



Global Alliance for
Disaster Risk Reduction & Resilience
in the Education Sector



FORTHCOMING

Towards Safer School Construction

A community-based approach



ARUP



A Call for Safer Learning Facilities

All children deserve safe, accessible, and culturally appropriate learning facilities – regardless, of class, creed, gender, or ability. Students in dark, hot, and dreary classrooms deserve spaces that invite creativity and engagement. Communities also deserve a focal point where they can congregate with pride to support their future.

With clear insight, the United Nations set a Millennium Development Goal for 2015 to bring children and youth what they deserve – universal primary education.

Yet, access to any classroom is not enough.

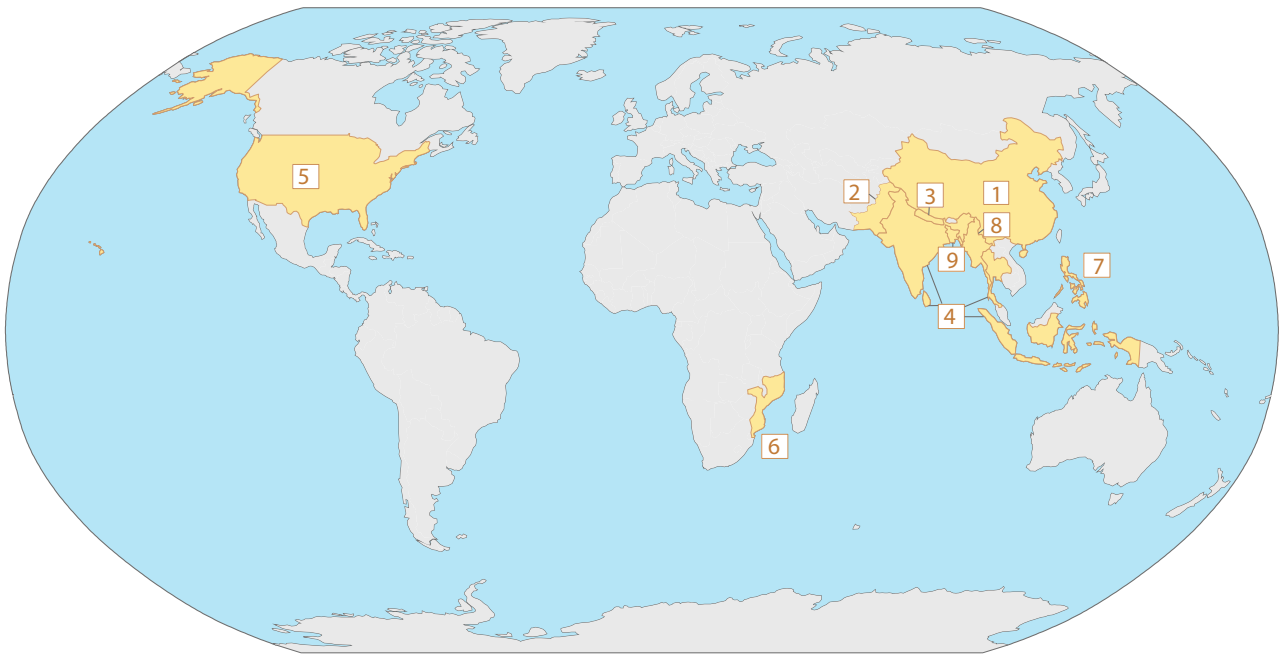
Though decades of classroom building has brought education to millions of students globally, many sit in classrooms at risk of collapsing or being rendered unusable when the ground shakes, flood waters rise, or high winds sweep across the land. Poor design and construction, stemming from limited resources, corruption, and unfamiliar building technologies, has made learning facilities unsafe and has led to a staggering loss of life.

Disasters striking these unsafe learning facilities can shatter fragile development gains, undermining the hope placed in education. In disasters, students, school staff, and families experience intense mental and physical trauma. Unsafe learning facilities can injure and even kill occupants. Months, even years, of education can be lost as communities shift resources away

from education during their arduous recovery. Without school, students are more vulnerable to abuse, neglect, violence, and exploitation. With so much at stake learning facilities should be durable and functional even after a disaster. They should continue to provide haven as intended.

Though school safety has become a global concern, recent disasters highlight the continued vulnerability of learning facilities. The 2010 Super Typhoon Megi, the 2012 Bangkok floods, the 2005 Hurricane Katrina, and other cyclones have damaged or destroyed thousands of learning facilities. Earthquakes have been even more devastating. The 2005 Kashmir earthquake killed 17,000 students and destroyed 80 percent of learning facilities in some areas. The 2008 Sichuan earthquake in China killed tens of thousands of students in the very facilities meant to protect them. Two years later, 200,000 people perished in Haiti and 80 percent of the learning facilities in the capital city of Port-au-Prince were damaged or destroyed. In each case, the emotional loss to the surviving community remains incalculable.

Whether a government education agency managing thousands of classrooms across a jurisdiction, a humanitarian organisation rebuilding learning facilities after a disaster, or a small non-profit constructing a single school in an impoverished community, a child's right to safety and survival is paramount.



The Need for Safer Learning Facilities

1. China – The 2008 Sichuan earthquake crushed 10,000 students to death in their classrooms.

4. Indian Ocean countries – The 2004 tsunami left 150,000 students without learning facilities.

7. Philippines – In 2013 Typhon Yolanda partially or completely damaged 2500 learning facilities and 800 day care centres.

2. Pakistan – Over 17,000 students were killed and 10,000 learning facilities destroyed in the 2005 Kashmir earthquake.

5. United States – After Hurricane Katrina, 700 learning facilities closed and \$2.8 billion was spent to educate displaced students in the first year.

8. Myanmar – In 2008 Cyclone Nargis destroyed 2,460 learning facilities.

3. Nepal – Three quarters of learning facilities in Nepal's Kathmandu Valley are unlikely to survive expected earthquakes.

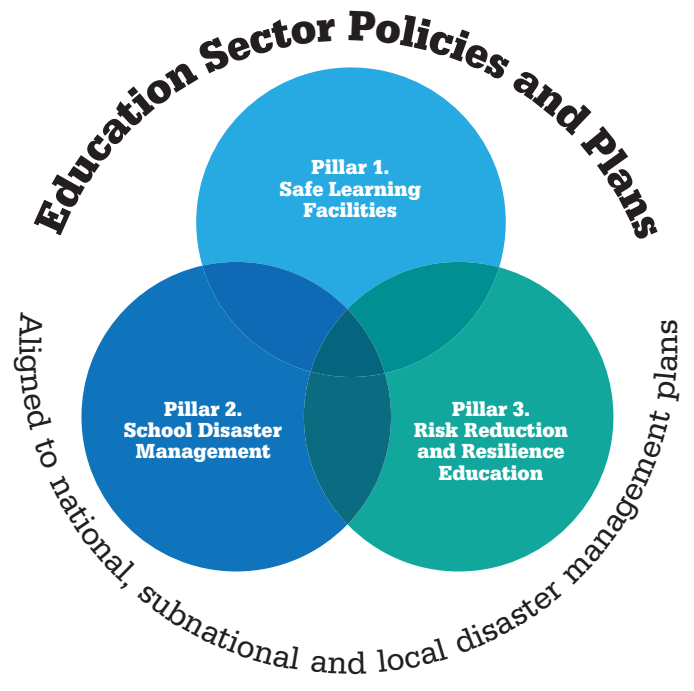
6. Mozambique – Floods in 2015 inundated 335 learning facilities.

9. Bangladesh – The 2007 Cyclone Sidr affected over 145,000 children; reconstruction was estimated at US\$81 million.

The Need for Comprehensive School Safety

School disasters must be prevented to maintain education sector development gains. This means learning facilities must be safe, schools must have robust disaster management strategies, risk reduction and resilience concepts must be infused in the curriculum, and these concepts must be part of a larger outreach program to communities. Together, these elements form the three pillars of Comprehensive School Safety, with the aim of:

- Protecting learners and education workers from death, injury, and harm in schools
- Planning for educational continuity in the face of all expected hazards and threats
- Safeguarding education sector investments
- Strengthening risk reduction and resilience through education



A Commitment to Safe Learning Facilities

1. Every child has the right to safety and survival.

Every new learning facility should be planned, designed, and constructed to minimum standards of life safety.

Every existing learning facility strengthened, renovated, remodelled, refurbished, or modernized should be brought up to the life safety standard.

Every learning facility designated as a shelter for emergencies and disasters should meet the higher standard of operational continuity.

2. Every child has the right to access education.

Every learning facility should be constructed to protect a child's access to education from known and anticipated hazards.

Every learning facility should be maintained to protect education sector investments from known and anticipated hazards.



In 2007, Hurricane Felix damaged learning facilities in Nicaragua. Such damages destroy development gains and undermine students' access to education. Photographer: Claudio Osorio, INEE



In 2007, the Picaso earthquake in Peru rendered this primary school classroom unsafe for use. Heavily damaged learning facilities must often be torn down. Moderate changes to design and construction can reduce the likelihood of heavy damage and ensure children have access to education, even after disaster strikes. Photographer: Claudio Osorio, INEE



A community-based approach ensures materials and construction techniques are appropriate for the local context. Photographer: Arup



A community-based approach enhances community skills and capacity in hazard-resistant construction. What communities learn during the construction of a safe school can be applied to their own houses, building a culture of safety. Photographer: Arup

A Community-Based Approach

A community-based approach to school construction offers one way of achieving safe learning facilities.

Community-based school construction is when communities hold an informed, decision-making role in school planning and design or where they directly take part in the construction of learning facilities.

Key advantages:

- Creating designs that meet community needs
- Ensuring materials and construction techniques are appropriate for the local context
- Bringing accountability and transparency to school construction
- Enhancing community skills and capacity
- Building community ownership of a school and its upkeep

Community-based construction is an attempt to build both learning facilities and community capital. It acknowledges that **communities know what is best for them** – what locations will be most accessible, which construction materials are familiar to local builders, what designs are culturally acceptable.

Community-based construction can foster a **sense of ownership** as communities take part in planning and design stages. They can articulate their needs and ensure the appropriateness of the materials and construction techniques used. By engaging in the construction process, they gain experience with the materials and construction techniques. This familiarity later helps the school community successfully operate and maintain the school, ensuring it remains a safe school throughout its lifespan.

The impacts of a single safe school construction project radiate outward from the school site. When communities are actively involved in constructing safe learning facilities, they also **build their capacity for safe construction practices**. They see how to attach roof trusses to be secure during cyclones; practice

how to bend reinforcing steel to strengthen concrete columns so they are protected in earthquakes; learn how to lay drainage systems and strong foundations to reduce the risks posed by heavy rain; and observe how lining a roof can lessen rainwater leakage. Communities can then apply these techniques to their own houses and demand that future community facilities are also built safely.

The approach ensures that school construction **benefits the local community and livelihoods**. Local labourers can find employment and opportunities to improve their skills. Community approaches also help ensure that funds reach communities. They rely upon labour-intensive construction rather than feed profits to external corporations. These projects rely upon local materials and local practice rather than pre-fabricated materials that communities will be unable to maintain or replicate.

The approach brings **transparency and accountability**. Communities can better positioned to monitor school construction than distant donors or over-stretched government representatives. Being in the immediate vicinity of the construction site day and night, they know when a contractor has not shown up for weeks or have justified suspicions that the materials used are low quality. When they have direct responsibility for resources, communities can track how funds are spent and how materials are used. With less middle-men, cost per classroom often plummets even as community satisfaction and the quality of construction improves.

Where it occurs in post-disaster contexts, community-based construction can also be **a healing process**. Youth, parents and communities can come together to rebuild, helping to relieve the trauma, stress, and hopelessness felt after a disaster.

Finally, a community-based approach can create a **community learning opportunity** for disaster risk reduction. Learning facilities serve as community hubs. When the focus of construction is on safe school construction, the process can build community awareness of hazards and promote collective action to identify and reduce vulnerabilities to those hazards. It can build a culture of safety and resilience.

Key Principles of Community-Based Safe School Construction

Essential Practice

- 1 Build safe learning facilities and strengthen weak ones.** Learning facilities must be designed and constructed to protect students and staff from hazards. When existing learning facilities are unsafe, they need to be identified, assessed, prioritised, and strengthened. Concern for community priorities, cost and speed must take second place to safety and all stakeholders must commit to ensuring safety through quality assurance. Building anything less risk lives and wastes development dollars and community effort.
- 2 Engage as partners.** A community-based approach is premised upon building consensus between the development actor/ government body and local community. Development actors and government bodies may be best positioned to provide broad understandings of regional hazards, hazard-resistant designs, and effective construction techniques. Communities, however, may be more knowledgeable of local hazards, site conditions, and material availability. They will also understand local construction practice best. Both parties need to learn from each other.

Where ever possible, mere consultation and token participation should be avoided. Rather, school communities should be empowered to be full partners in comprehensive school safety.
- 3 Ensure technical oversight.** While appropriate safe school construction enhances community capacity and transfers technology, technical oversight remains crucial. The development actor or governmental body must ensure design and construction complies with good practice for hazard-resistant construction. Where low, they should also increase local technical capacity by connecting local skilled labour and technical specialists with external specialists.
- 4 Build upon local knowledge.** Safe school construction should build upon local knowledge, not replace it. Site selection, design, and construction should follow local practice, making only moderate adaptations to ensure safety. Doing so will ensure that communities can retain these good practices and apply them elsewhere.
- 5 Develop capacity and bolster livelihoods.** Community-based safe school construction provides an important training grounds for new skills. Projects should support training for skilled craftsmen and women who need to learn hazard-resistant construction techniques. Once trained, these craftsmen and women may even market their new skills. Safe school projects may also be ideal for building capacity of local government technical staff in areas of hazard-resistant design and construction oversight. Their involvement in even small projects can spark interest in community-based approaches and further encourage governments to fulfil their obligation of providing safe learning facilities to all communities.

Good Practice

- 6 Support a culture of safety.** Building safe learning facilities provides a tangible project for increasing awareness about hazards and risk reduction strategies. As communities engage in a construction project where safety is considered and then explained in each step, they begin to value safe construction and recognize its necessity. This awareness can be sustained and enhanced; school disaster management committees and curricula can encourage everyone to regularly engage in school disaster risk reduction after construction is complete.
- 7 Scale up and promote accountability.** Actors and agencies should promote dissemination and replication of community-based safe school construction through common standards, processes, and guidance tools. Such efforts allow successful aspects of community-based approaches to spread. They can promote accountability through a public commitment to safe learning facilities and track this commitment through measurable targets and indicators.



Community-based safe school construction provides an important training grounds for new skills. Projects should support training for skilled craftsmen and women who need to learn hazard-resistant construction techniques. Photographer: Sanjaya Bhatia, UNISDR



In a community-based approach, local communities work with technically qualified individuals to design schools that are safe and culturally appropriate. Photographer: Arup



Students at a Laos school take classes in buildings constructed by development actors and the local community. Photographer: Danielle Wade, Save the Children

Looking Ahead

Save the Children, the Global Facility for Disaster Reduction and Recovery (GFDRR), Arup, UNESCO, Risk RED and others, are developing a guidance note intended to show how community-based safe school construction can do more than just provide communities with learning facilities. It can also:

- Ensure every learning facility built is a safe one
- Raise awareness about hazards within communities
- Build local capacity for safer construction practice
- Strengthen a culture of safety within and around the learning facility

It will highlight key principles in community-based safe school construction. Case studies and stories throughout this guide will show tangible examples of emerging good practices in different procedural stages and at different project scales.

Scope

The focus of this guide will be on the processes of community-based school construction. It should supplement technical guidance on appropriate construction materials and techniques, such as UNESCO's 2013 Guidelines for Earthquake Resistant Non-Engineered Construction. This guide considers community-based school construction in-depth, supplementing the broader Guidance Notes on Safer School Construction published in 2009 by the Global Facility for Disaster Reduction and Recovery (GFDRR) at the World Bank and the Inter-Agency Network for Education in Emergencies (INEE).

Intended Audience

This guidance note will be intended for decision makers and program advisors in implementing agencies involved in, or intending to begin, school construction in hazard-prone areas. It will be primarily intended for development actors – the development and humanitarian organizations building and repairing learning facilities – as well as government bodies seeking to introduce or oversee community-based school construction programs. The guide also will provide insight for community disaster risk reduction and disaster management practitioners within the education sector.

The note aims to provide guidance for school construction projects that have one or more of the following characteristics:

- Local school committees or community leaders contribute to the funding, planning, construction or oversight of learning facilities in hazard-prone locations
- Construction may enhance existing or planned disaster risk reduction education
- The local construction sector does not already include robust hazard-resistant design, construction and oversight practice
- Intent to combine post-disaster reconstruction and disaster risk reduction

This guidance will be divided into three sections: an introduction, an overview of a community-based construction process, and a detailed description of the process. The process will be divided into five broad stages – mobilization, planning, design, construction, and post-construction. For each stage, the guidance note will describe key activities and considerations as well as opportunities and challenges central to a community-based approach.

Process

This guidance note is being developed through a consultative process, guided by a steering group comprised of representatives from the Save the Children, GFDRR, UNESCO, Arup, and Risk RED. The steering group has identified leading experts in community-based school construction from Africa, Asia, Europe, and Latin America. These individuals were invited to serve as reference group members. Reference group members were interviewed on good and poor practice in the field; many suggested other experts to be added to the reference group. These reference group experts met with the steering group for a 2-day technical consultation in February 2015 where they clarified key principles and activities necessary for community-based safe school construction.

Next Steps

The guidance note will be published in May 2015 as a 'consultation edition.' The content will be enriched further by collecting feedback from development actors, government bodies, and communities using the guidance material whilst planning and constructing schools. Organisations, governmental or non-governmental, wishing to provide input will be invited to do so.