

## **Contribution to the knowledge of the Doropo region geology in North-Eastern Côte d'Ivoire (Ampella-Centamin licence)**

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The Birimian terranes of the West African Craton (WAC) is composed of granitoids and greenstone belts and represent an attractive target for mineral exploration. Unfortunately, these areas are very often affected by intense weathering surface which hinders geological field mapping and structural studies. This is the case of the Doropo region in north-eastern Côte d'Ivoire, where very little geological work has been done outside the exploration activities carried out by Ampella-Centamin. In order to better understand the geology of this region, two research projects have been initiated. One develops the Birimian litho-structural framework in this part of Côte d'Ivoire by combining satellite and geophysical images (aeromagnetic and radiometric) with field observations in a Geographic Information System. The other studies the geodynamic context of these formations as well as their period of implementation using geochemical and geochronological data. We present here the preliminary results of the litho-structural study.

The petrographic study of the region identified: biotite granite, pink granite, migmatitic granite, amphibole granodiorite, diorite, dolerite and amphibolite. In the field, granite and granodiorite outcrops are intersected by pegmatite veins. Biotite granite remains the most common formation and is observed throughout the study area. Pink granite occurs in the Kodo and Kakota areas. Granodiorite is found in the Taboura and Gbabédjou sectors where it outcrops in the form of domes or as an enclave in biotite granite. The main ferromagnesian minerals in this rock are biotite and green hornblende. The diorite outcrops in contact with the biotite granite. Dolerite dyke has only been encountered in core samples from diamond drilling. Concerning amphibolite, it is always in enclave either in granite or in granodiorite. It is found in the areas of Kakota, Gbabadjou and Lagbo-Danao.

The teleanalytical study of Landsat8 OLI images has produced a linear map showing the major orientations NW-SE and NE-SW. In the field, the data collected identified fractures, both dextral and sinistral strike-slip fault, shear bands, sigmoid, folds and stretching lineation. All these structural elements attest that the Doropo region formations are affected by a predominant brittle and ductile deformation.

**Keywords:** Geology, structural, Doropo, Landsat8 OLI image