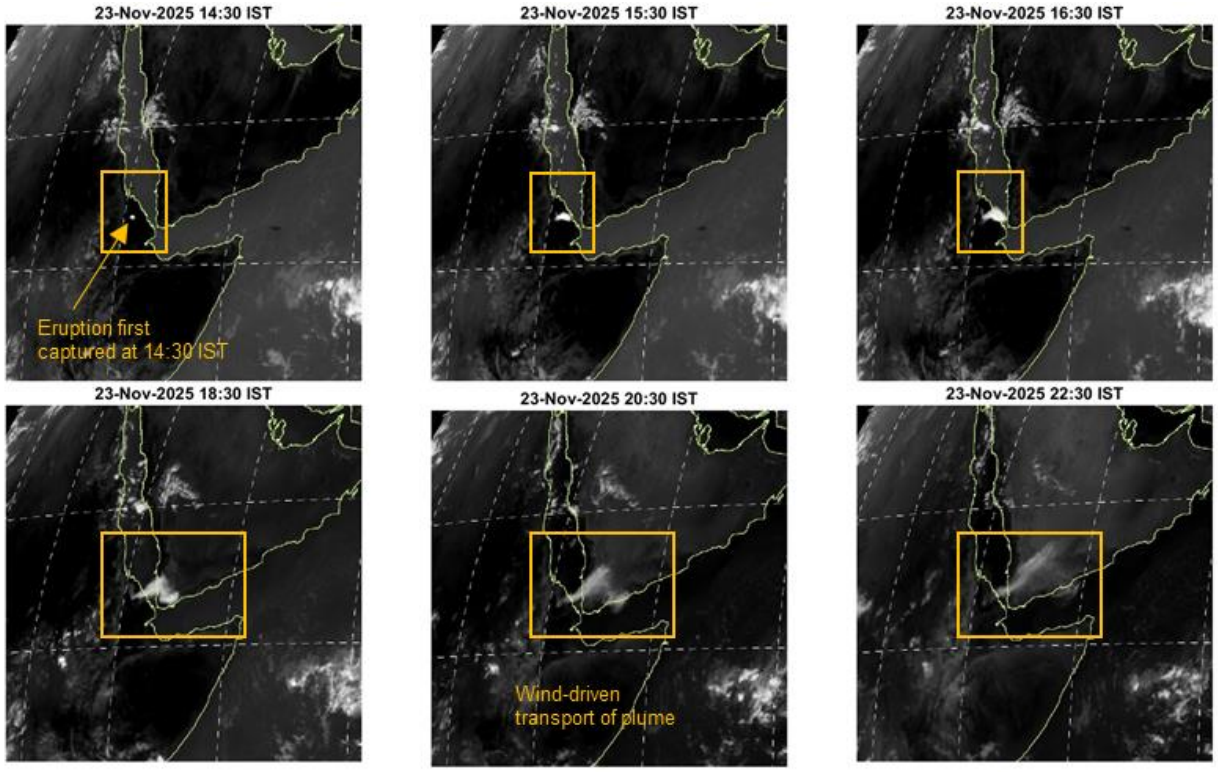
Ethiopia’s Hayli-Gubbi Volcanic Eruption captured by INSAT-3DS (23-11-2025)

Volcanic Ash Plumes observed from INSAT-3DS



Evolution of volcanic plume as imaged by INSAT-3DS on 23-Nov-2025

- Ethiopia’s Hayli-Gubbi volcano erupted on 23rd November 2025 at 08:30 UTC (1400 IST) in the Erta Ale Range of the Afar Rift, Ethiopia.
- The powerful eruption of the volcano was captured by INSAT-3DS using thermal infrared (TIR1) channel.
- INSAT-3DS with its high temporal resolution, uniquely tracked the volcanic plume, first capturing the eruption at 14:30 IST.
- As time progressed, INSAT-3DS imaging clearly showed the wind driven transport of volcanic plume.

Increase in Sulphur Dioxide concentration post volcanic eruption

- The Volcanic Ash plume caused major disruption to air traffic in India, particularly for flights operating over the Arabian Sea, the Middle East and Europe.
- Volcanic eruptions release ash, fine dust, and various gases (eg. SO_2) which can be transported over long distances by upper-level winds.
- Driven by upper-level winds, the dense SO_2 plume rapidly moved north-eastward across the Middle East and the Arabian Sea.

Observation of the movement of SO_2 by TROPOMI satellite as it spreads across the Arabian Sea towards the Indian subcontinent.