

# **Geochemistry of kibaran formations of MAKAMA (South Kivu, D.R. Congo): an overview of Gold enrichment**

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## **Abstract**

MAKAMA is located in FIZI territory (South Kivu, D.R. Congo). This region belongs to the Mesoproterozoic belt (kibaran belt) that covers mainly the eastern D.R. Congo. Quartzite, various schist, pegmatite and Granite are the principal types of lithology that predominate in this territory.

This paper consists mainly in the study of the geochemical characterization of FIZI formations especially MAKAMA sector mining area by stream sediment and soil sampling.

The use of major and minor chemical elements helped to understand the process of mineralization of the study area in gold enrichment. This mineralization in MAKAMA streams and rivers is mainly due to the weathering of schist rocks bearing disseminated gold. The schist's gold enrichment of the kibaran belt in Kivu has been proven since the beginning of 20<sup>th</sup> century. Arsenic, Tin, Tungsten and Copper are enriched secondary metal found associated with gold in MAKAMA soil and stream sediments samples.

Along the kilomo and Bikacimwendji Rivers, gold enrichment is up to 12 ppm while tin 75ppm and Arsenic 34ppm. The depletion of gold rate is mostly in soil than in rivers, in soil gold enrichment reaches 2ppm only. These soils showed allochthonous characteristics.

The level of gold bearing rocks oxidation in MAKAMA with its tropical environment is the principal fact responsible of enrichment and depletion of elements in rivers and soil due to the water and rock interaction.

Statistics and diagrams geochemistry of major and minor elements enabled a better identification of the qualitative aspects of soil and rivers of MAKAMA.

By this study, the mapping of gold anomaly and mineralization trend confirmed a potential in gold largely covering MAKAMA sector.