seasonal information on rainfall, crops and prices, which tends to be routinely collected by government systems, along with information on livestock and labour and self-employment opportunities, are used in conjunction with baseline data to indicate at risk groups. The analysis allows for an estimate of the number of people that will need assistance to survive and/or protect their livelihoods, and the type and timing of assistance required.

HEA differs from other approaches because it projects and quantifies households' access to food and income. It can also be used at scale, and for a wide range of shocks or scenarios: if a shock can be forecasted, HEA can model its projected impact. Since 2012, Save the Children has been investing in 'early action' and forecast-based contingency planning. This means intervening in response to forecasted need, before a situation develops into a crisis. It involves understanding who to target and when, and with what kind of support.

HEA allows Save the Children and other users to tackle the socio-economic barriers families face that hinder children's wellbeing.<sup>xxix</sup> Using HEA, families' and children's needs can be quantified based on income targets by understanding income gaps that could prevent them from being able to afford their children's nutrition, healthcare and education needs. It can also predict future needs for families and children in the coming months or season. Because it can be used at scale, HEA is used in national food security systems and social protection mechanism including the Productive Safety Net Programme (PSNP) in Ethiopia, the Malawi Vulnerability Assessment Committee (MVAC) and counterparts in West Africa, as well as being a key indicator in the Integrated Phase Classification framework (IPC), the globally used system for classifying food insecurity.



Agnes and her family struggled to cover costs for their children, including school uniforms and learning materials, due to long-term drought in Malawi. Photo: Jonas Gratzler / Save the Children

**In Malawi and Niger**, Save the Children is bringing together data from HEA, Cost of the Diet and climate to support nutrition-sensitive Anticipatory Action that better meets the needs of children, lactating and pregnant women, and other vulnerable groups. A high-level meeting in Malawi in February 2024 shared initial findings, offering important potential to enable national food security systems to become more anticipatory and more sensitive to the needs of children and other marginalised social groups.<sup>xxx</sup>

**In Lebanon**, Save the Children is implementing a project that seeks to improve child protection and socio-economic prospects for male and female refugees and host communities in greater Beirut. The project targets families with children at risk of child protection violations, including those engaged in the worst forms of child labour, at risk of child marriage, and with disabilities. Save the Children in Lebanon has identified that a lack of economic security is a key driver of many child protection violations. Therefore, an important component of the project is to sustainably increase families' income to levels to prevent the need for children to work or be married off early. Using the HEA in this way highlights its potential for ongoing monitoring and observation in a wide variety of situations.

**In Asia**, Save the Children conducted a synthesis review of its HEA across Bangladesh, Myanmar, Nepal, Pakistan and the Philippines from 2011-2015.<sup>xxxi</sup> The analyses revealed that across the region, the poorest households have extremely limited assets, income, and access to affordable credit and savings mechanisms, which makes them vulnerable to indebtedness and less able to face shocks. In some livelihood zones, children in poorer households are more likely to be engaged in child labour in order to contribute economically to the household's income. Drought, floods, cyclones and economic shocks were common in many areas in the region. The analysis showed that while better off households are likely to sell assets during times of shocks, poorer households may migrate for casual labour or engage in strategies that may have negative impacts on children, such as withdrawing children from school to avoid paying school expenses or reducing expenditure on non-staple foods. The review provided three recommendations: 1) Design livelihoods and social protection programmes and policies based on a clear understanding of household economy to ensure realistic income targets linked to the cost of children's basic needs; 2) Design programmes to address non-economic barriers to children's well-being, including poor households' limited coping capacity, income and assets, as well as cultural norms and practices; and 3) Invest in child-focused analysis of household income and needs.

## **Engaging Child Clubs in disaster risk monitoring in Sri Lanka**

Flash flooding and landslides are common risks resulting from the annual monsoon season in Sri Lanka. Partnering with the Disaster Management Centre, National Building Research Organisation and the Department of Irrigation – the national agencies responsible for EWS - Save the Children is supporting community-based early warning for floods, landslides and other locally-prioritised risks, such as forest fires and animal incursion. Save the Children's approach for this project promotes child participation, community ownership and sustainability by engaging with existing community-based child clubs that are monitored under the Child Secretariat of Sri Lanka. Working through local partner organisations, children participating in child clubs will be educated on how to read, monitor and report on rain gauges that are provided to communities as part of the project. Child clubs will be linked to community DRR committees to learn more about rainfall observations, early warning monitoring the planning for voluntary community evacuations when flooding is predicted. Decision making regarding trigger points for evacuation will be developed for each community collaboratively between village disaster management committees and local disaster management authorities.

Save the Children's EWS work in Sri Lanka is closely linked to and complements ongoing programming focused on nature-based solutions and healthy ecosystems, including those through environmental clubs at the school level. Initiatives under this work includes local reforestation (tree planting) and school- and community-based waste management campaigns and initiatives.

## PILLAR 3: WARNING DISSEMINATION AND COMMUNICATION

Parents, guardians and other adults are often assumed to be able to pass early warning information on to children and/or act to protect their safety.<sup>xxxii</sup> This leads to risk management practices that assume that parents a) intimately understand the unique risks that children face, and b) make responsible and appropriate decisions in the best interests of their children. The most effective way to ensure that children are able to understand early warning messages is for warning dissemination and communication methods to be designed and delivered by children, for children.

Age-specific abilities of children and youth to interpret, understand and act on early warning information must be recognised. Provided with relevant disaster risk information and supported by teachers, parents or other duty bearers, children are best-placed to develop age- and linguistically-appropriate awareness materials that incorporate local languages, cultural values and children's experience of the world.<sup>xxxiii</sup> Children's communication methods often challenge conventional methods of risk communication as they co-construct the knowledge needed to communicate risk by placing external information within their own reality.<sup>xxxiv</sup> Creative arts such as community drama and verbal messaging such as child-led radio segments are methods often suggested by children to raise awareness within their own communities, along with house-to-house visits to reach out-of-school and younger children, as well as older persons and persons with disability.

### Strengthening child-centered risk communication in Bosnia and Herzegovina

When severe rain hit Bosnia and Herzegovina in 2014 resulting in severe floods and landslides, children, communities and authorities alike were unprepared and were not equipped with the knowledge or planning to mitigate impacts. Around 560,000 citizens, including 140,000 children, were affected by the widespread damage to homes and infrastructure, leaving many children and their families homeless.

Following the initial emergency response, in 2015 Save the Children initiated a series of projects aimed at raising awareness and building the capacity of children to reduce the impact of future natural and other hazards. The projects were multi-dimensional and included capacity building of local institutions, including schools and kindergartens, to increase preparedness to multiple hazards, facilitating the process of conducting HVCAs and developing plans of protection and rescue at municipal and school/preschool level, and awareness raising among community members, children in particular.

*“Now we also know how to behave if flooding happens while we're at school. We should calmly leave the classroom and move to a higher floor, and if we're already there, then we should stay put and wait for help.” –7th grade boy.*

This included developing early warning protocols to alert children of hazards based on information received from state departments, such as continuous ringing of the school bell, use of megaphone or bells in case of power outages or sending a messenger to alert classes on a room-by-room basis. Specific guidance materials were developed for teachers of children with a disability to ensure inclusion of all children in project activities.

At the community level, Save the Children supported children to carry out public campaigns led by Student Councils from the local schools. Special attention was paid to creating children-friendly materials, but also materials for adults, providing simple guidelines and instructions on how to act both in advance of and during a hazard event.



Upon project completion in 2021, all schools decided to include disaster risk education and workshops into their annual curricula, including the organisation of drills and exercises and updating of the school risk assessments and emergency preparedness plans, given that they now had the knowledge, skills and experience to carry on these activities independently. Across the seven years of implementation, the project reached over 10,000 children and 3,000 adults in eight municipalities.

Save the Children’s engagement with and contribution to resilience, capacities and awareness raising in education and for children was mentioned more than 20 times in the Sendai Framework’s mid-term review of Bosnia and Herzegovina.

*A child-friendly poster advising children on what to do in a situation of flood developed as part of a public campaign led by Student Councils.*

## Child-centered warning dissemination as anticipatory action in Bangladesh

Ensuring children are able to access and understand early warning messages is a key component of the anticipatory action work done by Save the Children in flood- and cyclone-prone areas of Bangladesh. The *Scaling Up Anticipatory Action in Flood-Prone Areas of Bangladesh (SAFE)* project kept children at the centre of early warning efforts by actively including children in all stages of the project from risk identification and monitoring to warning communication and planning early actions. Children and youth worked together to develop early warning messages that included child-friendly warnings and identified anticipatory measures that were tailored to meet their needs. They also recommended effective strategies, timelines, and potential early message distribution channels.

In addition to designing messages, volunteer children and youth were trained in interpreting flood bulletins and advisory messages alongside local Disaster Committee members as part of an ‘Interpreter Pool’. The Interpreter Pool, comprised of a group of local teenagers, met regularly to discuss flood-related information and disseminated risk information to approximately 200 local families through community radio, community announcements via loudspeaker, voice messages via the mobile phone network and door-to-door visits for vulnerable households. The project also engaged the sub-national level Bangladesh Scouts organisation to engage volunteer children and youth to support the distribution of early warning messages.

This specific project focused on communities in rural flood-prone areas and engaged with school teachers and school management committees to support child participation. Children were provided with information on the risks of floods and were consulted on how they would best like to receive early warning messages and how they could ensure that every member of the community was reached. Children were also consulted on what kind of early actions would be appropriate following an early warning and suggested alternative safe learning spaces, safe shelters and psychological support.



The SAFE project conducted consultations with children in schools and communities and included topics such as developing early warning messages, checklists for child-safe shelters and the identification of potential early actions. Photo: Save the Children International

## Raising Awareness through DRR Clubs in Madagascar

Madagascar is the most exposed of all African countries to cyclones. The frequent recurrence of natural hazards has a particularly detrimental impact on schools, and thus on children's access to uninterrupted and quality education. In the first half of 2020, three cyclones disrupted access to education for 13,000 students. The disruption can take different forms, including damage to school buildings, loss of teaching and learning materials, difficulties to access schools due to impassable roads, poor accessibility for children with disability and use of schools by communities as emergency shelters preventing the delivery of classes. The lack of education continuity plans and the slow process of school reopening following a disaster contribute to already high drop-out rates, especially among girls and the poorest children.

Working in consortium and supported by ECHO, Save the Children and partners implemented a multi-year project dedicated to strengthening inclusive and localised early warning systems, community- and school-based preparedness plans and support actions in advance of forecast cyclones. Disaster risk reduction (DRR) clubs comprised of both students and teachers were established in 152 schools, with a total of 2,751 members, more than half of whom were women and girls. The clubs were dedicated to raising awareness on disaster risk, understanding the different colour codes of early warning systems in

Madagascar and designing activities to disseminate risk information. Through the DRR clubs, children actively participated in the analysis of key risks and vulnerabilities which affect them, as well as identifying preparedness and mitigation plans to be put in place.

Activities focused on urban and rural communities along the west coast of Madagascar and Antananarivo with high exposure to riverine and flash flooding. Mapping of risks, vulnerability and capacity was complemented by installation of synoptic meteorological stations and water-level markers to strengthen institutional forecasting capacities. The approach consists of real-time tracking of weather conditions (connecting satellite images and regional weather forecasts) which, when analysed against hydro-geological mapping of the vulnerabilities in the area, detect upcoming natural hazards and generate early alerts to the national disaster authorities and to the at-risk population via SMS.

Save the Children and partners worked with communities to prepare for the effective use of EWS and its translation into local early action. As part of early action planning in the education sector, school committees worked to develop and pilot strategies to support school continuity and return, such as audio packages to support children's access to education during periods of disruption, that could be activated based on early warning triggers. School-based DRR clubs were actively involved in warning message dissemination through school and community-level awareness campaigns and were supported by volunteer Scouts in case of a trigger for early warning.



Tafia is a member of the DRR Club in his primary school in Miandrivazo district, Madagascar.  
PHOTO: Narindra Rakotonahary/Save the Children

## PILLAR 4: PREPAREDNESS AND RESPONSE CAPACITIES

Disaster risk knowledge and warning communication strategies must be translated into early actions that protect lives and livelihoods. Experience has shown that given the opportunity, children are able to identify, participate in and even lead preparedness measures and anticipatory actions to mitigate the impact of hazard events on themselves, their families and their communities. Building on foundational disaster risk knowledge and an understanding of local hazards, the needs, vulnerabilities and capacities children must necessarily be taken into account in the development of school- or community-based actions plans. These can include safe evacuation routes and pre-determined actions that enable children to become assets in times of emergency, as well as drills for children to not only practice actions but manage emotions that may impair their ability to act quickly and responsibly in a real crisis event.

### Preparing for El Niño in Indonesia

The effects of El Niño were widely felt across Indonesia in 2023, with drought and wildfires predicted right across the archipelago. National-level multi-stakeholder coordination was strengthened in 2023 through the National Anticipatory Action Working Group, however there is still need for a national Anticipatory Action Framework and further resources and efforts allocated for community-level early warning system capacity strengthening.

Anticipating the onset of El Niño, Save the Children worked with children, schools and communities in East Nusa Tenggara and West Nusa Tenggara to identify the specific risks that children will face with the predicted drought and wildfires, and develop anticipatory actions to mitigate potential impacts. Building on a similar approach used in 2022-23 in anticipation of flooding, Save the Children's local partners facilitated school-based sessions for children aged 9-13 to teach them about the potential drought risks, impacts and early warning systems, as well as children's rights and avenues for child participation, using children-friendly approaches. Expanding activities to the community level was enabled through existing Child Protection programming with households focused on the 'Parenting Without Violence' approach.

Following the information sessions, children were asked to identify specific risks and impacts that they were likely to experience if facing drought in their community. Child-specific impacts identified by the children included:

Risk	Impact
Education interruption	Inability to study comfortably
Lack of access to water	Unable to wash dishes, drink enough water, brush teeth, use the toilet
Crop failure, food insecurity	No fresh plants
Lack of access to water in schools	Dry school toilets
Exposure to water-borne diseases, dehydration	Sickness



Children in Indonesia. Photo: Save the Children Indonesia

To mitigate the negative impacts of drought, children suggested these anticipatory actions:

- Use a water barrel for water harvesting and safe water storage
- Keep the environment clean to minimise illness
- Eat nutritious food to ensure adequate nutrition and water intake
- Bathe once a day with small amounts of water to minimise water usage
- Awareness raising campaign to make sure people do not smoke on dry land due to high fire risk.

Children also identified population groups within their community that were particularly vulnerable to drought, including children and infants, pregnant women, persons with a disability, older persons and persons who are sick or chronically ill. In East Sumba, for example, forecast information and early warnings received from the national level were disseminated at village level through both online and in-person communication methods. As well as sharing hazard information with communities and schools via platforms such as Facebook, villages conduct as community meetings to spread the message far and wide. To ensure that early warnings are inclusive, villages use traditional means of sharing information such as the ringing a gong by village officials while reciting the words "Yagama" or "We Are Here". Community members – including children - who hear this signal strike the gong in their respective homes and recite the same words. The gong striking continues until all community members gather at the agreed-upon meeting point to receive the important information. In another example, red flags are displaced in each village to warn of predicted drought, fire or strong winds in the area. Both approaches are used for multiple hazards.

The utilisation of non-technological early warning dissemination and communication methods allows children to respond to early warnings and support the community in implementing anticipatory actions to mitigate potential impacts. Based on this initiative, Save the Children is finalising the development of 'Child-Friendly Drought Early Warning System Guidelines' for implementing partners and community-based facilitators to enable the expansion of this approach to additional areas. The Guidelines will also be shared with the National Anticipatory Action Working Group and available for piloting and use by other organisations.

## **Building capacities for child-led response in South Sudan**

South Sudan has experienced unprecedented levels of flooding since 2019, with increasing severity and number of people affected each year. Intergenerational knowledge previously relied upon for understanding weather and climate events was no longer relevant as floods at this scale had never been experienced, and communities were therefore unprepared to deal with the impacts.

Informed by community consultations conducted by Save the Children and the Rift Valley Institute in 2022,<sup>xxxv</sup> Save the Children is supporting a pilot project in Maban, South Sudan, to build on existing local capacities, knowledge, and practices. The purpose of the project is to support direct opportunities for local actors and communities to shift both power and practice, to support children and communities to enhance adaptive capacity, strengthen climate resilience and reduce vulnerability to the impacts of climate change.

The project includes components that were both child-led and child-centered, empowering children to understand risks and plan and implement anticipatory actions that they themselves have identified, while also supporting adult community members to act in the best interests of children and the wider community. In the first six months of implementation, child led DRR clubs in 8 schools developed their own priority anticipatory action plans and were provided with small grants to support action. In Bankuman Primary School, for example, children prioritised the digging of a trench around their school to divert the trajectory of floodwater leading to the school grounds. In Gasmalla Primary School, the club members prioritised the construction of a fence to shield lower class pupils from a flowing river adjacent to their school compound. Children also led weekly radio talk shows raising awareness on flood

risk, preparedness and early action, participated in a series of workshops using drama and visual arts as mediums for awareness raising, and painted their school with key messages on climate change.

Early results of the project show a positive impact on student enrollment and attendance at project schools. According to DRR club members, the school-based activities have led to safer and more attractive learning facilities and a greater sense of comfort by parents in sending their children to school. Children also reported that they are now able to continue going to school throughout the rainy season due the activities they prioritised to ensure continuity of education.



Children playing at a child-friendly space in South Sudan.  
Photo: Esther Mbabazi / Save the Children

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