Guinea-Bissau geological map edition, scale 1:400,000

P.H. Alves[1]; V. Figueiredo[2]

[1]LNEG. Laboratório Nacional de Energia e Geologia. Estrada da Portela, Bairro do Zambujal – Alfragide, Ap.7586, 2610-999 Amadora. Portugal (paulo.hagendorn@lneg.pt); [2]LNEG-UTE-Planageo. Laboratório Nacional de Energia e Geologia. Rua da Amieira. Apartado 1089, 4466-901 S. Mamede de Infesta, Portugal (vera.figueiredo.planageo@ext.randstad.pt)

Abstract

The recent edition of the Geological Map of the Republic of Guinea Bissau (GB) scale 1:400,000 updates the 1968 Teixeira map published during the Portuguese colonial rule and the Mamedov (1980) unpublished map related to the URSS foreign aid after the independence of GB.

The Geological Map is available through the local geological survey (DGGM in Bissau) since 2015 and at the Portuguese geological survey (LNEG) since 2017. The map was printed in 2013 by LNEG, where the final geological interpretation and the ArcGis digital edition were made. Most field and lab work was conducted by the IICT (Tropical Sciences Research Institute, Lisbon), currently part of the University of Lisbon. A large team from the DGGM was also involved in drilling and fieldwork related to the map. Works from other authors were taken in consideration, especially those from the BRGM (geological maps of Gabu and Bafata, scale 1:100,000 and research regarding the Farim area phosphates), Portuguese and URSS geologists for the Boé region, data from 1400 selected water boreholes all over the country, and UN sponsored works on the Bijagos archipelago.

Besides the geological data presented on most geological maps (unit limits, lithostratigraphy, cross section and legend) this edition was printed front and back to include other sorts of data, as a way to make it useful to anyone interested in facts about the country, including school communities and the local population. This option was also followed because publishing a map of GB is a very rare occasion, as less than one general map is printed per decade, due to lack of interest, low funding, scarcity of mineral resources, political and governance instability. GB is also one of the least visited countries by tourists, even as it is one of the safest countries to visit in Africa.

Data included: Geology 1:400,000 and Geological cross section; Legend; Location of the main outcrops; List and location of 57 mineral occurrences; "Vendus" (pans or temporary lakes); 346 boreholes (location in the map and log on the back); Bathymetric chart showing the continental shelf and pinpointing the Bijagos Delta; Satellite image showing the sedimentary transport; Geomorphological sketch map with a small abstract; Hypsometric map; Geological cross section of the Mesocenozoic basin; Lithostratigraphic column as followed in hydrocarbon exploration; Map of the administrative divisions; Cartographic division; References; Photos of outcrops.

For this edition a new base map was created, as no modern raster base existed. The 1:50,000 scale colonial cartography covers GB with 72 maps of remarkable quality but clearly outdated, as they were produced from 1953 to 1966. These maps were converted from raster to vector, adapted to the 1:400,000 scale and updated through imagery, field knowledge and the 2009 Census of population, as the road network and the rural settlements changed after the 1963-1974 colonial war when large areas of the country were abandoned by the population. Even with the colors of geology and all the technical symbols, the detailed topography of this map that includes contour lines and nearly 2000 spot heights will help any traveler in GB.