

Geology, Geotectonic and Georesources in relation to sustainable development in Sudan

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This paper is an attempt to reveal the present status of geological criteria in Sudan so as to encourage mining industry. Sudan has been known for its diversity and prolonged history of geological processes and events. This and the vast area of the country make it one of the relatively richest African countries in geo-resources. Irrespective of this, most of the country is considered still virgin, as far as prospecting, exploration and extraction of geo-resources are concerned. Gold mining has been active in the "Nubian desert" since Pharaonic times. The general outline of the geology of the Sudan, displayed geochronologically, consists of: metamorphic and igneous rocks of Precambrian era referred to as basement complex. These are unconformably covered by Phanerozoic sedimentary and volcanic sequences. All of these units had been subjected to more than one phase of deformation. The geo-resources of Sudan consist of:

- Solid metallic and non metallic minerals and industrial and building materials; most of these are confined to the uplifted blocks of Precambrian basement complex.

- Hydrogeological aquifers and hydrocarbon energy are confined to subsidizing Phanerozoic basins and depressions of sedimentary sequences separating the uplifted blocks of Precambrian basement complex.

This paper also displays gold mining activity, with special stress on indigenous (artisanal) mining, prevailing now in the country and account for positive and negative impacts on socio-economic and environment. In Sudan, as well as other African countries, national and international conflicts (hot spots) are usually located, where geo-resources, of great economic potentialities are expected. The suggested recommendation, in this review, is to set a road map to adopt a national policy governing laws and regulations for sustainable and rational mining industry.