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INVENTORY OF MINERAL RESOURCES
IN BENIN

(Document submitted by the
Government of Benin)

The geological map of Benin indicates crystalline and crystallophyllian formations of the Precambrian as well as more recent sedimentary formations.

The crystalline and crystallophyllian formations, covering nine-tenths of the country, can be classified in three major groups:

(a) Highly metamorphic terrain (mica-schist, mignatitic gneiss) almost throughout middle and north Benin. This is called the Dahomeyan and is considered to be the oldest Precambrian formation in West Africa;

(b) Moderately or slightly metamorphic terrains making up the Atacorian, the Kande series and the Buem in the north-western part of the country;

(c) Granites.

The sedimentary formations are generally found in four areas:

(a) The primary terrains of the Voltaïen in the north-west;

(b) Sandstone in Kandi from the Cretaceous period in the north-east;

(c) Sandstone in Gaya in the far north;

(d) Secondary and tertiary basins in the south.

Several indices of mineralization have been found throughout Benin since colonial and neo-colonial times. During the last few years, considerable efforts have focussed on prospecting for certain useful substances, which have resulted in the identification of some deposits. Work has continued on other promising mineralizations.

A. PROVEN DEPOSITS

1. Onigbolo limestone deposits

(a) Summit of the Paleocene;

(b) Zoogenous limestone with satisfactory technological characteristics;

(c) Estimated reserves of 90 million tons;

(d) Deposit being exploited - cement factory producing 50,000 tons per year.

2. Dadjo marble deposits

(a) Located 150 km north of Save;

(b) Contains four deposits, only one of which has been studied in detail;

- (c) Marble ranging from white to grey with coarse or medium crystallization;
- (d) Reserves of 6 million tons;
- (e) Technical and economic studies under way with a view to exploiting the marble.

3. Loumbou-Loumbou iron deposits

- (a) Located in the north of Benin;
- (b) Oolitic iron in horizontal layers 3 to 3.5 metres thick under a 6 metre overlap;
- (c) Reserves: 266 million tons over 150 sq km of the Loumbou-Loumbou plateau;

250 million possible tons discovered in the exploratory studies done in the west and south of the plateau;

- (d) Content: 46 to 52 per cent iron;
13 to 15 per cent silicon.

4. Mekrou region phosphate deposits

- (a) Probably an extension of the phosphate deposit recently discovered in the Tapoa region of the Niger;
- (b) Deposits in the form of phosphated sandstone:
 - (i) Occurring at or below the surface 1 to 4 m thick;
 - (ii) 100 to 300 m deep and up to 5 to 10 m thick.
- (c) Provisional reserves: 5 million tons in the southern sector of the zone;
- (d) Average content: 25 per cent P_2O_5 (22 to 30 per cent);
- (e) Study under way to use these phosphates in the manufacture of simple or triple super-phosphates.

B. PROMISING DEPOSITS

1. Perma gold deposits

- (a) Placer gold
 - (i) Has already been mined in this region (approximately 1 ton of gold has been extracted);

- (ii) Current reserve of about 500 kg;
 - (iii) Discovery during geological mapping, mining research and exploratory studies of numerous gold indices between the 10th and 11th parallels in the valleys of the Sarga-Pendjari-Alibori and Boutakounda Rivers.
- (b) Gold in veins
- (i) Has been thoroughly researched;
 - (ii) Many veins have been found;
 - (iii) Content of the veins: 5 g to 75 g/ton;
 - (iv) Provisional reserve: 300 kg.

2. Ketou kaolin deposits

- (a) Found in the Maestrichtien;
- (b) Deposit may prove to be very large;
- (c) Thickness of the overlay ranging from 3 to 8 m;
- (d) Thickness of the kaolin unknown as exploratory drilling has not yet been done.

3. Sand for glassmaking from Houeyogbe, Seme and surrounding areas

- (a) Prospection under way in order to identify the macroscopic layer that can be used for glassmaking;
- (b) The first chemical results should average contents of:
 - SiO₂ - 98 per cent, Fe₂O₃ - 0.12 per cent at Houeyogbe;
 - SiO₂ - 98.5 per cent, Fe₂O₃ - 0.20 per cent at Seme;
- (c) Other results should be forthcoming;
- (d) Partially known reserves: Houeyogbe region, approximately 700,000 cu m; Seme region, approximately 1,200,000 cu m.

4. Other indices

- (a) Chromite from Buem: Found in lenticular bodies in the Buem serpentinites;
- (b) Rutile: In the Birni, Kjoungou, Pehonco; Kilibo, Toui and Tchaourou regions;

- (c) Ilmenite: In the valley of Couffo, north-west of Abomey;
- (d) Monazite: In the recent detrital deposits of the Middle Oueme and Middle Okpara.
- (e) Disthene: Middle Basin of Okpara;

Of eluvio-colluvial and even alluvial origin;
Geological context: Dolomite gneiss and amphibolites.