

METALLOGENIC ANALYSIS OF WEST AND WEST-CENTRAL AFRICA

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How can metallogeny benefit from GIS techniques? It will be shown that the Digital Metallogenic Map of Africa is a powerful GIS tool for metallogenic analysis, the correlation of global metallogenic spatial information, and for exploration. The characteristics of the metallogenic provinces of West and West-Central Africa reflect the complex tectonic history of the area. Examples of the wide variety of mineral deposits are discussed within their lithological, chronostratigraphic and geotectonic context. The Ntem-Chaillu granite-gneiss of Gabon and Congo is an important Archaean greenstone belt, hosting several stratiform, vein and placer gold occurrences. The Palaeoproterozoic Birimian greenstone of West Africa is of particular interest in view of the diverse genetic types of gold mineralisation present, i.e. mesothermal load, tourmalinized turbidite sandstone, quartz veins with native gold, shear-zone hosted vein, intrusive disseminated, and porphyry copper-gold. Archaean itabirites are the main source of iron ore within the West African Craton, Chaillu-Ntem and the Jamba group of Angola. Stratiform Mn and Fe deposits are hosted within the Birimian (West Africa) and Francevillian (Gabon) volcano-sedimentary formations. MVT lead-zinc mineralisation is well developed in the Pan-African West Congolian Niari basin (Congo and Angola). Birimian terranes as well as the Rokelide-Mauritanide volcano-sedimentary sequences are prospective for volcanic-hosted massive Cu-Pb-Zn sulphides. Important Palaeoproterozoic magmatic Fe-Ti-V deposits are found in West Africa and southern Angola. Sn, W, Ta and Nb are related to post-orogenic granites and pegmatites.