

## **Exploring the Geological Conditions of Gold Mineralization In Suriname: An Example of the Rosebel Area, Suriname**

**Nicole Kioe-A-Sen**

*Department of Geology and Mining, Anton de Kom University of Suriname*

### **Abstract**

Gold is one of the most important commodities for Suriname. Most of the gold deposits are located in a NW-SE greenstone belt in eastern Suriname formed during the Trans-Amazonian Orogeny (2,260 – 2,080 Ma). These deposits are classified as orogenic gold deposits formed during the Proterozoicum, with a possible link with the gold deposits from West Africa. Currently, gold is being mined at various locations by small and large scale companies. The Rosebel gold mine, from which production started in 2000, was the first large-scale open pit mine in Suriname. Iamgold Corporation, a Canadian company, is responsible for mining operations. Total annual gold production for Suriname was estimated at 736,000 troy ounces in 2013, of which 336,000 troy ounces was produced from the Rosebel mine and the remaining by the small scale miners. Despite the increasing gold production and interest in the gold sector, there is a lack of geological knowledge concerning the natural resources as gold. This is mainly the result of the lack of research and systematic exploration. Accessibility to the exploration areas and the required capital also have an important impact. For efficient exploration, there must be detailed knowledge of the regional geological evolution. Set ups of genesis models can also contribute to a better understanding of the different types of gold mineralization in Suriname. Advanced research and documentations are currently very limited. The present research focusses on a prospective area north of the Rosebel mine. The Rosebel mine consists of eight individual gold deposits and gold mineralization is generally hosted in quartz-carbonate veins. In the area examined for the present study, gold is not associated with quartz-carbonate veins, but rather with an unidentified silica unit. The research is aimed at determining the structural, mineralogical and geochemical characteristics of the gold deposit to get a better understanding of the Proterozoic gold forming processes in this part of Suriname and benefit future exploration.