

# ***Late Cenozoic dynamics of the upper Tana river in response to the volcanic activity of Mount Kenya***

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Fluvial dynamics of the upper Tana river have been reconstructed for the Mount Kenya region. The oldest dated phonolite flow that interacts with the palaeo Tana river is 6.05 Ma (40Ar/ 39Ar) old placing the initiation of Mount Kenya volcanics within the Miocene. The major eruptive phase causing the build up of the main volcanic body lasted from 4.43 to 3.9 Ma (40Ar/ 39Ar). During this build up periods with relatively high and low base level occurred, which may be linked to global sea level change. The final phase from the main vent lasted from 2.8 to 2.7 Ma when the rift valley up doming was also prominent. From 2.65 Ma to 0.80 Ma (40Ar/ 39Ar) no major volcanic eruptions occurred and the Tana responded only to changes in uplift and climate change. A large basaltic eruption on the South flank of Mount Kenya of the Thiba basalts happened at 0.80 Ma (40Ar/ 39Ar) caused a significant change in the course and response of the Upper Tana basin.

The terrace record of the current Tana valley registers the accelerated Tana incision as a response of the increase in uplift rate post 0.8 Ma. Our reconstruction demonstrates that not only major tectonic events but also significant base level changes occurred during the Pliocene as witnessed by both incision and depositional records in the upper Tana basin.