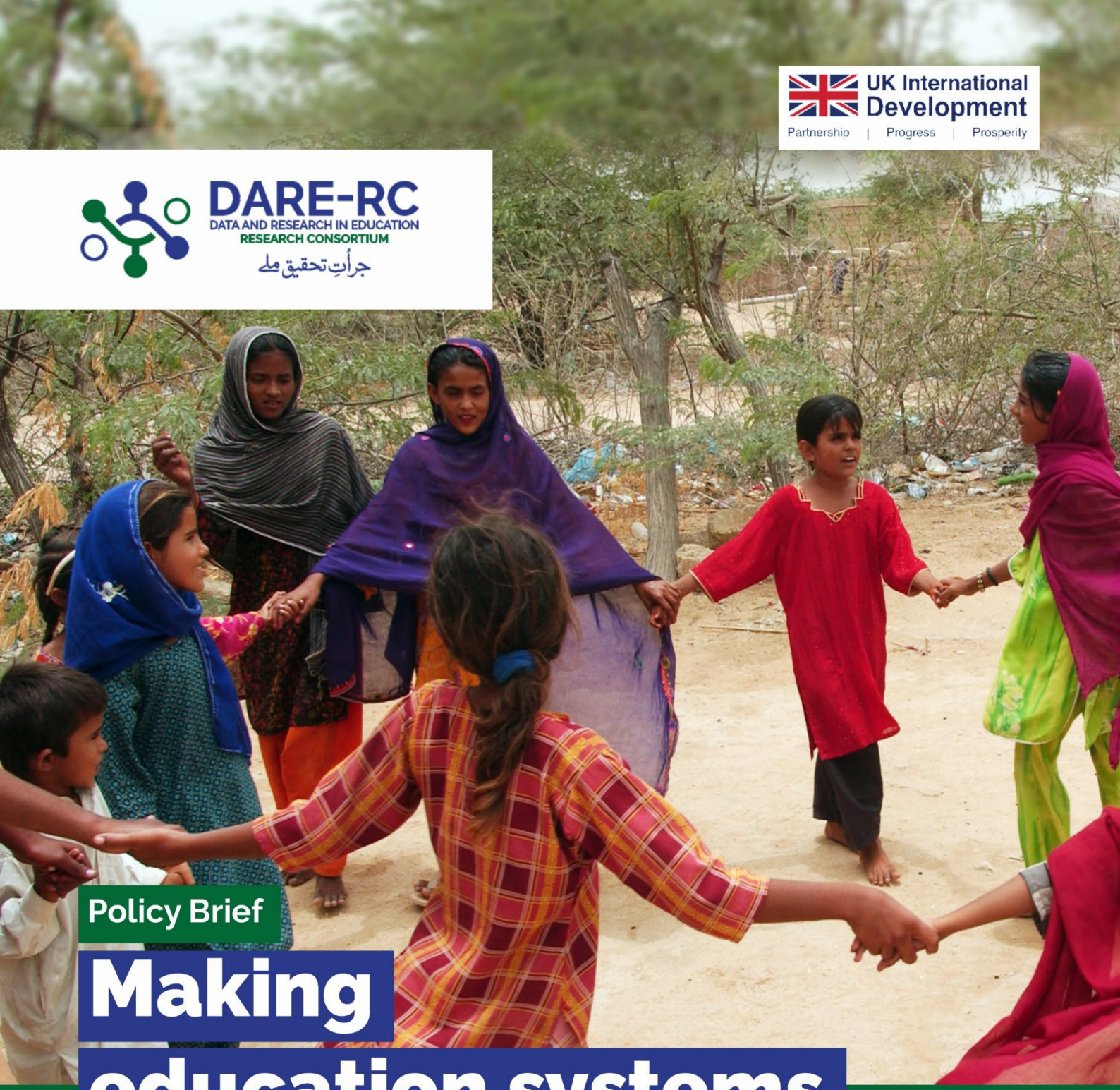

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DARE-RC
DATA AND RESEARCH IN EDUCATION
RESEARCH CONSORTIUM
جرأتِ تحقیق ملے

Policy Brief

Making education systems more resilient to climate impacts

lessons from community-based participatory research in Pakistan

Sightsavers

Introduction

Pakistan's ranking of 14 out of 163 countries in UNICEF's child-focused climate risk index is indicative of the vulnerability of children and adolescents to climate change[1]. Climate -related disasters have exacerbated the ongoing education crisis and inequalities in the country.[2] Despite the high frequency and magnitude of climate change-related emergencies in Pakistan, the implementation of disaster management policies continues to be a challenge, and climate and disaster management policies are often not integrated into education sector policies, and vice versa. Disruptions caused by climate-related disasters therefore continue to hinder provision of high quality, inclusive education, disproportionately impacting those facing social disadvantage, such as young people living in rural areas, low-income families, and children and adolescents with disabilities.

The Data and Research in Education-Research Consortium (DARE-RC) aims to understand the challenges facing Pakistan's education system and explore potential solutions to these issues. The DARE-RC project is funded with UK International Development from the UK government. Informed by our research 'Resilient education system for adolescent learners in Pakistan', this policy brief focuses on the resilience of education system and highlights the importance of understanding the contextual impacts of climate change on learners, educators, families, and communities, and engaging them in the development of more effective policies to increase the resilience of the education sector to climate shocks. Building on existing global frameworks and recent policy developments in Pakistan, this brief suggests opportunities to more effectively mainstream disaster risk reduction, climate change mitigation and adaptation into education policy and planning at national and provincial levels.

Study Methodology

This study explored what resilient education means for adolescents (ages 10–19), their teachers, education authorities, and communities in Pakistan. Grounded in community-based participatory research (CBPR), the study gathered context-specific insights and experiences of climate change-induced disasters and their impact on education continuity, health and wellbeing and how those intersect with the resilience of the education system in Pakistan. Through inclusive and action-oriented methods, this research generated locally relevant evidence that can inform more adaptive, inclusive, and resilient educational practices and policies. The study was conducted in 16 mainstream and 2 special education schools across urban and rural Islamabad, Punjab, and Sindh. Data were collected through 55 focus group discussions, nine key informant interviews, participatory geospatial mapping, and photovoice, and analysed using inductive thematic analysis. A total of 173 participants including adolescent learners with and without disability, 117 parents and 117 teachers participated in FGDs. Nine stakeholders participated in KIIs. Adolescent participants included 75 boys and 73 girls, and all were in year 8 or above. 48 learners and teachers engaged as peer researchers in data collection and findings validation.

[1] **https://knowledge.unicef.org/resource/heat-towards-climate-resilient-education-system-pakistan**

[2] **https://www.unicef.org/rosa/media/17611/file/The%20Heat%20is%20On%20-%20Pakistan.pdfhttps://www.unicef.org/rosa/media/17611/file/The%20Heat%20is%20On%20-%20Pakistan.pdf**

Key study components were:

1. Participatory focused group discussions (FGDs) and community mapping with adolescent learners with and without disabilities;
2. Focus Groups Discussions with teachers and parents;
3. Key Informant Interviews with representatives from education, disaster management and climate change sector from provincial and national level;
4. Geographical information system mapping and photovoice with peer researchers.
5. A validation workshop with key stakeholders from the education, disaster risk reduction and climate change sectors, representatives from I/NGOs, and organisations of persons with disabilities.

Key Findings

The research showed that learners in Pakistan experience an education system with limited resilience to withstand, adapt to and recover from climate-induced disasters.

Adolescents experience a wide range of disasters, which impact their education: study participants had faced floods, prolonged heatwaves, cold spells, and irregular and heavy rain. They also cited broader impacts on their environments, such as smog, industrial emissions and urban pollution. Disasters disrupted teaching and learning, resulting in academic setbacks, school dropouts and increased vulnerability to physical and mental health issues. The impacts of all forms of disaster were worsened by infrastructural constraints at school and community level. Collectively, these disasters caused two to three months of unplanned school closures. **"Every year, there are floods here. It's a huge problem. Schools and houses are destroyed. People from affected areas move to cities or other villages. In such situations, if there's no help, we have to demolish our houses ourselves**." (Male Learner FGDs, rural Punjab)

Mobility barriers as a result of disasters particularly impact girls and learners with disabilities: recurrent rain and flooding damaged infrastructure, including roads and bridges, displacing families and making travelling to school unsafe. This disproportionately affected girls and learners with disabilities, who were more likely to be kept at home due to parental safety concerns. Learners with disabilities were kept off school for extended periods of time, due to mobility barriers and the unavailability of transportation, particularly in rural areas. This exacerbated existing learning disparities and led to school dropouts. School dropouts were reported to be the highest among learners with disabilities enrolled in rural mainstream schools.

"For disabled children, the risk is even higher. They can't come to school on their own as there is not transport…parents have to bring them, but they chose not to." (Teacher FGDs, urban Punjab)

"Girls face different challenges. They often stay at home and aren't allowed to go to school... In Pashtun families, it's harder for girls to continue their education after disaster." (Female Learner FGD, rural Sindh)

Remote education has significant challenges: while teachers made substantial efforts to support continued learning during school closures, including by distributing devices and recording video lessons, adolescents faced major challenges learning remotely, due to lack of electricity, devices, internet connectivity, and of a conducive environment. Girls, children with disabilities and those in rural areas were least able to benefit from remote learning. The study found that some effective responses to these challenges included sharing devices and establishing community or peer-led tutoring. Teachers also reported helping children who lived close by.

"But here we have…issues …no internet. Rural areas don't get proper 4G connectivity. Even if there's electricity, the…internet towers don't work. That's a big issue." (Teacher FGDs, rural Karachi)

"Girls are affected more. For instance, I have a student with an eye problem. She couldn't attend online classes because she couldn't use a mobile phone. When she studies too much, her eyes water. She can't read. (Teacher FGDs, rural Punjab)

Disasters impact adolescents' health, which indirectly impact learning: smog, heat, and flooding harmed physical health, which was worsened by poor sanitation and limited access to clean water. Girls faced added challenges during menstruation, especially in extreme heat. These effects were compounded by loss of homes, livelihoods, and food insecurity.

"In school, when there is an assembly, some students faint due to extreme heat…we don't have any shade on our assembly and playground." (Male Learner FGD Islamabad). "It becomes so hot. The sun comes right on our heads. Hair and clothes are drenched in sweat. We overheat; I get nosebleeds…. 4 to 5 times a day." (Female Learner FGD rural Sindh)

"Girls start facing psychological issues, stress, depression…especially while menstruating during extreme heat. Some become mentally disturbed or emotionally affected". (Female Learner FGD rural Punjab)

Inadequate infrastructure undermines the resilience of the education system: participants identified systemic and structural challenges for climate resilience, including inadequate school, road and transport infrastructure, curriculum gaps, and absence of teacher training focused on climate change, climate resilience and trauma-informed teaching.

"Many schools still operate in dilapidated buildings... lack basic amenities such as clean drinking water and proper shelter... there is a dire need to upgrade buildings with climate-resilient structures like solar panels and rainwater harvesting." (Stakeholder KII)

"The roads are very bad. There's a lot of water…during flood. It becomes hard to walk to school. Our shoes and clothes get dirty. We reach school late because water stays for long after the rain. (Female Learner FGD, rural Sindh)

Lack of opportunities to engage in climate resilience: participants noted a lack of opportunities for learners, parents, and communities to engage in disaster preparedness and climate action. Adolescents and teachers expressed a desire to actively contribute to awareness-raising and school-level planning and disaster preparedness activities. Stakeholders highlighted the need for stronger intersectoral coordination, which is currently missing. Most schools lacked emergency action plans

beyond basic fire and earthquake drills, leaving them unprepared for more frequent disasters. They emphasised that community involvement enhances school disaster planning and resilience.

"Curriculum should include what to do during floods and other emergencies. It should also include how to prepare for those emergencies and what can youth like us to do." (Male Learner FGD, urban Sindh)

"If we're trained and supported, through guides, facilities and resources, we'll empower students and the community too. Then they won't stay home during disaster, they'll know how to face challenges." (Teacher FGD, urban Islamabad)

"Teachers need training in psychosocial support, emergency protocols, inclusive education... School heads should be skilled in local risk assessment..." (Stakeholder KII)

Policy Implications

Although adolescents in Pakistan already experience climate-related disruptions to their education, the intersections between climate change and education have not been fully addressed in either education or climate policy.

- **There is a need to better integrate climate resilience in education policy frameworks, and to improve alignment between education and climate policies**. For example, the **Framework for Implementation of Climate Change Policy (2014-2030)** specifies mitigation and adaptation measures for different sectors **but** only contains limited provisions for the education sector.
- **Strategies for ensuring education continuity during school must be inclusive of learners with disabilities.** This applies to distance education and community learning policies, including the **2023 National Distance Education Strategy (NDES)**[3]**,** which must be implemented in a way that removes barriers to distance learning for the most marginalises students. Similarly, investments in, **Basic Education Community Schools (BECs**) to build their resilience to climate impacts can be an important strategy to ensure continuity of education in times of crisis, including for learners with disabilities and out of school children.
- **Diverse student voices, teachers, parents and communities must be engaged in climate policies and strategies.** Adolescents and teachers in the research showed a strong understanding of the impacts of climate-induced disasters on education and on specific groups of children and can be powerful stakeholders in driving meaningful climate action. The new **Climate Smart Education Systems Initiative (CSESI), funded by Global Partnership for Education (GPE),** is a welcome effort to mainstream climate change adaptation into education. Its workplan should be developed and implemented in consultation with marginalised groups, including learners with disabilities and their representative organisations. This would respond to the study findings that adolescents, teachers and communities' aspirations for meaningful engagement in climate action.
- **The importance of inclusive and effective teacher training and curriculum reform.** The research highlighted gaps in the curricula on climate and an absence of teacher training focused on climate change, climate resilience and trauma-informed teaching. Adolescents

[3] https://pid.gov.pk/site/press_detail/22713

voiced a desire for education that not only informs but empowers them to take climate action. Revisions must be made to the 2021 **National Climate Change Policy (NCCP)** to truly incorporate contextualised climate change into the national education curriculum so that future generations to deal with climate impacts.

- **Inclusive climate resilience requires effective policy implementation.** The experience of adolescent learners is that education access and quality is eroded as multiple disasters disrupt continuity. Policy frameworks need to be evidence-informed address this challenge. **The Pakistan School Safety Framework (PSSF)** is the key instrument in increasing resilience of the education sector and must be fully integrated into ESPs and provincial education budgeting at national and provincial levels. The **National Education Policy Development Framework (NEPDF)** broadly mentions Disaster Risk Reduction (DRR) and provides guidelines for education policies that facilitate inclusion and equity, which must be implemented at provincial level.

Recommendations

1. Integrate climate resilience into education policies and processes, including Education Sector Plans

To ensure a systemic approach to school resilience, provincial education departments and Local Education Groups (LEGs) should:

- ✓ Adopt approaches to climate mitigation and adaptation in schools that are inclusive of all children, including those with disabilities, given their increased vulnerability.
- ✓ Integrate existing climate policy and frameworks, such as Pakistan School Safety Framework (PSSF), and incorporate resilience indicators into provincial ESPs implementation and education monitoring frameworks

2. Strengthen disability inclusion and climate resilience in education data

To understand the impact of disasters in schools, the Education Management Information System (EMIS) should collect data to monitor impacts on school infrastructure and education provision, and school dropout rates among learners with disabilities, who are disproportionately affected.

- ✓ Establish strong coordination between provincial EMIS and PSSF mechanisms to ensure disability and climate resilience data reporting.
  - Include data from PSSF focal points and provincial disaster management authorities in the EMIS
  - A joint **technical working** group representing both EMIS and PSSF may be notified by provincial education departments.
- ✓ Ensure data on marginalised groups and climate vulnerability inform evidence-based policies and budgetary allocations. ESPs should be informed by a disaggregated risk analysis by gender, disability and geography.

3. Enhance intersectoral coordination and policy coherence

While Pakistan has policies addressing education continuity and disaster risk management, they operate in isolation and lack effective interministerial coordination, resulting in fragmented approach. Provincial authorities should:

- ✓ Establish school safety cells/focal points in provincial education departments to institutionalise DRR and climate resilience in education sector. The School Safety Cell that has been established within the Directorate of Elementary and Secondary Education in Khyber Pakhtunkhwa is a good example of this.
- ✓ Establish Inclusive Education-Climate-DRR Working Groups with representation from education, climate and disaster management authorities, organisations of persons with disabilities (OPDs), adolescents and youth, civil society organisations (CSOs), and representatives of School Management committees (SMCs) to formulate provincial "*climate action and education action plans*" and facilitate joint planning.

4. Better Engage Local Government and Community Stakeholders to support adaptation planning in schools

Provincial education departments and disaster management authorities (PDMAs) should:

- ✓ Empower district education offices, local DRR and climate change departments, and SMCs to lead localised risk assessments, hazard mapping, implement preparedness plans, and respond to emergencies.
- ✓ Make equitable budgetary allocations, provide support and training to SMCs and other educational stakeholders on resilience building.
- ✓ Enable faster, context-specific and disability inclusive responses to climate risks, particularly in vulnerable rural and hazard-prone areas through increased engagement of local government actors and community stakeholders, especially OPDs and learners with disabilities**.** For example, indigenous solutions can play a key role in developing early warning systems in disaster prone locations.
- ✓ Strengthen collaboration between development partners and provincial and district governments for the development of climate resilient schools, particularly in disaster prone/affected regions.

5. Incorporate climate change mitigation and adaptation in teacher training curricula

Teachers are critical stakeholders in the response to climate change.

- ✓ Incorporate climate change mitigation and adaptation, as well as elements of school safety and the promotion of sustainable behaviours and psychosocial support in teacher training programmes to prepare educators as frontline responders and advocates.
- ✓ Strengthen investments in community level teacher training initiatives and build their capacity on remote learning practices through policies such as the **2023 National Distance Education Strategy (NDES)**. Provide support to marginalised learners to reduce inequalities in distance learning caused by challenges such as lack of electricity and the digital divide.

6. Incorporate climate change and disaster preparedness and resilience into the national education curriculum

To ensure learners are informed and empowered to take climate action:

- ✓ Embed climate change in the curriculum as part of the 2026 review of the National Climate Change Policy (NCCP).
- ✓ Review the section in 'emerging trends' in the **National Curriculum Framework** to include climate change adaptation and prepare schools and students for climate impacts. Ensure this is also reflected in the **Signal National Curriculum**.

Conclusion

Pakistan is highly susceptible to climate-induced hazards and, while progress has been made towards increasing its education sector resilience, disasters continue to disrupt education. The study highlighted how learners with disabilities, girls, and other marginalised rural communities face greater disruptions to education, leading to many children dropping out or being excluded from school for long periods. The study found insufficient mainstreaming of disability, gender, and geography in efforts to build resilience in the education sector.

To maintain teaching and learning processes and education outcomes at the time of climate-related emergencies, there must be better integration and coordination between climate adaptation and education policies. The study found that schools, particularly those in rural areas, are unprepared to face climate shocks, lacking measures such as emergency action plans and resilient infrastructure. Education policies must therefore do more to incorporate climate change into the curriculum and equip teachers and learners to deal with ever more frequent climate impacts.

This requires a deep understanding of how communities experience and respond to local climate risks, and how different characteristics increase vulnerability to climate shocks. Incorporating the insights of teachers, learners, and local stakeholders is crucial for effective, context-driven climate action in education. By including diverse voices, enhancing cross-sectoral coordination and policy coherence, Pakistan has an opportunity to foster locally relevant solutions and a more resilient education system.

For more information

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

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