

East African Rift Valley

The East African Rift is perhaps the largest rift valley in the world, stretching from as far as Ethiopia at the Afar Triple Junction in the north to the south in Mozambique. The rift was formed when the African Plate started pulling itself apart (divergence) 20-30 million years ago. The rift valley is thought to have been formed by a magma plume in the north near the surface after failing to burst through the surface (diapir). The magma grew and stretched for hundreds of kilometers near the surface inflicting tremendous force against the crust. Eventually the crust snapped all the way down to the south creating grabens (rift valley) and hosts.

Around Uganda and Kenya the magma plume separated into two branches creating the Eastern Rift and the Western Rift. The Eastern part is called the Somali Plate and the Western part of the whole of Africa is called the Nubian Plate. The two faults stretch all the way to Mozambique in the south.

The formation of the rift valley is uncertain with different explanations put forth to describe its origin. Today the fault slowly stretches down and if it reaches the Indian Ocean in the south the horn of Africa will be separated from the main continent forming a new sea.



Rift valley faults denoted by broken line; src https://commons.wikimedia.org/wiki/File:Great_Rift_Valley_map-fr.svg



Africa in a million years time

Most earthquakes and volcanoes in Africa are mainly situated and generated along the rift valley. Most of the volcanoes are extinct with some occasional dormant and active volcanoes eg Nyirangongo in DRC erupted in 2002, Eta Ale, Mt Kilimanjaro etc. Nyirangongo is one volcano with most active lava flows.

Africa, e.g Zimbabwe, usually doesn't experience major tectonic activities such as volcanoes and earthquakes because the plate boundaries are far from the continental land area. The only recent major earthquake in Southern Africa occurred in 2006 with the epicenter in Mozambique. The fault movement along the rift valley can be accountable for the earthquake.

The rift valley has created lakes and proven useful in most countries situated along it, e.g Kenya and Malawi, by providing fish and HEP. Some major rift valley lakes include L Tanganyika (Tanzania), L.Nyasa (Malawi) and L.Turkana (Kenya).

<https://thegeoroom.co.zw/geomorphology/rift-valley.php>