

Geology of subsheets O and U of the Yabello map sheet (NB37-14)

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ABSTRACT

The study area is located in the southern Ethiopia near to Ethio-Kenyan boarder bounded by 4°00'N and 4°30'N latitude and 37°45'E and 38°00'E longitude covering an area of about 1500 square kilometers.

The rock exposures in the study area include both high-grade (biotite gneiss and granite gneiss) and low-grade (amphibole schist, talc-tremolite-actinolite schist and marble) Precambrian crystalline rocks, Precambrian intrusives (foliated granite and syenite); Tertiary-Quaternary volcanic rocks including volcanic falls (pyroclastic surge deposits and scoria) and volcanic flows (aphanitic basalt, scoriaceous basalt, vesicular to non-vesicular basalt and vesicular basalt) and Quaternary sediments (including sandy soil and alluvial).

The Precambrian crystalline rocks were subjected to different phases and events of deformation and metamorphism. All the Precambrian rocks excluding the syenite were affected by the whole range of amphibolite facies metamorphism during D1/M1 due to progressive metamorphism. Because of D2/M2 event the low-grade rocks were affected by greenschist facies metamorphism. All the the Precambrian rocks were affected by widespread retrogressive metamorphism resulting in retrograde alteration of minerals due to shearing activity/ strike slip faulting during D3/M3 event. The D4 deformational event resulted in megascopic open regional folding of the Precambrian rocks.

The scoria, basalt and granitoids are of good potential as constructional materials. The olivine aggregates and marble deserve more detailed study for evaluating their economic potential.

