



2009 Minerals Yearbook

MALI AND NIGER

THE MINERAL INDUSTRIES OF MALI AND NIGER

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MALI

Mali's mining sector was dominated by the production of gold. No other mineral commodities were produced in significant quantities in the country, with the exception of rock salt and semiprecious stones, such as amethyst, epidote, garnet, prehnite, and quartz. Diamond was produced in small quantities as a byproduct of the mining of gold, but information on diamond production was inadequate to make reliable estimates of output. The country's vast undeveloped mineral resources included bauxite, copper, chromium, diamond, granite, gypsum, iron ore, kaolinite, lead, lithium, manganese, marble, nickel, niobium, palladium, phosphate rock, rutile, talc, tin, titanium, thorium, tungsten, silver, uranium, and zirconium. The Government agency responsible for the mining sector in Mali is the Direction Nationale de la Géologie et des Mines, which is part of the Ministère des Mines de l'Énergie et de l'Eau.

Production

Gold production increased to 42,364 kilograms (kg) from 41,160 kg in 2008 mostly as the result of the beginning of operations at the Syama Mine and the restarting of operations at the Tabakoto Mine. This increase, however, was moderate owing to a decrease in production at three other mines, namely, the Kalana, the Morila, and the Sadiola Hill Mines. Data on mineral production are in table 1.

Structure of the Mineral Industry

At least 15 international companies were engaged in gold exploration and (or) production in Mali. These included Resolute Mining Ltd. of Australia; Canadian companies African Gold Group Inc., Avion Gold Corp., Axmin Inc., Etruscan Resources Inc., Great Quest Metals Ltd., IAMGOLD Corp., Merrex Gold Inc., North Atlantic Resources Ltd., and Rockgate Capital Corp.; Glencar Mining plc of Ireland; AngloGold Ashanti Ltd. of South Africa; and Avnel Gold Mining Ltd., Cluff Gold plc, and Randgold Resources Ltd. of the United Kingdom. Oklo Uranium Ltd. of Australia explored for phosphate rock and for uranium. Table 2 is a list of major mineral industry facilities.

Commodity Review

Metals

Gold.—Gold was produced at both the artisanal and industrial levels. Most of the artisanal gold produced in the country came from the Kenieba Valley, which is located about 500 kilometers (km) from the capital city of Bamako. Orpailleurs (artisanal gold miners) recovered gold from alluvial deposits in Kenieba and, to a lesser extent, from other areas throughout the country. At the industrial level, gold was produced from the Kalana, the Loulo,

the Morila, the Sadiola Hill, the Syama, the Tabakoto, and the Yatela Mines.

The Syama and the Tabakoto Mines were commissioned during the year. The Tabakoto Mine (which included the Tabakoto and the Segala deposits) had been put on a care-and-maintenance status by its previous owner, Nevsun Resources Ltd., in 2007. The mine, which was acquired by Avion in 2008, resumed operations in 2009 and produced a total of 1,586 kg of gold. Avion held an 80% interest in the Tabakoto Mine and the Government held the remaining 20% interest (Avion Gold Corp., 2010; Resolute Mining Ltd., 2010, p. 13-16).

Gold production from the Kalana underground gold mine decreased by 22.1% to 519 kg from 666 kg produced in 2008. The decrease in production at the Kalana Mine was attributed to the processing of lower ore grades and to the temporary shutdown (owing to flooding) of the mine's underground operations in May (Avnel Gold Mining Ltd., 2010, p. 5-6).

Gold production at the Loulo Mine increased by 36.2% to 10,936 kg from 8,028 kg produced in 2008. The increase in production was attributed to higher hourly and daily throughput at the processing plant. The Loulo Mine was operated by Société des Mines de Loulo S.A. (Somilo), which was owned by Randgold Resources (80%) and the Government (20%). The mine comprised the Gara and the Yalea open pit operations and two corresponding underground mines, the first of which was in operation during the year and the second of which was under construction (Randgold Resources Ltd., 2010, p. 22-25).

Gold production from the Morila Mine decreased by 19.7% to 10,637 kg from 13,245 kg produced in 2008. The mine treated low-grade stockpiles during the year and planned to continue to do so until 2013. The mine was operated by Morila Ltd., which was a joint venture among AngloGold Ashanti (40%), Randgold Resources (40%), and the Government (20%) (AngloGold Ashanti Ltd., 2010, p. 81).

Gold production from the Sadiola Hill open pit gold mine decreased by 21.9% to 11,011 kg from 14,090 kg in 2008 mostly as a result of a 26% decline in the ore grade processed owing to depletion of resources at the main pit. Ore grades were expected to continue to decline in 2010. The future of the Sadiola Hill Mine was dependent upon the successful development of the deep sulfide project, which was expected to add new resources of 90,200 kg (reported as 2.9 million troy ounces). The project was at the feasibility stage and was scheduled to be completed by October 2010 (AngloGold Ashanti Ltd., 2010, p. 84).

Gold production from the Yatela open pit mine increased by about 34.5% to 6,905 kg from 5,132 kg produced in 2008. The increase in production was attributed to an increase in the head grade of the stockpiled ore that was processed during the year. This stockpiled material was expected to be depleted in 2010. An exploration program to look into the possibility of extending the life of the mine was carried out during the year. Preliminary results indicated that additional resources were identified within the mine that could extend the life of the operation further.

No other information concerning the amount of such resources was reported during the year (AngloGold Ashanti Ltd., 2010, p. 86).

References Cited

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- Avnel Gold Mining Ltd., 2010, Management's discussion and analysis for the year ended December 31, 2009: London, United Kingdom, Avnel Gold Mining Ltd. 17 p.
- Randgold Resources Ltd., 2010, 2009 annual report: St. Helier Jersey, Channel Islands [United Kingdom], Randgold Resources Ltd., 116 p.
- Resolute Mining Ltd., 2010, 2009 annual report: Perth, Australia, Resolute Mining Ltd., 124 p.

NIGER

In 2009, Niger continued to be the world's sixth ranked producer of uranium, accounting for about 6.4% of world production. Other mineral commodities produced in the country included cement, coal, gold, gypsum, limestone, salt, silver, and tin (World Nuclear Association, 2010).

Production

Bituminous coal production increased by 23% to 225,072 metric tons (t) from 182,912 t produced in 2008. Gold production decreased by 20% to 1,852 kilograms (kg), and uranium production increased by 7% to 3,243 t. Output for cement, gypsum, limestone, salt, silver, and sulfuric acid were estimated. 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

Gold.—The Samira Hill Mine was the only industrial gold operation in the country. The mine produced 1,770 kg in 2009, which was a decrease of 18.3% from the 2,168 kg produced in 2008. The decrease in production was the result

of the processing of lower head grades. The mine was owned by Semafo Inc. of Canada, which held an 80% interest in the operation, and the Government, which held the remaining 20% (Semafo Inc., 2010, p. 10).

Mineral Fuels and Related Materials

Uranium.—Production of uranium came from the Akouta underground mine, which was operated by Compagnie Minière d' Akouta (COMINAK), and the Arlit open pit mine, which was operated by Société des Mines de l' Air (SOMAIR). COMINAK was owned by Paris-based Areva Group (34%), the Government of Niger (31%), Overseas Uranium Resources Development Co. of Japan (25%), and ENUSA Industrias Avanzadas, S.A. of Spain (10%). SOMAIR was owned by Areva Group (63.4%) and the Government of Niger (36.6%). In 2009, Areva continued with its plans to develop the world-class Imouraren uranium deposit, for which it received a mining permit in early January 2009. Areva planned to invest \$1.5 billion to develop a mine at Imouraren, which would have a production capacity of 5,000 metric tons per year. The Imouraren project is located about 160 km north of Agadez and 80 km south of Arlit. The mine, which was scheduled to begin production in 2012, was expected to create 1,400 direct jobs. Ownership in the project was to be shared between Areva and the Government, which would hold a 66.65% and a 33.35% interest, respectively (Areva Group, 2009a, b).

In addition to Areva, at least nine companies explored for uranium in Niger in 2009. These companies included Artemis Resources Ltd. and Oklo Uranium Ltd. of Australia; Canadian companies Bayswater Uranium Corp., Cameco Corp., Homeland Uranium Inc., North Atlantic Resources Ltd., and Orezone Gold Corp.; Niger Uranium Ltd. of South Africa; and China Nuclear International Uranium Corp.

References Cited

- Areva Group, 2009a, Niger—Areva to mine the Imouraren deposit: Paris, France, Areva Group press release, January 5, 1 p.
- Areva Group, 2009b, Niger—Foundation stone laid on Imouraren mining site: Paris, France, Areva Group press release, May 4, 1 p.
- Semafo Inc., 2010, 2009 annual report: Saint-Laurent, Quebec, Canada, Semafo Inc., 20 p.
- World Nuclear Association, 2010, World uranium mining—Production from mines: London, United Kingdom, World Nuclear Association, May. (Accessed November 25, 2010, at <http://www.world-nuclear.org/info/default.aspx?id=360&terms=niger>.)

TABLE 1
MALI AND NIGER: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Country and commodity	2005	2006	2007	2008	2009 ^e
MALI ²					
Gold, mine output, Au content ³ kilograms	44,230	51,957	43,850	41,160	42,364 ⁴
Salt ^e	6,000	6,000	6,000	6,000	6,000
Semiprecious stones ⁵	NA	10,000	10,000 ^e	10,000 ^e	10,000
NIGER ⁶					
Cement, hydraulic ^e	83,400	62,000	42,000	40,000	40,000
Coal, bituminous	182,060	176,320	171,296	182,912	225,072 ⁴
Gold, mine output, Au content kilograms	4,962	2,615	3,427	2,314	1,852 ⁴
Gypsum	17,417	13,043	4,615	8,661	8,700
Limestone	146,000	146,000	146,000	146,000	146,000
Salt ^e	1,269 ⁴	1,300	1,300	1,300	1,300
Silver, mine output, Ag content kilograms	201	100 ^e	139	289	200
Sulfuric acid: ^e					
Gross weight	70,000	70,000	70,000	70,000	70,000
Sulfur content	23,000	23,000	23,000	23,000	23,000
Tin, mine output, Sn content	14	13	11	10 ^e	--
Uranium, U content	3,093	3,434	3,153	3,032	3,243 ⁴

^eEstimated; estimated data are rounded to no more than three significant digits. ^rRevised. NA Not available. -- Zero.

¹Table includes data available through December 31, 2010.

²Mali also produced sand and gravel solely for domestic consumption, but information is inadequate to make reliable estimates of output.

³Excludes artisanal production, which is estimated to be about 4,000 to 5,000 kilograms per year.

⁴Reported figure.

⁵Artisanal production of semiprecious stones includes amethyst, epidote, garnet, prehnite, and quartz.

⁶In addition to the commodities listed, phosphate rock, tungsten ore, and a variety of construction materials (clays, sand and gravel, and stone) were produced, but information is inadequate to make reliable estimates of output.

TABLE 2
MALI AND NIGER: 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
MALI				
Gold	kilograms	Société de la Mine d'or de Kalana (Avnel Gold Mining Ltd., 80%, and Government, 20%)	Kalana Mine, 300 kilometers south of Bamako	900.
Do.	do.	Société des Mines de Loulo S.A. (Randgold Resources Ltd., 80%, and Government, 20%)	Loulo Mine, 350 kilometers west of Bamako	11,000.
Do.	do.	Morila S.A. [a subsidiary of Morila Ltd., 80% (AngloGold Ashanti Ltd., 40%; Randgold Resources Ltd., 40%; Government, 20%)]	Morila Mine, 180 kilometers southeast of Bamako	13,000.
Do.		Société d'Exploitation des Mines d'Or de Sadiola S.A. (AngloGold Ashanti Ltd., 41%; IAMGOLD Corp., 41%; Government, 18%)	Sadiola Hill Mine, 77 kilometers south of Kayes	5,300,000 ore.
Do.	kilograms	Société des Mines de Syama S.A. (Resolute Mining Ltd., 80%, and Government, 20%)	Syama Mine, 300 kilometers southeast of Bamako	7,800.
Do.		Société d'Exploitation des Mines d'Or de Yatela (AngloGold Ashanti Ltd., 40%; IAMGOLD Corp., 40%; Government, 20%)	Yatela Mine, 50 kilometers southwest of Kayes	2,500,000 ore.
Do.	kilograms	Avion Gold Corp., 80%, and Government, 20%	Tabakoto Mine, Kenieba Valley	3,100.
Do.	do.	Artisanal miners	Kenieba Valley	5,000.
NIGER				
Cement		Société Nigérienne de Cimenterie (Damnaz Cement Company Ltd.)	Malbaza Uzine, southwestern Niger	80,000.
Coal		Société Nigérienne de Charbon (SONICHAR)	Anou Araren, central Agadez region	300,000.
Gold	kilograms	Société des Mines du Liptako S.A. (SML) [African GeoMin Mining Development Corp. Ltd. (Semafo Inc., 80%, and Government, 20%)	Samira Hill Mine, 90 kilometers west of Niamey	3,000.
Uranium		Compagnie Minière d'Akouta (COMINAK) [Areva Group, 34%; Government, 31%; Overseas Uranium Resources Development Co., 25%; ENUSA Industrias Avanzadas S.A., 10%]	Akouta underground mine, northern Niger	2,500.
Do.		Société des Mines de l'Air (SOMAIR) (Areva Group, 63.4%, and Government, 36.6%)	Arlit open pit mine, 6 kilometers northwest of Arlit, Agadez Region	2,300.
Do., do. Ditto.				