



# 2009 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

Clay, diamond, gold, limestone, and sand and gravel were the only mineral commodities reported as being produced in Central African Republic. The country's undeveloped mineral resources included copper, graphite, ilmenite, iron ore, kyanite, lignite, manganese, monazite, quartz, rutile, salt, tin, and uranium.

### Production

Production of diamond and gold, which was mostly artisanal, came from the regions of Berberati, Haute-Kotto, and Haute-Sangha. In 2009, diamond production decreased by 17% to 311,779 carats from 377,209 carats in 2008. Gold production from artisanal mining operations increased by 42% to 61 kilograms (kg) from 43 kg in 2008. Production data for other mineral commodities were not available for 2009 (table 1).

### Structure of the Mineral Industry

The Ministry of Mines, Energy and Water was the Government agency responsible for the mining sector. Production and trade of diamond and gold were overseen by the Bureau d'Evaluation 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) operating in the country.

### Commodity Review

#### Metals

**Gold.**—AXMIN Inc. of Canada held a 100% interest in the Bakala, the Bambari, the Bogoin II, and the Pouloubou gold concessions areas. On September 11, 2009, the company expressed to the Government its intention not to renew the Bakala, the Bogoin II, and the Pouloubou permits owing partly to its inability to raise capital for their development. The company, however, continued to seek to obtain the required permits and Government approvals for the Passendro gold project, which is located within the Bambari concession area about 60 kilometers (km) from the town of Bambari. As of June 18, 2009, the company announced a 30% increase in the project's measured and indicated resources, which were reported to be 31.5 million metric tons (Mt) at an average grade of 2.0 grams per metric ton (g/t) gold. The mineral resource estimates were prepared by independent consultants SRK Consulting Ltd. of the United Kingdom (Axmin Inc., 2009; 2010, p. 4-5).

## Industrial Minerals

**Diamond.**—London-based Pangea DiamondFields plc suspended exploration activities at its Dimbi and Etoile alluvial diamond concession areas in late January. The company reported that both projects were to be put on a care-and-maintenance status until market conditions improved, although options of a possible sale or transfer of equipment were also being considered. Exploration activities at Dimbi were shut down in December 2008 owing to the breakdown of the main power generator onsite. During early January, activities at Dimbi were limited to processing stockpiles and securing the site. Equipment from the Etoile project area was to be transferred to the Dimbi project area for safekeeping once all samples onsite were processed (Pangea DiamondFields plc, 2009).

## Mineral Fuels and Related Materials

**Uranium.**—Areva Group of France announced that its Bakouma uranium project, which is located 100 km north of the Bangassou prefecture and 900 km northeast of Bangui, had entered the prefeasibility stage. Areva had bought out British-Canadian company UraMin Inc. in July 2007, thereby acquiring a 90% working interest in 10 separate areas of uranium mineralization within the Bakouma prospect. Uranium deposits at Bakouma were mined to a limited extent during the 1960s and 1970s but not at a commercial scale. Inferred mineral resources at Bakouma were estimated to be about 5.7 Mt at an average grade of 1.72% U. Full production was expected to be achieved between 2014 and 2015 (Areva Group, 2010).

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- Axmin Inc., 2009, 30% increase in measured and indicated resources at main zone Passendro gold project—Central African Republic: Toronto, Ontario, Canada, Axmin Inc. press release, June 18, 2 p.
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## CÔTE D'IVOIRE

Mineral commodities produced in Côte d'Ivoire included cement, gold, manganese ore, natural gas, crude petroleum, and petroleum products. In addition to these commodities, the country produced clay, crushed stone, diamond, sand and gravel, and sulfuric acid, but information was inadequate to make reliable estimates of output. Information was not available to determine whether the country continued to produce niobium

(columbium) ore or tantalum ore. Undeveloped mineral resources included bauxite, cobalt, copper, iron ore, nickel, and silica sand.

On October 29, 2009, the United Nations Security Council renewed once again the ban on rough diamond trade that it had imposed on the country since 2005. The measure was to be reviewed on October 31, 2010. Presidential elections, which were to be held in November 2009, were postponed once again. The Independent Electoral Commission announced that the elections had been postponed to allow for the completion of the registration process. No new election date was set as of yearend (United Nations Security Council, 2009; U.S. Department of State, 2010).

## Production

Based on reported exports of hydraulic cement, cement production decreased by 21% to 283,400 metric tons (t) from 360,034 t in 2008. Gold production increased by 65% to 6,947 kg from 4,205 kg in 2008 as a result of achieving full production at the the Bonikro gold mine. Data on mineral production are in table 1.

## Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities.

## Commodity Review

### Metals

**Bauxite.**—Dharni Sampda Private Ltd. (DSPL) of India, which was formerly known as Taurian Resources Private Ltd. (the name was changed in February 2009), held an exploration license for the Divo bauxite concession, which was located 180 km from the Port of Abidjan. DSPL, which operated the concession under its subsidiary Taurian Côte d'Ivoire S.A., began exploration activities at Divo in February. The company announced that the project was at the feasibility stage, but no information concerning a resource estimate was available as of yearend (Dharni Sampda Private Ltd., 2010a).

**Gold.**—La Mancha Resources Inc. held a 45.9% interest in the Ity gold mine. The company reported that the mine had produced 1,608 kg of gold (reported as 51,710 troy ounces) during the year compared with 1,694 kg (reported as 54,460 troy ounces) in 2008. The slight decrease in production was the result of a reduction in mill throughput and of a lower gold recovery rate (La Mancha Resources Inc., 2010, p. 7-8).

The Bonikro gold mine, which is located in south-central Côte d'Ivoire about 250 km northwest of the capital city of Abidjan, achieved its first full year of production. The mine produced 4,700 kg of gold (reported as 150,000 troy ounces). Lihir Gold Ltd. of Australia (the company that operated the mine) planned to invest \$37 million in exploration in 2010 and was considering increasing annual production to more than 6,000 kilograms per year (kg/yr) by 2012 (Lihir Gold Ltd., 2010, p. 16).

The Angovia Mine, which is located about 40 km northwest of Yamoussoukro, produced 673 kg of gold during the year.

Cluff Gold plc. of the United Kingdom (the company that operated the mine) estimated that production at Angovia would reach about 900 kg (reported as 30,000 troy ounces) in 2010. The company planned to continue with its ongoing drilling program, which was initially to focus on a 5,000-meter (m) reverse-circulation drilling program to identify near-surface gold-in-laterite and gold-in-saprolite deposits (Cluff Gold plc, 2010, p. 10-11).

London-based Randgold Resources Ltd. acquired a further 5% interest in the Tongon gold project, which raised its equity in the project to 89%. The company announced that construction of a metallurgical processing plant with a capacity to process 3.6 million metric tons per year of ore was underway and that the completion of construction work at the Tongon Mine, which was expected to come online in October 2010, was on schedule. Production for 2010 was expected to be about 2,300 kg/yr (reported as 75,000 troy ounces). The company envisioned producing about 9,000 kg/yr (reported as 290,000 troy ounces) during the first 2 full years of operation and then to average about 8,400 kg/yr (reported as 270,000 troy ounces) for the remainder of the mine's life, which was estimated to be 10 years. The Government held a 10% interest in the Tongon Mine, and the remaining equity was held by a local Ivorian company (name not disclosed) (Randgold Resources Ltd., 2009, p. 14, 30-35; 2010, p. 36-39).

**Manganese.**—China National Geological and Mining Corp. (CGM) planned to invest more than \$20 million in the Lauzoua Mine to increase manganese production to 300,000 metric tons per year (t/yr). The mine, which is located in the Department of Lahou about 180 km west of Abidjan, was owned by Compagnie Minière du Littoral (CML). CML was a joint venture among Société pour le Développement Minier de la Côte d'Ivoire (51%), CGM (39%), and private interests (10%). A processing plant that would produce 50,000 t/yr of ferromanganese was also to be built (Coulibaly, 2009).

DSPL continued to explore for manganese in the Zanzan region in northeastern Côte d'Ivoire. The company held two exploration licenses—one for the Bondoukou area, which consisted of numerous hills containing manganese mineralization, and one for the Toumodi area, which consisted of two hills containing manganese mineralization. The Government had granted the company a special authorization to export 250,000 t of manganese ore from these properties in 2008; however, it was not clear whether the company produced manganese from the properties in 2009 (Dharni Sampda Private Ltd., 2010b).

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## TOGO

Togo ranked fourteenth among the world's leading producers of phosphate rock in 2009. Other mineral commodities produced in the country included cement, clinker, diamond, gold, and limestone. Undeveloped mineral resources included bauxite, gypsum, iron ore, manganese, marble, rutile, and zinc (Jasinski, 2010).

### Production

In 2009, clinker production increased by 15.9% to 1,050,198 t from 906,176 t in 2008. Diamond production decreased by 98.6% to 125 carats from 8,787 carats, gold production increased by 9.8% to 12,995 kg from 11,835 kg, and phosphate rock production decreased by about 13.8% to 726,000 t from 842,000 t. Data on mineral production are in table 1.

### Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities.

### Commodity Review

#### Metals

**Nickel.**—Lithic Metals and Energy Ltd. (LMEL) of Australia continued to explore for chromite, nickel, uranium, and zinc at

its Haito, Niamtougou-Kara, and Pagala concession areas. The Haito project, which is located in southern Togo, consisted of five exploration licenses for an area of 1,000 square kilometers; the project had known nickel mineralization and historical chromite production as well as minor copper occurrences that had been identified by earlier Government-funded exploration and mapping programs. In June, LMEL announced a resource calculation for Mount Kpote, which was one of the prospects within the Haito concession area. The inferred resource for Mount Kpote, which was based on test pitting to a maximum depth of 12 meters, was reported to be 12.25 Mt at an average grade of 0.83% nickel and 0.045% cobalt (Lithic Metals and Energy Ltd., 2009).

### Industrial Minerals

**Phosphate Rock.**—The Government was in the process of restructuring the phosphate sector. For this purpose, a financial and strategic audit was ordered for Société Nouvelle des Phosphates du Togo (SNPT) (formerly Société des Phosphates du Togo). As part of the restructuring plans for the company, 616 employees at SNPT were laid off in January and new equipment was purchased for the company's operations. SNPT's output, which had been declining in the past few years owing in part to the company's dilapidated infrastructure, was expected to reach 1 Mt in 2010 and 1.8 Mt by 2012 owing to the coming online of two new quarries in 2011 (African Economic Outlook, 2010; International Monetary Fund, 2010, p. 56-57).

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TABLE 1  
CENTRAL AFRICAN REPUBLIC, CÔTE D'IVOIRE, AND TOGO: ESTIMATED PRODUCTION OF MINERAL COMMODITIES<sup>1,2</sup>

(Metric tons unless otherwise specified)

Country and commodity	2005	2006	2007	2008	2009	
<b>CENTRAL AFRICAN REPUBLIC<sup>3</sup></b>						
Clay	NA	78,886 <sup>4</sup>	79,000	79,000	NA	
Diamond <sup>5</sup>	carats	383,300 <sup>4</sup>	419,528 <sup>4</sup>	467,711 <sup>4</sup>	377,209 <sup>4</sup>	311,779 <sup>4</sup>
Gold, mine output, Au content	kilograms	15 <sup>4</sup>	10 <sup>4</sup>	10	43 <sup>r,4</sup>	61 <sup>4</sup>
Limestone		85,000 <sup>4</sup>	85,000 <sup>4</sup>	85,000	85,000	NA
Sand and gravel		NA	172,436 <sup>4</sup>	173,000	170,000	NA
<b>CÔTE D'IVOIRE<sup>6</sup></b>						
Cement <sup>7</sup>		449,704 <sup>r</sup>	360,297 <sup>r</sup>	468,767 <sup>r</sup>	360,034 <sup>r</sup>	283,400 <sup>4</sup>
Columbium (niobium) and tantalum:						
Columbite	kilograms	130	130	130	130	NA
Tantalite	do.	400	400	400	400	NA
Diamond <sup>8</sup>	carats	-- <sup>r</sup>	-- <sup>r</sup>	-- <sup>r</sup>	-- <sup>r</sup>	--
Gold, mine output, Au content <sup>9</sup>	kilograms	1,335 <sup>4</sup>	1,324 <sup>4</sup>	1,243 <sup>4</sup>	4,205 <sup>4</sup>	6,947
Gravel and crushed stone <sup>10</sup>		660,000	660,000	660,000	660,000	NA
Manganese ore, gross weight		--	56,829 <sup>4</sup>	94,618 <sup>4,11</sup>	176,561 <sup>4,11</sup>	177,000 <sup>e</sup>
Natural gas	million cubic meters	2,200 <sup>4</sup>	2,200	1,574 <sup>4</sup>	1,600	1,600 <sup>e</sup>
Petroleum:						
Crude	thousand 42-gallon barrels	14,574 <sup>4</sup>	21,955 <sup>4</sup>	17,727 <sup>4</sup>	22,000	21,500
Refinery products	do.	26,347 <sup>r</sup>	29,634 <sup>r</sup>	25,591 <sup>r</sup>	26,000 <sup>r,e</sup>	NA
Sand		173,000	173,000	173,000	173,000	NA
Sulfuric acid		3,000	3,000	3,000	3,000	NA
<b>TOGO</b>						
Cement:						
Clinker		1,200,000	1,200,000	1,200,000	906,176 <sup>r,4</sup>	1,050,198 <sup>4</sup>
Hydraulic <sup>12</sup>		800,000	800,000	800,000	800,000	NA
Diamond	carats	41,000	28,176 <sup>4</sup>	17,362 <sup>4</sup>	8,787 <sup>4</sup>	125
Gold	kilograms	6,179	7,184	10,159	11,835 <sup>4</sup>	12,955 <sup>4</sup>
Limestone		2,400,000	2,400,000	2,400,000	1,823,539 <sup>r,4</sup>	1,704,280 <sup>4</sup>
Phosphate rock, beneficiated product:						
Gross weight	thousand metric tons	1,350	1,650	750	842 <sup>4</sup>	726 <sup>4</sup>
P <sub>2</sub> O <sub>5</sub> content	do.	481	590 <sup>4</sup>	270	303	260 <sup>e</sup>

<sup>r</sup>Revised. do. Ditto. NA Not available. -- Zero.

<sup>1</sup>Estimated data are rounded to no more than three significant digits.

<sup>2</sup>Table includes data available through November 8, 2010.

<sup>3</sup>In addition to the commodities listed, Central African Republic produced quartz crystals, but information is inadequate to make reliable estimates of output.

<sup>4</sup>Reported figure.

<sup>5</sup>Production is approximately 70% to 80% gem quality.

<sup>6</sup>In addition to the commodities listed, Côte d'Ivoire produced clay and crushed granite, but information is inadequate to make reliable estimates of output.

<sup>7</sup>Based on reported exports of hydraulic cement.

<sup>8</sup>Côte d'Ivoire's production of diamond has been under United Nations sanctions since 2004.

<sup>9</sup>Does not include production from artisanal mining.

<sup>10</sup>Based on reported crushed stone and gravel exports.

<sup>11</sup>Based on reported manganese ore exports.

<sup>12</sup>Includes cement produced from imported clinker.

TABLE 2  
CÔTE D'IVOIRE AND TOGO: STRUCTURE OF THE MINERAL INDUSTRIES IN 2009

(Metric tons unless otherwise specified)

Country and commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
<b>CÔTE D'IVOIRE</b>				
Cement		Société des Ciments d'Abidjan	Abidjan plant	750,000.
Do.		Société de Ciments et Matériaux (Holcim Ltd.)	do.	800,000.
Do.		Société des Ciments du Sud-Ouest	San Pedro	100,000.
Gold	kilograms	Société des Mines d'Ity (La Mancha Resources Inc., 45.9%; Société pour le Développement Minier, 44.1%; Government, 10%)	Ity Mine, 700 kilometers from Abidjan	1,900.
Do.	do.	Yaouré Mining SA (Cluff Gold plc, 90%, and Government, 10%)	Angovia Mine, 40 kilometers northwest of Yamoussoukro	1,240.
Do.	do.	Equigold Mines CISA (Lihir Gold Ltd., 90%, and Government, 10%)	Bonikro Mine, 250 kilometers northwest of Abidjan	5,000.
Do.	do.	Société des Mines de Tongon SA (Randgold Resources Ltd., 89%; Government, 10%; local Ivorian company 1%)	Tongon Mine, northern Côte d'Ivoire, 55 kilometers south of the border with Mali	9,000. <sup>1</sup>
Manganese		Compagnie Minière du Littoral (Société pour le Développement Minier de la Côte d'Ivoire, 51%; China National Geological and Mining Corp., 39%; and private interests, 10%)	Lauzoua Mine, 180 kilometers west of Abidjan	150,000.
Do.		Dharni Sampda Private Ltd.	Bondoukou Mine	NA. <sup>2</sup>
Petroleum, crude	thousand 42-gallon barrels	Canadian Natural Resources Ltd., 57.61%; Svenska Petroleum Exploration AS, 27.39%; Société Nationale d'Opérations Pétrolières de la Côte d'Ivoire (Petroci), 15%	Baobab oilfield, offshore	17,520.
Do.	do.	Canadian Natural Resources Ltd., 58.67%; Tullow Oil plc, 21.33%; Société Nationale d'Opérations Pétrolières de la Côte d'Ivoire, 20%	East Espoir oilfield, offshore	6,700.
Petroleum products	42-gallon barrels per day	Société Ivoirienne de Raffinage (Government, 100%)	Abidjan	65,000.
<b>TOGO</b>				
Cement		Société de Ciments du Togo	Lome plant	800,000 cement.
Do.		West Africa Cement Co.	Tabligbo	1,000,000 cement; 1,200,000 clinker.
Limestone		Ciments de l'Afrique de l'Ouest	do.	2,400,000.
Phosphate rock		Société Nouvelle des Phosphates du Togo SNPT)	Akoumape and Hahotue	2,000,000.

Do., do. Ditto.

<sup>1</sup>Under development. The Tongon Mine was expected to come online in October 2010.

<sup>2</sup>It was not clear whether the mine was operational in 2009. The Government granted the operating company a special authorization to export an initial 50,000 metric tons of manganese ore during the exploration stage.

