

## ***Geology of subsheets A and G of Yabello map sheet (NB37-14)***

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### **ABSTRACT**

The Sarite (A) and Kajima (G) sub-sheets of the Yavello sheet (NB-37-14) are situated at the northern western part of the sheet and are bounded by coordinates  $4^{\circ} 30' - 5^{\circ} 00'N$  and  $37^{\circ} 30' - 37^{\circ} 45'E$ . The area is underlying by various volcanic rocks and Quaternary cover (eluvium/ alluvium) with minor and patchy occurrences of the Precambrian rocks.

The kyanite-quartz schist on the Precambrian rocks shows very well stretched quartz and kyanite grains and strong schistosity. The existence of kyanite and the high stretched grains of quartz indicate the upper amphibolite facies metamorphic temperature and pressure metamorphic condition. Spots of gneissic rock units that are highly weathered around Chebi and central parts of Kajima area occur as basement window but is not mappable at this scale.

The Tertiary volcanic rocks are widespread throughout the project area covering about 80% of the area. They are mainly basaltic flows, trachytes and acidic to intermediate lavas most of which are undifferentiated. At places, basics rocks are dominant. The volcanic rocks are generally divided into pre-rift, syn-rift and post-rift volcanics. The Tertiary, pre-rift succession whose early flows range in age from Mid-Eocene to Late Miocene, mostly occur at Sarite area, where as the post-rift volcanics exposed in Kajima area and further down south covering the early penplain basement topography.

The basalt flows and the trachytes at Sarite extruded relatively earlier than the rest of the volcanic units. The boundary of the basalt and trachyte are fault controlled and at places gradational. The porphyritic olivine phyric basalt and the intermediate volcanic rocks (trachybasalt) are extruded probably in Mid-Miocene to early Miocene time and are probably syn-rifting.

The flood basalt covering the vast area of the Kajima Sub-sheet is mostly post-rift volcanics. It covers the basement peniplain surface. They volcanic rocks are younger in age than the rest of the volcanic units. Volcanism the area seems to be younging towards the south and

away from the rift shoulders as interpreted from aerial photographs of the sub-sheets “A”, “G”, “N” and “T” of the Yevello sheet. As pointed out by the previous workers, the younger Holocene volcanic rocks which are dominantly found in Dilo(N) and Gorya(T) Sub-sheets of the Yevello sheet are dominantly of recent basaltic cones, maars and flows probably linked to the volcanism related to the development of a new rift.

NS, NNE normal faults produce faulted blocks and Sarite-Weresesu ridge and Arbala-Horbate plain to the east. The Arbala plain seems to be a part of the Segen basin but with no other end of fault bound. In Quaternary, erosion led to the deposition of Quaternary sediments and the formation of the present ridge and plain topography.