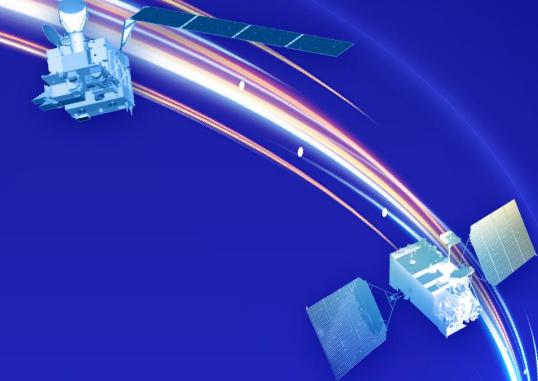




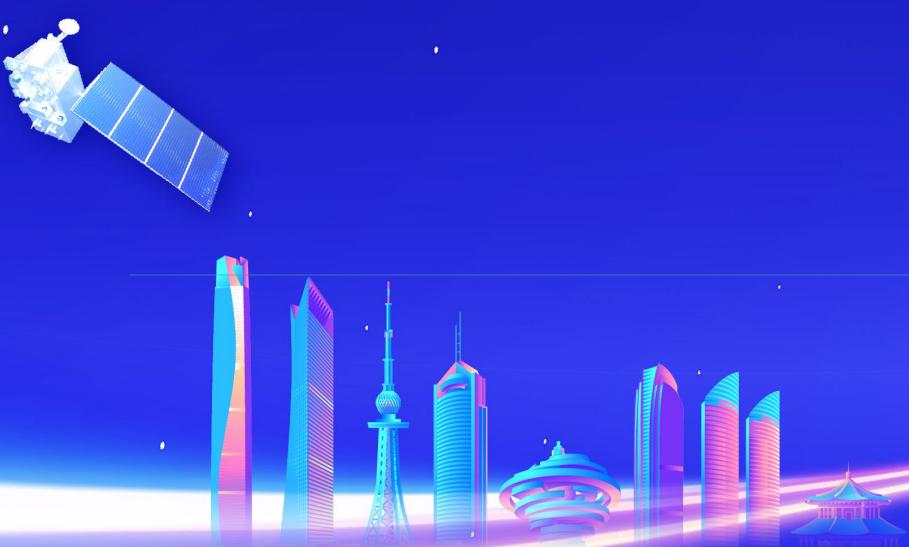
AOMSUC-15 FYSUC-2025

FIFTEENTH ASIA-OCEANIA METEOROLOGICAL SATELLITE USERS' CONFERENCE
THE JOINT 2025 FENGYUN SATELLITE USER CONFERENCE



Use of satellite data in monitoring and prediction of severe weather in Lake Victoria basin

Benjamin Bahati



Forecasting challenges in the Lake Victoria Basin



- ✓ A vast lake basin shared by five nations
- ✓ Weather changes in minutes.
- ✓ Very few ground weather stations.
- ✓ Satellite coverage is essential.



Satellites used by KMD in Kenya

Meteosat Third Generation (MTG)

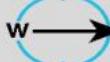
- **Meteosat-9 (MSG):** Updates every 15 minutes.
- **NOAA SNPP satellites:** Tracks storms and temperatures.
- **The Metop series (Metop-A, B, C).**



APPLICATION OF FY and MSG in Forecasting a Storm over LVB



- ❖ On October 6th and 7th a deep convective system developed over the Lake Victoria Basin
- ❖ Data from two satellites detected this development.
- ❑ Meteosat-9 SEVIRI
- ❑ Fengyun 3D MWHS

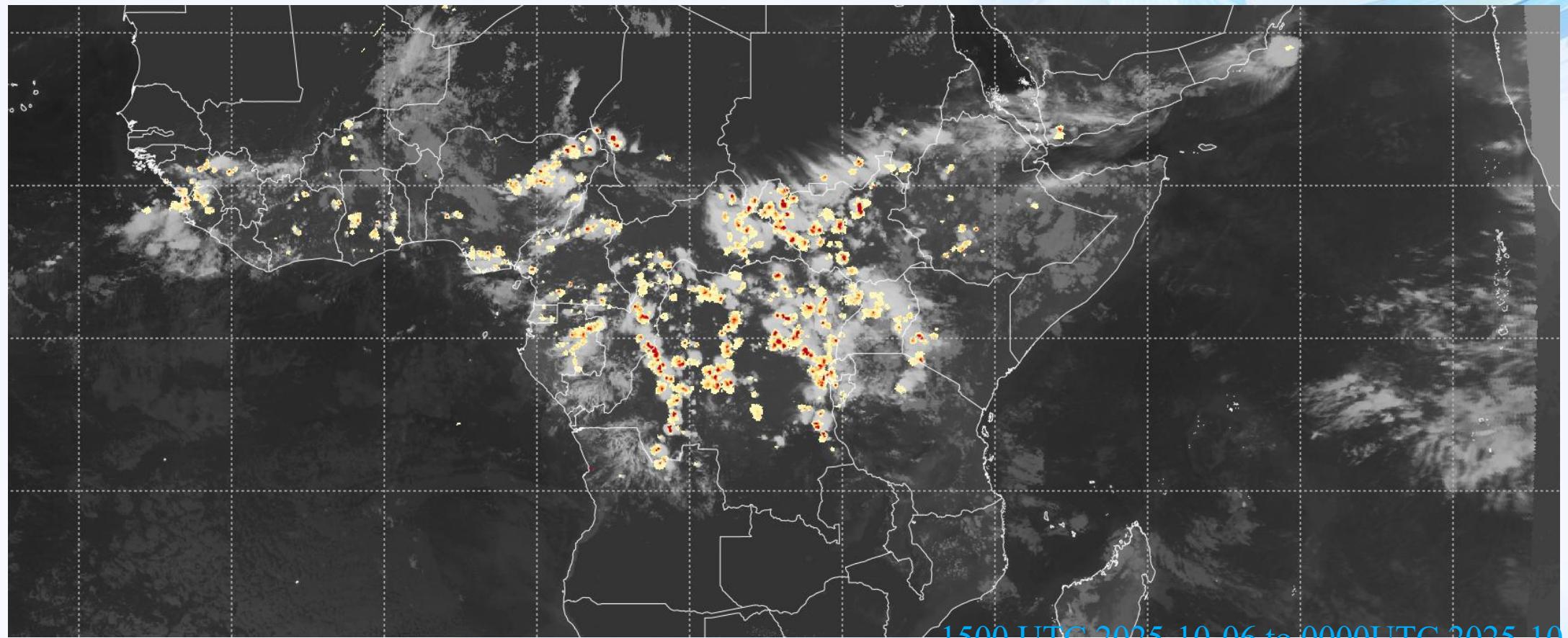
Monday 06/10/2025	Wind strength /direction	Wave height	Rainfall/ Cloud cover	Rainfall distribution	Visibilit y	Hazard s
Night before midnight	 Light	 Small waves	 Moderate rains	 Several places		
Night after midnight	 Light	 Small waves	 Isolated thunder rain	 Several places		
Tuesday 07/10/2025 Morning	 Light	 Small waves	 Light rains	 Few Places	 Good	
Tuesday 07/10/2025 Afternoon	 Light	 Small waves	 Widespread thunder with rains	 Several places	 Moderate	

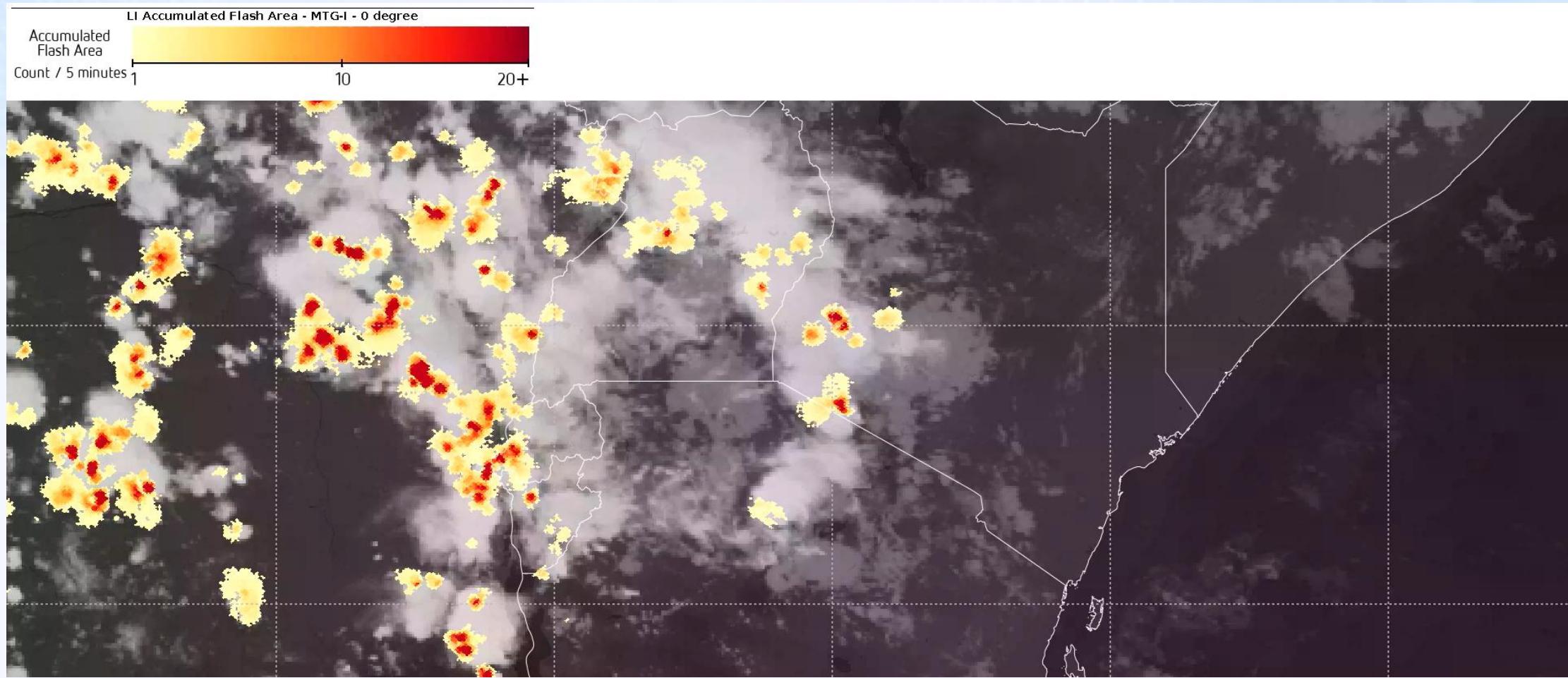
How data from Fengyun 3D MWHS was used

- FengYun-3D Satellite passes over Kenya at 12-hour intervals
- On 6th October, the overpasses were at 00.58 UTC and 12.48 UTC.
- Data from the satellite identified the pre-convective phase of an intense weather event over Lake Victoria.



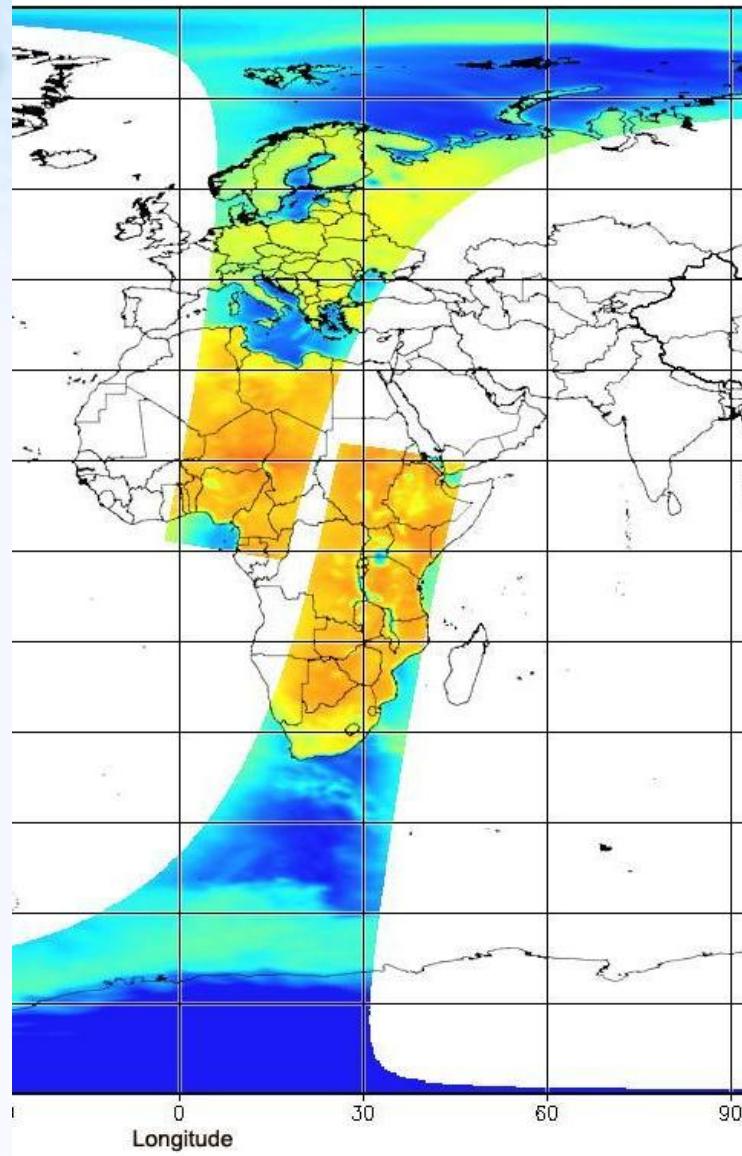
- ▶ Rectified (level 1.5) Meteosat SEVIRI image of Equatoria Africa showing Accumulated Flash Area data gathered from the optical emission of lightning flashes



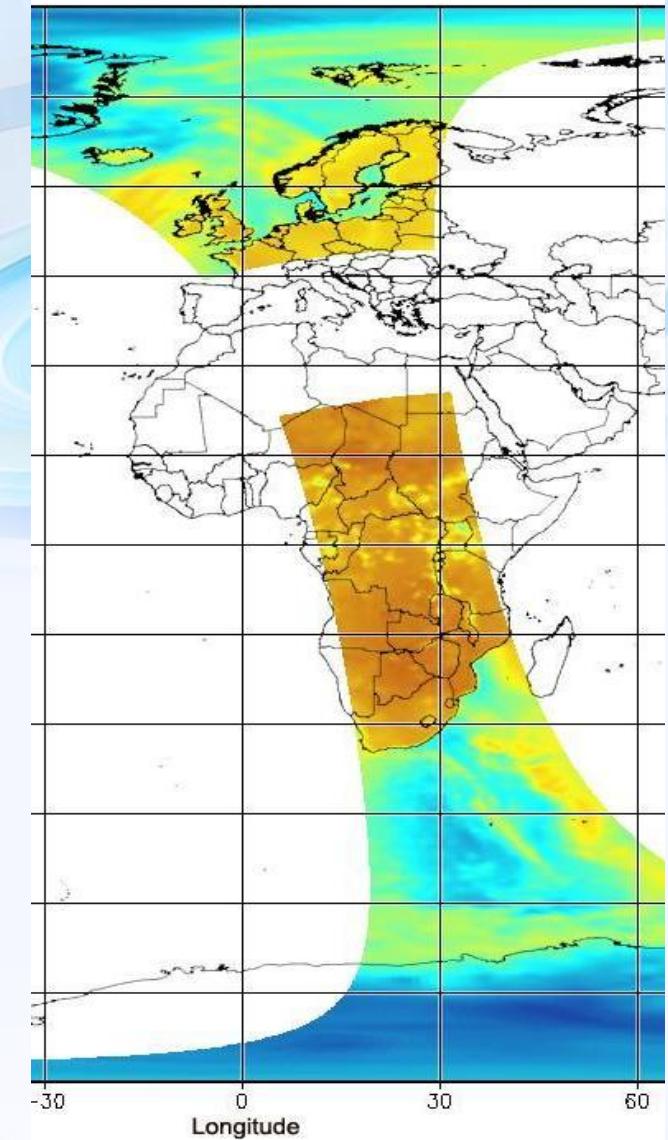


Prognosis of lightning flash intensity in the Lake Victoria Basin
18.00 UTC October 6th to 00.00 UTC October 7th

CH.1 50.37 GHz 20251006 00:58



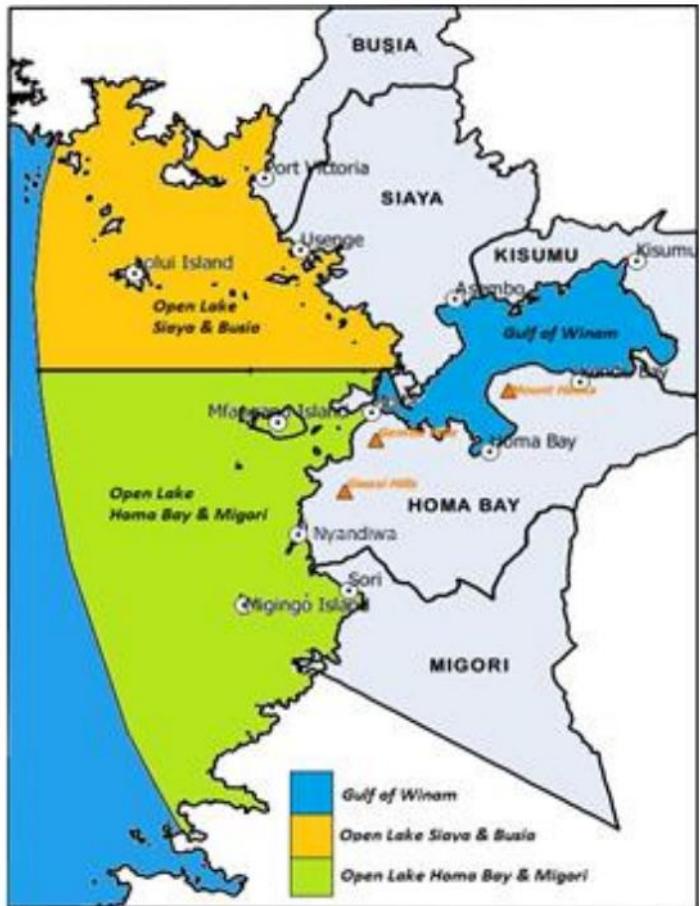
3D MWHS CH.1 20251006 12:48



The Swaths of Africa covered by Fengyun - 3D MWHS-2



REPUBLIC OF KENYA
MINISTRY OF ENVIRONMENT AND FORESTRY
KENYA METEOROLOGICAL DEPARTMENT
24-HOUR FORECAST FOR FISHERMEN ON LAKE VICTORIA
ISSUED AT: 14.00 EAT ON MONDAY 6TH OCTOBER, 2025



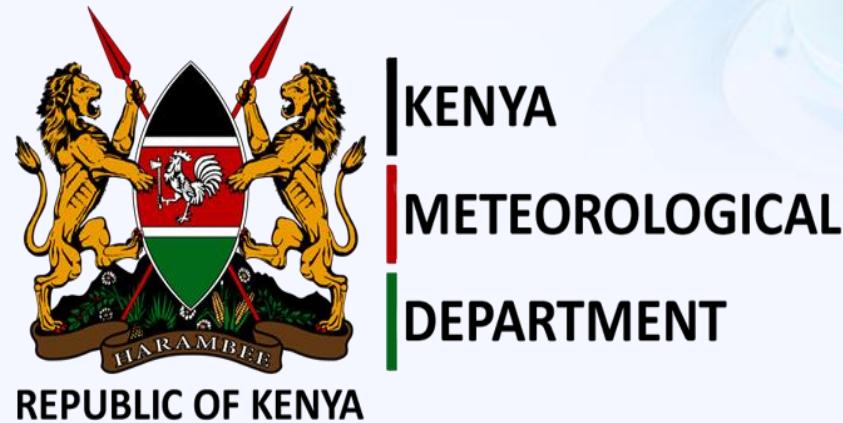
- The intense thunderstorms forecast were identified as posing a threat to small craft on Lake Victoria
- KMD issued an advisory, urging fishermen in the Kenyan sector of the lake to remain onshore or return to shore immediately.

Persistent Challenges Solutions

- Predicting sudden wind and waves.
- Tracking dangerous waterspouts.
- Pinpointing lightning over water.
- Reaching every person in real-time.
- **Invest** in new technology.
- **Train** communities and forecasters.
- **Collaborate** across borders.
- **Protect** every human life.



Thank you



Promoting **safety**, **awareness**, and **climate resilience** in the
Lake Victoria Basin