

Climate Change Hazards, Risks and Vulnerabilities Assessment in Schools in Pakistan: Piloting a Localised Participatory Assessment

Evidence from the DARE Research Consortium

Policy Brief



Authors

Dr Sapana Basnet
Dr Zahid Majeed
Dr Muhammad Sulaman Ijaz
Dr Mahamood Ahamad,



ABOUT

This policy brief was produced by the DARE Research Consortium. It summarises the findings from a full report (forthcoming) detailing research conducted as part of the DARE-RC portfolio, and was authored by the researchers of that report. This brief forms a part of a series to provide actionable evidence to policymakers in Pakistan to improve education.

DISCLAIMER

The views expressed in this document are those of the authors and the DARE Research Consortium and do not necessarily reflect those of the FCDO or the UK Government.

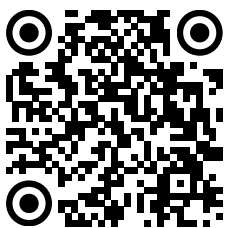
PUBLICATION DATE

October, 2026

DESIGN & EDITING

Sam Wilson, Amina Batool (Wyeside Education)

Scan to find out more



DARE Research Consortium

DARE-RC is Pakistan's largest education research programme, generating rigorous, actionable evidence to improve education policy and practice.

DARE's 44 research studies and scoping papers offer critical insights on inclusion, teaching and learning, governance, data, accountability, and system resilience.

© DARE Research Consortium

Climate Change Hazards, Risks and Vulnerabilities Assessment in Schools in Pakistan: Piloting a Localised Participatory Assessment

Dr Sapana Basnet, Dr Zahid Majeed, Dr Muhamad Sulaman Ijaz, Dr Mahamood Ahamad, et al.

Methodology

- **Design:** participatory, mixed-methods implementation research in three phases – desk review/contextualisation, CRSAT piloting, and findings validation/tool refinement.
- **Pilot:** 18 schools across ICT, Punjab and Sindh (urban, rural, special education); 216 participants in school-based Climate Risk Assessment teams.

Key Figures

18

schools piloted across ICT, Punjab and Sindh

216

participants engaged in the risk assessment process

9

girls' schools among the 18 piloted (7 boys', 2 special education)

10–12

members per school Climate Risk Assessment team

Findings

1

Climate risks are multi-hazard, localised and cyclical

Schools face overlapping hazards rather than isolated events – flooding in rural Punjab/Sindh, heatwaves and smog in urban settings, predictable by season.

2

Vulnerabilities are structural, social and institutional

Unsafe buildings, missing boundary walls and inadequate WASH facilities combine with weak formal disaster-management structures.

3

Climate impacts are unequal and deepen existing exclusion

Girls, children with disabilities and low-income learners experience more severe and prolonged disruptions from climate events.

4

Schools show strong informal capacity, but lack institutional backing

Community networks and teacher knowledge provide fragile, inconsistent coping – knowledge is lost entirely if a teacher is transferred.

5

CRSAT is feasible, accessible and valued

Its step-by-step design helped schools move from vague risk awareness to concrete, prioritised action plans, at low cost.

6

School-level risk data is currently under-used

Valuable CRSAT data is not yet linked to any planning, budgeting, or monitoring systems beyond the school gate.

Policy Implications

- **The Pakistan School Safety Framework (PSSF) bridges an important policy-practice gap, but its risk assessment tool is too technical for routine school-level use.**
- **Education resilience initiatives must be tailored to local needs – a one-size-fits-all approach is ineffective given Pakistan's varied risk profile.**
- **Resilient education requires clear governance, accountability and sustained investment – not just a tool, but linked planning, budgeting and monitoring systems.**
- **Equity and inclusion must be central to resilience planning, given the disproportionate impact of disruptions on girls and disabled learners.**

Recommendations

INSTITUTIONALISE

Embed CRSAT in Policy

- Introduce standardised guidelines for disability-inclusive Education Continuity Plans.
- Integrate CRSAT into Education Sector Plans and school budgets.

COORDINATE

Strengthen Cross-Sector Links

- Establish school safety focal points and Inclusive Education-Climate-DRR Working Groups.
- Co-develop disability-inclusive Education Continuity Guidelines.

BUILD CAPACITY

Sustain Local Ownership

- Establish School Safety Committees with inclusive membership.
- Link school-level risk data into EMIS to inform investment decisions.

Key Messages

Pakistan is highly vulnerable to climate risks, yet school-level climate and disaster risk assessment is rare. The Climate Risk Assessment Tool (CRSAT) lets teachers, students, and parents assess their own school's climate risks directly while also highlighting risk patterns and capacity gaps across schools, districts and provinces.

Climate risks to schools are multiple, localised, and cyclical but their impact does not affect all students equally. Girls, children with disabilities, and students from low-income households face more severe and prolonged disruptions.

Schools face structural vulnerabilities (like unsafe buildings, missing boundary walls, inadequate WASH facilities) and lack emergency preparedness and formal disaster-management structures. They cope through strong informal networks and teacher knowledge, but without institutional backing, their preparedness remains fragile and inconsistent, and may even be lost entirely if a teacher is transferred.

The pilot found CRSAT to be feasible, low-cost, and valued by school communities. Its step-by-step design helped schools move from vague risk awareness to concrete, prioritised action plans. However, this valuable school-level data is currently not linked to any planning, budgeting, or monitoring systems, meaning it is not yet informing decisions beyond the school gate.

Institutionalising CRSAT (integrating it into Education Sector Plans and school budgets) alongside stronger coordination between education and disaster-management authorities, can help operationalise the PSSF at scale. This should include establishing School Safety Committees with inclusive membership and clear local ownership of risk assessment and response.

School-level risk data should feed into Education Management Information Systems to inform evidence-based, disability-inclusive investment decisions. For this, sustained capacity-building is needed, which includes training school staff and communities in risk assessment on an ongoing basis, rather than treating it as a one-off exercise.



Introduction

Education is a fundamental human right and a cornerstone of social and economic development. It underpins all the Sustainable Development Goals, particularly SDG 4 on inclusive, equitable quality education. Climate change is increasingly undermining these ambitions by disrupting education systems, restricting access and worsening learning outcomes. Climate-related hazards and recurring crises reduce access to education and widen inequalities.¹ These impacts disproportionately affect marginalised learners, including children in rural and low-income communities, girls and learners with disabilities.^{2,3}

Pakistan is highly vulnerable to climate risks, ranking among the most affected countries globally, with floods, extreme heat and air pollution causing repeated disruptions to schooling. While Pakistan has frameworks to strengthen climate resilience in education, including the comprehensive risk assessment tool included in the Pakistan School Safety Framework (PSSF), implementation of it remains limited and fragmented. To address this gap, this action-oriented implementation research collaboratively contextualised UNESCO's and Viet Nam Ministry of Education and Training's assessment and preparedness toolkit⁴ and piloted the newly adapted 'Climate Risk Assessment Tool' (CRSAT) in Pakistani schools.

CRSAT is a simplified and participatory school-level tool with step-by-step guidance that helps school communities identify and assess climate- and disaster-related risks affecting learning, safety and education continuity. When combined across schools, CRSAT data highlights patterns of risk and capacity gaps across schools, districts and provinces and supports education authorities to strengthen PSSF implementation.

Study Methodology

The research used a participatory, mixed-methods implementation research approach, delivered in three phases: (1) desk review and contextualisation, including alignment analysis between the PSSF and the UNESCO/Viet Nam toolkit; (2) piloting of CRSAT, using participatory risk assessment, GIS mapping, photovoice and FGDs with school-community risk assessment teams; and (3) findings validation and tool refinement, through stakeholder workshops.

The adapted CRSAT was piloted across 18 schools in Islamabad Capital Territory, Punjab and Sindh, covering urban, rural and special education settings. Of these, nine were girls' schools, seven were boys' schools and two were co-education special education schools. Each participating school established a Climate Risk Assessment team of 10–12 members, comprising head teachers, students, parents, community members and local officials. In total, 216 participants engaged in the assessment process, with deliberate efforts to include girls, children with disabilities and marginalised groups.

Data was analysed using thematic analysis and descriptive methods, guided by a three-domain risk framework (hazards, vulnerabilities and capacities). Spatial and visual data (maps and photographs) were triangulated with qualitative narratives to strengthen interpretation and validity.

18

SCHOOLS PILOTED

Across ICT, Punjab and Sindh – urban, rural, and special education

“**CRSAT offers a simpler, step-by-step approach that enables teachers, students, parents and community members to participate directly in risk assessment.**”

Key Findings

1 Climate risks to education are multi-hazard, localised and cyclical

The CRSAT tool accurately captures the granular experience of schools across all study sites that they encounter multiple, overlapping hazards rather than isolated events. Flooding and waterlogging dominated in rural Punjab and interior Sindh, while heatwaves, smog and air pollution were highlighted in urban settings. Seasonal calendars revealed that disruptions to schooling are predictable and recurrent, particularly during monsoon months and peak summer heat.

“Flooding is not a surprise anymore. We know when it will come, but we don't have a plan that matches that reality.”

— TEACHER, RURAL SINDH

2 Vulnerabilities are structural, social and institutional

Across regions, schools identified widespread infrastructure and systematic vulnerabilities (unsafe buildings, lack of boundary walls, inadequate WASH facilities), overcrowding and limited emergency preparedness. Vulnerability was compounded by poverty, location, weak access to services and lack of formal disaster management structures at the school level.

“We depend on our own judgement and experience. There is no formal guidance or training to tell us what to do when something happens.”

— HEAD TEACHER, PUNJAB

3 Climate impacts are unequal and deepen existing exclusion

The study found strong evidence that girls, children with disabilities and learners from low-income households experience more severe and prolonged impacts from climate disruptions. Barriers included inaccessible evacuation routes, lack of assistive and digital devices and gendered safety concerns during emergencies.

“There is no plan for children with disabilities during emergencies. Teachers try their best, but there is no system.”

— TEACHER, SPECIAL EDUCATION SCHOOL, ISLAMABAD

4 Schools demonstrate strong informal capacities but lack institutional support

Despite limited formal training, many schools showed strong informal coping mechanisms including community support networks, teacher knowledge, and local insights. However, these capacities operated without systematic backing, making responses inconsistent and fragile.

“We help each other because we have to. But if a teacher is transferred all that knowledge is lost.”

— TEACHER, ICT

5 CRSAT is feasible, accessible and valued but requires facilitation

The risk assessment process using CRSAT made risks more visible and discussable, helping school communities move from informal awareness to more systematic assessment and planning. The step-by-step design – historical profiling, seasonal calendars, school walks and mapping – was widely seen as an important strength, especially for those with no formal training in disaster risk management. However, participants cautioned against risk assessment becoming a “tick-box exercise” if absorbed into systems without adequate training, facilitation and follow-up mechanisms. Some schools facing higher exposure suggested conducting risk assessment twice a year.

6 School-level risk data are currently under-used

The study found that risk experienced at school level is rarely linked to planning, budgeting or monitoring systems. Integrating CRSAT outputs into Education Management Information Systems would support more evidence-based prioritisation, targeted investment and climate-responsive resource allocation at district, provincial and national level.

¹ UNICEF Pakistan. (2020). Pakistan Country Office Annual Report 2019.

^{2,3} Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector (GADRRRES). (2022). Comprehensive School Safety Framework 2022–2030; International Disability and Development Consortium. (2023). Towards COP28: Key Advocacy Messages.

⁴ UNESCO and Viet Nam Ministry of Education and Training (2016). Assessment and Preparedness Toolkit for Safe and Sustainable Schools.

Policy Implications

PSSF bridges an important policy-practice gap. While key legislative frameworks exist to promote equitable access to education, they provide insufficient implementable provisions on building climate resilience of schools. The Pakistan School Safety Framework (PSSF), formulated by the National Disaster Management Authority (NDMA), is a key instrument for bridging this policy gap.

Resilient education requires clear governance, accountability and sustained investment. Weak interdepartmental coordination, unclear institutional responsibilities, and financial and capacity limitations hinder effective PSSF implementation. This translates into uneven risk assessments and gaps in emergency preparedness at the school level. Using CRSAT as a simplified and participatory risk assessment tool can help address these challenges.

Education resilience initiatives must be tailored to local needs.

Climate risks in Pakistan vary significantly by region and school. A one-size-fits-all approach is ineffective. The phased and participatory approach adopted by CRSAT provides a valuable model for effective implementation of PSSF at provincial and district levels, catered to local risks.

Equity and inclusion are central to resilience. Evidence shows that girls, children with disabilities, and the poorest households bear the most severe, disproportionate and prolonged impacts of climate disruptions. The CRSAT promotes inclusive risk identification and prioritisation and can support alignment with Pakistan's broader commitments on rights and social inclusion.

“*Continuity of education during and after a disaster reduces the disaster's impact on educational outcomes.*”

Recommendations

Some recommendations below are short-term solutions that can immediately improve coordination; others require more systemic changes and intentional efforts to improve disability inclusion and resilience more broadly.

1. Institutionalise CRSAT for Effective PSSF Implementation

- **Short term:** Provincial education departments should introduce minimum standards for inclusive emergency preparedness and standardised guidelines for disability-inclusive Education Continuity Plans.
- **Long term:** Given its successful implementation in Viet Nam and contextualised piloting in Pakistan, CRSAT should be integrated into Education Sector Plans (ESPs) and school budgetary allocations.

2. Enhance Intersectoral Coordination and Policy Coherence

- **Short term:** Establish school safety directorate/focal points in provincial education departments, and Inclusive Education-Climate-DRR Working Groups at provincial levels.
- **Medium term:** Working Groups should co-develop disability-inclusive Education Continuity Guidelines and joint monitoring frameworks with school safety indicators.

3. Ensure Meaningful Engagement of Local Stakeholders

- **Short term:** Empower district education offices, local DRR departments and SMCs to lead localised risk assessments and implement school safety plans.
- **Short term:** Establish School Safety Committees (SSCs) comprising school management, teachers, students, SMC/CDMC members, and parents.
- **Medium term:** Make equitable and disability-inclusive budgetary allocations for school safety planning.

4. Strengthen Disability Inclusion and Climate Resilience in Education Data

- **Short term:** Establish coordination between PIE, provincial EMIS and PSSF mechanisms; incorporate climate risk indicators into EMIS and ASC questionnaires.
- **Long term:** Explore digital platforms to collect real-time data for monitoring hazards, risks and school preparedness, based on Viet Nam's experience.

5. Build Capacity on Disability-Inclusive Climate Resilience

- **Short term:** PDMAAs should conduct regular orientations on PSSF implementation; make the tool available in multiple formats with region-specific adaptations.
- **Medium term:** Develop quality training for school management and teachers, incorporated into teacher training curriculums with HEC support.

Conclusion

Pakistan's repeated climate shocks result in long-term social and economic costs, including learning loss, school dropout and school damage. These disruptions are not driven by isolated events, but by recurring, season-specific hazards that interact with local livelihoods and school calendars.

Pakistan has a robust framework of education and climate policies, but they are often implemented in a fragmented manner. The CRSAT builds on these existing frameworks to offer a complementary, more detailed and participatory methodology that enables schools to understand climate and disaster risks in their local context and translate policy into practice. By embedding inclusion, climate risk awareness, and community participation throughout the assessment process, CRSAT provides a solid starting point to operationalise and strengthen the PSSF.

For More Information

Report Authors: Dr Sapana Basnet¹, Dr Zahid Majeed², Dr Muhamad Sulaman Ijaz³, Dr Mahamood Ahamad³, Alexandre Chailloux¹, Itfaq Khaliq Khan², Leena Ahmed², Munazza Gillani², and Dr Elena Schmidt¹.

(1: Sightsavers UK; 2: Allama Iqbal Open University; 3: Sightsavers Pakistan)

Policy brief contributors: Ujala Sarfaraz, Nalini Vaz, Jennifer Williams, Mariana Rudge, Joe Weber, Munazza Gillani and Hannah Loryman.

Report Date: May 2026

This policy brief is based on findings from the report titled: *Climate change hazards, risks and vulnerabilities assessment in schools in Pakistan: piloting a localised participatory assessment*.

Full report available at: <https://research.sightsavers.org/project/dare-climate-change-hazards-risks-and-vulnerabilities-assessment-in-schools-in-pakistan/>

More information about the DARE-RC Programme: <https://darerc.org/>

The DARE-RC project is funded by UK International Development from the UK government. Its implementation is led by Oxford Policy Management in partnership with Sightsavers and Aga Khan University – Institute for Educational Development (AKU-IED).



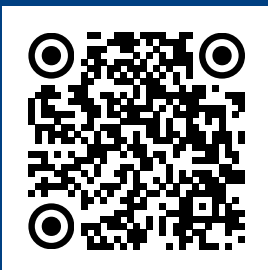
DARE-RC
DATA AND RESEARCH IN EDUCATION
RESEARCH CONSORTIUM
جرائع تحقیق ملے



**UK International
Development**

Partnership | Progress | Prosperity

Scan to find out more



DARE Research Consortium

DARE-RC is Pakistan's largest education research programme, generating rigorous, actionable evidence to improve education policy and practice. DARE's 44 research studies and scoping papers offer critical insights on inclusion, teaching and learning, governance, data, accountability, and system resilience.



DARE-RC is funded with UK International Development from the UK Government and its implementation is led by Oxford Policy Management in partnership with its consortium partners.