



Interactions between climatic forcing of lake level change, tectonics and volcanism in the Rungwe Volcanic Province, SW Highlands of Tanzania

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The Rungwe Volcanic Province extends between the Rukwa and Nyasa (Malawi) rift lakes, which both experienced marked water level fluctuations (several hundred meters in altitude) during the last 40 ka. The infilling of water reservoirs whether artificial or natural, is known to be able to trigger earthquakes and volcanism (Ambraseys and Sarma, 1968). In the Southwestern Highlands of Tanzania and most especially in the Rungwe Volcanic Province where the western and eastern branches of the East African Rift System meet, a similar link is likely highlighted. Compilation of available data supplemented by new observations allows investigating the time relations between (1) climatically induced, rapid water level fluctuations in the surrounding rift lakes, (2) tectonic activation of the fault systems that extend from the lacustrine depressions to the volcanic area, and (3) deposition of tephra layers in soils and sediments. The latter are considered to reflect the frequency and/or magnitude of explosive eruptions in the Rungwe massif. According to these data, a connexion is suggested between the great lakes level change, tectonics, and volcanic activity for the last glacial – interglacial transition (14 – 11.5 cal. ka BP), and possibly also during the Holocene.