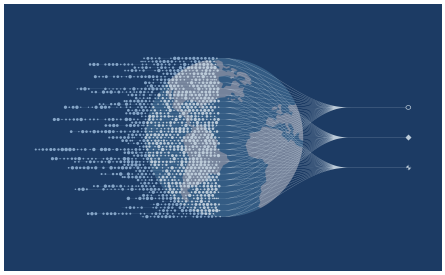

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In A Box analysis of the 17-18 August 2024 Kamchatka seismo-volcanic events: opportunities for integration of the CTBTO IMS system into Kenya's preparedness for concomitant geohazards

On 17 August 2024, an mb6.0 earthquake at a depth of 29 km occurred approximately 102 km southeast of Petropavlovsk-Kamchatsky, Russian Federation. The earthquake triggered the eruption of the Shiveluch volcano the following day, producing a 9000-meter ash plume. Using his Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) National Data Centre NDC training from 5 to 16 August 2024 in Nairobi, Kenya, the author accessed waveform and infrasound data from the CTBTO's Secure Web Portal SEL2/3 database. Using the CTBTO's NDC in a box suite, he analysed seismic data from Kamchatka peninsula stations using GeoTool and infrasound data from I44RU station using DTK-GPMCC. Results indicate that the earthquake occurred near Severneye (53.58°N, 158.42°E) about 390 km south of the Shiveluch volcano, highlighting the potential for large local seismic events to trigger coupled volcanicity. Kenya's Rift Valley has dormant volcanoes like Central and South Island within Lake Turkana, a tectonic zone with instrumental M6.0–6.5 earthquakes. While the risk of actual volcanic eruptions may be low, significant earthquakes in the region could trigger non-eruptive geohazards such as volcanic landslides, leading to seiches. Kenya's preparedness for such natural disasters could benefit greatly from the CTBTO International Monitoring System seismic and infrasound network, leveraging partnerships to improve geohazards monitoring and preparedness capabilities.

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