


**SHULE BORA**

Quality learning for all children


**UK International  
Development**

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# Building future ready schools – climate resilience and inclusion

When schools are built for the future, every child can learn and thrive, even in times of crisis.

Tanzania's schools are facing increasing environmental challenges, floods, heat, droughts and landslides that disrupt learning and disproportionately affect the most vulnerable children. While impacts on education outcomes from climate change are underrepresented in the climate change literature, evidence shows: an adverse relationship between heat and learning; floods halt learning; and days of school closure equal days of lost learning (Marin et al, World Bank 2024:39). Shule Bora is working with the Government of Tanzania to build schools that are climate-resilient, inclusive and safe for all learners – minimising learning loss.

## The challenge

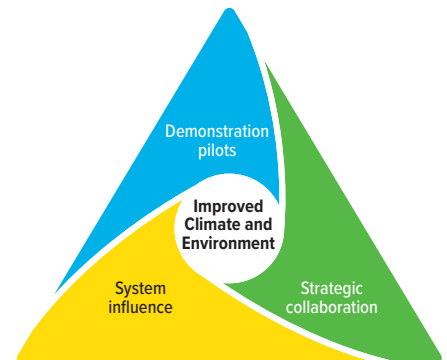
Environmental pressures are growing across Tanzania:

- Floods, droughts, and landslides threaten school buildings and access routes
- Many schools lack shaded areas, adequate ventilation or emergency preparedness plans
- Poor air quality, cause by widespread use of firewood, impacts children's health and learning
- Children with disabilities are most at risk when disasters strike, yet are often overlooked in climate resilience planning

## Shule Bora's approach

Shule Bora is working with the Government of Tanzania to develop a holistic strategy to achieve learning objectives in challenging environmental conditions. Drawing attention to the links between climate and learning, identifying where risks are greatest, and developing scalable solutions helps influence decision makers to expand impact beyond where Shule Bora is directly supporting.

Shule Bora has developed a series of innovations that together have presented a new approach for how national and local decision makers can address climate challenges in a way that contributes to more a more future-ready, resilient and effective education system. Central to the approach are three areas:



### 1. Using data to better drive understanding of climate risk:

**Shule Bora**, in partnership with EdTech Hub, has developed a climate risk mapping tool to help local authorities map the risks and impact of climate change and understand where their priorities for intervention should be. It acts as an early warning system for events such as floods and drought, and can lead to better disaster preparedness and resilience in schools. Our relationships and understanding of local government dynamics has helped situate this tool better with key decision makers, creating space for it to be used more and have greater impact.

**2. Cost-effective school-based climate innovations:** Working with Government to develop and pilot a series of low-cost, scalable innovations that can respond to common climate challenges.

### 3. Influencing people, processes and practices:

The innovative tools and approaches to school infrastructure and school feeding are encouraging, but for the innovations to have a significant impact, they need to demonstrate results beyond where we are directly supporting. Therefore, as part of our innovations, we have clear approaches to influencing people, processes and practices. These include:

- Using the infrastructure innovation demonstration to influence the adoption of new construction and preventative maintenance standards across the country.
- Using local government experience of climate risk mapping in Shule Bora supported local governments to help diffuse the use of the tool elsewhere.
- Advocating and supporting the development and inclusion of a climate-education related indicator in the multi-donor payment for results framework to incentivise scaling.

### Why it matters

A school that is not climate-resilient is a school that risks being unsafe, inaccessible, or even unusable.

When infrastructure fails, or heat and flooding disrupt lessons, it's the most vulnerable children, especially girls and those with disabilities, who are first to drop out.

By building safer, climate-ready schools, Tanzania is also building a more inclusive and equitable education system.

### What's next?

Shule Bora and the Government of Tanzania are focused on:

- Scaling resilient infrastructure designs through new builds and retrofits
- Mainstreaming disaster preparedness into all schools
- Embedding climate and environment into national education planning, with an explicit focus on inclusion

## CASE STUDY: BAHU

In Bahu, a semi-arid district in Dodoma region known for high temperatures, strong winds and infrequent heavy rains, Shule Bora has introduced infrastructure innovations solutions to cool classrooms, reduce wind damage, dampen rain acoustic, and enhance learning conditions. Innovations include:

- Replacing traditional dark corrugated iron roofs with white roofs that reflect 70% of heat, lowering classroom temperatures by up to 5 degrees, which can improve learning outcomes by up to 10% (Wargocki et al. (2019).
- Installing larger window and vents to enhance ventilation and reduce heat buildup.
- Installing a rainwater harvesting system to provide a reliable supply of a clean water in arid conditions; and
- Planting trees around the school to stabilise the soil, and act as windbreakers to protect the infrastructure.

Rehabilitating the 18 existing classrooms has proven more cost-effective than building new infrastructure. The cost has been approximately 300 million Tanzanian Shillings (TZS) (approximately GBP 90,000), in comparison to 600 million TZS that is typically spent to build a new school with six classrooms.



ABOVE: Hon. Mohammed Mchengerwa, Minister of PO-RALG (fourth from right) officially inaugurated climate resilient classrooms next to the British Deputy High Commissioner, Ms. Sally Hedley (third from right).

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Shule Bora is a six-year programme (2021 – 2027) funded by UK International Development with technical assistance provided by Cambridge Education. The programme is led by the government of Tanzania, and its aim is to improve the quality of pre-primary and primary level government schools by enhancing teaching, inclusiveness, and safety. Shule Bora works in partnership with the Ministry of Education, Science and Technology (MOEST), the President's Office, Regional Administration and Local Government Tanzania (PO-RALG) and its agencies.