

Petrography and geochemistry of the Dabakala' region volcanites (Northeastern Côte d'Ivoire)

A. GNANZOU^{1*}, H. NGUESSAN¹, I. COULIBALY², Y. COULIBALY¹, G. OUATTARA³

¹ Laboratory of Basement Geology and Metallogeny, UFR STRM, Félix Houphouët-Boigny University, Côte d'Ivoire (Correspondance: ganzouallou@yahoo.fr)

²Nanguy Abrogoua University, 02 BP 801 Abidjan 02

³ Laboratory of Geosciences, Living Environment, Environment and Geographical Sciences, UMRI 68 - Polytechnic Doctoral School, National Polytechnic Institute Felix Houphouët-Boigny, Yamoussoukro, Côte d'Ivoire

Abstract

Located in the northeastern Côte d'Ivoire, the Dabakala region belongs to the Birimian domain. It straddles three volcano-sedimentary units: the Haute-Comoé unit at the East, the Fettékro unit at the North and the Haut-N'zi unit at the West. These consist lithologically, of a volcanic and volcano-sedimentary complex in which outcrop granitoids (granite and granodiorites). Previous studies raise questions about the characteristics of Birimian formations and are the subject of many debates. To participate in this debate, a study focusing on the petrography and geochemistry of volcanites was initiated. The objective of this study is to contribute to a better understanding of the volcanites of the Haute-Comoé and Fettékro furrows. The main results showed that the volcanites are made up of basalts, andesites, dacites, rhyolites and pyroclastites. Chloritization, sericitization, carbonation and sulfurization are the types of alteration commonly encountered in host rocks. The analyzes in major and trace elements show that the volcanites studied are generally sub-alkaline. Basalts are tholeiitic and the most differentiated andesites and facies are calc-alkaline. The significant enrichments in lithophilic elements and the clear negative anomaly in Niobium and Tantalum show that basalts would be set up in a context of subduction (or of remelting of a source coming from a subduction environment).

Keywords: volcanite, tholeiitic, calc-alkaline, subduction, Dabakala,