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Opportunities related to Moroccan mine wastes valorisation

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Large amounts of solid wastes are produced by the mining industry. These wastes are often considered as problematic materials as they can lead to harmful impacts on the surrounding environment and the society. However, it was proved by many studies that most of mine wastes are inert but sometimes mixed with problematic components such as sulfidic minerals and hazardous metals and metalloids. Reprocessing and retreatment of mine wastes is a key sustainable solution to remove the sources of pollution and to recover the remaining high value products. Many studies around the world have demonstrated the big interest in recovering the residual metals and the use of mine wastes in other applications such as the construction sector.

In this study, a special accent will be given to the current management practices of mine wastes in Morocco as well as the possible opportunities related to the reuse of mine wastes coming from different mining activities. Three main materials categories are targeted: phosphate waste rocks and tailings, coal waste rocks and zinc tailings. The goal is to suggest more sustainable management methods and to explore new future opportunities related to the re-use and reprocessing of these wastes. Some possible high value-added products from these types of wastes are suggested based on their characteristics, location and volume. Construction aggregates, ceramics, bricks, cement, glass, acid mine drainage control, and road-base construction are among the possible explored channels.