

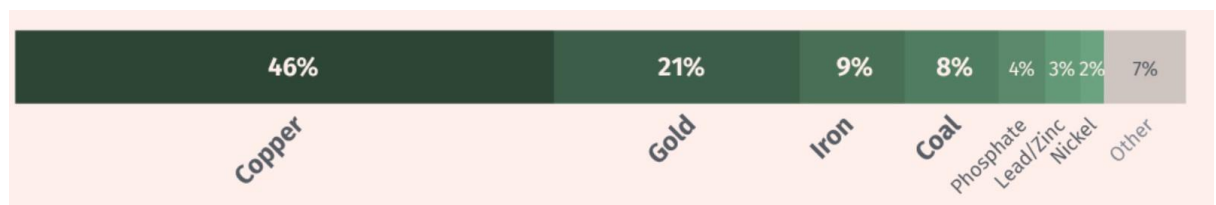
Mine tailings and resource efficiency

The mining activity mainly focuses on a specific resource that is typically a relatively limited amount within a vast amount of extracted material. After milling and processing, many of these materials will be categorized as waste (tailing). However, tailings might still have an adequate quantity of secondary resources in themselves.

Even though tailing materials, owing to the presence of hazardous elements, ions, and oxides, can cause environmental and health deterioration, it is economically and environmentally beneficial to manage tailings as a resource to reduce waste by employing re-mining.

Besides these, it is evident that due to the technological breakthrough, the mining activity might generate less tailing and consequently low concentration of resources these days compared to last decades; therefore, re-mining of old mining sites might be of more interest in terms of availability of valuable resources in tailings. On the other hand, the demand for raw materials and mining of lower-grade ores is increasing, leading to a rise in tailings volume worldwide.

Additionally, based on the global tailing portal, it seems there are about 18000 TFSs (Tailing management and Storage Facilities) around the world and the contribution to global tailings by commodity is as follows. (Global Tailing Review, ICMM, UNEP, PRI)



Therefore, taking care of such a vast volume of tailings and their environmental and safety issues must be back on the agenda.

This thesis will include the following steps:

1. Literature review on mine tailings and re-mining activity of one target metal like copper.
2. Collecting information and quantitative data to have a reliable Life Cycle Inventory
3. Discussion and analysis of the investigation result.

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