POLICY OPTIONS BRIEF:

Climate-resilient education provision in Myanmar

Options for practical, low-cost, and conflict-sensitive climate programming for donors and education partners working in a polycrisis context

Key messages

- **Myanmar is among the world's most climate-vulnerable countries**. Floods, cyclones, extreme heat, drought, landslides, and pollution reduce school attendance, damage schools, affect well-being, and increase learning loss.
- **Climate hazards do not act alone.** They compound—and are compounded by—armed conflict, displacement, economic stress, and fragmented governance. Investments that treat climate adaptation as a stand-alone technical issue risk poor uptake or maladaptation.
- **The most feasible entry points are low-cost and locally owned:** shade and ventilation, water and WASH systems, drainage and flood protection, flexible learning continuity, locally trusted early warning and school safety planning.
- **Donors should fund small, fast, and adaptive mechanisms, not only large infrastructure.** Community-managed grants, rapid repair funds, and locally led pilots (delivered through schools, parent-teacher associations, education service providers, and civil society) can help schools prepare before shocks and reopen quickly afterwards.
- **Success depends on engagement through flexible financing with local stakeholders:** education service providers, civil society organisations, parent/community structures, and decentralised governance actors.

1. THE PROBLEM IN BRIEF

Myanmar faces compounding climate, conflict, and humanitarian crises that undermine children's well-being and education continuity. The country ranks second globally on the Climate Risk Index for exposure to extreme weather events between 1995 and 2024, and UNICEF estimates that more than 91% of children are exposed to three or more climate-related shocks.

Climate hazards such as cyclones, riverine and coastal flooding, extreme heat, drought, landslides, air pollution, and environmental degradation are occurring in a context of armed conflict, mass displacement, fragmented governance, economic stress, and chronic under-resourcing.

Recent events illustrate the scale: Cyclone Mocha (2023) damaged roughly 400,000 buildings in Rakhine State; Typhoon Yagi (2024) flooded vast areas and damaged more than 10,000 schools; and the 2024 heatwave reached 47-50°C, triggering multi-day school closures and over 1,500 reported heatstroke deaths. Climate risks differ sharply across Myanmar's regions, but the underlying pattern is consistent—hazards interact with conflict, economic stress, and weak governance to produce a polycrisis that no single intervention can resolve.

Climate impacts are not only episodic disruptions. They can produce cumulative learning loss, as well as long-term dropout, through repeated closures, shortened school days, poor classroom conditions, illness, unsafe travel routes, damaged learning materials, and additional burdens on teachers.

The central policy problem is therefore not simply how to "climate-proof" school buildings. Rather, it is how to support schools, networks, systems, and communities to anticipate, respond to and recover from shocks in a context where formal authority, operational capacity and local legitimacy are distributed across a variety of actors. For donors and education partners, this means prioritising practical options that can be delivered through trusted local structures, adapted to regional hazards, and screened for conflict-related risks.

Source note: This brief is based on the rapid evidence review *Intersectional linkages between climate effects and education provision in Myanmar* (ERICC Helpdesk, 2026), including its desk review, 26 stakeholder consultations, regional risk analysis, intervention review and recommendations.

2. DECISION LENS FOR POLICY OPTIONS

The brief assesses options against five criteria that are relevant to Myanmar's current operating environment:

1. **Education effect**: The likely contribution to access, continuity, and learning.
2. **Feasibility**: Whether the option can be implemented through local actors under conflict, access, and supply-chain constraints.
3. **Cost profile:** Relative affordability, including whether the option can be piloted through small grants.
4. **Speed:** How quickly the option can reduce risk or support school reopening.
5. **Equity:** Relevance for displaced learners, girls, children with disabilities, and remote communities.

3. POLICY OPTIONS

The brief identifies five non-exclusive options. Table 1 summarises each option's core idea and the dimensions on which it should be addressed; the narrative that follows develops each option, with key trade-offs highlighted at the end of each.

Table 1. Options at a glance

Policy option	Core idea	Potential impact	Feasibility	Time horizon	Bottom line
Option 1. Locally adapted climate-resilient infrastructure	Upgrade school and community learning spaces using low-cost, locally sourced, and risk-informed designs: shade and ventilation, improved roofing, drainage, and retaining walls.	High	Medium-high	Medium	Foundational option for access and quality; needs careful conflict-sensitive design.

Policy option	Core idea	Potential impact	Feasibility	Time horizon	Bottom line
Option 2. Flexible and adaptive learning continuity	Protect learning time through adjusted schedules, creating temporary/community spaces and programming such as remote or hybrid learning and catch-up support.	High	Medium	Short	Best immediate option where infrastructure cannot be quickly improved.
Option 3. Early warning and school safety	Embed early warning, evacuation, rapid repair, pre-positioning, and drills in school safety systems.	High	Medium	Short–medium	High value because it links climate adaptation with existing civilian protection systems.
Option 4. Climate-resilient WASH, water storage and school health	Improve drinking water, sanitation, rainwater harvesting, filtration, drainage, and seasonal health readiness.	High	Medium–high	Short–medium	Especially relevant for heat, drought, flooding, disease prevention and girls' attendance.
Option 5. Climate literacy and community environmental action	Integrate climate and environmental awareness into curricula, teacher training, school gardens and local adaptation activities.	Medium	High	Medium–long	Important for ownership and behavioural change but insufficient without material support.

Option 1. Invest in locally adapted climate-resilient infrastructure

Rationale: School infrastructure is central to both education quality and climate adaptation. In Myanmar, many school and temporary learning structures are exposed to floods, storms, heat, landslides, and conflict-related hazards. Practical measures include shade trees (lowering ambient temperatures by 1–5°C), natural ventilation (building orientation, windows, airflow design), locally appropriate materials (bamboo, hempcrete, clay-based construction), raised foundations, improved roofing and reflective rooftop coatings (2–5°C indoor cooling), retaining walls, drainage, and sandbags.

- Fund community-led school repair and adaptation grants for context-specific upgrades.
- Support local education authorities, service providers, civil society, and school committees to develop simple school construction and maintenance guidance that addresses climate risks.[1]
- Require site-level risk screening before construction or repair, including flood, landslide, heat, water access, shelter use, and conflict exposure.
- Prioritise locally available materials and designs that communities can maintain without fragile external supply chains.

[1] Myanmar-specific examples include the Karenni Interim Executive Council school construction guidelines and the Karen National Union Kawthoolei Climate Action Plan. Global references include the Safer School Construction Guidance from INEE, GFDRR and the World Bank, and the Disaster Risk Management & School Resilience Manual from UNICEF (Zimbabwe).

Key trade-offs for Option 1:

- White or reflective roofing can reduce heat, but visible roofs may be inappropriate where schools face airstrike risk.
- Thatch or bamboo can improve cooling but may increase fire, storm, or durability risks unless well designed.
- Shade tree species and planting locations must be chosen with communities, otherwise community ownership is likely to be negligible.
- Using schools as shelters can protect communities but may prolong education disruption unless temporary learning arrangements are pre-planned.

Option 2. Design flexible and adaptive learning continuity models

Rationale: Climate shocks affect education through closures, shortened days, damaged routes, displacement, and teacher workload. Learning continuity measures are often faster and cheaper than major construction and can be implemented even where infrastructure investment is constrained.

- Develop school-level learning continuity plans that specify what happens during heatwaves, floods, storm, haze, displacement, or insecurity.
- Support adjusted timetables, morning instruction, outdoor shaded lessons (combating heat) where safe, community learning spaces, and temporary learning arrangements following shocks.
- Fund catch-up tutoring, small-group remediation, and teacher guidance after closures or prolonged absences; school feeding programmes can also sustain attendance during climate-driven food insecurity.
- Use low-connectivity and context-specific modalities: printed packets, radio, community-based instruction, messaging apps, online platforms, or satellite-supported (Starlink) learning where appropriate.
- Provide weather-adapted access support such as rain gear (umbrellas, rain boots), waterproof bags and floating backpacks (for flood-prone areas), and learning kits where these directly reduce absenteeism.

Key trade-offs for Option 2:

- Flexible calendars can reduce exposure to floods or heatwaves but may also reduce instructional time or shift schooling into another hazardous season.
- Remote learning can protect continuity but will widen inequities if electricity, devices, connectivity, and teacher support are not addressed.
- Catch-up programmes are effective only if teachers are supported; otherwise they add uncompensated workload.

Option 3. Embed early warning and school safety

Rationale: The strongest climate-education programming shifts from reactive response to anticipatory action. Relevant measures include early warning, evacuation protocols, school safety planning, pre-positioned supplies, rapid repair funds, and integration with civilian protection structures. In conflict-affected areas, climate preparedness must align with trusted local actors and existing protection systems.

- Support school safety plans that include climate hazards, conflict risks, evacuation, shelter management, WASH, child protection, and disability inclusion.
- Invest in trusted local early warning channels, including community networks, education authorities, civil society organisations, and, where appropriate, local governance systems.
- Pre-position supplies before predictable seasons: learning materials, water purification, basic repair materials, hygiene supplies, seasonal medicines, seeds, and temporary learning kits.
- Create fast-access school recovery funds for cleaning, minor repairs, WASH restoration, and temporary learning spaces following shocks.
- Run regular drills and scenario planning with teachers, students, parents, and community leaders.

Key trade-offs for Option 3:

- Early warnings only work if communities trust the source and have realistic options for action.
- Evacuation planning must consider landmines, checkpoints, airstrikes, disability access, and gendered protection risks.
- Preparedness systems can become paper exercises unless paired with small operational funds.

Option 4. Prioritise climate-resilient WASH, water storage, and school health

Rationale: Water scarcity, heat, flooding, contamination, and waterborne disease directly affect attendance, concentration, dignity, and safety. WASH is therefore a high-value education intervention, not only a health intervention. Practical entry points include water tanks, rainwater harvesting, filtration, drainage, sanitation, and disease preparedness.

- Fund water storage, rainwater harvesting, basic filtration, and safe drinking water systems in schools and temporary learning sites.
- Integrate WASH into school adaptation grants, including gender-responsive sanitation and menstrual hygiene where relevant.
- Improve drainage and sewage management in flood-prone schools to reduce contamination and post-flood disease risks.
- Plan for seasonal health risks: heat stress, dehydration, dengue, malaria, waterborne illness, respiratory illness from haze, and mould-related illness after flooding.
- Link WASH improvements with attendance monitoring so providers can identify whether water or sanitation constraints are driving absenteeism.

Key trade-offs for Option 4:

- Water infrastructure may be difficult to maintain without local technical ownership and recurrent funding.
- Strong community involvement, ownership, and oversight is needed to sustain WASH systems and prevent infrastructure from being stolen or falling into disrepair.
- WASH systems in displacement sites need to be designed for mobility, crowding, and protection risks.
- Climate-resilient WASH can be overlooked if donors separate education, health, and infrastructure budgets too rigidly.

Option 5. Strengthen climate literacy and community environmental action

Rationale: Climate adaptation requires community ownership and awareness. In Myanmar, some local actors already support environmental education, school gardens, tree planting, local natural resource protection, and climate-related curricula. These activities can strengthen long-term resilience, but they should not substitute for material investments in safety, WASH, and learning continuity.

- Support locally developed climate and environmental curricula, teacher training, and age-appropriate learning materials, working with education authorities, teacher preparation centres, and civil society.
- Use school gardens, tree planting, agroforestry and waste reduction as practical learning activities linked to nutrition, shade, and community resilience.
- Connect climate learning with local livelihoods, climate-adapted agriculture, indigenous knowledge, natural resource management, local energy, and disaster preparedness.
- Promote whole-school approaches (visible environmental improvements, reduced plastic waste) and green skilling.
- Create youth and community micro-grants for environmental action around schools, especially where linked to local education plans.
- Address human-induced environmental drivers through community-led natural resource governance.
- Document and share local adaptation practices across education providers and civil society.

Key trade-offs for Option 5:

- Awareness activities can become symbolic if not linked to practical risk reduction.
- Curriculum work should avoid overburdening teachers and should be adapted to local languages and political contexts.
- Environmental action may touch contested resource governance issues and must be handled conflict-sensitively.

4. RECOMMENDED POLICY PACKAGE

The recommended approach is a phased package rather than a single option. Donors and implementing partners should start with locally led diagnosis and small, flexible financing, then build toward more systematic infrastructure and policy alignment. Table 2 summarises the phasing.

Table 2. Three-phased package

Phase	Indicative timing	Priority actions
Phase 1: Diagnose and prepare	Short	Map school-level risks; consult local education authorities, civil society, teachers, parents, and students; identify priority hazards by region; set up small grants and rapid repair mechanisms.
Phase 2: Protect continuity	Medium	Implement school safety plans, early warning links, temporary learning arrangements, WASH improvements, teacher support and catch-up programmes.
Phase 3: Upgrade systems and infrastructure	Long	Scale locally tested infrastructure models, develop construction/maintenance guidance, integrate climate risk into coordination frameworks, and support climate literacy and green skills.

Recommended prioritisation:

- **For immediate donor programming:** combine Option 2 and Option 3. These are relatively fast, low-cost, and feasible under access constraints, especially if paired with small operational funds.
- **For high-risk schools and displacement settings:** add Option 4 as a core education investment because water, sanitation, and school health affect attendance, dignity, and learning conditions.
- **For medium-term resilience:** invest in Option 1 through locally led pilots and prototype designs before scaling.
- **For longer-term system change:** use Option 5 to build awareness, local ownership, and community adaptation capacity, while avoiding symbolic programming that lacks material support.

Climate risk and education vulnerability vary sharply across Myanmar's regions, and one-size-fits-all programming is unlikely to be effective. Table 3 sets out priority hazards and best-fit adaptation entry points by region; investments should be tailored accordingly.

Table 3. Regional targeting considerations

Region	Primary climate risks	Priority adaptation entry points
Central Dry Zone (Mandalay, lowland Sagaing, Magway)	Extreme heat, drought, water scarcity, erratic rainfall.	Shade, ventilation, rainwater harvesting, water storage, WASH, adjusted timetables, agroforestry/school gardens, heat-health guidance, reflective roofing only where airstrike risk is low.

Coastal regions (Ayeyarwady, Mon, Rakhine, Tanintharyi, Yangon)	Cyclones, storm surge, flooding, salinisation, mangrove loss and humid/wet-bulb heat.	Elevated/stilted classrooms, drainage, cyclone-resilient shelters, cyclone-aware school safety, temporary learning spaces, trusted early warning and evacuation systems, mangrove/coastal restoration partnerships.
Upland and hilly regions (Chin, Kachin, Shan, upland Sagaing)	Landslides, flash floods, drought, water scarcity, wildfires, and environmental degradation from extraction/logging.	Retaining walls, slope stabilisation, drainage, flexible calendars, community learning spaces, radio/community learning, safe access support.
Southeastern Myanmar (Mon, Kayah, Kayin, Bago, Tanintharyi)	Flooding, landslides, extreme heat, seasonal haze/pollution.	Civilian protection-linked early warning, temporary learning and catch-up, school feeding, WASH, climate-adapted shelters, community learning spaces, disaster risk reduction training.

APPENDIX 1. COST EFFECTIVENESS AT A GLANCE

This appendix consolidates indicative, cost-effectiveness ratings for individual interventions drawn from the source evidence review. Ratings are illustrative—actual costs depend on local conditions, supply chains and conflict access.

Very high priority (high impact, very low cost)		
Intervention	**Indicative cost**	**Why it ranks high**
Adjusting academic calendars and schedules	Minimal	Immediate reduction in exposure to peak heat or flooding; works with existing systems.
Community engagement and parent-teacher association involvement	Minimal	Enables localisation, uptake and sustainability across all other interventions.
Tree planting for shade	~US$0.33/student	Clear temperature and learning benefits; community-led; locally appropriate species.
Rainwater harvesting (basic systems)	Low	Strong WASH impact; simple, scalable; integrates with existing community projects.
Disaster preparedness training	~US$4.19/student	High impact on safety and continuity; integrates with existing civilian-protection structures.
Flexible / temporary learning spaces	Low	Maintains continuity during shocks; depends on shelter resilience.
High priority		
Intervention	**Indicative cost**	**Why it ranks high**
Use of local / natural materials	Low	Reduces construction costs and improves thermal comfort; choice of material must match hazard profile.
Bioclimatic school design	Low (if integrated early)	Long-term comfort and energy benefits; pairs well with airstrike-safe design.
Sandbags and small barriers	Low	Effective short-term flood protection; not effective in flash floods.
Environmental restoration (forests, mangroves, wetlands)	Low (per unit)	Cost-effective at scale; multi-benefit (flood control, livelihoods, microclimate); slower payback.
Climate and environmental education	Low–medium	Builds long-term adaptive capacity; many grassroots and ethnic education-led efforts already underway.
School feeding programmes	Medium–high	Strong attendance and protection benefits; recurring cost reduces marginal cost-effectiveness.

Medium priority (higher cost or more context-dependent)		
Intervention	**Indicative cost**	**Why it ranks high**
Water storage and WASH infrastructure	Medium	Critical for health and learning; requires upfront investment.
Elevated / stilted classrooms	Medium	Effective in flood zones; needs early design integration.
Early warning systems	Medium	High potential impact; depends on trust in the issuing source (military-issued alerts often distrusted).
Retaining walls (landslide protection)	~US$22/student	Targeted, location-specific protection.
Reflective (white) roof coatings	~US$0.66/student	Strong cooling evidence; potential increased airstrike risk and supply-chain constraints in conflict areas.
Remote learning systems	Medium	Effective where connectivity exists; requires specialised teacher training.