

Drone and data academy improve climate and disaster risk management

Droughts and floods are becoming more frequent and severe in Malawi. In 2024, the government declared a state of emergency in 23 of 28 districts due to El Niño conditions, intensified by climate change, which led to inadequate rainfall, flooding and prolonged dry spells.¹

These events severely damaged crops and disrupted food production, affecting an estimated 9 million people, including 4.59 million children.² Flooding from Cyclone Freddy in 2023 had already displaced approximately 660,000 people.³ The escalation of natural hazards is increasing the risk of death, disease, food insecurity, school disruption and other life-altering impacts on children.

Young people are tackling the climate crisis by helping children and communities in Malawi cope with increasingly severe natural hazards. They are applying the knowledge and skills they learned at the African Drone and Data Academy (ADDA), which was launched by UNICEF in 2020, in collaboration with the Malawi University of Science and Technology (MUST) and the Virginia Polytechnic Institute and State University (Virginia Tech), based in the United States.

UNICEF and its partners established ADDA to equip young people with skills in science, technology, engineering and mathematics (STEM) – including drone and geospatial technologies, data analysis and disaster risk management (see [ADDA overview](#)).



African Drone and Data Academy



1,473 students
trained from 25 countries



60% of graduates
are young women



80% employment rate
among alumni



Students in an ADDA lab assemble various parts of an open-source drone during a hands-on lecture. ADDA equips youth with science, technology and innovation knowledge and skills, which many are applying to reduce climate, disaster and environmental risk. ©UNICEF Malawi



Global Action

UNICEF supports [Disaster Risk Reduction \(DRR\)](#) in 150 countries, ensuring children are safe, protected and actively engaged in solutions to reduce disaster risk. Learn more in this animation about [UNICEF's child-centred DRR approach](#), featuring Malawi.



The Academy collaborates closely with Malawi's Department of Disaster Management Affairs (DoDMA), particularly through a Rapid Response Unit at ADDA that supports search and rescue operations and post-disaster assessments (see [ADDA: Drones and disaster response](#)). In partnership with DoDMA, the unit co-developed a standard operating procedure for drone and geospatial information use during flood emergencies. ADDA is also working to enhance DoDMA's capacity to apply these technologies effectively.

ADDA graduates are already contributing to disaster risk reduction and response efforts using advanced drone technology. During Cyclone Freddy in 2023, graduates and instructors used drones to capture aerial images, map affected areas and support search-and-rescue operations – accelerating and strengthening the overall response.⁴

In 2024, alumni collaborated with a local drone company to capture and analyse aerial imagery of flood-prone areas in northern Malawi. These data informed the creation of a new flood forecasting system, providing critical insights to 170,000 residents and local officials – enabling improved disaster preparedness, faster response and greater protection for vulnerable communities.



A drone operated by a company employing ADDA graduates brings medical supplies provided by UNICEF to a remote area in Malawi. ©UNICEF/UNI432867/Khanyizira

Since its launch, ADDA has trained 1,473 students from 25 countries, with 60 per cent of graduates being young women. The academy has an 80 per cent employment rate, with many alumni pursuing careers in environmental protection and disaster risk reduction.⁵ To address climate change, ADDA graduates are actively helping communities adapt to environmental challenges and natural hazards through smart farming techniques and water security initiatives.

Precision agriculture is one example: Alumni use technology, data analysis and mapping tools to improve farming practices and increase food production efficiency. These efforts not only boost agricultural output but also contribute to safeguarding children's health by ensuring access to nutritious food and safe water.

- 1 UNICEF, 2024, [Rising Heat, Drought and Disease: Climate Crisis Poses Grave Risks to Children in Eastern and Southern Africa](#).
- 2 Ibid.
- 3 UNICEF, 2023, [Malawi Humanitarian Situation Report 2023](#).
- 4 UNICEF, 2023, [ADDA alumni aid cyclone response with swift tech solutions](#).
- 5 United Nations Evaluation Group (UNEG), 2024, [Formative Evaluation of The African Drone and Data Academy \(ADDA\) as a Case Study to Enhance the Youth and Learning Innovations Portfolio in Malawi – 2019–2023](#).