

IM4DC

Action Research Report

SUMMARY

Researchers:

Arianne Ford and John Miller

School/Centre:

Centre for Exploration Targeting

University/Institutions:

University of Western Australia

Key themes:

Governance and regulation
Operational effectiveness

Key countries:

Benin, Cameroon, Central African Republic, Chad, Democratic Republic of Congo, Equatorial Guinea, Gabon, Nigeria, Republic of Congo, Sao Tome, Principe and South Sudan

Completion:

June 2014

Research aims:

This research sought to conduct a GIS-based mineral prospectivity analysis of central Africa with the following deliverables:

- An assessment of the quality of the existing geoscientific data
- Generation of mineral prospectivity maps for Central Africa
- A report on key areas for mineral potential and recommendations
- Release the new maps via the IM4DC server
- Visit to Nigeria to communicate results with key stake holders

For further information on this action research:

Contact person: Arianne Ford
arianne.ford@uwa.edu.au

A GIS-Based Mineral Prospectivity Analysis of Central Africa

Geoscientific data is often acquired by national and provincial geological surveys but remains under-utilised due to a lack of resources or in-house expertise. One way to utilise this data is to produce prospectivity maps which can assist with mineral exploration and land management decisions. Such prospectivity mapping exercises have previously been undertaken with the Geological Survey of Western Australia for the similar purpose of attracting investment dollars into the region from exploration companies. Prospectivity maps also assist in providing advice for government agencies in terms of where to focus future budgets. The mineral potential maps generated give an indication of where further data acquisition and analysis may be of most practical use or where more field mapping may be necessary.

Central Africa is of interest for the global mineral exploration and mining sector due to the existence of known precious and base metal mineralisation, as well as being an established diamond producing region. However, geoscientific information in the region relevant to minerals has been limited in quantity, difficult to access, lacking modern data organisation and with little inter-country synthesis.

A previous IM4DC Action Research project – the Central African GIS Database project – made significant inroads into compiling available data and organising it in a coherent manner. The aim of the current project was to build upon this work to not only provide new geoscience products, but also to present an example of best practice release of precompetitive data. In this case, the precompetitive datasets generated were mineral prospectivity maps of Central Africa, to include gold, copper, tin and other commodities.