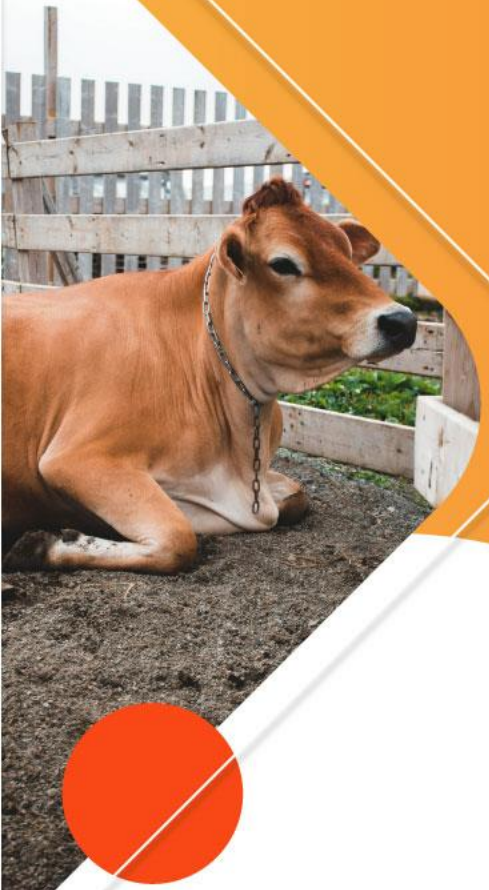
World Organisation for Animal Health

Regional Training Seminar for WOAH National Focal Points for Veterinary Laboratories (cycle III)

8 - 10 July 2025, Gaborone, Botswana



Emergency Management

Mozambique's experience in Managing the Cyclone Freddy in early 2023

Iolanda Monjane

Central Veterinary Laboratory

Mozambique

Co-funded by the European Union

Counter Proliferation & Arms Control Centre

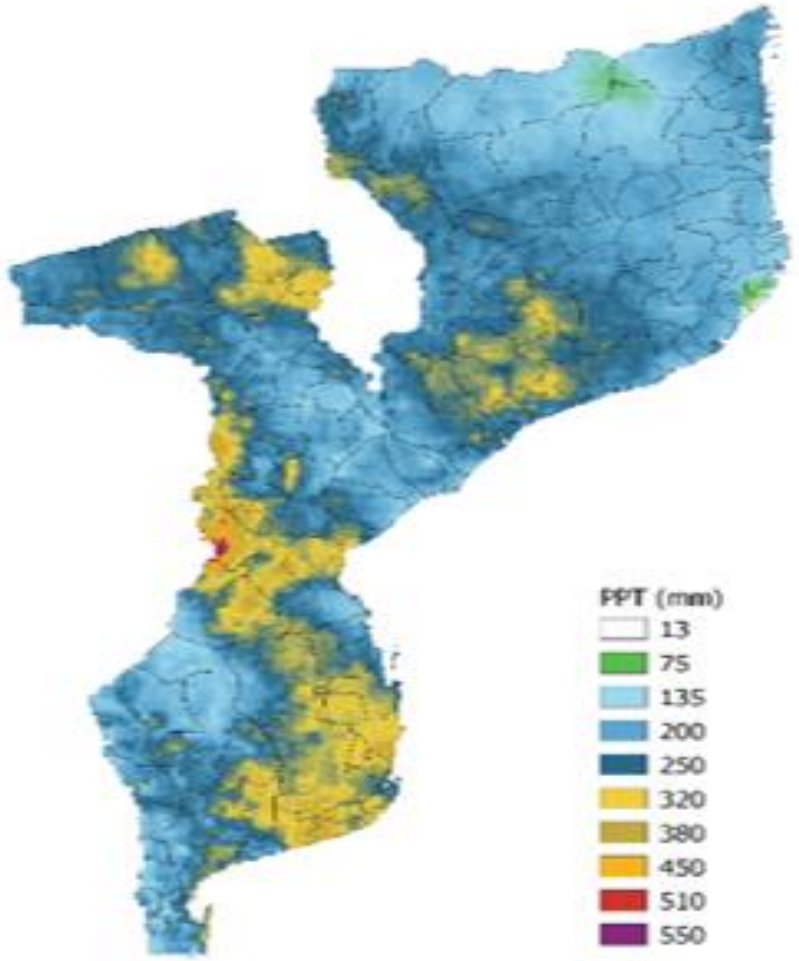
Content

1. Overview of the situation
2. Impact of floods in the provinces
3. Recovery plan
4. Laboratories response considering the possible surge of animal disease cases
5. How the veterinary laboratory system was affected
6. Recommendations for how veterinary laboratories can be better prepared for natural disasters such as the cyclone
7. Recommendations

Co-funded by the European Union
Counter Proliferation & Arms Control Centre

Overview of the situation

- Mozambique is one of the African countries most vulnerable to climate shocks;
- Located in the Intertropical Convergence Zone;
- High degree of climate variation and change;
- Downstream of river basins shared with other countries in the *interland*.
- It has a long coastline and extensive areas with altitude below sea level;
- The relief and practice of subsistence agriculture, poverty, limited access to investment in advanced technologies, the fragility of service and social infrastructures, among others, further aggravate the country's vulnerability;



Co-funded by the European Union
Counter Proliferation & Arms Control Centre

Overview of the situation

Tropical Cyclone Freddy

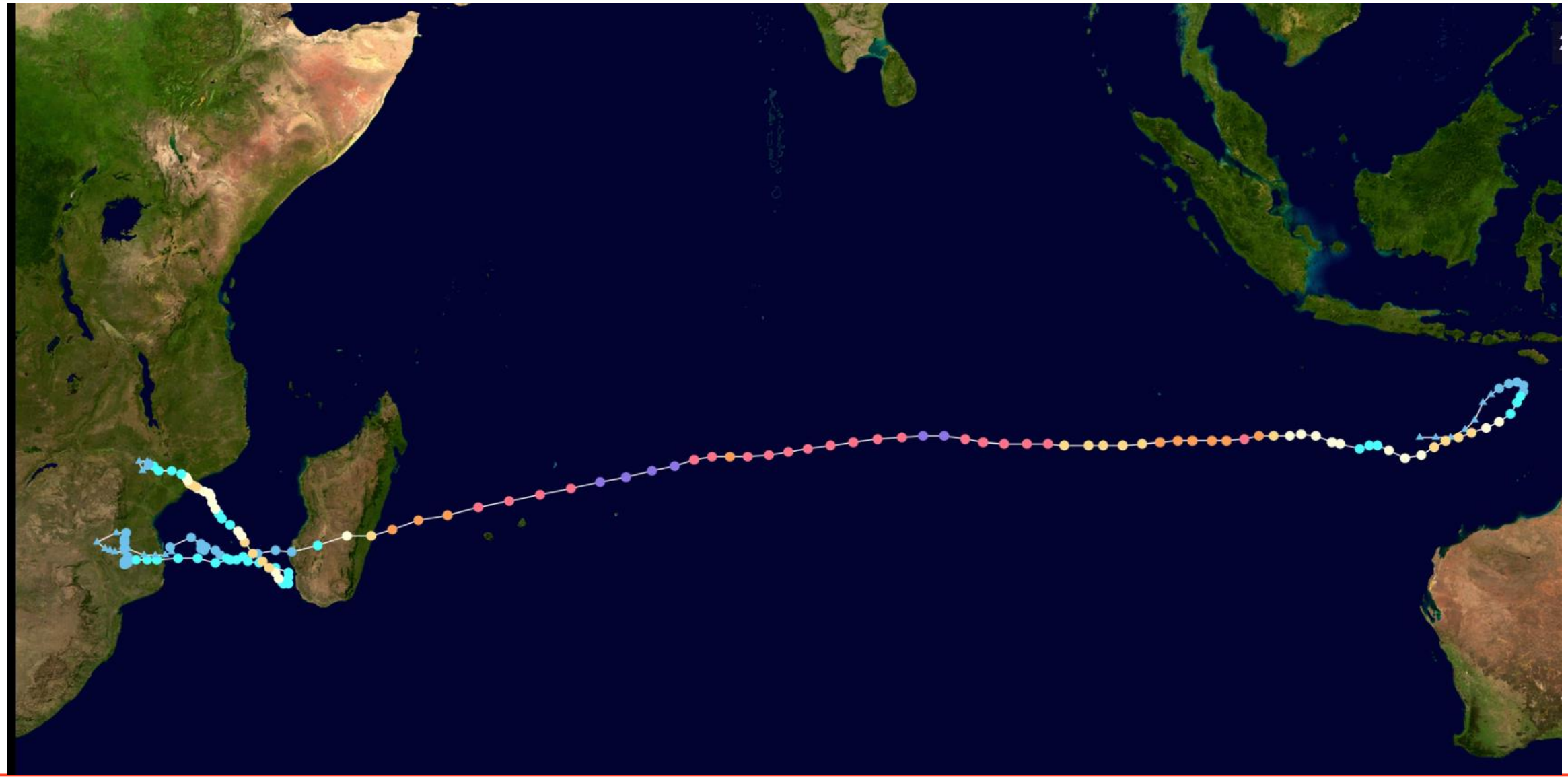
- longest lasting tropical cyclone on record, at 36 days (4 February to 14 March 2023);
- Hit Mozambique twice, on 24 February and 11 March, with destructive winds and extreme rainfall.
- Due to its prolonged passage near and over land, It caused major human and economic losses in the affected countries (Madagascar, Malawi and **Mozambique)**;

David Steele/Shutterstock

Co-funded by the European Union
Counter Proliferation & Arms Control Centre

World Organisation for Animal Health

Overview of the situation



Co-funded by the European Union
Counter Proliferation & Arms Control Centre

Overview of the situation

- Impacts in Mozambique were severe and included heavy rains, wind and flooding damaged houses, schools, clinics and crops.
- Floods washed roads away, leaving a number of villages stranded. **Thousands of families have lost their food, homes and means of income.**
- The devastating impact of the cyclone, hit areas that were already under severe pressure due to significantly above-normal rainfall in the previous week;

Co-funded by the European Union
Counter Proliferation & Arms Control Centre

Recovery plan

Urgent response with immediate interventions:

- Support the most affected families to partially restore productive capacity and improve self-confidence;
- Urgent support for the livestock sector in terms of animal health to cover around 93,300 families;
- Pesticides was allocated to control weeds and diseases that may arise in the fields.
- Health assistance to the livestock sector, and recondition of treatment infrastructures (diving tanks, treatment corridor, etc.);
- Medicine kits (Medicines, desinfectants, tripanocides, tick killer drugs);
- Lampy skin vaccines to cover around 750,000 animals.

Co-funded by the European Union
Counter Proliferation & Arms Control Centre

Laboratories response considering the possible surge of animal disease cases

- The FAO/IAEA VETLAB program, delivered urgent laboratory equipment, reagents, and technical expertise to Mozambique CVL;
- These resources enabled the use of nuclear - derived tests (**PCR** and **ELISA)** – ASF, FMD, RVF, IA, NDV and PPR;
- The support strengthened CVL and regional lab in **Chimoio;**
- Animals mixing post-flood acelerate disease spread. Early, rapid, and accurate detection was vital for targeted vaccination, isolation, and control campaigns.

Co-funded by the European Union
Counter Proliferation & Arms Control Centre

Laboratories response (cont.)

➢The National Institute of Health (INS) leveraged its public health infrastructure through existing systems and the **Field Epidemiology and Laboratory Training Program**, with support from partners like **CDC and WHO;**

- INS and CVL quickly deployed emergency surveillance and reporting systems to monitor outbreaks across both humans and animals **using one health approach**;

- INS and CVL through One Health platform, trained staff conducted lab diagnostics for zoonotic diseases, integrated data with epidemiology teams, and supported outbreak investigations and vaccination planning.

Co-funded by the European Union
Counter Proliferation & Arms Control Centre

Laboratories response (cont.)

- While the focus was often on **cholera** and waterborne human diseases, the labs' enhanced detection capabilities extended naturally to animal health threats using One Health approach;

- **WHO** and **UNICEF** reinforced the one-health approach by linking veterinary test results with human health surveillance.

Co-funded by the European Union
Counter Proliferation & Arms Control Centre

How the veterinary laboratory system was affected

Specific damage reports to veterinary laboratories are not always distinguished, Cyclone Freddy's broad destruction of Mozambique's health infrastructure meant:

- **Physical and functional damage** to vet labs;
- **Severe logistical disruption** (roads, power, water) - inhibiting diagnostics;
- **A shift in lab priorities** toward human health emergencies, slowing animal disease surveillance;
- **Recovery efforts** focused on rebuilding stronger, more integrated, and resilient systems.

Co-funded by the European Union
Counter Proliferation & Arms Control Centre

Recommendations for how veterinary laboratories can be better prepared for natural disasters such as the cyclone

- Pre-position mobile lab units or rapid diagnostic kits in disaster-prone regions;
- Stockpile critical supplies like reagents, PPE, and sampling materials, including agreements with regional or international partners for emergency resupply;
- Use cloud-based Laboratory Information Management Systems (LIMS) to ensure data access even if local servers are compromised.
- Equip labs with satellite phones and radio systems for maintaining communications when networks fail.

Co-funded by the European Union
Counter Proliferation & Arms Control Centre

Recommendations

- Participate in international networks (e.g. FAO/IAEA VETLAB Network) to access emergency resources and training;
- Integrate veterinary labs into national disaster preparedness frameworks alongside public health and civil protection services;
- Expand use of point-of-care diagnostics (e.g., rapid test kits, mobile PCR units) to allow testing to continue in field conditions.
- Train field vets to use these tools when centralized lab access is limited.
- Perform periodic assessments of lab physical vulnerability, supply chain risks, and disease surveillance weaknesses;

Co-funded by the European Union
Counter Proliferation & Arms Control Centre

World Organisation for Animal Health

Thank you!

Iolanda Monjane
Central Veterinary Laboratory

Co-funded by the European Union
Counter Proliferation & Arms Control Centre