



Geothermal exploration in the Virunga Prospect, Northern Rwanda

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German technical cooperation has taken the initiative to support partner countries in geothermal energy use. Therefore the Federal Institute for Geosciences and Natural Resources (BGR) on behalf of the Federal Ministry for Economic Cooperation and Development (BMZ) is carrying out the technical cooperation programme GEOTHERM. As an example of the ongoing project activities, preliminary results of studies carried out in the Virunga geothermal prospect in Northern Rwanda will be presented.

The study area is located along the Western branch of the East African Rift System. Weak geothermal surface manifestations, e.g. hot springs and bubbling pools, indicate an existing hydrothermal system. Previous studies did not determine location, distribution, quality and quantity of the heat source. Consequently the aim of this study is to detect and assess the heat source with a multi method approach. Remote sensing techniques, geochemical analyses and geophysical measurements have been applied to make a first serious attempt. More detailed geophysical investigations and gas measurements are planned to start in spring 2009.

Aerial photographs and satellite images were used for a high-resolution structural analysis to determine major fault zones, which are dominating the flow paths of hydrothermal fluids. In the frame of a regional geophysical survey (Magnetotellurics and Transient Electromagnetics) a zone of low resistivity values could be detected SW of the Karisimbi stratovolcano, which is corresponding with the results of the geochemical analyses. Assumptions are made that a magmatic body may exist in a depth of 5 km below surface.