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# From storytelling to resilience: A transdisciplinary approach to empowering children in disaster risk reduction

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## ABSTRACT

This paper presents an extended and multi-faceted project that explores a model of best practice designed to empower children to play enhanced roles in Disaster Risk Reduction (DRR) strategies. It focuses on the decade-long evolution and wide reach of COPE Disaster Champions (COPE), a transdisciplinary, child-centred initiative that delivers DRR education through a globally accessible series of free children's picture books, and is framed through the lens of the instigating and creative team. Created to address a previous gap in age-appropriate DRR materials, the books combine storytelling with scientific accuracy, cultural sensitivity, and distinctive illustrations tailored to young learners. Grounded in Narrative Theory, their unique design aims to make complex evidence-based DRR concepts simple and relatable to children. The first section of the paper showcases the way transdisciplinary collaboration can be applied to the content creation process, involving scientists, educators, UN agencies, NGOs, artists, and children themselves, to increase the disaster resilience of children around the world. The paper further examines the way COPE has expanded beyond traditional printed media into interactive digital formats, such as audiobooks, animated trailers, e-books, jingles, and training manuals, designed to reach children across diverse learning styles and linguistic contexts.

COPE's transdisciplinary approach and use of a global dissemination model, has resulted in an open-access, multilingual approach and cross collaborative strategic partnerships. Its impact is apparent in the contextualisation and distribution of materials across both digital spaces and community-based programmes, effectively reaching children in high-risk regions such as Nepal, Madagascar, Egypt, and the Pacific Islands. By situating COPE within the priorities of the *Sendai Framework for Disaster Risk Reduction* (2015–2030), the paper demonstrates how a creative, children's rights-based inclusive approach to DRR education can empower the next generation to become disaster resilient champions in their communities.

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## 1. Introduction

A wide range of hazards, from earthquakes and floods to heatwaves and blizzards, can occur globally, often unexpectedly. These events frequently cause widespread destruction, loss of life, and disruption to communities, infrastructure, and ecosystems [1]. Children and youth are among the vulnerable populations in disaster contexts, often experiencing the most immediate and severe impacts when crises occur. These impacts can include significant disruptions to physical and mental health, nutritional status, access to education, future economic opportunities, and increased exposure to abuse and violence, among other adverse outcomes [2]. Disaster Risk Reduction (DRR) [3] seeks to minimize these impacts through proactive measures that prevent harm, reduce disruption, and protect lives, homes, and livelihoods, and strengthen people’s capacity to respond effectively when disasters occur [4]. The *Sendai Framework for Disaster Risk Reduction*, adopted by United Nations member states in Sendai (Japan) in 2015, underscores the vital role children play in reducing disaster risks, enhancing community resilience, and influencing policy to improve disaster protection [4]. Research indicates that fostering children’s agency and participation not only supports their psychological well-being but also contributes to the development of broader community resilience [5]. Moreover, despite their heightened vulnerability, children possess unique strengths, such as creativity, adaptability, and effective communication that can meaningfully support DRR efforts at both the household and community levels [6].

According to The World Meteorological Organization (WMO), the frequency, intensity, and duration of extreme weather events have increased fivefold between 1970 and 2023, leading to more significantly escalating disaster risks [7]. In 2023 alone, such events disrupted the education of over 240 million students globally [8]. Considering these escalating challenges, there is a pressing need to identify and implement effective strategies that motivate individuals and communities to actively participate in climate adaptation and DRR initiatives [9,10]. It is essential that today’s children are equipped with the necessary knowledge, skills, and values to serve as resilience-builders, empowering them to advocate for safety and preparedness in the face of disaster.

Among the most effective strategies for cultivating this resilience and engagement in children is storytelling. Narrative Theory [11] underscores the role of storytelling in education, demonstrating that narratives help learners construct meaning and make abstract concepts more accessible, memorable and meaningful. Within the context of DRR, this theory supports the integration of compelling, relatable stories to communicate preparedness strategies effectively to children. Moreover, the critical importance of embedding DRR into formal education systems should be highlighted. This approach advocates for free and compulsory primary education as a foundational step in ensuring that all children, regardless of socioeconomic status, have access to life-saving knowledge and skills [12].

Responding directly to this dual imperative of the pedagogical strength of storytelling and the urgent need for accessible, child-centred DRR education, the COPE Disaster Series was created in 2015 (Fig. 1) (see [Appendix A - COPE Content Development & Stakeholders](#)), starting with the *Earthquakes* book. The series takes its name from its four protagonists, Candy, Ollie, Ping, and Eddy, COPE, a squad of DRR agents on a mission to build a new generation of resilient champions with the urgency and capacity to protect themselves and others by embedding scientifically accurate preparedness messages within engaging, age-appropriate narratives, COPE bridges the gap between policy and practice by providing contextually grounded, inclusive educational resources that empower children to understand hazards, develop resilience, and take proactive roles in disaster preparedness. With its tagline, *Make the Difference. Be Ready!* COPE exemplifies how narrative-based learning can transform children from passive recipients of information into confident DRR advocates.

This paper aims to highlight the impact of transdisciplinarity through inter-disciplinary, cross-sector, local and international collaboration in increasing the disaster resilience of children. It also highlights the need to expand beyond traditional print into the additional, innovative and interactive formats and examines how its collaborative multi-lingual dissemination model supports



Fig. 1. COPE Disaster Champions series.

localisation, curriculum integration, inclusive design for children with disabilities, and recognition by global DRR frameworks. The paper concludes by reflecting on COPE’s strengths and limitations, emphasizing that a transdisciplinary storytelling approach is essential for effectively engaging children in disaster preparedness.

## 2. Context and literature review

Understanding the current landscape of DRR education for children, who are increasingly vulnerable to disasters reveals that there are still gaps in accessibility, relevance, and global reach. This context is important for appreciating COPE’s contribution, which not only addresses these shortcomings but does so through a child-centred approach blending narrative and distinctive illustrations to encourage active participation of young learners in disaster preparedness.

**Filling Existing DRR Education Gap.** Current literature shows that although DRR resources for children do exist, the overall availability of free, age-appropriate, and globally accessible learning materials remains limited [13]. Nevertheless, nation specific initiatives have significantly advanced disaster education. For instance, Iran is one of the most disaster-prone countries in the world and is a notable example of producing earthquake education programmes, highlighted in the training books by Ghafory-Ashtiany [14] which were among the earliest efforts to engage the public, particularly schoolchildren, in seismic safety through public education campaigns. Further studies have demonstrated innovative ways of teaching even preschool aged children with DRR concepts. In both formal and informal learning environments puppet gloves, songs, maquettes and board games [15] and comic strips [16] become means to enhance knowledge and convey life-saving messages. These interactive approaches reflect the power of multi-sensory learning and storytelling in improving children’s retention of safety knowledge and enhancing emotional resilience. Outside of Iran, important initiatives are still emerging. In the United States, organizations such as the Federal Emergency Management Agency (FEMA) through *Ready Kids* [17] and the American Red Cross with *Prepare with Pedro* [18] offer disaster-themed storybooks and digital activities for school-age children. Sesame Street’s *Here for Each Other* offers disaster preparedness through family workshops with tips for during and after emergencies, including interactive printable activities to help children remember their phone numbers and home address [19]. In Australia, the popular *Tree* series by Children’s Health Queensland [20] supports and help young children prepare for emergency situations through storybooks, puppets and animations that address various hazards, floods, storms, cyclones, droughts and wildfires. In China, collaborative initiatives such as the *Homecoming Earthquakes* comic [21] uses a scenario about how a strong earthquake affects a family with ‘left behind’ children to communicate risk and preparedness to communities in ways that are both locally grounded and graphically appealing.

Globally, the *Sendai Framework for Disaster Risk Reduction: For Children* [22] remains an internationally recognized efforts to adapt DRR frameworks into child-accessible language and formats. Other leading organizations such as UNDRR, UNICEF, and the International Federation of Red Cross and Red Crescent Societies (IFRC) have developed important child-focused resources. These include educational games such as *Riskland*, introduced in 2002 and adapted into an online version in 2011 [23], as well as broader toolkits and informative materials aimed at raising awareness and promoting disaster preparedness [24].

Despite these valuable contributions, significant gaps in relevance and engagement persist. Many DRR education materials remain limited in scope, often focused on single hazards, and are anchored in traditional, data-heavy delivery models that lack interactivity [9]. They are often text-based, assume adult-level comprehension, and seldom account for cultural diversity. Moreover, much of the existing content is neither freely available nor easily adaptable for different regions. In response to these challenges, COPE was conceptualised in 2015 as an inclusive education initiative specifically designed to address these shortcomings (see *Appendix A - COPE Content Development & Stakeholders*). Developed through a transdisciplinary collaboration between author Martha Keswick, illustrator Mariko Jesse, and editor Professor Timothy Sim (Singapore University of Social Sciences), COPE merges evidence-based DRR content



**Fig. 2.** Three illustrations from the COPE Avalanches book. **Left:** Illustrations highlighting the key DRR message. **Centre:** Scientific information and preparedness strategies. **Right:** Mistress Fu preparing the squad with actions that children can do to stay safe during an avalanche.

with narrative-driven, visually engaging storytelling. Each hazard book delivers practical, easy-to-understand DRR strategies through carefully crafted characters and appealing illustrations, effectively bridging the gap between scientific knowledge and child-friendly communication. COPE's core objective is to make disaster preparedness fun, memorable, and empowering, providing children worldwide with the knowledge and skills needed to respond confidently and safely to increasing hazards.

**Target Audience.** The COPE Disaster Series is primarily designed for children aged 6–10 [25]. However, its target audiences extend to all ages including parents, educators and community leaders who can benefit by remembering key DRR instructions in the vital moment should a disaster occur. Early engagement in DRR is crucial, and even pre-school aged children can actively participate in activities in ways that might help mitigate disaster risks [26].

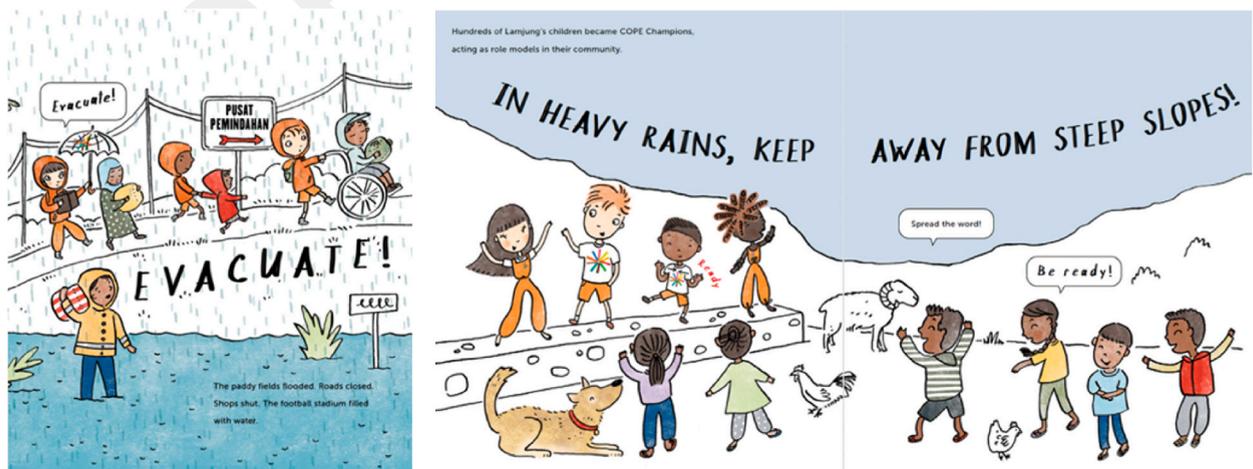
Children do not necessarily need to live in disaster prone areas to benefit from DRR education. A compelling example is Tilly Smith, a 10-year-old British girl who was on vacation with her parents in Phuket, Thailand, on December 26th, 2004, when the Indian Ocean Tsunami hit [27]. Recognizing the warning signs from a geography lesson, she alerted people on the beach to run in land and **GET UP TO HIGH GROUND**, ultimately saving hundreds of lives that day [28,29]. Tilly's experience reinforces the importance of fostering a global perspective, and the role of children in DRR, rather than automatically assuming that certain hazards are too remote or distant. COPE encourages an inclusive approach, embracing the value that disaster education is important for everyone regardless of age, background and geographical locale.

**Unique Design.** COPE's significant reach can be attributed in part to its illustrations, which address a notable gap in the visual communication strategies employed by other children's DRR educational materials. COPE's distinctive style, shown in (Fig. 2), uses charming drawings with detailed landscapes, expressive characters, and dynamic actions to bring each story to life and effectively motivate children in DRR actions (Fig. 2, left). In this way, it uses the transformative power of art to provide innovative strategies to make complex and disaster related issues simple, clear, and accessible for children, by turning scientific information (Fig. 2, centre) and preparedness strategies into visually engaging and age-appropriate imagery, as suggested by Parsons [9]. These images help young readers understand what natural hazards are, how they happen, and what actions they can do to stay safe (Fig. 2, right).

Likewise, in the *Landslides* book, the characters are depicted running from the mountainous landslide prone areas to reinforce the importance of the key message **IN HEAVY RAINS, KEEP AWAY FROM STEEP SLOPES**, (Fig. 3, right). Meanwhile in *Floods*, the main characters help villagers off a boat to **EVACUATE** up to higher ground, making key DRR instructions instantly understandable and unforgettable through visual storytelling, (Fig. 3, left). COPE's illustrations even go so far as to transcend language barrier [9], to connect with readers on an emotional level, enabling them to explore the abstract concepts of climate change and disaster risk in tangible and impactful ways.

**Background and Central Characters.** The Great Wenchuan Earthquake struck on May 12, 2008, with magnitude 7.9, and killing over 69,000 people [30]. It left hundreds of thousands injured and millions homeless. This backdrop provided the initial narrative of COPE with the central fictional character of Grand Mistress Fu, a respected martial arts teacher from Mount Emei, Sichuan, narrowly escaping death as her village school collapses around her. Witnessing a lack of preparedness among children, Fu dedicates her life to educating them, and over the years rebuilds her school into *The COPE Academy*, an international DRR hub. Grounded in the belief that children are powerful educators for their peers, Grand Mistress Fu, recruits four teenage orphans, Candy, Ollie, Ping, and Eddy, each of whom have tragically lost their parents in disasters across South Africa, New Zealand, Hong Kong, and Brazil respectively. Trained up by scientists and DRR experts at The COPE Academy, they form the *COPE Squad*, whose mission is to increase disaster preparedness worldwide, alongside Grand Mistress Fu's beloved pets, Rescue the dog, and Sense the snake.

The deliberate selection of squad members from diverse geographical and cultural backgrounds reflects COPE's commitment to global representation and reinforces the message that disaster preparedness is a universal concern. Among the team, Eddy, who has a hearing disability, communicates using *Libras*, the Brazilian sign language (LSB). His presence within the squad not only emphasizes



**Fig. 3.** Two illustrations from the COPE *Floods* and *Landslides* books. **Left:** 'Evacuate' key DRR message for *Floods*. **Right:** Illustrations highlighting the key DRR message for *Landslides*.

the importance of disability inclusion in DRR education but also serves to model equitable communication practices. By featuring a character who navigates disasters with a hearing disability, COPE promotes the message that no one should be left behind, a key principle aligned with the *Sendai Framework*, [31]. This principle will be elaborated later in the paper. The squad thus functions not only as a narrative device but as an embodiment of diversity and inclusion, demonstrating that children from all walks of life have the potential to lead and inspire resilience within their communities. The imaginary world of COPE and its colourful characters help young readers to make sense of the Wenchuan disaster and learn from its example, thus reinforcing the power of storytelling [11], in educating children in DRR.

**Narrative Format.** Each title in the COPE Disaster Series is crafted around a compelling three-part narrative structure that harnesses the power of storytelling to empower children in DRR. Rooted in Narrative Theory [11], which emphasizes that people, especially children, understand and remember concepts more deeply through meaningful stories. Every story begins at The COPE Academy, where the COPE Squad undergoes specialized training focused on a specific hazard. This is followed by a mission to a hazard-prone region, where an actual disaster occurs, and the squad must put their training into practice therefore modelling practical DRR skills for local children. The story concludes with a return to The COPE Academy and a reflection on their experience, reinforcing key lessons learned and preparing for future missions. An exception to this structure is COPE’s *Climate Change* book, published in 2025 in collaboration with the World Meteorological Organization (WMO), which follows a different narrative format with the squad attending the United Nations Climate Conference to learn more about climate change and how it connects with increasing natural hazards as well as disasters.

The COPE Academy training itself is rigorous and age appropriate, covering all phases of disaster - before, during and after (Fig. 4), in ways that are engaging for young audiences. Children are introduced to scientific and historical insights into each hazard, for instance, how earthquakes can trigger secondary hazards like landslides and tsunamis. They learn about *Early Warning Systems* through real-life examples and practice packing survival kits and planning evacuation routes. To promote emotional and psychological resilience, mindfulness practices, yoga, and breathing exercise sessions are also included. The training builds on communication skills, with lessons on how to deliver DRR presentations in schools and clubs. The squad members receive leadership training to empower them to inspire others and recruit more *COPE Champions*. The program includes essential physical and psychological first aid knowledge, promotes physical well-being and fitness, and teaches outdoor survival through culturally relevant games and unique adventures. A respect for cultural diversity and traditional DRR practices are fostered with emphasis on how to contribute to post-disaster clean-up efforts and recovery processes in a safe manner.

In the example of the *Earthquakes* book, once training is complete, the COPE Squad, led by Grand Mistress Fu in her iconic red helicopter, travels to Colima (Mexico), a region at risk of seismic activity. As they visit homes, schools, and community clubs across the country, the squad demonstrate children lifesaving DRR strategies, such as using whistles and mapping evacuation routes. The squad recruits COPE Champions, so that local children can become “agents of change,” as outlined in the *Sendai Framework*, [31] in their own communities. And as the story unfolds, the squad’s teachings are put to the test when a 6.5 magnitude earthquake hits while they are in a classroom. Instantly the pupils follow the key DRR instruction of **DROP, COVER, and HOLD!**, taking shelter under and holding onto the legs of sturdy desks. Though the classroom partially collapses, their preparedness ensures a timely and safe evacuation, reinforcing the vital importance of their mission. Back at The COPE Academy, the squad reflect on their experience, armed with knowledge and confidence in the belief that they can make a difference (Fig. 5).



Fig. 4. Illustrations from the COPE Landslides book. What to do before, during and after a landslide.



Fig. 5. Illustrations from the COPE *Earthquakes* book. Scenes from the *Earthquakes* book.

### 3. Transdisciplinary collaboration

The quality and inclusivity of COPE's content are rooted in its foundation of extensive cross-sector collaboration. This section details how experts from meteorology, disaster risk science, education and arts worked alongside NGOs, global institutions, and regional contributors to co-create scientifically accurate and culturally relevant materials. Youth participation, inclusive design, and locally adapted messaging were also integral to shaping content that is both accessible and impactful for children worldwide.

**Content Creation.** Achieving the goals of *The Sendai Framework* requires a collective, cross-sectoral effort [32]. COPE was built on this very principle since its inception; bringing together a diverse, transdisciplinary team of key stakeholders from all over world, as discussed in Ref. [33], each contributing unique perspectives and expertise to ensure the content is valid, inclusive, and child focused, (see [Appendix A - COPE Content Development & Stakeholders.](#)) COPE sought early guidance from the Hong Kong Observatory, and in 2020, welcomed the World Meteorological Organization as scientific advisor to contribute the highest standards in weather-related content. WMO Secretary-General Celeste Saulo underscored the protective dimension of this collaboration [34], noting that by enhancing children's understanding of risks and their ability to respond, the partnership actively contributes to the development of more resilient communities [35]. UNDRR Asia and the Pacific has also contributed significantly providing ongoing DRR expertise since 2018 on commissioning the *Tsunamis* booklet to commemorate World Tsunami Awareness Day. UNICEF East Asia and the Pacific has offered input on inclusivity, particularly in integrating perspectives on disabilities and children's rights. In addition, UNESCO advised

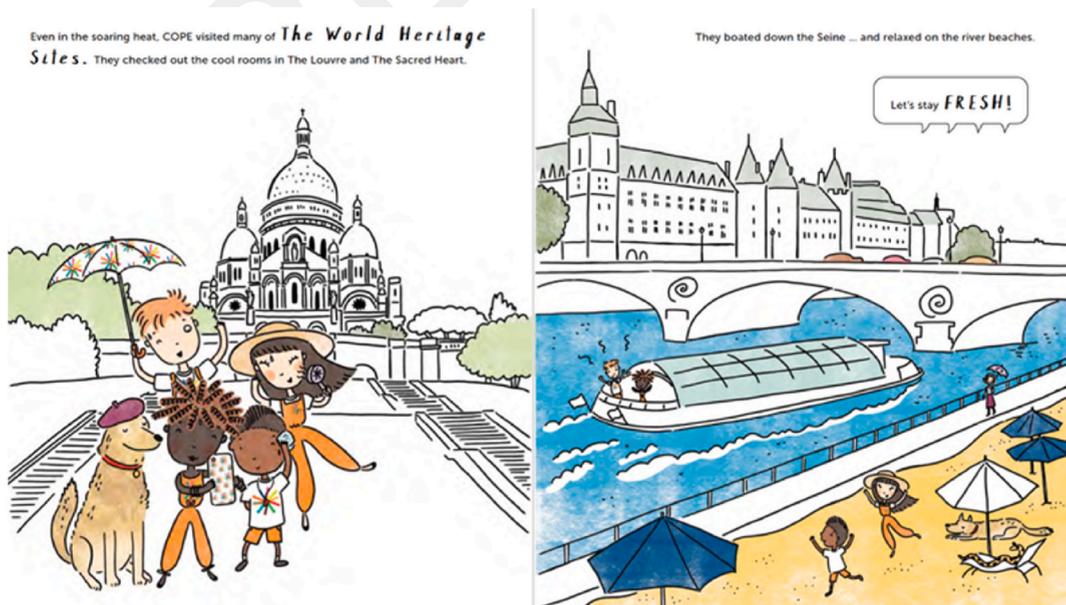


Fig. 6. Spread from the *Heatwaves* book showing two World Heritage Sites: The Sacred Heart church and the Banks of the Seine.

on the accurate representation of World Heritage Sites such as the banks of the River Seine, Paris, which feature in *Heatwaves* to guarantee that the stories reflected the historical significance of these globally protected locations (Fig. 6). Furthermore, COPE collaborates closely with leading academic institutions to ensure content accuracy with current DRR knowledge and best practises for each hazard. These include The University of Oxford, Earth Sciences Department, who worked on *Volcanoes*, *Tsunamis* and *Earthquakes*, James Cook University for *Cyclones* and The University of Pretoria for *Wildfires*, The University of Stirling and University of Malaysia for *Floods*.

International NGOs' have played a key role in shaping the creative process, with World Vision Nepal collaborating on the *Landslides* book by providing local risk insights in Lamjung Province. They also supported the translation of the book into Nepali, and facilitated community-based feedback, ensuring the story reflected the lived experiences of children in vulnerable regions, such as the characters of Raj and Gita, whose family was displaced after the landslide and were temporarily living in tents.

Local experts brought authenticity and were featured in the stories, for example, the Javanese geologist, Munasri, advised on the *Volcanoes* by ensuring the accurate depiction of volcanic activity, local early warning methods, and indigenous terminology, (which will be further explored later in the paper). Similarly, renowned Alpine forecaster Scott Redwood, contributed to the *Avalanches* book by providing expertise on avalanche risks specific to the Milford Sound region. He advised on local safety strategies, and explained how tourists are protected along the Milford Road, where controlled avalanches are triggered by helicopters dropping explosives to safely release unstable snow, thereby preventing larger, unmanageable events.

Young people were actively involved in the development process. For example, students at Te Anau Primary School in New Zealand contributed feedback on early drafts of the *Avalanches* book, while children at the International French Lycée of Saint Genis Pouilly in Geneva provided input during the creation of the *Climate Change* book, helping to ensure the stories were engaging, age-appropriate, and relevant to young readers. UNICEF East Asia and Pacific's Youth Climate Action group (YPAT) also ensured a strong children's rights perspective, while local young children in Thailand, helped shape messages to resonate with children from their own communities. In addition to its narrative content, the COPE series is grounded in key DRR principles, which include early warning systems, cultural sensitivity, and the protection of children's rights (Fig. 7).

**DRR Principles.** At the core of each hazard book are essential DRR principles, including *Key Instructional Messages* [36], *Leave No One Behind* [37], *Early Warning Systems* [38,39], *Cultural Sensitivity* [40] and *Children's Rights Perspectives* [41]. These principles were carefully discussed and integrated by the transdisciplinary team among COPE key stakeholders, ensuring that each story educates, empowers, and includes every child, regardless of background or ability. By embedding DRR concepts within an engaging narrative, the COPE stories allow readers to see themselves as problem-solvers rather than passive recipients of information.

**Key Instructional Messages.** Each title highlights simple one-word or short sentence messages, carefully designed to be practical and easy to recall in the critical moments before or during a disaster (see [Appendix A - COPE Content Development & Stakeholders](#)). Through engaging storytelling and clear visual cues [42]. COPE delivers concise, age-appropriate guidance on the nature of different hazards and the steps children can take to prepare themselves, support their families, and help protect their communities. Some of these DRR messages, such as **GET UP TO HIGH GROUND** in *Tsunamis*, were already globally recognized and widely promoted, however, others had to be custom developed by COPE's team to address the specific nature of different hazards. It was important to make these key messages as age appropriate and relatable to children as possible. For example, the University of Oxford's Earth Sciences Department, UNDRR, and a local Javanese geologist assisted COPE in the creation of **LISTEN. PREPARE. STAY AWARE** for the *Volcanoes* book, strengthening the importance of vigilance and readiness in volcanic zones. These potentially life-saving messages lie at the heart of each narrative, blending scientific accuracy with child-centred communication so that children understand such risks and feel confident to respond in the case of an emergency.

COPE's main objective is to increase disaster resilience among children and communities across the world, with the squad travelling to high-risk areas, spreading the key DRR messages through a mix of education, community outreach, and media engagement. The book *Storm Surges* depicts COPE's widespread media presence in Hong Kong, where they appear on TV, radio, and in newspapers, engaging students in schools through educational sessions and by providing preparedness stickers and activity books, emphasizing the life-saving instruction: **KEEP CLEAR FROM THE COAST**. In *Floods*, they visit Kelantan State (Malaysia) where they go to villages, shopping malls, markets and beaches, promoting early action through floods hazards maps and practice drills to the evacuation centres: **EVACUATE**. COPE therefore uses interactive, role-modelling experiences to deliver DRR messages, fostering young people's ability to take informed action and actively build disaster resilience from awareness.

**Leave No One Behind.** Aligned with *The Sendai Framework*, COPE promotes awareness of vulnerable groups, including the elderly, people with disabilities, migrants and those living in poverty, ensuring that no one is left behind in an emergency. As mentioned earlier in the paper, inclusivity features include disability friendly content such as Eddy who has a hearing disability and from Brazil, so sometimes communicates with the squad using Libras Sign Language (LSB). These signs were developed in partnership with The University of Brasilia [43] and are present through images of key DRR words such as *Ready*, *Cyclones*, or *Disaster* (Fig. 7, left). Eddy always packs extra batteries for his hearing aid in his survival bag highlighting the importance of specific as well as general preparedness in emergency situations. In *Avalanches*, a teenage boy puts special snow tyres on his wheelchair when visiting the slopes, while in *Heatwaves* there is a girl who has a visual disability. She counts the number of steps it takes to get to the water foundation in the park, remembering to go right when she smells the bakery.

COPE's stories also emphasize a balanced portrayal of boys and girls working together in leadership roles, challenging traditional gender norms that often position males as primary decision-makers in crisis situations. This aligns with research that highlights the gendered nature of disaster response, particularly in the aftermath of events such as the 2004 Indian Ocean Tsunami, where women and girls were disproportionately affected, not only in terms of mortality but also in limited participation in recovery and leadership processes [44]. In *Blizzards*, Nomu, a teenage girl, is shown making key decisions alongside the boys on how to prepare for Mongolia's

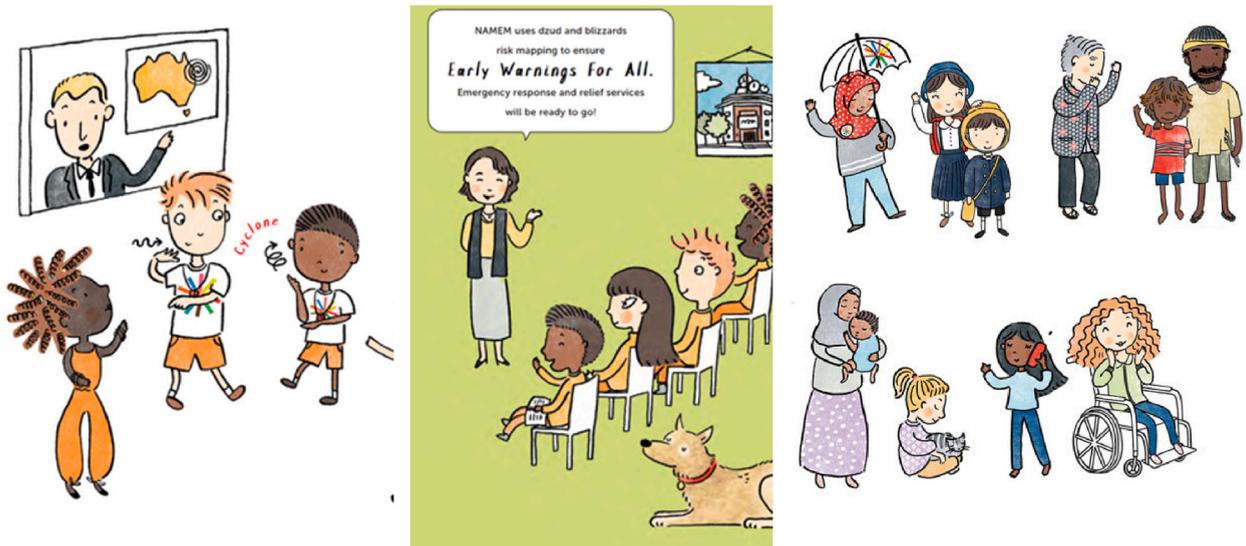


Fig. 7. Illustrations from the COPE books. **Left:** Eddy and Ollie signing “Cyclone”. **Centre:** Early Warning Systems. **Right:** Selection of character from different cultural backgrounds.

winter ‘dzud’. In *Wildfires*, the COPE squad encounters South Africa’s ‘Working on Fire’ initiative, an inspiring team of young fire-fighters comprising both male and female members, who exemplify bravery, teamwork, and community service in the face of disaster. In *Droughts*, boys and girls work together to support their *Aini* community, (a Hani ethnic minority in China). They take the initiative by carrying water from a distant well to help those in need, highlighting the importance of collective action and resilience in times of crisis. The squad generally consider everyone’s needs to make sure no one is left behind, offering guidance, partnership and the importance of accessibility and preparedness in emergency situations.

**Cultural Sensitivity.** The transdisciplinary team ensures that regional disaster preparedness practices and cultural references are accurate. COPE’s stories take the reader on a journey to disaster-prone regions, where the squad respectfully learns not only about hazards but also about the people, customs, and traditions that shape how communities prepare and respond (Fig. 7, right). The illustrations capture the cultural essence by incorporating region-specific architecture, traditional clothing, local landscapes and indigenous design elements, so that the young reader is transported from country to country, whilst learning culturally relevant disaster preparedness strategies: In Java, Indonesia, a wooden clapper is used by the village chief to signal a volcanic eruption (*Volcanoes*) while the pyroclastic flow is named as ‘wedhus gembel’ which means ‘shaggy goat’ in Javanese. In the fishing village of Tai O Hong Kong Great Auntie Chen’s house is built on stilts so is less likely to flood (*Storm Surges*). In each disaster location the squad sample local foods such as dumplings (or *buuz*) in Mongolia (*Blizzards*), Kobe beef in Japan (*Tsunamis*) or Mealie Pap and Bobotie in South Africa (*Wildfires*).

By showing children working alongside communities, learning from elders, understanding cultural practices, and embracing different ways of thinking, the stories teach that disaster preparedness is not one-size-fits-all. Instead, it is shaped by history, environment, culture and traditions. Through these adventures, children develop empathy and appreciation for diverse cultures, seeing that disaster resilience is a shared, global effort.

**Early Warning System.** The United Nations Secretary-General’s global initiative on universal Early Warning Systems (EWS) aims to ensure that, by 2027, all nations have reliable and actionable risk information. COPE is recognized as WMO’s special contribution to EWS Pillar One (Disaster Risk Knowledge and Management), specifically empowering children in disaster preparedness. This recognition was included in WMO’s *Guide for National Meteorological and Hydrological Services in Support of National Multi-hazard Early Warning Systems* [45]. By featuring COPE, WMO highlighted the importance of integrating educational initiatives into national strategies for early warning systems. Evidence shows that children and youth are eager to be actively involved in household and community DRR, often sharing their knowledge with family members, friends, and neighbours [46]. COPE reinforces these principles by integrating practical early warning applications across the narratives (Fig. 7, centre). In *Floods*, children learn to map, memorise and follow evacuation routes in flood-prone areas. In *Wildfires*, *Storm Surges*, *Cyclones*, and *Earthquakes*, survival kits are assembled with emergency essentials such as a contact card, water bottle, mobile phone etc. In *Cyclones*, children recognize the early warning signals such as government or weather alerts on the radio, TV or social media, and take action by helping their families **STAY SAFE** to secure their homes before the impact of the storm (e.g., boarding up the windows, putting away garden pots, making sure pets are out of danger).

**Children’s Rights Perspectives.** The COPE Disaster Series integrates a strong children’s rights perspective to ensure that children are not passive recipients of information but active participants in their own safety and preparedness, aligned with key articles of the *UN Convention on the Rights of the Child* (CRC) [47]. COPE empowers children with knowledge, skills and values that encourage their active participation, and safeguard their well-being in disaster contexts. Experts from UNICEF East Asia and Pacific have carefully

reviewed the series, ensuring the DRR content remains child-centred, participatory, and inclusive. The right to life, survival, and development is underscored in books like *Floods*, where children are taught to evacuate early, avoid floodwaters, and prevent waterborne illness, actions essential for safety and survival (CRC, *Article 6*). COPE reinforces the right to information and participation by replacing traditional top-down messaging with interactive formats that encourage leadership and reflection (CRC, *Articles 12, 13, 17*). In *Wildfires*, for example, young members of “Working on Fire” help plan evacuation routes and lead community drills, demonstrating meaningful involvement in preparedness. The right to education and disaster preparedness is central to the series, as seen in *Blizzards*, where children are taught about early warning systems and emergency protocols (CRC, *Articles 28, 29*). Health and well-being are also addressed in line with the right to health, water, and nutrition. In *Droughts*, children learn how to conserve water, prevent dehydration, and maintain hygiene, equipping them with life-saving health knowledge (CRC, *Articles 24, 27*). COPE’s *Climate Change* title upholds children’s right to a safe environment and climate action and raises awareness of environmental risks, and the role children can play in building resilience (CRC, *Article 26*).

By advocating that children are both learners and leaders, the books align with their right to be heard and involved in decisions that affect their safety [48]. With UNICEF East Asia and Pacific’s expert guidance, COPE ensures that DRR education is not just about preparedness but empowerment, participation, and resilience-building for the next generation. Beyond education, COPE supports UNICEF’s commitment to empowering children and youth by helping them translate knowledge into action which advocates for children’s rights in local and international disaster management policies, fostering capacity-building initiatives, strengthening protection laws, creating engagement opportunities, and investing in youth-led solutions.

#### 4. An approach to interactive learning

Over this past decade, COPE has partnered with a wide range of organizations to expand its DRR content beyond printed books into innovative, interactive formats. This section exemplifies a transdisciplinary approach which blends science, education, technology and the arts to creatively make disaster preparedness more accessible and impactful for children worldwide.

**Animated Trailers.** Developed to complement each title in the COPE Disaster Series, these 45 second animated trailers provide engaging visual summaries to introduce the specific hazard and to reinforce the key DRR messages. The trailers offer a concise and playful insight into the narrative approach, showcasing that complex DRR scientific topics are being made relatable to young audiences. Each trailer credits the advisors and collaborators involved in the book’s development, reinforcing COPE’s collaborative commitment to producing evidence-based DRR educational content [25], (Fig. 8, left).

**Audio Books.** Available in multiple languages, the development of audiobooks has provided an accessible way to absorb critical DRR information through storytelling, particularly benefiting those who prefer auditory learning or have limited access to printed materials. A notable example is UNICEF Egypt’s Arabic versions, which cover ten hazards as well as the COVID-19 pandemic, expanding access to disaster preparedness education for Arabic-speaking children. Additionally, the *Wildfires* audiobook is available in Spanish via YouTube and Spotify, thanks to a collaboration with the Instituto Interamericano para la Reducción de Riesgo de Desastres—IIARRD (*Inter-American Institute for Disaster Risk Reduction*) in Argentina [49]. By committing to using innovative, collaborative methods to ensure that disaster education, the series reach a diverse audience across linguistic, cultural, and technological barriers.

**Interactive E-books.** The Singapore University of Social Sciences (SUSS), in collaboration with COPE and UNICEF Egypt, is in the process of transforming the COPE Disaster Series into animated, interactive e-books [50]. These digital resources feature audio narration and engaging games designed to enhance young learners’ understanding of disaster preparedness around the world. The interactive elements bring the COPE Squad and COPE Champions to life, presenting them as DRR role models thereby immersing children in meaningful storytelling. This approach draws on Narrative Theory [11], which highlights how stories effectively help learners make sense of complex concepts by placing them within familiar and emotionally resonant contexts. Through narrative-driven learning, children can more easily relate to the characters, internalize key preparedness messages, and apply them in real life. Freely accessible to the public via the SUSS UniLEARN Portal, UNICEF’s Learning Passport platform and the COPE Disaster Champions website, these e-books ensure that children everywhere can benefit (Fig. 8, centre).

**Jingles.** Created by The TENG Company in collaboration with Widewall Pictures and the COPE creative team, these jingles are 40–60 second animated songs which are designed to teach children the key disaster preparedness messages, such as **STAY COOL AND HYDRATED** in *Heatwaves* [51,52]. Using a child-focused, bottom-up approach, the TENG team performed the melodies live in schools, gathering feedback from children on their music preferences. This input directly influenced the final compositions, ensuring the jingles were both engaging and memorable. These catchy tunes act as effective memory aids, helping children retain and recall critical DRR actions during emergencies. Available on YouTube,<sup>1</sup> the UNDRR Prevention Web,<sup>2</sup> and within SUSS<sup>3</sup> interactive e-books, the jingles demonstrate the role of music in DRR education (Fig. 8, right).

**Train The Trainer Manuals.** To strengthen DRR education across South America, COPE partnered with the Instituto Interamericano para la Reducción de Riesgo de Desastres (IIARRD) in Argentina, PRESENTES in Colombia, and MCR2030 UNDRR Advisory Group in Paraguay to create a series of Train the Trainer educational manuals to complement the storybooks. Developed using content from the COPE Disaster Series, the manuals, originally produced in Spanish, equip teachers with easy-to-use DRR materials, interactive

<sup>1</sup> COPE’s Jingles [https://youtu.be/6lhE6TBYNwA?si=8h20EgAhSstD\\_HjW](https://youtu.be/6lhE6TBYNwA?si=8h20EgAhSstD_HjW).

<sup>2</sup> COPE on the UNDRR Prevention Web <https://www.preventionweb.net/publication/tsunamis-2024>.

<sup>3</sup> SUSS platform under development: <https://susssole.h5p.com/content/1292139002131334489>.

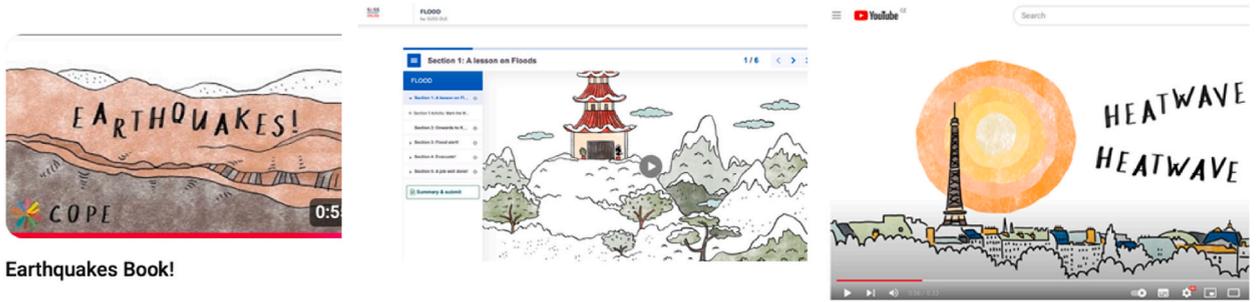


Fig. 8. Left: Animated COPE Trailers. Centre: Interactive COPE books. Right: COPE Jingles.

activities, and practical tools. They offer a hands-on learning approach through games, videos, puppetry, and colouring exercises, stressing the power of regional partnerships in advancing DRR education [53,54].

### 5. A unique transdisciplinary approach to global dissemination

Effective governance in DRR increasingly calls for policy shift from traditional emergency response, to proactive risk reduction with transparency, accountability, and joint oversight guided by *The Sendai Framework* [55]. Key policies must focus on strengthening human resource capacity, community empowerment, and disaster regulations among others [55]. Empirical evidence suggests that the involvement and empowerment of local entities and community, positively contributes to effective policies. This requires systematic, adaptable frameworks based on collaboration, trust, and integration of all stakeholders [56,57]. COPE operationalises these principles through its transdisciplinary co-production model which contributes to widespread use and adaptation across diverse geographic and linguistic contexts. Through partnerships in localising and translating materials, COPE's content has been embedded into projects on the ground and learning centres while developing inclusive formats for children with disabilities. Additionally, its integration into high-level DRR frameworks and online platforms validates international recognition of both its pedagogical approach as well as the content by leading agencies.

**Multilingual Model.** The COPE Disaster Series of books has so far been translated and contextualised into 23 different languages to date, enabling vulnerable communities across 40 different countries to benefit from the vital DRR information. (See [Appendix B – COPE's Translations & Distribution](#)). This expansion has been made possible through collaborations with institutions and volunteering individuals alike, all dedicated to the DRR cause. The WMO has played a key role by localising the books into the six official UN languages: English, Spanish, French, Russian, Arabic, and Chinese [35]. Other translated versions such as *Blizzards* in Mongolian, *Cyclones* in Filipino and *Volcanoes* in Bahasa, have all been made available by partner organizations and individuals. Through these cross-collaborative efforts, COPE expands its global impact, ensuring that children, regardless of their location or language, can have access to critical disaster preparedness messages.

**Dissemination Model.** COPE partners with UN agencies, ministries of education, NGOs, universities and schools to distribute the content to achieve the mission of ensuring that the key DRR instruction messages reach communities most at risk, supplying children, parents and educators alike. (See [Appendix C – COPE's Dissemination Efforts](#)). COPE intentionally keeps its content 'copyright free' so that interested partners can easily and quickly utilize the materials, whether online or offline, without intellectual property restrictions. After collaborators translate and contextualise the text, the COPE creative team reviews the translated version back into English, to ensure that the scientific facts, key DRR information, and illustrations remain intact, and that the translation protocols are properly followed [58]. Small text changes are usually accommodated within the localised version, (e.g., referring to hurricanes



Fig. 9. COPE projects on the ground. Left: In Malaysia, storytelling sessions and workshops with puppets. Centre: In Nepal, landslides workshops in schools. Right: In Colombia, hurricanes workshops and colouring activities with kids. Images courtesy of Dr Masayu Dzainudin, World Vision Nepal and Presentes Corporation.

instead of cyclones in The Caribbean), however, modifications to the artwork are not permitted to preserve the original intent of the illustrations.

**Projects on the Ground.** COPE's collaborative model has materialised into localised, community-based projects that have already advanced child-centred disaster resilience in some of the world's most vulnerable regions. (See [Appendix C - COPE's Dissemination Efforts](#)). In Assam, India, the UN Major Group for Children and Youth translated the *Floods* and *COVID-19* books into Assamese, distributing 2,400 copies to schools in flood-prone regions along the Brahmaputra River. Through interactive reading sessions and preparedness workshops, children and teachers were equipped with critical DRR knowledge. This initiative influenced local policy, prompting annual COPE sessions to be integrated into educational planning. In Kelantan (Malaysia), COPE *Floods* were used in community activities in partnership with Dr. Masayu Dzainudin of Sultan Idris Education University and local government agencies reaching indigenous children during National Children's Day with flood preparedness kits, bilingual books, and storytelling using finger puppets (Fig. 9, left). Building on this collaboration, Sultan Idris Education University and UNICEF Malaysia are together supporting the development of a COPE *Floods* initiative specifically tailored for children with hearing and visual disabilities. This inclusive project involves the innovative production of Braille materials and an interactive audio-video in Malaysian Sign Language (MSL). A school outreach tour is scheduled from June 2025 to January 2026, aiming to distribute these revised resources and raise awareness among vulnerable groups across selected educational settings.

WMO and Meteo Madagascar, supported the localisation of COPE *Cyclones* and *Floods* in Malagasy. Officially presented to the Ministry of Education of Madagascar on World Meteorological Day. Meanwhile, in the Democratic People's Republic of Korea (North Korea), a collaboration between Birkbeck University and the Mount Paektu Research Centre enabled the translation of *Volcanoes*, *Floods*, *Droughts*, and *Landslides* into Korean. In Lamjung (Nepal) through a collaboration with World Vision Nepal and Durham University, 42,000 copies of *Landslides* were translated and distributed across eight districts, including 170 reading camps that engaged over 20,000 children. This initiative improved disaster literacy and fostered community-wide awareness and response capacity in a region vulnerable to landslides (Fig. 9, centre). In Providencia (Colombia), following the devastation of Hurricanes Eta and Iota, COPE's *Hurricanes* book was localised and disseminated through a partnership with Medellín-based NGO *Presentes*, with teacher training and awareness campaigns equipping local educators and authorities to guide children in hurricane preparedness (Fig. 9, right). According to Catalina Diaz, Director of Risk Intelligence at *Presentes*, "Now, in Providencia and Santa Catalina, there is a greater response capacity thanks to COPE and *Presentes*. Our children are better prepared, and our community is more resilient." (C. Diaz, personal communication, February 3, 2025).

**Digital Reach.** COPE's commitment to accessible DRR education extends beyond on-the-ground initiatives to a global digital presence, maintaining its transdisciplinary and inclusive approach. Its resources are currently hosted on 24 online platforms, including WMO (Fig. 10, left), WeAdapt,<sup>4</sup> UNDRR PreventionWeb<sup>5</sup> (Fig. 10, centre), Hong Kong Observatory,<sup>6</sup> World Vision,<sup>7</sup> and other educational, governmental, and digital library sites, broadening access to key DRR messages for children, educators, and policymakers across classrooms, homes, and communities worldwide. A notable example is in the Philippines, the Department of Education uploaded the COPE *COVID-19* booklet, to its official Learning Resource Portal,<sup>8</sup> therefore ensuring that educators, learners, and school communities across the country had online access to COPE's content, further advancing digital equity in disaster risk education. Furthermore, COPE's inclusion in the UNICEF Learning Passport (Fig. 10, right), a platform designed to transform education through online, mobile, and offline technology. COPE's Disaster Series and Jingles feature across global and regional libraries, including East Asia and the Pacific, Egypt, Lebanon, Timor-Leste, Ghana, Sierra Leone, and the Philippines, helping to address the challenge of delivering critical disaster preparedness education to children through multiple languages and formats [59].

Additionally, COPE's partnership with UNICEF Egypt adapted audiobooks for offline learning and integrated them into STEAM education camps, reaching over 160,000 children. Using *Heatwaves* and *Droughts*, students developed practical models and solutions for climate-related challenges, fostering critical thinking, innovation, and resilience. In alignment with the continuous expansion of digital education, COPE maintains its commitment to enhancing its virtual footprint. This strategic focus aims to facilitate the global preparedness of children to comprehend risk and effectively serve as agents of change within their respective communities.

In summary, these examples demonstrate how COPE's unique transdisciplinary dissemination model is transforming policy frameworks and scientific knowledge into practical, narrative-driven, and inclusive learning experiences to empower children to understand risk, build resilience, and contribute actively to safer communities around the world.

## 6. Strengths and limitations

This paper has described COPE's production, philosophy and dissemination model which enable wide-ranging contribution to children's DRR education, driven by its storytelling approach, evidence based distinctive illustrations, and the commitment of

<sup>4</sup> WeAdapt is a collaborative platform on climate change adaptation issues: <https://weadapt.org/knowledge-base/disasters-and-climate-change/cope-books-for-children-heatwaves/>.

<sup>5</sup> The PreventionWeb is a global platform created to share knowledge for disaster risk reduction and resilience: <https://www.preventionweb.net/publication/droughts>.

<sup>6</sup> HK Observatory is a website created to teach children about climate-related topics: <https://kids.weather.gov.hk/en/index.html>.

<sup>7</sup> World Vision implemented Disaster Risk Reduction programs with the COPE content: <https://www.wvi.org/stories/nepal/cope-landslides-book>.

<sup>8</sup> UNICEF Learning Passport <https://global.learningpassport.org>.



**Fig. 10.** Some of the online platforms where COPE is available. **Left:** The World Meteorological Organization. **Centre:** UNDRR PreventionWeb. **Right:** UNICEF Learning Passport.

dedicated collaborators. This organic expansion, marked by flexibility, has enabled the global dissemination of free DRR content, reaching vulnerable children worldwide.

While the open-access model is a key strength, it requires significant coordination to maintain the integrity of the original content and ensure alignment with scientific and cultural standards. A central element is COPE’s translation protocol which includes back-translation and expert scientific review, to guarantee linguistic accuracy and child comprehensibility. Although the text can be adapted to local terminology and context, the illustrations are non-modifiable to protect artwork integrity and character-consistency. This can limit visual tailoring to specific settings (e.g., depicting the COPE Squad in Fijian national dress). At the same time, it is also a strength: consistent artwork preserves global recognisability, reinforces brand identity, and ensures that children everywhere engage with the same familiar characters and backgrounds, while also helping them understand that hazards occur across the world and that children living in disaster-prone areas face and cope with different types of disasters. This emphasizes the message that disasters are not confined to their own country or community but are a shared global reality.

Despite COPE’s demonstrated impact in advancing child-centred DRR materials, its ability to scale and sustain this success is constrained by funding and a small core operational team. These imitations have affected the pace at which new content can be developed and distributed to meet the growing global demand for children’s DRR education. Moving forward, to fully realise its potential and respond to the rising frequency and severity of climate-related disasters, the initiative recognises the need for more sustainable resources to enhance its operational capacity and impact, and to continue delivering lifesaving messages, to high-risk communities worldwide. Most importantly, the project needs to embark on a rigorous and systemic evaluation of its impact on children from around world, both in terms of design effectiveness, and its influence on children’s resilience and competence of disasters risk reduction. Further research should aim to attribute measurable changes in knowledge, attitudes and behaviours directly to COPE. This could include assessing learning outcomes such as pre/post knowledge of **DROP, COVER, HOLD**, evacuation route recall, early warning comprehension, household kit preparation, alongside behavioural indicators like participation in drills, family preparedness planning, and teacher led practice changes. Generating such evidence will be essential to demonstrate COPE’s educational value, strengthen its global credibility, and inform ongoing improvements to building child-centred disaster resilience.

## 7. Conclusion

This paper provides a detailed examination of the COPE initiative which aims to address significant gaps in the availability of free, easily accessible and age appropriate DRR materials for children. It emphasizes how a unique transdisciplinary approach to the creation of scientifically grounded yet child-friendly content, delivered through the combination of storytelling with distinctive and culturally sensitive illustrations, translates complex hazard knowledge into simple, memorable key instructional messages, that children can easily recall and apply during emergencies.

The paper also exemplifies how COPE’s contribution to educating a generation of children in disaster-preparedness approaches designed to support them, is evident in specific interrelated areas. First, by addressing vulnerability and beyond the information dissemination, the books intend to foster emotional and psychological resilience through elements such as mindfulness and psycho-social first aid, supporting children’s well-being before, during, and after disasters. Second, it advances inclusion and equity, consistent with the *Sendai Framework’s* people-centred approach and commitment to *leave no one behind*. Disability-inclusive formats (e.g., Braille materials, sign-language and audio resources), gender-balanced portrayals of leadership, and a multilingual, open-access model, enables communication and access for all. Third, COPE empowers children as agents of change. By positioning young people as active participants rather than passive recipients, and in line with the *UN Convention on the Rights of the Child*, COPE supports children’s agency and meaningful contributions to household and community resilience. Fourth, it demonstrates clear policy and practice relevance adoption by ministries, UN platforms and NGOs, and adaptable formats (e-books, audiobooks, jingles), that enable delivery across diverse technological and educational contexts.

As climate-related disasters escalate and educational disruption persists, child-centred and engaging DRR content is essential, not optional. While COPE faces constraints in operational capacity, the open-access ethos and partnership-driven implementation still indicates strong potential for global and sustainable impact. By equipping children to act with knowledge and confidence, protecting

themselves, their families, and even their communities, COPE demonstrates how DRR education can cultivate a generation of resilient champions, capable of navigating an increasingly hazardous world. From localised editions in North Korea and Malaysia to community-based initiatives in Colombia and India, illustrating how international organisations can work with local actors to promote DRR resilience. The global importance of this work was underscored in August 2024, when UN Secretary-General António Guterres launched the *Cyclones* book in Tongan during a primary-school visit, a powerful international endorsement of COPE's relevance and reach [60,61]. Let's *Make the Difference. Be Ready.*

### CRedit authorship contribution statement

**Martha Keswick:** Conceptualization, Investigation, Writing – original draft, Writing – review & editing. **Timothy Sim:** Conceptualization, Writing – review & editing. **Lina Suarez:** Conceptualization, Writing – original draft, Writing – review & editing. **Daniel Echeverri:** Writing – review & editing. **Tamsin A. Mather:** Writing – review & editing. **David M. Pyle:** Writing – review & editing.

### 8. Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the author(s) used ChatGPT to refine language and improve the tone of the text. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### APPENDIX A. COPE DISASTER SERIES' CONTENT DEVELOPMENT & STAKEHOLDERS

Disaster Book	Key Message	Location (Story Setting)	Year Published	Collaborators/Experts	Universities/Institutions
<i>Earthquakes</i>	DROP, COVER, HOLD!	Mexico	2019	Dr Janise Rodgers, Prof Philip England & Prof Barry Parson	University of Oxford, Geo Hazards International
<i>Tsunamis</i>	GET UP TO HIGH GROUND	Japan	2018, 2024	UNDRR, Hong Kong Observatory, Dr Wang Dong Ming, Prof Philip England, Prof Tamsin Mather, Prof David Pyle	University of Oxford, National Disaster Reduction Centre of China
<i>Floods</i>	EVACUATE	Malaysia	2019	Hong Kong Observatory, Prof Lena Dominelli	National University of Malaysia, University Pendidikan Sultan Idris, University of Stirling
<i>Cyclones</i>	STAY SAFE	Australia	2020	Hong Kong Observatory, Prof Caryn West, Andrea Grimes	James Cook University
<i>Storm Surges</i>	KEEP CLEAR FROM THE COAST	Hong Kong	2020	WMO, Hong Kong Observatory Prof Caryn West	James Cook University, Hong Kong Jockey Club Disaster Preparedness Response Institute
<i>Landslides</i>	IN HEAVY RAINS, KEEP AWAY FROM STEEP SLOPES	Nepal	2021	WMO, Hong Kong Observatory, World Vision Prof Alex Densmore	University of Durham
<i>Wildfires</i>	BE READY TO GO	South Africa & California	2021	UNICEF South Africa, San Francisco Fire and Public Health Department Prof Antoinette Lombard	University of Pretoria
<i>Droughts</i>	EVERY DROP COUNTS	China	2022	WMO, Hong Kong Observatory, China Meteorological Administration, UNICEF East Asia and Pacific Assoc. Prof Yang Wanqiu Prof Ziqiang Han	Yunnan University, Shandong University
<i>Volcanoes</i>	LISTEN. PREPARE. STAY AWARE	Indonesia	2022	UNDRR, WMO, Hong Kong Observatory, UNMGCY, Munasri, Prof Tamsin Mather & Prof David Pyle	University of Oxford
<i>Heatwaves</i>	STAY COOL AND HYDRATED	France	2022	WMO, Hong Kong Observatory, City of Paris, UNICEF East Asia and Pacific, UNESCO, METEO France, Prof Diana Mangalagiu	University of Oxford
<i>Blizzards</i>	WRAP UP! STAY INSIDE	Mongolia	2023	WMO, MET Services Mongolia, UNICEF	Shandong University
<i>Avalanches</i>	KNOW BEFORE YOU GO	New Zealand	2024	WMO, Hong Kong Observatory, MET Services NZ, UNICEF NZ, NZ Mountain Safety Council, Milford Road	Te Anau school
<i>Climate Change</i>	ACT NOW, FOR TOMORROW	Worldwide	2025	WMO, UNICEF, UNDRR Prof Diana Mangalagiu	University of Oxford

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Disaster Book	Key Message	Location (Story Setting)	Year Published	Collaborators/Experts	Universities/Institutions
<b>COVID-19</b>	STAY SAFE AND SMILING	Worldwide	2020	UNICEF East Asia and Pacific, Readable Singapore Prof Sonoe Mashino Prof Lena Dominelli Prof Caryn West	University of Hyogo, University of Stirling, James Cook University

## APPENDIX B. COPE'S TRANSLATIONS &amp; DISTRIBUTION

Book Title	Language	Translation Partner	Region Covered
<i>Tsunamis, Earthquakes, Floods, Cyclones, Storm Surges, Landslides, Wildfires, Droughts, Volcanoes, Heatwaves, Blizzards &amp; Avalanches</i>	English, Spanish, French, Russian, Arabic, Chinese	WMO	North America, Latin America, Caribbean, Middle East, Asia, Europe, East Africa
<i>Earthquakes, Landslides &amp; COVID-19</i>	Nepali	Word Vision/UNMGCY	South Asia
<i>Cyclones</i>	Tongan	WMO – MET Office	Pacific Islands
<i>Blizzards &amp; Earthquakes</i>	Mongolian	UNICEF Mongolia	Mongolia
<i>Cyclones, Tsunamis &amp; COVID-19</i>	Filipino	NGO - Volunteer	Southeast Asia
<i>Earthquakes, Volcanoes, Floods, Cyclones, Landslides, Tsunamis</i>	Bahasa	Volunteer in Indonesia	Southeast Asia
<i>COVID-19</i>	Cantonese	UNICEF HK	Southeast Asia
<i>Earthquakes</i>	Italian	NGO - Volunteer	Southern Europe
<i>Heatwaves, Volcanoes, Droughts, Wildfires, Landslides, Cyclones, Earthquakes</i>	Urdu	NGO - Volunteer	South Asia
<i>Landslides</i>	Portuguese	Volunteer	Southern Europe
<i>Floods &amp; COVID-19</i>	Malay	Sultan Idris Education University	Southeast Asia
<i>Floods</i>	Malagasy	WMO – MET Office	Southeastern coast of Africa
<i>Floods &amp; COVID-19</i>	Assamese	UN Major Group for Children and Youth	South Asia
<i>Tsunamis, COVID-19</i>	Japanese	Prof Sonoe Mashino - Hyogo Univ	East Asia
<i>COVID-19</i>	Vietnamese	VDMA	Southeast Asia
<i>COVID-19</i>	Thai	Volunteer	Southeast Asia
<i>Volcanoes, Droughts, Landslides, Floods</i>	Korean	Prof. James Hammond – Birkbeck University of London	Northeast Asia
<i>Landslides, Floods &amp; Earthquakes</i>	Hindi	Words. Rhythms. Images	South Asia
<i>Floods</i>	Sinhala	Save the Children	South Asia
<i>Floods &amp; Heatwaves</i>	Czech	COPE	Czech Republic

## APPENDIX C. DISSEMINATION EFFORTS: STRENGTHENING GLOBAL DISASTER RESILIENCE

Date/Country	Book/Activity	Collaborator	Language	Reach	Innovative format/What is unique about it
<b>Nepal (2021)</b>	<i>Landslides</i> - Reading camps and school distribution	World Vision and MGCY	Nepalese	42,000 books in 470 schools, 170 camps, 20,000+ reached	Integrated reading camps across 8 districts
<b>Hong Kong (2021)</b>	<i>Earthquakes</i> - Storytelling Programme" conducted 60 sessions for parents, kindergartens, and schools on disaster prevention and earthquakes drill	HKJCDPRI	Cantonese	2000+ primary students	Parent and kindergarten engagement
<b>Philippines (2021)</b>	<i>COVID-19</i> - Book	Philippines Ministry of Education	Filipino	Online reach	Booklet available nationwide on the Ministry's learning page
<b>Indonesia (2022)</b>	<i>Volcanoes</i> - Students engaged in DRR programs focused on volcanic events, learning safety protocols before and after eruptions	UNESCO and the Tanjung Benoa Disaster Risk Reduction Forum	Bahasa	Public school - 16 participants	Mount Merapi-based volcano safety learning

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Date/Country	Book/Activity	Collaborator	Language	Reach	Innovative format/What is unique about it
Argentina (2022)	<i>Floods</i> - Workshop in Punta Lara	IIARDD, UNLP Faculty of Social Work	Spanish	Local children in flood-prone area – 15 participants	Storytelling in a picnic setting
Malaysia (2022)	<i>Floods</i> - Storytelling sessions on flood preparedness, crafting puppets featuring COPE characters	Sultan Idris Education University – Dr. Masayu Dzainudin	Malay	Primary schools	Puppets and discussion-based learning
Egypt COP27 (2022)	Session: Be ready for disasters - Empowering future generations with practical knowledge in DRR	COPE - WMO	English	15 Global leaders	Practical Knowledge on DRR
Colombia (2023)	<i>Hurricanes</i> - Workshops with teachers and local officials on hurricanes and Disaster Risk Management	Presentes Corporation	Spanish	1000 books to schools, libraries, and the police.	Localized DRR training; educators trained; long-term recovery resilience focus
India (2023)	<i>Floods</i> and <i>COVID-19</i> into Assamese, conducted reading sessions	UN Major Group for Children and Youth	Assamese	2,400 books to 7 institutions	Snowball sampling of flood-prone areas; storytelling led to local DRR policy shifts
Tonga (2023)	<i>Cyclones</i> in Tongan at the Sixth Pacific Meteorological Council Meeting	WMO	Tongan	100+ participants to implement a national rollout	Sixth PMC event focus on kids
Switzerland (Geneva) (2023)	<i>Heatwaves</i> - Interactive sessions promoting DRR knowledge through colouring activities	WMO – COPE	French	Children at WMO outreach – 400+ participants	Visual learning approach
Czech Republic (2023)	COPE Disaster Risk Reduction workshop at ISB School	COPE	English	40 ISB Students	Workshop-based engagement
Ecuador (2023)	<i>Volcanoes</i> - distributed to teachers	University of Oxford (Professor Tamsin Mather & Professor David Pyle), IGEPN	Spanish	National education network	Collaboration with IGEPN for science-education outreach
Montserrat (2023)	<i>Volcanoes</i> -Shared with local schools, the volcano observatory, and the National Trust	University of Oxford (Professor Tamsin Mather & Professor David Pyle)	English	Local schools	Strengthened volcanic DRR awareness in Caribbean
The Bahamas (2023)	<i>Cyclones</i> - Adapted to Hurricanes	Local school request	English	One school	Localized version created specifically for Caribbean use
Dubai COY18 (2023)	Session: Empowering children and youth for resilience through DRR education	COPE - UMGCY	English	25 youth leaders	Youth-led DRR empowerment
Dubai COP28 (2023)	Session: Communicating around early warnings: from disinformation to acceptance	COPE - WMO	English	50 Global leaders	Early Warning Systems Education
Dubai COP28 (2023)	Session: Preparing a future generation of resilient children: capacity building session with practical knowledge in Disaster Risk Reduction.	COPE - UMGCY	English	50 participants	Youth-led DRR empowerment
Guatemala (2024)	COPE books presented at the Cities on Volcanoes conference	University of Oxford (Professor Tamsin Mather & Professor David Pyle)	Spanish	100+ participants	COPE's journey from Guatemala to Ecuador emphasized
Argentina (2024)	<i>Floods</i> - Risk management class for two rural primary schools in Castelli, Buenos Aires	IIARDD	Spanish	2 rural schools 10 participants per school	Environment Day celebration
Colombia (2024)	COPE at First Congress on DRM in Manizales	Presentes Corporation	Spanish	National stakeholders – 200 participants	COPE showcased as community empowerment strategy
Nicaragua (2024)	<i>Volcanoes</i> -Introduced to preschool “Los Carlitos” to educate children on volcanic preparedness	University of Oxford (Professor Tamsin Mather & Professor David Pyle)	Spanish	10 students	Hands-on learning about volcanoes for children under six
France (2024)	<i>Heatwaves</i> at an exhibition during the Olympic Games	Climate Academy	French	Olympic-linked exhibition	Interactive climate adaptation exhibition for youth
Egypt (2024)	<i>Earthquakes</i> - Storytelling sessions and earthquake prevention video clip	UNICEF Egypt – CARE	Arabic	Learning Hub - 360 Students	Pop-up books and multimedia – The workshops took place after the period of earthquakes in Turkey and Syria
Egypt (2024)	<i>Droughts</i> and <i>Heatwaves</i> - STEAM camps	UNICEF Egypt	Arabic	160,000 primary school children	DRR integrated into STEAM with group projects

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Date/Country	Book/Activity	Collaborator	Language	Reach	Innovative format/What is unique about it
<b>Colombia, Argentina (2024)</b>	<i>Launch of Train the Trainers materials</i>	COPE – IIARDD – PRESENTES - UNDRR	Spanish	Teachers in Latin America – 341 Views	New materials for teachers to teach DRR topics in schools
<b>Madagascar (2024)</b>	<i>Hurricanes and Floods</i> presented to the Ministry of Education	WMO, Météo Madagascar	Malagasy	Nationwide Schools	Possible integration into school curricula, launched on World Meteorological Day
<b>Malaysia (2024)</b>	<i>Floods</i> - Flood Community Activity in Tanjong Malim, providing flood kits and books	Dr. Masayu Dzainudin, UPSI, NCDRC	Malay	Indigenous communities – 24 participants	Finger puppets, storytelling, flood kits on National Children's Day
<b>Malaysia (Kuala Lumpur) (2024)</b>	Early Warnings for Youth - COPE Disaster Series contribution	WMO	English	Youth session participants	Contribution to ESCAP/WMO Typhoon Committee
<b>Bangladesh (2024)</b>	Tsunamis book - Storytelling session with interactive games and arts	RIMES	English	Local children –18 participants	Drop, Cover, Hold taught via fun activities
<b>Indonesia (2024)</b>	Tsunamis book - Presented at UNESCO IOC Global Tsunami Symposium	UNDRR	English	Global experts	Highlighted community empowerment via DRR books
<b>Philippines (2024)</b>	COPE at APMCDRR, Tsunamis book launch	COPE - APMCDRR	English	Regional ministers, NGOs 400+ participants	New book launch + youth focus
<b>Philippines (2024)</b>	3-day youth advocacy training featuring COPE	UNICEF, Burauen Community College	Filipino	40 youth leaders	Youth-led DRR empowerment
<b>Tonga (2024)</b>	UN Secretary-General António Guterres highlighted COPE's <i>Cyclones</i> book during his visit to a local school	WMO	English	Local school children – 100+ participants	Highlighted by António Guterres
<b>Maldives (2024)</b>	COPE <i>Tsunamis</i> book launch on Dec 26	NDMA, Equinox Media	English	Tsunami anniversary event	Tsunami commemoration through book gifting
<b>Geneva (2025)</b>	COPE <i>Floods, Heatwaves and Droughts</i>	UNDRR Global Platform	English	Workshop for more than 60 youth leaders	Book dive and activities with the COPE books
<b>Costa Rica (2025)</b>	COPE <i>Train the Trainers</i>	Costa Rican Red Cross	Spanish	Workshops in 11 schools, more than 250 students	Special materials design for teachers and students with activities to do during the classes
<b>Malaysia (2025)</b>	COPE <i>Floods</i>	Sultan Idris Education University – Dr. Masayu Dzainudi UNICEF	Malay	School book tour	Floods book in Braille and interactive audio video in Malaysian Sign Language
<b>Egypt (2025)</b>	COPE <i>Floods, Heatwaves, Earthquakes</i> – Arabic Videos on Platform	UNICEF Learning Passport – Egypt	Arabic	625 lessons registrations	Interactive books - videos targeted to Arabic speakers
<b>Egypt (2025)</b>	COPE <i>Floods, Heatwaves, Earthquakes</i> – Arabic Videos on Ministry of Education	MOE Learning Passport - UNICEF	Arabic	865 Community schools 91 teachers - Each teacher had 40–45 students in multi-grade classes 23,700 reported visits	Interactive books - videos targeted to Arabic speakers
<b>Globally COPE's website (2022–2025)</b>	COPE Books	COPE	Different languages	10,634 views	Books, Videos and Animations
<b>COPE's YouTube (2025)</b>	COPE Books	COPE	Different languages	10,000 views Views: 1,149 Downloads: 1,233	COVID-19 video Online Books
<b>Hong Kong (2025) UNDRR</b>	COPE <i>Covid-19</i> COPE Books	UNICEF Hong Kong UNDRR	Cantonese Various languages	15 libraries: 15,093 learners engaged	Online Books
<b>Globally UNICEF learning Passport (2025)</b>	COPE Books	UNICEF	English	15 libraries: 15,093 learners engaged	Online Books
<b>Sri Lanka (2025)</b>	COPE <i>Floods</i>	Save the Children Sri Lanka	Sinhala	8 school libraries 20 Village Disaster Management Committees	Schools where clubs have been established to introduce children to environmental conservation, disaster risks and community awareness

## Data availability

No data was used for the research described in the article.

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