

# **An Investigation of Industrial Mineral Mining Methods in Sri Lanka**

**Thanujan T, Subasinghe MAIJ, Vettinathan S, Dharmaratne PGR,  
\*Hemalal PVA, Chaminda SP and Jayawardena CL**

Department of Earth Resources Engineering, University of Moratuwa, Sri Lanka

\*Corresponding author - hpanagoda54@gmail.com

Sri Lanka is endowed with a rich base of industrial minerals despite its small land area. Traditional and modernized mining methods are employed to mine graphite, limestone, beach mineral sand (ilmenite, rutile, zircon and garnet), apatite, calcite, dolomite, quartz, feldspar, clay, kaolin, silica sand, mica and rock aggregate. Notably, some deposits have not been optimally exploited to their potential. Moreover, Sri Lanka does not have comprehensive information and documentation in the mining context. The mining method is selected on the basis of respective geology of the deposit, hardness of the ore and rock, depth, thickness and other geological aspects etc. The extraction of narrow steeply dipping vein deposits and deposits at great depth are significantly challenging and need specified selective mining techniques. In the study, currently practiced mining technologies, Cut-and-Fill mining at Bogala, Open-stopping at Kahatagaha mines, open cast mining at Aruwakkalu Limestone quarry and mineral sand mining at Pulmoddai were investigated. The investigation was carried out through interviews and field visits. Site characteristics of each mine were tabulated, and the mining procedures were discussed. Mining methods employed at Kahatagaha and Pulmoddai were traditional while Bogala and Aruwakkalu utilize more systematic technologies. It is recommended to investigate and conduct in-depth analysis in the second phase of the study for technological improvements.

**Keywords:** Cut and fill, Mining method, Open pit, Open stope, Placer mining