



# 2006 Minerals Yearbook

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CENTRAL AFRICAN REPUBLIC, CÔTE D'IVOIRE,  
AND TOGO

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# THE MINERAL INDUSTRIES OF CENTRAL AFRICAN REPUBLIC, CÔTE D'IVOIRE, AND TOGO

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## CENTRAL AFRICAN REPUBLIC

Central African Republic's mineral resource endowment included copper, diamond, gold, graphite, ilmenite, iron ore, kaolin, kyanite, lignite, limestone, manganese, monazite, quartz, rutile, salt, tin, and uranium. Of these commodities, only diamond and gold were produced in 2006; subsistence farming was the mainstay of the economy. The World Trade Organization (2007, p. 2, 6) estimated that the mining sector accounted for about 7% of the gross domestic product (GDP); rough diamond and timber were the country's leading export products.

According to the U.S. Department of State, Central African Republic has had a history of violence and unrest. The country has experienced four coups d'état and many years of undemocratic rule since its independence in 1960. Recent threats to the country's stability included the presence of several rebel groups, which occupied four northeastern towns in October and November 2006 (Swan, 2007).

### Production

Production of gold and diamond, which was mostly artisanal, came from the regions of Berberati, Haute-Kotto, and Haute-Sangha. In 2006, diamond production increased to about 420,000 carats from a revised 383,294 carats in 2005 (table 1); diamond exports, which were mainly destined for Europe and Israel, amounted to about 416,000 carats and were valued at \$59 million.

### Structure of the Mineral Industry

Production and trade of diamond and gold were overseen by the Bureau d'Évaluation et de Contrôle de Diamant et d'Or (BECDOR). BECDOR maintained the country's diamond and gold production database and assessed the value of diamond parcels that came from the various diamond-exporting companies (collectively known as bureaux d'achat) that operated in the country.

### Commodity Review

#### Metals

**Gold.**—Axmin Inc. of Canada continued to explore for gold in the country. A prefeasibility study for the Passendro gold project was completed by GBM Ltd. of the United Kingdom in early 2006 and was followed by a feasibility study conducted by Senet (Pty) Ltd. of South Africa, which was commissioned during the third quarter of 2006. The prefeasibility study had

envisioned an open pit operation with a gravity carbon-in-leach processing plant that would process about 3 million metric tons per year (Mt/yr) of ore with production estimated to be about 6,200 kilograms per year (kg/yr) of gold (reported as 200,000 troy ounces) (Axmin Inc., 2007, p. 1).

Other companies exploring for gold in the country included Prospero Minerals Corp. (formerly Corumel Minerals Corp., name changed in 2006), and Tamija Gold & Diamond Exploration Inc. of the United States, and London-based Pan African Resources plc.

#### Industrial Minerals

**Diamond.**—In 2006, Energem Resources Inc. of Canada continued to focus on the development of suitable diamond prospects within its Bangana, Bria, Kotto, and Quadda concessions (Energem Resources Inc., 2006). Vaaldiam Resources Ltd.'s plans to explore for diamond-bearing kimberlite pipes in the country continued to be on hold during the year as the company focused on other priority exploration areas in Brazil and Canada (Vaaldiam Resources Ltd., 2007, p. 17, 35). Other companies exploring for diamond included Pangea Diamondfields plc, which planned to invest \$3.2 million in a bulk sampling plant for its Dimbi project concession area, and Gem Diamonds Ltd., which held exploration and mining permits for the Mambere River project near the town of Berberati.

#### Mineral Fuels and Related Materials

**Petroleum.**—Central African Republic did not produce mineral fuels in 2006 and depended upon imports for its energy requirements. United Reef Ltd. of Canada, which had obtained the rights to a petroleum exploration permit in the country through a farm-in agreement with Denver-based RSM Production Corp. (RSM) in 2004, was unable to continue with its exploration activities in 2006. The company declared “force majeure” following the lack of progress in resolving a contract dispute between RSM and the Government. The company's exploration permit was for the Doseo and the Salamat basins in the northern part of the country (United Reef Ltd., 2006, p. 1-4).

**Uranium.**—South African-based UraMin Inc. held a 90% working interest in 10 separate areas of uranium mineralization at Bakouma in south-central Central African Republic; the remaining 10% free-carried interest was held by the Government. The company began an exploration drilling program on the Patricia North deposit in August 2006 and planned to complete a feasibility study during the third quarter of 2008 (UraMin Inc., 2007).

## References Cited

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- Energem Resources Inc., 2006, Asset overview—Diamonds in Central African Republic: Energem Resources Inc. (Accessed August 21, 2007, at [http://www.energem.com/energem\\_mining.html](http://www.energem.com/energem_mining.html).)
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- UraMin Inc., 2007, Report and financial statements for the period ended December 31, 2006: Gauteng, South Africa, UraMin Inc., 46 p.
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- World Trade Organization, 2007, Trade policy review—Central African Republic: Geneva, Switzerland, World Trade Organization, May, 73 p.

## CÔTE D'IVOIRE

Côte d'Ivoire was a producer of cement, clay, diamond, gold, gravel and crushed stone, manganese, natural gas, niobium (columbium), crude petroleum and petroleum products, sand, sulfuric acid, and tantalum. Other mineral resources produced included bauxite, cobalt, copper, iron ore, nickel, and silica sand. The Ivorian economy was largely dependent on agriculture with coffee and cocoa as the principal export crops.

### Production

Most mineral production data for 2005 and 2006 has been estimated with the exception of gold and crude petroleum. In 2006, gold production decreased modestly to 1,324 kilograms (kg) compared with 1,335 kg produced in 2005; crude petroleum production, however, increased by about 50.3% to 21.9 million barrels (Mbbbl) compared with 14.6 Mbbbl in 2005. Data on mineral production are provided in table 1.

### Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities.

### Commodity Review

#### Metals

**Gold.**—In 2006, gold production decreased to 1,324 kg from a revised 1,335 kg in 2005 (table 1). Production came from the Ity Mine, which was owned by French-based La Mancha Resources Inc. La Mancha acquired a 51% interest in the Ity Mine from Cie. Générale Des Matières Nucleaires Group (COGEMA) of France in 2006. State-owned Société pour le Développement Minier en Côte d'Ivoire (SODEMI) held the remaining 49% interest (La Mancha Resources Inc., 2007, p. 7).

Equigold NL of Australia through its subsidiary Equigold Côte d'Ivoire S.A. completed a bankable feasibility study for the Bonikro gold project in July. Commissioning of the processing plant was scheduled for late March 2008, and first commercial production was expected by April 2008. The estimated mine life

of the project was 8 years at an estimated average production rate of about 3,700 kg/yr (reported as 120,000 troy ounces). Gold reserves at Bonikro were estimated to be 16 million metric tons (Mt) at a grade of 1.8 grams per metric ton (g/t) gold (Equigold NL, 2007a, p. 12-14; b).

Randgold Resources Ltd. of the United Kingdom advanced its Tongon project to the bankable feasibility stage in 2006; the company did not plan to make a decision until 2008 on whether or not to develop a mine. The company carried out an eight-hole diamond drilling program during the year and planned to conduct a 30,000-meter drilling program in 2007 (Randgold Resources Ltd., 2007, p. 2, 29-30).

Cluff Gold plc. of the United Kingdom completed a feasibility study for the reopening of the Angovia Mine. The company planned to submit an application for a mining permit to the Government, but no timeframe was provided as to when this would take place. Indicated and inferred mineral resources at Angovia were estimated to be about 6.15 Mt at a grade of about 1.7 g/t gold (Cluff Gold plc., 2007, p. 9).

### Industrial Minerals

**Diamond.**—Kimberlites were known to occur at Kanangone, Seguela, and Tortiya; diamond was produced only from alluvial deposits at Seguela and Tortiya. In December 2006, the United Nations Security Council renewed until October 31, 2007, the ban it had imposed on rough diamond originating in Côte d'Ivoire (United Nations Security Council, 2006).

### Mineral Fuels

Most of the country's oil and gas wells were located offshore. A consortium formed by Canadian Natural Resources Ltd. (CNR) (58.67%), Société Nationale d'Opérations Pétrolières de la Côte d'Ivoire (20%), and Tullow Oil plc of the United Kingdom (21.33%) produced natural gas and petroleum from the East Espoir and West Espoir oilfields. CNR (57.61%), Svenska Petroleum Exploration of Sweden (27.39%), and Petroci (15%) operated the Baobab oilfield, which began production in late 2005. The Baobab oilfield reached peak production of 52,000 barrels per day (bbl/d) during the first quarter of 2006, but owing to technical problems, production dropped to an average of about 25,000 bbl/d during the second half of the year. Average annual production at the East Espoir oilfield was 31,000 bbl/d. The West Espoir oilfield began production in mid-2006, and production was expected to peak at 13,000 bbl/d in 2007 (U.S. Energy Information Administration, 2007).

### References Cited

- Cluff Gold plc., 2007, 2006 annual report: London, United Kingdom, Cluff Gold plc., 48 p.
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U.S. Energy Information Administration, 2007, Côte d'Ivoire—Country analysis brief: U.S. Energy Information Administration, May. (Accessed January 12, 2007, at [http://www.eia.doe.gov/emeu/cabs/Cte\\_dIvoire/Oil.html](http://www.eia.doe.gov/emeu/cabs/Cte_dIvoire/Oil.html).)

## TOGO

Togo was a producer of cement, clinker, diamond, gold, limestone, and phosphate rock. The country was also endowed with resources of bauxite, gypsum, iron ore, manganese, marble, rutile, and zinc. Agriculture, which accounted for about 42% of the GDP in 2006, was Togo's main economic activity. Most of the industrial activity in the country was limited to phosphate production (U.S. Department of State, 2007). The Ministère de l'Équipement, des Mines, de l'Énergie et des Postes et Télécommunications was responsible for the administration of the mining sector. The International Fertilizer Group Togo,

which was a 50-50 joint venture between Brifco Ltd. of France and the Government of Togo, was the company in charge of phosphate production.

## Production

Production of diamond decreased by 31% to 28,200 carats from 41,000 carats produced in 2005; phosphate rock production increased by 22% to about 1.7 Mt from about 1.4 Mt produced in 2005. Data on mineral production are provided in table 1.

## Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities.

## Reference Cited

U.S. Department of State, 2007, Togo—Background note: U.S. Department of State, September. (Accessed October 23, 2007, at <http://www.state.gov/r/pa/ei/bgn/5430.htm>.)

TABLE 1  
CENTRAL AFRICAN REPUBLIC, CÔTE D'IVOIRE, AND TOGO: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons unless otherwise specified)

Country and commodity	2002	2003 <sup>c</sup>	2004 <sup>c</sup>	2005 <sup>c</sup>	2006 <sup>c</sup>
<b>CENTRAL AFRICAN REPUBLIC<sup>2</sup></b>					
Diamond <sup>3</sup> carats	415,788 <sup>r</sup>	332,700 <sup>4</sup>	350,000	383,300 <sup>r,4</sup>	420,000 <sup>4</sup>
Gold kilograms	16	7 <sup>4</sup>	7	10 <sup>r,4</sup>	10
<b>CÔTE D'IVOIRE<sup>5</sup></b>					
Cement <sup>c</sup>	650,000	650,000	650,000	650,000	650,000
Columbite <sup>c</sup> kilograms	130	130	130	130	130
Diamond carats	306,500	230,000	300,000	300,000	300,000
Gold kilograms	3,570	1,313 <sup>4</sup>	1,219 <sup>4</sup>	1,335 <sup>r,4</sup>	1,324 <sup>4</sup>
Gravel and crushed stone	550,000 <sup>c</sup>	600,412 <sup>4</sup>	659,097 <sup>4</sup>	660,000	660,000
Natural gas million cubic meters	1,610	1,457 <sup>4</sup>	2,000 <sup>4</sup>	2,200 <sup>4</sup>	2,200
Petroleum:					
Crude thousand 42-gallon barrels	5,457	7,506 <sup>4</sup>	8,125 <sup>4</sup>	14,574 <sup>4</sup>	21,900 <sup>4</sup>
Refinery products <sup>c</sup> do.	19,000	19,000	19,000	19,000	19,000
Sand <sup>c</sup>	750,000	233,737 <sup>4</sup>	173,056 <sup>4</sup>	173,000	173,000
Sulfuric acid <sup>c</sup>	3,000	3,000	3,000	3,000	3,000
Tantalite <sup>c</sup> kilograms	400	400	400	400	400
<b>TOGO<sup>6</sup></b>					
Cement: <sup>c</sup>					
Clinker	1,000,000	1,200,000	1,200,000	1,200,000	1,200,000
Hydraulic <sup>7</sup>	800,000	800,000	800,000	800,000	800,000
Diamond carats	NA	87,200	123,000 <sup>r</sup>	41,000	28,200
Limestone <sup>c</sup>	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000
Phosphate rock, beneficiated product:					
Gross weight thousand metric tons	1,271	1,471 <sup>4</sup>	1,115 <sup>4</sup>	1,350 <sup>r</sup>	1,650
P <sub>2</sub> O <sub>5</sub> content <sup>c</sup> do.	460	530	418 <sup>4</sup>	481 <sup>r</sup>	590 <sup>4</sup>

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits. <sup>r</sup>Revised. NA Not available.

<sup>1</sup>Table includes data available through October 2007.

<sup>2</sup>In addition to the commodities listed, Central African Republic produced kaolin and quartz crystals, but information is inadequate to make reliable estimates of output.

<sup>3</sup>Production is approximately 80% gem quality.

<sup>4</sup>Reported figure.

<sup>5</sup>In addition to the commodities listed, Côte d'Ivoire produced clay, crushed granite, manganese, and stone, but information is inadequate to make reliable estimates of output.

<sup>6</sup>Togo also presumably produced gold, but output is not reported, and available information is inadequate to make a reliable estimate of output.

<sup>7</sup>Includes cement produced from imported clinker.

TABLE 2  
CÔTE D'IVOIRE AND TOGO: STRUCTURE OF THE MINERAL INDUSTRIES IN 2006

(Metric tons unless otherwise specified)

Country and commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
<u>CÔTE D'IVOIRE</u>				
Cement		Société des Ciments d'Abidjan	Abidjan plant	750,000.
Do.		Société Ivoirienne de Ciment et Matériaux (Holcim Ltd.)	do.	500,000.
Do.		Société des Ciments du Sud-Ouest	San Pedro	100,000.
Gold		Société des Mines d'Ity [La Mancha Resources Inc., 51%, and Société pour le Développement Minier en Côte d'Ivoire (SODEMI), 49%]	Ity Mine	450,000 ore.
Petroleum, crude	thousand 42-gallon barrels	Canadian Natural Resources Ltd. (CNR), 57.61%; Svenska Petroleum, 27.39%; Société Nationale d'Opérations Pétrolières de la Côte d'Ivoire (Petroci), 15%	Baobab oilfield	17,520.
Do.	do.	Canadian Natural Resources Ltd. (CNR), 58.67%; Tullow Oil plc, 21.33%; Société Nationale d'Opérations Pétrolières de la Côte d'Ivoire (Petroci), 20%	East Espoir oilfield	6,700.
Do.	do.	do.	Lion and Panther oilfields	2,000.
Petroleum products	do.	Société Ivoirienne de Raffinage	Abidjan	23,800.
<u>TOGO</u>				
Cement <sup>1</sup>		Ciments du Togo	Lome plant	800,000 cement.
Do.		West African Cement Company	Tabligbo	1,000,000 cement; 1,200,000 clinker.
Limestone <sup>1</sup>		Ciments de l'Afrique de l'Ouest	do.	2,400,000.
Phosphate rock		International Fertilizer Group Togo	Akoumpe and Hahotue	2,000,000.

<sup>1</sup>Based on information available as of yearend 2005.