

35TH INTERNATIONAL GEOLOGICAL CONGRESS

27 AUGUST - 2 SEPTEMBER 2016 | CAPE TOWN, SOUTH AFRICA



CONFERENCE GUIDEBOOK

www.35igc.org



New 1/2,5 million scale Geologic and Mineral Occurrences maps of the Democratic Republic of Congo

M. Fernandez-Alonso¹, J.-F. Mupande², T. Badosa², D. Baudet¹, S. Dewaele¹, H. Kalenga², D. Kampata², V. Kanda-Nkula³, M. Lahmouch¹, P. Lahogue¹, M. Luamba³, H. Mashagiro², P. Mawaya², J. Mpoi³, B. Mwanza², F. Onya²

¹ Royal Museum for Central Africa (RMCA), Tervuren, Belgium; max.fernandez@africamuseum.be

² Ministère des Mines, Kinshasa, R.D. Congo.

³ Centre de Recherches Géologiques et Minières (CRGM), Kinshasa, R.D. Congo.

The 2015 versions of the geologic map of the DRC, at a scale of 1/2.500.000, are an update of the versions published respectively in 1974 [1a] and 1976 [1b] which were at the time essentially based on pre-1970 knowledge, insights and paradigms. The new versions are based on a geological synthesis of the DRC developed by the RMCA in the frame of the GARS major programme of UNESCO [2], compiled from post-1970 (un)published document sources produced in the scope of geological investigations, mineral exploration programmes and academic research in certain parts of the country. They also draw upon various recent publications focusing on equivalent formations in neighbouring countries from a geological perspective, as well as diverse geophysical works carried out in the continent on the deep geology of Central Africa.

The new geology version uses the contours of stratigraphic units defined in the 1974 map as a basis, but updates and/or redefines the national stratigraphy at the Supergroup level according to the more recent literature results, and following the most recent standards and directives set up by the International Commission on Stratigraphy of the IUGS [3]. It also regroups and classifies the major lithostructural units that make up cratonic blocks, orogenic belts and sedimentary basins in a schematic diagram consistent with the geodynamic environment and tectonic processes prevailing at the time of formation. This yields a new vision of the geological history of the DRC presented in the form of a 'geodynamic barcoding' that places the different geological units of the country within the assembly and dispersion dynamics of the African continent's major components since Archaean times.

In addition the new geological synthesis also addresses the economic aspect by improving on the 1976 definition of metallogenic provinces and providing a more complete inventory of the known mineral occurrences of the DRC's.

All the information on lithostratigraphy and mineral resources is built into a (*proposed national*) georeferenced GIS database that was developed to incorporate data up to the formation level, thus facilitating any additions, revisions and updates following progresses in the compilation of available data on the regional level and the results of future fieldwork. A web-GIS application (www.drcmining.org and www.drcmining.cd) allows the professional geoscientist community to access the new information through the internet using standard browsers.

This work was carried out in the frame of the World Bank – DRC PROMINES [4] programme.

References:

- [1a] Lepersonne, J. (1974) - Carte Géologique du Zaïre au 1/2000.000 et Notice Explicative. République du Zaïre, Département des Mines, Direction de Géologie, Kinshasa.
- [1b] BRGM, (1976) - carte des gîtes minéraux du Zaïre au 1/2.000.000. Service Géologique du Zaïre en collaboration avec la mission minière française, le Musée royal de l'Afrique centrale et le Bureau de recherches géologiques et minières.
- [2] Deblond, A. (2004)- Updated Geological framework of Central Africa; GARS / GeoNET programme, Scientific Case study N^o7, UNESCO.
- [3] Murphy, M.(1999)- International Stratigraphic Guide, an abridged version; Episodes, vol 22/4.
- [4] PROMINES - Growth with Governance in the Mineral Sector / La Bonne Gouvernance dans le Secteur Minier comme Facteur de Croissance. Project P106982 / IDA – H589 ZR – TF010744.