

Geology

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Geology

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The Geology Map of Africa in the Africa Groundwater Atlas

A new geology map of Africa has been developed for this Africa Groundwater Atlas. This is based on a 1:5 million scale map of geology, oil and gas fields and geologic provinces of Africa ([Persits et al., 2002](#)), which in turn was based on a map published in 1964 by UNESCO ([Furon and Lombard 1964](#)). This map was digitised by, and made available through, the USGS, and can be accessed via the [USGS Energy Data Finder](#).

The 1:5 million scale geology map has been modified to make it more relevant for representing aquifers and groundwater potential. For some countries, the map has also been modified so that it more accurately represents geology at a country scale. These modifications have been made by the British Geological Survey in collaboration with co-authors of the relevant country pages.

Some of the geological units in the original map have been grouped together or subdivided. For example:

Precambrian rocks In the original geology map, Precambrian rocks are undivided. In the revised map, Precambrian rocks have in many cases been subdivided into three groups:

1. metasedimentary
2. orogenic/mobile belt - crystalline metamorphic and igneous rocks within linear, mostly Proterozoic, orogenic belts
3. craton - Archaean and Palaeoproterozoic rocks which have not been affected by Proterozoic and younger orogenic events

Sedimentary rocks In some cases, sedimentary rocks have been grouped by the major sedimentary basins to which they belong: for example, the Taoudeni, Chad and Iullemeden basins.

Unconsolidated sedimentary deposits have also been modified in the revised map. Where they are mapped in the original map, they are still distinguished if they cover a large area and/or where they overlie low productivity aquifers. However, if they have small outcrops (for example, alluvial outcrops in small river valleys) or if they overlie important bedrock aquifers, such as highly productive consolidated sedimentary basins, they are not shown in the revised map, so as to reveal the underlying bedrock aquifer (MacDonald et al., 2012).

If you reproduce any of the geology maps from this Atlas, please cite both the Africa Groundwater Atlas and Persits et al. 2002/Furon and Lombard 1964.



- Revised geology map of Africa at 1:5 million scale. Based on map described in Persits et al. 2002/Furon and Lombard 1964.



- Legend for geology map of Africa at 1:5 million scale. Based on map described in Persits et al. 2002/Furon and Lombard 1964.

Citations

Furon R and Lombard J. 1964. [Explanatory note: Geological Map of Africa \(1/5,000,000\) / Note explicative: carte geologique de l'Afrique \(1/5,000,000\)](#). UNESCO and the Association for African Geological Surveys (ASGA). UNESCO, Paris, 1964.

Persits, F, Ahlbrandt, T, Tuttle, M, Charpentier, R, Brownfield, M, and Takahashi, K. 2002. [Map showing geology, oil and gas fields and geologic provinces of Africa, Ver 2.0](#). USGS Open File report 97-470 A.

MacDonald, A M, Bonsor, H C, Ó Dochartaigh, B É, and Taylor, R G. 2012. [Quantitative maps of groundwater resources in Africa](#). Environmental Research Letters 7(2). doi: 10.1088/1748-9326/7/2/024009

Other Geological Maps of Africa

OneGeology

Many countries across Africa (27 in total) are members of OneGeology, an international initiative to make worldwide geological data and maps available at a scale of at least 1:1 million. Further information can be found via the [OneGeology website](#) and data can be accessed via the [OneGeology portal](#).

Geological Atlas of Africa

Schlüter, T. 2006. [Geological Atlas of Africa](#). Springer.

Thomas Schlüter published a [Geological Atlas of Africa](#) in 2006. This excellent overview provides an introduction to the basic geology of Africa, including a geological overview map and summary of each country in Africa. It also provides an overview of the tectonic and sedimentary/stratigraphic setting of the African continent, putting the national geological information in context.

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