

Youth develop the country’s first early warning system with real-time data, protecting thousands

Children in Libya are increasingly vulnerable to climate-driven weather extremes. In 2023, catastrophic flooding caused by Storm Daniel led to the collapse of two dams, affecting over 880,000 people and resulting in 5,900 deaths and 8,000 missing persons.¹ Scientific analysis suggests the storm’s intense rainfall was up to 50 times more likely due to rising global temperatures.²

Following the disaster, the World Meteorological Organization identified major gaps in Libya’s early warning systems, including inadequate observation networks, outdated forecasting tools and staffing shortages.³ These shortcomings underscore the urgent need for a robust, nationwide early warning system with real-time monitoring and multi-hazard forecasting capabilities.

Reliable early warning systems in Libya are crucial for managing climate risks and preparing for disasters. Real-time forecasting allows authorities to organize supplies, close schools, activate contingency learning plans (including for remote and alternative location options), plan evacuations and issue timely alerts. These systems also combat misinformation, protect livelihoods and help communities make safer decisions in the face of extreme weather.

In response, UNICEF supported the youth-led Roaya Foundation in bringing Libya Mozn – the country’s first real-time early warning system – to scale. The foundation is a volunteer-driven organization established in 2014, focusing on space, climate and weather-related initiatives. Young people have designed and are leading the Libya Mozn early warning system initiative, aligning with the foundation’s broader vision to enhance weather forecasting in Libya.

Unlike traditional systems that rely heavily on static forecasting models, Libya Mozn uses live data from 45 weather stations, providing updates every two seconds. This real-time approach is critical for making life-saving decisions during rapidly evolving events, such as flash floods or dam breaches.



Global Action

UNICEF is part of the [Early Warnings for All \(EW4All\) initiative](#) that aims, by the end of 2027, for everyone on Earth to be protected from hazardous events through life-saving early warning systems.

UNICEF collaborates with partners to help governments ensure early warning systems reach vulnerable children and are linked to social services like schools and health facilities. These systems are designed to be child-responsive, integrating children’s unique needs, rights, ideas and vulnerabilities.

Libya Mozn Early Warning System



45
weather stations
delivering real-time data



2-second
update intervals
for rapid alerts



900,000
social media followers
can access weather
updates



50,000
mobile app users
can access weather alerts
and safety guidance



Since becoming operational one year after the 2023 floods, Libya Mozn has been monitoring extreme heat, solar radiation, heavy rainfall, flooding, dust storms and sandstorms. In communities near Roaya's weather station installations, the foundation trained 10 young people as climate monitors and technicians. Their engagement fosters local ownership and sustainable management through continuous data collection and system operation. The hands-on involvement strengthens the system's longevity while equipping youth with valuable skills in climate and disaster risk reduction.

In the past year, the visibility of Libya Mozn's forecasting data has grown significantly. It is the only real-time early warning system with its own app and a large social media presence. The Roaya Foundation's Facebook page,⁴ featuring updates from Libya Mozn, has more than 900,000 followers. A Facebook group with 100,000 users receives user posts with real-time weather condition reports, photos and videos.

UNICEF continues to support the Roaya Foundation in expanding the system and integrating its data into national communication channels through partnerships with the government and the private sector.



Libya's Government Communication Centre officially recognized and promoted a mobile app developed by the Roaya Foundation. The app analyses early warning system data to send alerts and safety guidance to more than 50,000 users to date.



Through its social media and mobile phone app platforms, Libya Mozn is becoming a widely used early warning system for real-time weather information. ©Roaya Foundation

- 1 UNICEF, 2023, [Devastating floods in Libya](#).
- 2 World Weather Attribution, 2023, [Interplay of climate change-exacerbated rainfall, exposure and vulnerability led to widespread impacts in the Mediterranean region](#).
- 3 World Meteorological Organization, 2023. [Libya floods show need for multi-hazard early warnings, unified response](#).
- 4 Roaya Foundation Facebook, www.facebook.com/roaya.astronomy.