A student at a public secondary school in the Atsimo Andrefana region observes the damage done by Cyclone Freddy in 2023. Approximately 90,000 students had to stop classes for an extended period because their schools were damaged by high wind speeds or flooded by rising waters from Cyclone Freddy. ©UNICEF/UN0845809/Andriantsoarana

unicef
for every child

Innovative finance reshaping cyclone resilience and child-responsive disaster management

in Madagascar

Children's lives and futures at risk

Madagascar

Extremely high child climate risk*

Child climate risk: Hazard exposure + vulnerability

* UNICEF's Child Climate Risk Index (CCRI).

10th/163

Ranking out of 163 countries for risk**

** Ranking is 1 to 163. Thus, a higher ranking (closer to 1) means children face the highest climate risks in that country.

Floods, cyclones, vector borne diseases and heatwaves create extremely high risks to children in Madagascar

In Madagascar, severe cyclones have become an integral part of children's lives. Between 2000 and 2024, more than 50 tropical storms and cyclones have impacted over six million boys, girls and adults.[1] In 2021 alone, 12.9 million children were exposed to tropical cyclones.[2]

Given that nearly 60 percent of Madagascar's population (31 million) is under the age of 25,[3] children and young people bear a disproportionate burden. They face disrupted education, food insecurity, displacement, psychological and physical health risks, compromised livelihoods, and increased or new protection risks. Cyclone impacts threaten children's rights now and their futures.

81%

In Madagascar, tropical cyclones account for 85% of annual losses from natural hazards, costing an average of $87 million/USD yearly and up to $810 million/USD for a 100-year event. Emergency costs can reach $190 million/USD. These losses can equate to 4% of the country's gross domestic product (GDP).[4]

If current cyclone trends persist, children will face increasing threats to their well-being, especially the nearly 81% percent of children living in poverty.[5]

Innovative solutions are critical to protecting and empowering children, households and communities in situations of vulnerability. New ways of protecting children are needed to reduce suffering and build resilience from increasing cyclone severity, frequency and geographical breadth.

Today & Tomorrow approach

UNICEF, the Government of Madagascar and civil society are working together to pilot a ground-breaking finance solution that includes a child-responsive parametric risk finance mechanism.

The Today & Tomorrow approach aims to reduce child exposure and vulnerability to future shocks and hazards, engage children and young people in solutions and strengthen the essential social systems and services they rely on most.

UNICEF projects that Today & Tomorrow will protect 13.5 million children and families from current and future damage wrought by climate change. It plans to do so through the Humanitarian-Development-Peace Nexus (HDPN), a holistic approach to delivering better results for children by meeting short-term humanitarian goals, incorporating longer-term development actions to build resilience and minimizing conflict exacerbated by climate impacts.

1 billion

# of children and young people at extremely high risk from climate impacts

Madagascar's overall response to cyclones typically involves allocating funds to specific sectors for an average duration of six months. The Today and Tomorrow approach introduces a more flexible funding model to address multi-hazard risks. It aims to strengthen the resilience and preparedness of children, communities and infrastructure—including risk reduction before a tropical cyclone hits—and accelerate a quicker response and rebuilding back better in recovery.

Building back better means that disaster recovery, rehabilitation and reconstruction enhance the resilience of individuals, households, communities and infrastructure, such as by incorporating climate change adaptation (CCA), climate change mitigation (CCM) and disaster risk reduction (DRR) measures.

The Today & Tomorrow Pilot

UNICEF announced Today & Tomorrow as a 2023-2025 pilot at the United Nations Framework Convention on Climate Change (UNFCCC) 27th Conference of the Parties (COP27). It is co-designed by UNICEF and WTW's Climate and Resilience Hub with the support of public and private sector partners, including Germany's BMZ and UK's FCDO under the Global Shield Financing Facility. The Tomorrow component features an innovative, parametric risk transfer product for tropical cyclone risk to provide protection for an estimated 13.5 million children, youth, women and parents within the first 3 years (2023-2025). After the pilot phase, the approach is expected to scale to more countries and utilize risk financing tools to cover other hazards, such as earthquakes, floods and drought.

The high cyclone-risk regions and countries in the pilot are the Caribbean (Haiti), Eastern and Southern Africa (Comoros, Madagascar, Mozambique), Asia (Bangladesh) and the Pacific Islands (Fiji, Solomon, Vanuatu).

In 2023, the pilot released more than $4 million/USD in Tomorrow insurance payouts triggered by cyclones in 7 of the 8 countries.

After Cyclone Gamane in March 2024, a UNICEF Madagascar staff member distributes school kits to students in the Sava region, Northern Madagascar. The school aids ensured education continuity for 11,500 students in the areas hardest hit by the cyclone. © UNICEF/UNI573276/Andriantsoarana

"In Madagascar, we're seeing that children's greatest needs are more effectively addressed when we work on humanitarian response and development interventions in a complementary manner."

Anneleen Van Uffelen, UNICEF Madagascar
Climate, Environment, Energy and Disaster Risk Reduction (CEED) Specialist

Today funding

**15$** ← 1$

saved in post-disaster recovery for every $1/USD invested in risk reduction & prevention*

The **Today** funding supports cross-sectoral, integrated child-centered preparedness, anticipatory action, early warning, CCA, CCM and DRR. UNICEF Madagascar can act today to avert, prevent and minimize future climate and disaster risks that lead to disasters as a result of cyclones while building a low-carbon future and strengthening practical solutions for longer-term resilience. The funding aims to exponentially increase the ultimate return on investment compared to the business-as-usual disaster response.[6]

Tomorrow funding

**4$** ← 1$

saved for every $1/USD invested in disaster-resilient infrastructure*

*UNDRR

Through the **Tomorrow** component's parametric insurance coverage, UNICEF Madagascar receives cyclone disaster response funding based on the pre-defined Child Cyclone Index (CCI) criterion of wind speed and child population. These payouts complement regular humanitarian aid and enable faster response; the budget corresponding to the amount of the payout funding from the insurance policy for *tomorrow's cyclone disasters* is normally released within 72 hours after a triggering cyclone event has been confirmed and the respective event report has been issued. The rapid-payout insurance scheme allows UNICEF and partners to meet the immediate disaster response and sustainable recovery needs of affected children and communities in a timelier manner, preventing the trigger of additional negative impacts such as disease outbreaks or malnutrition.

Madagascar funding

Broadly, the Today Component allowed UNICEF and its partners to:

- Enhance **climate and multi-hazard resilience** in schools and education services.
- Engage **youth in green entrepreneurship** to contribute to solutions for a better future.
- Provide a **surveillance and management system for childhood illnesses** that are sensitive and aggravated by climate change.
- Implement **community DRR measures** involving children, young people and teachers, including establishing child-focused early warning systems and school-based disaster preparedness.
- Strengthen the capacity of the national **social protection system** to adapt to climate change, with the aim of including climate vulnerability indicators in the social registry.

Since 2023, three tropical cyclones and one storm[7] triggered over $1.6 million/USD.

The Tomorrow Component included the following:

- **Conduct post-disaster assessment and data collection** of damage, losses and needs to identify and evaluate insurance and recovery across sectors.
- Provide **education supplies** (e.g., tents, tarps, school and recreation kits, early childhood development [ECD] kits, learning materials, blackboards and school tables).
- Provide **water, sanitation and hygiene** (**WASH**) **materials** (e.g., water filters, handwashing devices, WASH kits and water purification products).

2023
Cyclones Cheneso & Freddy

175 km/hr ..... Max wind speed
277,000..... People affected
88,000 ..... People displaced
181,537..... Students' education disrupted

2024
Tropical Storm Alvaro & Cyclone Gamane

165 km/hr ..... Max wind speed
238,000 ..... People affected
22,000 ..... People displaced
13,000 ..... Students deprived of education 3+ weeks

- Provide **nutrition response** (e.g., Severe Acute Malnutrition [SAM] treatment and Infant and Young Child Feeding [IYCF]).
- Provide **child protection services** (e.g., actions to prevent violence and family separation in humanitarian situations).
- Provide affected communities with **mental health and psychosocial support** (**MHPSS**) and counselling for children in affected areas.
- Promote **sustainable, climate-resilient recovery and reconstruction**.
- Provision **medicine** to ensure continued access to health services.
- **Restore, rehabilitate and rebuild infrastructure** to be resilient to climate-related shocks. This includes cleaning and disinfecting wells, reinforcing natural dykes, reforesting coastal flood defence, installing temporary schools and healthcare centre roofs and replacing school roofs.
- Improve cyclone **communication and awareness** with Social and Behavior Change (SBC) interventions.
- Assure **transport of lifesaving materials and services** in emergency response to hard-to-reach locations.
- Improve the coordination of **Madagascar's Education in Emergencies Sector Group** at all levels.

Jacky Roland Randimbiarison,
UNICEF Madagascar Emergency Programming Specialist

"One of the greatest challenges we face in Madagascar is that the damage to schools often surpasses the resources available for sustainable recovery during a humanitarian response, as it is a complex challenge. We need greater capacity to build disaster-resilient schools and longer funding periods than the traditional three-to-six-month cycle in humanitarian response. While we build back better where possible with the parametric insurance funding, a greater effort for climate finance is imperative for safer schools nationwide."

After Cyclone Freddy, young students in the southeast of Madagascar take a break from studying in front of their temporary shelter. ©UNICEF/UNI420108/Andriantsoarana

Resilient education

Madagascar's education system is under tremendous strain. In 2022, the primary school completion rate was 62% for girls and 57% for boys.[8] The increasing severity of cyclones exacerbates this learning crisis and threatens children's right to quality education.[9]

Recurring cyclones and severe tropical storms significantly impact children's education, exacerbating existing inequalities and risks.[10] They can:

- Damage school facilities and make classrooms unfit for teaching.
- Displace children and their families.
- Increase poverty and threaten livelihoods, which can force children and parents to adopt negative coping strategies such as engaging in risky behaviour, marrying girls and boys and increasing child labour.

- Strain education authorities, increase teacher-student ratios and create learning challenges in crowded classrooms.
- Undermine teachers' ability to provide quality education.
- Strain government resources, making investing in resilient education systems harder.
- Create mental and physical health issues, which can reduce children's ability to engage in learning, and attend school.

200,000
students

affected in Madagascar by Cyclones Cheneso, Freddy and Gamane and Tropical Storm Alvaro

Globally, climate-related disasters disrupt the education of 40 million children a year.[11] In Madagascar, Cyclones Cheneso, Freddy and Gamane and Tropical Storm Alvaro affected nearly 200,000 students. To support them and build resilience in affected communities, UNICEF directed approximately $1.45 million/USD to the education sector.

Madagascar's efforts are driven by the *National Contingency Plan of the Government and the Inter-Agency Standing Committee*, led by the Ministry of the Interior and Decentralization and the National Office of Risk and Disaster Management. Using this plan, various groups—including those in the Education in Emergencies Sector Group—formulate their own sector-specific contingency plans with detailed guidance on mitigating, preparing for and responding to emergencies.
The Education in Emergencies Sector Group's plan guided which activities UNICEF funded with the parametric insurance payouts. This plan helped fill financial gaps from traditional, non-flexible funding sources and allowed UNICEF to reach a more significant number of vulnerable children and families in underserved communities.

The previously established emergency sector groups create a unique opportunity for government partnerships in Madagascar. As UNICEF and the Ministry of Education (MoE) have co-led the sectorial group since 2006, they built on this solid foundation to pilot the Today & Tomorrow approach together. In an emergency, UNICEF Madagascar provides technical, financial and logistical support to the MoE to ensure education resumes quickly after the event.

Nady (13), a 4th-grade student affected by Hurricane Freddy

"The water level rose very quickly in our neighbourhood, and we were forced to temporarily move into my grandmother's house as it is better fortified. I'm happy to reunite with my classmates, even though I haven't fully regained my motivation to study due to this long interruption."

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Cyclone response and sustainable recovery in education

From the Today & Tomorrow 2023-2024 parametric insurance payouts, UNICEF's education sector provided:

20,000
Emergency kits for 20,000 children

250
Mental health and psychosocial support training (MPHSS) to 250 educators

1,000
Back-to-school learning training for more than 1,000 teachers, parents and directors

10,000
Building supplies and furniture to return 10,000 students to school (e.g., metal sheet, 1,000 school tables, 800 blackboards)

3
Restoration, rehabilitation and rebuilding of three educational buildings

Building climate resilience in education

For resilience building, UNICEF and its partners provided:

- Cyclone preparedness training for 120 local stakeholders, including authorities, communities and students.
- Six containers of provisional supplies to be stored at district levels (e.g., school kits, tents, tarps, blackboards, etc.).
- Reforestation through UNICEF's 'One child, One tree' programme. Data collection on absences and school dropouts, a community feedback mechanism on child impacts and child-centred early warning systems.
- Integrated child protection prevention and response services (child protection monitoring, case management services for victims, etc.)
- Social and Behaviour Change (SBC) activities to raise student and community awareness on prevention and measures to take before, during and after the passage of a cyclone.
- DRR/CCA club training to 250 educators (with 60 school clubs established).

Razanantsoa Germaine Nadia, Secondary School Director, Anosivelo

Mental health and psychosocial support training

"We now know what to do when children and parents ask us about stress, child abuse in everyday life or other problems after a disaster. It is mandatory to listen to the children and consider their concerns to improve their performance at school despite the various stresses surrounding them. This training allows us to improve our way of teaching and communicating with students and parents."

©UNICEF Madagascar/Olivas Josias Ratsimbazafy

Adolescent engagement spotlight

DRR and CCA clubs strengthen child awareness and resilience

After Cyclone Freddy, in the cyclone-prone Fitovinany region, Christinah (15) and Rubin (17) joined their school's DRR/CCA club. This club was one of 60 clubs with 1,200 members established through the Today & Tomorrow pilot. Each club is led by a teacher trained by UNICEF in mental health and psychosocial support (MHPSS) and how to set up and run DRR/CCA clubs.

Despite their community being repeatedly hit by cyclones, Christinah and Rubin said they were unprepared until they joined the club, which has 20 student members at their school. They quickly became active and led initiatives to create a safe and healthy school environment. For instance, before Cyclone Alvaro passed through their community, Rubin said the DRR/CCA club "*protected the school roofs by placing sandbags we collected ourselves from a local water source.*" Club members have also initiated waste sorting in their community and set up a school vegetable garden.

Christinah said she wants to use her new **"knowledge in waste management and agroecology to care for the environment and create a rich vegetation environment."** Rubin plans to **"set up a new club once in high school and continue my journey as a young leader"** in DRR/CCA. Already, their efforts have transformed their school environment and instilled a sense of environmental responsibility among the younger students.

The DRR/CCA clubs highlight the power of adolescent leadership. Initially struggling to find members, many clubs now attract more students due to their tangible impact. The 1,200 dedicated young members represent a new generation ready to build cyclone resilience in their communities for a better future.

Christinah and Ruban pose with club supplies for early warning activities. ©UNICEF Madagascar/2024/Tantely Soamanalina Raoelina

After Cyclone Gamane, children line up before the distribution of school kits donated by UNICEF Madagascar and distributed by Josias Ratsimbazafy and other staff. © UNICEF/UNI573304/Andriantsoarana

"In the education sector, parametric insurance allowed us to reach a greater number of children and their families affected by the most severe cyclones and storms in the last two years, helping return them rapidly back to school. Setting up CCA/DRR clubs takes us forward as a country, as the clubs promote and train children and young people as leaders in reducing risk and taking climate action. Their solutions will drive the transformation we need to build cyclone resilience in Madagascar."

Josias Ratsimbazafy,
UNICEF Madagascar Education Specialist

After receiving disaster risk and reduction training through their school, Mavorano secondary school students in southeastern Madagascar stand before their new cyclone-proof classroom built by UNICEF. ©UNICEF Madagascar/2024/Ramasomanana

Multi-hazard and multisectoral systems strengthening to increase resilience

Whilst the Tomorrow parametric insurance component explicitly addresses children's cyclone risk, the Today resilience building component of the approach addresses multi-hazard risk. UNICEF Madagascar addresses multiple natural hazards that often happen concurrently in one or more locations, including cyclones, storms, floods, droughts, extreme temperatures and epidemic outbreaks, such as Polio.

Multiple hazards

The hazards can devastate infrastructure and people's access to basic services and natural assets—such as drinking water and crops—essential for the survival and well-being of children and their families. The lack of these assets can exacerbate multigenerational poverty.

The impacts of climate change are multifaceted. They can accelerate multiple natural hazards simultaneously and exacerbate environmental degradation and biodiversity loss. In Madagascar, negative coping strategies such as slash-and-burn agriculture further intensify these adverse effects. Hazards cannot be addressed in isolation or managed by siloed sectors. Instead, they require complementary and integrated interventions to mitigate their impacts effectively.

For instance, since 2021, Madagascar's education dropout rates at both primary and secondary levels have increased in many regions affected by cyclones and drought. Dropping out of school can limit future opportunities, trapping children in cycles of poverty and reducing their ability to contribute to community resilience in the face of climate challenges. Efforts to support children's return to school and require a collaborative approach by multiple sectors, ranging from education to social protection, to WASH.

This multi-hazard, multisectoral approach expands UNICEF's efforts to strengthen child-responsive services and systems, including with government partners. Piloting the Today & Tomorrow approach with the Ministry of Education, for example, allows activities to be tested for potential replication on a nationwide scale. The Today & Tomorrow approach is also being promoted in other sectors as UNICEF and government ministries co-chair WASH, nutrition and child protection emergency sector groups. UNICEF also works with the Madagascar government in development working groups, such as the Cash Working Group focused on social protection.

Through the Today & Tomorrow pilot and child-responsive DRR efforts, UNICEF has seen the Government and other partners shift from a reactive emergency response-focused approach to a more holistic and proactive approach in Madagascar. This includes incorporating **anticipatory action** for proactive education disruption management, **early warning systems** for timely threat alerts, **climate change adaptation** and **DRR strategies** for educational resilience and learning continuity, **school safety measures** for physically safe and inclusive learning environments, and **sustainable recovery** to reduce future risk for people affected by cyclones and other hazards.

Strong government relations also connect to policymaking and planning. For instance, climate change is currently not part of the nationwide curriculum. UNICEF and partners are working with the Ministry of Environment to move the initiative forward. The Today & Tomorrow pilot also showcases working methods that can be integrated into Madagascar's Nationally Determined Contribution (NDC) submission to the UNFCCC, the country's National Adaptation Plan (NAP) and the *National Contingency Plan of the Government and the Inter-Agency Standing Committee.*

Madagascar global commitments

Governments are ultimately responsible for and accountable for the health and well-being of their citizens. Strengthening their cyclone disaster knowledge and readiness supports them to meet their global commitments by 2030, such as to the Sustainable Development Goals, the Sendai Framework for Disaster Risk Reduction and the UNFCCC Paris Agreement.

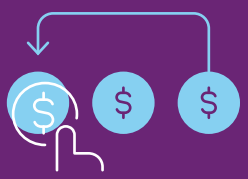
Nearly 100,000 students could not attend school for several weeks after cyclone Freddy hit the southeast and southwest of Madagascar. The school kits provided by UNICEF Madagascar enabled Ando to continue her studies, and she could sit her final exam for the secondary school diploma. ©UNICEF/UNI420033/Andriantsoarana

Transforming today & tomorrow for all

As the climate changes, even more dangerous cyclone seasons and extreme hazardous events will continue to affect the lives of millions of children in Madagascar. Innovative finance that prioritizes early action, preparedness, risk reduction and long-term sustainable recovery is critical in helping them survive and thrive. Transforming systems to keep essential services for children accessible, operational and safe is imperative and benefits all of society.

Anneleen Van Uffelen, UNICEF Madagascar
Climate, Environment, Energy and Disaster Risk Reduction (CEED) Specialist

"Eighteen months into the Today & Tomorrow pilot, the flexibility of the funding has proven its most valuable attribute. We can direct funds towards the interventions and regions with the most significant gaps. For instance, cyclones can take different pathways that pre-allocated or sector-specific funding cannot reach. Flexibility in how we fund our response and sustainable recovery is a game changer for efficiency and cost-effectiveness."



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