

Rare Metals Category

- **Rare metal resources so far well recognized in the country occur in the southern greenstone belt**
- **Rare earth metal bearing host rocks such as carbonatite have not yet been discovered**

Example of Rare Metal

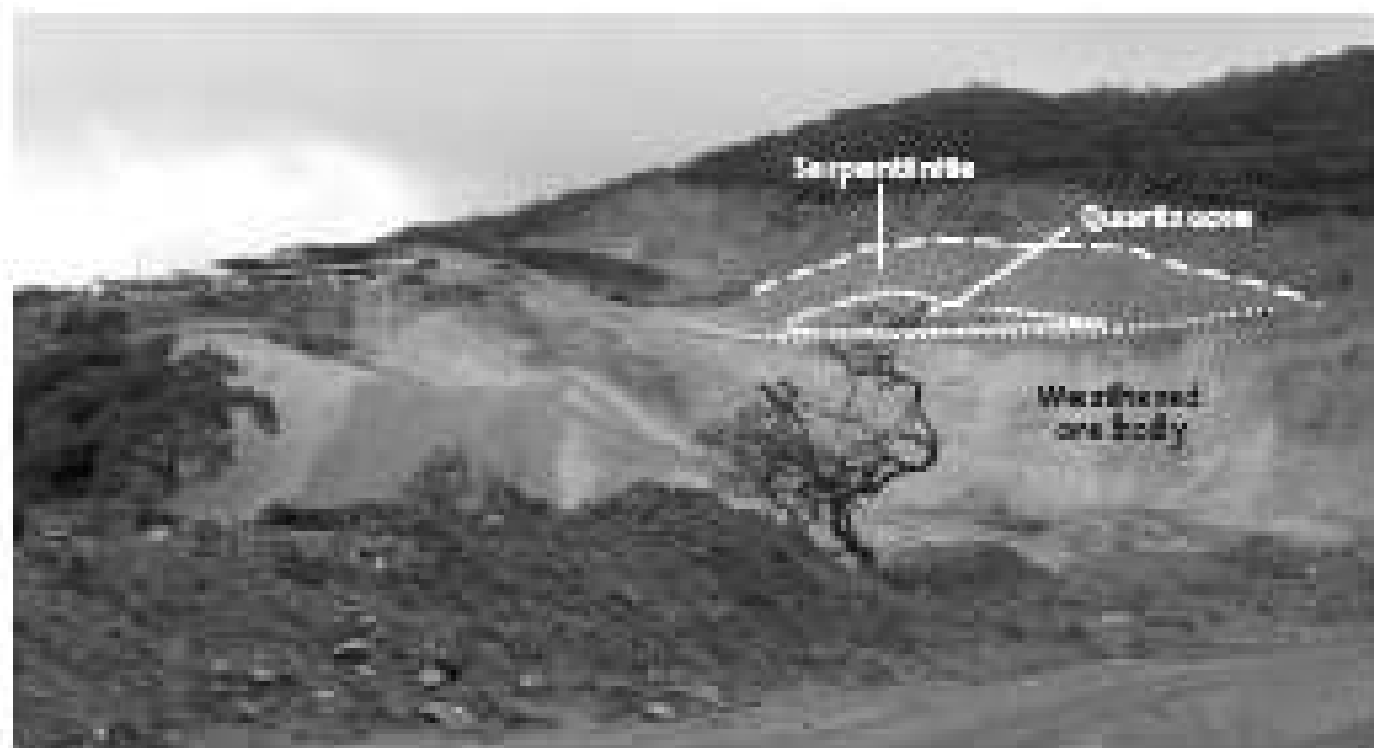
- Kenticha tantalum-bearing pegmatite belongs to the Precambrian basement of southern Ethiopia
- The basement is the southern part of the Arabo-Nubian Shield of Neoproterozoic age
- It consists of Granitic gneiss complex and Ophiolite fold and thrust belt
- The Ophiolite belt has mafic, ultramafic and metavolcano-sediment association
- Several pegmatites, and in particular Kenticha pegmatites enclosed within the ultramafic, intruded the lithologic units after several phases of deformation and metamorphism

Kenticha Pegmatite Field

- Kentich pegmatite field occurs within an area of 2500²Km
- The pegmatites are emplaced along NNE-SSW trending shear zone
- They range from barren feldspar-muscovite to rare element-enriched types
- The Ta-bearing pegmatite deposit is exposed in 2.5Km long and 40-70m wide area, and confined in a package of steeply dipping serpentinites and talc-tremolite schist, with thickness varying from 40-70m
- The upper part of the ore body is strongly weathered with a variety of clay minerals
- Tantalite mineral occurs in grain size of few mm to 5cm
- Weathering has affected feldspars and Li-bearing minerals, whereas the tantalite resisted

Tantalite Resource and Mining Status

- 100 tons is produced per annum from the weathered ore
- Primary un-weathered ore contains 17,000 tons at an av. of 0.017% Ta_2O_5
- Proved ore reserves in the weathered zone with minor component of un-weathered part is 4,700 tons at 0.015% Ta_2O_5
- Mining is so far confined to the weathered ore. The ore is dug out by bulldozer, scooped up onto trucks, driven to the plant to mix with water. The concentrate is produced through a series of steps including screening, jigging and treatment on shaking table
- Recovery is about 70%, and the remaining 30% is stored in the tailing pond
- The Kenticha pegmatite displays complex zoning with Li-minerals – lepidolite, spodumen and amblygonite and minor beryl and sulphides



Additional Commodities

- Varieties of minerals include spodumen, Li-mica and beryl which could add values in future
- All commodities in the form of K_2TaF , K_2NbF , Ta_2O_3 , Nb_2O_3 , Li_2O , U_3O_8 , etc. further require series technological consideration