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And Extent of Earth Fissures: Preliminary Findings From Chikwawa District, Southern Malawi

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Although earth fissures have occurred in some parts of the country, they have not been well-documented or studied in detail. Recent field investigation into the formation and extent of earth fissures in Chikwawa District, reveal their formation due to erosion as well as tensional cracks within the affected area as a result of groundwater withdrawal from the alluvial sediments. Several sinkholes and linear fissures trending N-S and E-W, connected by horizontal conduits characterized by mud deposition and mud flow, cut through the village thereby weakening and cracking houses. Minor fissures connect orthogonally to major fissures without clear offsets. The water flow through the conduits influenced the formation of sinkholes and conduits by weakening their structural strength which caused top soil to collapse into existing voids, creating or widening the sinkholes and exposing the conduits. We used geological, airborne geophysical as well as seismic ambient noise to delineate structures and determine depth-to-bedrock. Additionally, data from local as well as international seismological monitoring networks indicate no occurrence of an earthquake in the vicinity to attribute such activity to tectonic movement or faulting.

Promotional text

Fissures, Sinkholes, Alluvium, Tectonics, Faulting

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