



The RIFTLINK project: studies on rift-dynamics, uplift and climate change in western Uganda

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Feedback between tectonic uplift and erosional denudation can have drastic effects on global and regional climate patterns, which in turn have a significant impact on ecosystems and biogeographic zonation. The German-Ugandan RiftLink research group addresses the causes of rift-related uplift in the East African Rift, its impact on climate changes in Equatorial Africa since the Late Miocene, and the possible consequences for the evolution of hominids. RiftLink is funded by the Deutsche Forschungsgemeinschaft.

The major goal of the RiftLink research program is to constrain the dynamic processes that have caused rift-related crustal uplift and to investigate the causal relationship between mantle/lower-crustal and atmospheric/biogeographical processes. Specifically, we will test the hypothesis that rift-flank uplift in the East African Rift could have caused the pronounced climate changes, which have been suggested to drive human evolution.

The immediate objective is to gain understanding of these processes by investigating the origin of the more than 5000 meter high Rwenzori Mountains, which are located within the western branch of the East African Rift at the border between Uganda and the Democratic Republic of Congo. The RiftLink integrated research includes geophysics, petrology, low-temperature thermochronology, structural geology, geomorphology, sedimentology, paleontology, isotope geochemistry, climatology and numerical modelling. A major goal of our collaborative research is to achieve a comprehensive geodynamic understanding of continental rift systems and their role in climate change.

Field work has now started in western Uganda with expeditions in order to sample rocks and fossils from the Rwenzori region and Lake Albert, to map fault zones and sedimentary deposits, and to implement a seismic network to study upper-mantle and crustal structure in the Rwenzori region. Preliminary results will be presented by members of the RiftLink group in this session.