



2012 Minerals Yearbook

MALI AND NIGER

THE MINERAL INDUSTRIES OF MALI AND NIGER

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MALI

On March 21, 2012, the Government of Mali was overthrown by a military coup and, in April, insurgent groups took control of the cities of Gao, Kidal, and Timbuktu in the north of the country. By yearend, more than 100,000 people had been internally displaced as a result of the conflict and more than 200,000 had sought asylum in Burkina Faso, Guinea, Mauritania, Niger, and Togo. The deterioration of the security situation in Mali prompted the intervention of the United Nations Security Council (with the endorsement of the African Union and the Economic Community of West African States) and resulted in the deployment of an African-led peace-keeping mission to Mali in late December. The Tienfala iron ore project as well as gold and manganese exploration programs were temporarily put on hold as companies assessed the security situation in the country. Gold mining operations in the west and southwest of the country, however, were mostly uninterrupted, as these operations were located farther away from the conflict areas (Arieff and Johnson, 2012, p. 12; International Crisis Group, 2012, p. i–iii, 6; Mohanty, 2012; Nossiter, 2012; United Nations High Commissioner for Refugees, 2012; United Nations Security Council, 2012; U.S. Department of State, 2012; Randgold Resources Ltd. 2013, p. 86, 88; IAMGOLD Corp., 2014, p. 44, 116).

Mali's economy was largely dependent on gold exports, which in 2012 accounted for about 80% of total export earnings and nearly 8% of the country's gross domestic product (GDP). The country also produced diamond, phosphate rock, rock salt, sand and gravel, and colored gemstones, such as amethyst, epidote, garnet, prehnite, and quartz. Mali's vast undeveloped mineral resources included bauxite, chromium, copper, granite, gypsum, iron ore, kaolin, lead, lithium, manganese, marble, nickel, niobium, palladium, phosphate rock, rutile, silver, talc, thorium, tin, titanium, tungsten, uranium, and zirconium (International Monetary Fund, 2013, p. 34).

The military coup also delayed the enactment of law No. 2012–015 of February 27, 2012, which established the country's new Mining Code; the code eventually came into force on June 21, 2012. Some of the new provisions of the law included restrictions on the renewal of exploration authorizations, a reduction in the duration of exploration permit renewals to 2 years from 3 years, removal of the obligation to return to the state 50% of the surface area under exploration after each renewal, and the requirement that mining companies begin mining a concession within 3 years of obtaining the mining permit. Under the new law, the Government continues to retain a 10% free-carried interest but has the option to acquire an additional 10% interest in the project at a cash cost. Also, companies are required to beneficiate their minerals in the country but can apply for an exemption to this requirement from the Ministry of Mines. The new Mining Code also establishes

obligations with respect to environmental degradation and mine closure and rehabilitation (Norton Rose Fulbright, 2012).

Production

Gold production increased by 12.3% to 40,132 kilograms (kg) from 35,728 kg in 2011; these totals do not include the gold produced by artisanal miners, which could be as much as 5,000 kilograms per year (kg/yr). Information on the production of diamond, sand and gravel, salt, and semiprecious stones was inadequate to make reliable estimates of output during the year. Production of phosphate rock was 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 Tabakoto Mine was undergoing restructuring after Endeavour Mining Corp. of Canada acquired the rights to the mine from Avion Gold Corp. on October 18, 2012. Production at the Tabakoto Mine increased by about 21% to 3,431 kg from 2,837 kg produced in 2011. Endeavour planned to expand the capacity at the Tabakoto mill to 4,000 metric tons per day (t/d) of ore from its current capacity of 2,000 t/d. The expansion, which was expected to be completed by the second quarter of 2013, would allow for the production of more than 4,600 kg/yr of gold. The Tabakoto Mine was an open pit operation located about 360 kilometers (km) west of the capital city of Bamako near the border with Senegal. The company also held the rights to the Segala underground gold deposit, from which it planned to begin mining in 2013. The deposit was located about 5 km north of the Tabakoto Mine. As of yearend 2012, the Tabakoto Mine employed a total of 1,800 people. Endeavour held an 80% interest in the Tabakoto Mine and the Government held the remaining 20% interest (Endeavour Mining Corp., 2013, p. 1, 5, 7, 14–17).

Gold production at the Kalana Mine increased by about 6% during the year to 314 kg from 297 kg in 2011. Avnel Gold Mining Ltd. of the United Kingdom (80% interest), which was the company that operated the Kalana Mine, reported that despite the security situation, the road connecting the mine to the capital city of Bamako remained open and that there had been no reports of interruptions in the supply of electricity to the mine. In 2009, Canada-based IAMGOLD Corp. had signed a contract with Avnel to complete a National Instrument 43–101-compliant resource study for the Kalana Mine by 2012. Upon completion of the study, IAMGOLD would have the right

to acquire a 51% stake in the Kalana Mine at an investment cost of \$11 million. The study, however, was not completed as of yearend, and Avnel requested that IAMGOLD transfer all the data that it had gathered for the project to Avnel by April 2013. Avnel also held a 100% interest in the Fougadian exploration license through its subsidiary Avnel Mali SARL (Avnel Gold Mining Ltd., 2013a; 2013b, p. 11).

A third mill was installed and commissioned at the Loulo-Goukoto Mine complex in January. Production of gold increased by 45% to 15,652 kg from 10,767 kg in 2011 mostly as a result of the rampup of activities at the processing plant. Gold production from the Morila Mine decreased by 18.5% to 6,299 kg from a revised 7,733 kg in 2011. The Morila Mine's main orebody was depleted in 2009, and the only ore being processed was from stockpiled material, which, as of yearend, was estimated to be 5 million metric tons (Mt) of ore. Randgold reported, however, that pit pushback and tailings reprocessing projects planned for 2013 could extend the life of the mine to 2021. The Morila Mine was operated by Morila Ltd., which was a joint venture of AngloGold Ashanti Ltd. of South Africa (40%), Randgold (40%), and the Government of Mali (20%). The Morila Mine employed a total of 832 people, 415 of which were permanent employees (AngloGold Ashanti Ltd., 2013, p. 45; Randgold Resources Ltd., 2013, p. 7, 8, 33–35).

AngloGold reported that the future of the Sadiola Hill Mine was dependent upon the successful development of the mine's deep sulfide project. The project, however, was delayed during the year as a result of Mali's civil unrest. A 48,490-meter (m) reverse-circulation-drilling program reportedly identified additional oxide and shallow sulfide mineralization at Sadiola Hill, and the company planned to continue with further drilling. An exploration program was also carried out at the Yatela Mine, which consisted of 59,192 m of reverse-circulation drilling. An induced polarization geophysical survey for the the Sadiola Hill and the Yatela Mines was partially completed, and the analysis of the data was expected to be completed by early 2013. Termite mound sampling was also undertaken for both mines and was expected to continue into 2013. The Sadiola Hill Mine was operated by Société d'Exploitation des Mines d'Or de Sadiola S.A., which was owned by AngloGold Ashanti (41%), IAMGOLD (41%), and the Government (18%), and the Yatela Mine was operated by Sadiola Exploration Co. Ltd., which was owned by AngloGold Ashanti (40%), IAMGOLD (40%), and the Government (20%) (AngloGold Ashanti Ltd., 2013, p. 45, 48, 67–68).

Industrial Minerals

Phosphate Rock.—During the year, Great Quest Metals Ltd. of Canada put a temporary hold on its phosphate rock exploration activities in Tilemsi. The company reported that the decision was taken as a precautionary measure to protect its employees and contractors during the period of civil unrest. As of yearend, phosphate rock exploration activities remained on hold, and the company reported that the resumption of exploration activities would depend upon the reestablishment of order and security in the country. Great Quest, through its 94% share in Engrais Phosphates du Mali S.A., also held prospecting

and exploration licenses for the Aderfoul, the Tarkint, and the Tilemsi concession areas in eastern Mali (Great Quest Metals Ltd., 2013, p. 8, 21–22).

Outlook

Before the onset of political unrest, Mali was on its way to becoming a significant phosphate rock producer in the sub-Saharan Africa region, and gold, iron ore, and manganese exploration was ongoing. The continuation and (or) resumption of mining operations, expansion projects, and exploration programs in the country, however, will likely depend on the end of hostilities, the consolidation of peace, and the restoration of security in the country.

References Cited

- AngloGold Ashanti Ltd., 2013, 2012 annual integrated report: Marshalltown, South Africa, AngloGold Ashanti Ltd., 118 p.
- Arieff, A., and Johnson, K., 2012, Crisis in Mali: Washington, DC, Congressional Research Service, August 16, 15 p.
- Avnel Gold Mining Ltd., 2013a, Avnel Gold Mining Ltd. announces 2012 annual results—Period ended December 31, 2012: Guernsey, Channel Islands [United Kingdom], Avnel Gold Mining Ltd. press release, March 27, 12 p. (Accessed December 12, 2013, at http://avnelgold.com/wp-content/uploads/2013/pr/Avnel-Press-Release-2013_Results-Release-Annual-2012.pdf.)
- Avnel Gold Mining Ltd., 2013b, Consolidated financial statements—December 31, 2012: Guernsey, Channel Islands [United Kingdom], Avnel Gold Mining Ltd., 35 p.
- Endeavour Mining Corp., 2013, Management's discussion and analysis of results of operations and financial condition for the year ended December 31, 2012: Vancouver, British Columbia, Canada, Endeavour Mining Corp., 127 p. (Accessed November 21, 2013, at <http://www.endeavourmining.com/i/pdf/Financials/2012YE.pdf>.)
- Great Quest Metals Ltd., 2013, Consolidated financial statements for the years ended December 31, 2012 and 2011: Vancouver, British Columbia, Canada, Great Quest Metals Ltd., 33 p. (Accessed January 18, 2013, at <http://www.greatquest.com/i/pdf/2012-YE-FS.pdf>.)
- IAMGOLD Corp., 2014, Revised annual information form for the year ended December 31, 2012: Toronto, Ontario, Canada, IAMGOLD Corp., 150 p.
- International Crisis Group, 2012, Mali—Avoiding escalation: Brussels, Belgium, International Crisis Group, Africa report no. 189, July 18, 46 p. (Accessed October 25, 2012, at <http://www.crisisgroup.org/~media/Files/africa/west-africa/mali/189-mali-avoiding-escalation-english.pdf>.)
- International Monetary Fund, 2013, Mali—Achieving strong and inclusive growth with macroeconomic stability: Washington, DC, International Monetary Fund, 42 p. (Accessed November 8, 2013, at <http://www.imf.org/external/pubs/ft/dp/2013/afr1308.pdf>.)
- Mohanty, Meera, 2012, Mali coup dashes Indian business man Sandeep Garg's mining hopes: The Economic Times [Mumbai, India], April 11. (Accessed June 20, 2012, at <http://m.economictimes.com/news/news-by-industry/indl-goods/svs/metals-mining/mali-coup-dashes-indian-business-man-sandeep-gargs-mining-hopes/articleshow/msid-12616665.cms>.)
- Norton Rose Fulbright, 2012, Amendments to the Malian Mining Code: Norton Rose Fulbright, September. (Accessed October 17, 2013, at <http://www.nortonrosefulbright.com/knowledge/publications/70668/amendments-to-the-malian-mining-code>.)
- Nossiter, Adam, 2012, Soldiers overthrow Mali Government in setback for democracy in Africa: The New York Times, March 22. (Accessed March 22, 2012, at http://www.nytimes.com/2012/03/23/world/africa/mali-coup-france-calls-for-elections.html?_r=0.)
- Randgold Resources Ltd., 2013, 2012 annual report: St. Helier, Jersey [United Kingdom], Randgold Resources Ltd., 200 p.
- United Nations High Commissioner for Refugees, 2012, Mali situation update: United Nations High Commissioner for Refugees Update no. 11, October 1. (Accessed November 11, 2013, at <http://www.unhcr.org/507d0c949.html>.)

United Nations Security Council, 2012, Security Council authorizes deployment of African-led international support mission in Mali for initial year-long period—Resolution 2085 (2012) stresses need to further refine military planning: New York, New York, United Nations Security Council, SC/10870, December 20. (Accessed January 18, 2013, at <https://www.un.org/News/Press/docs/2012/sc10870.doc.htm>.)

U.S. Department of State, 2012, Situation in Mali: Washington, DC, U.S. Department of State press statement, March 22. (Accessed March 23, 2012, at <http://www.state.gov/r/pa/prs/ps/2012/03/186633.htm>.)

NIGER

Niger was the world's fifth-ranked producer of uranium, by volume, and accounted for about 8% of world uranium production from mines. Despite being affected by the spillover of instability from the conflict in Mali and by extensive floods, Niger's real GDP was estimated to have increased by about 11% during the year. The GDP growth was partly driven by the ramping up of petroleum production in the country. Niger was open to foreign direct investment and was a participant in the Extractive Industries Transparency Initiative. Other mineral commodities produced in the country included cement, coal, gold, gypsum, limestone, salt, silver, and tin (Hicks, 2012; Oxfam International, 2012; International Monetary Fund, 2013, p. 28; World Nuclear Association, 2013).

Production

Coal production decreased by 4.4% to 235,072 metric tons (t), and gold production decreased by 15% to 1,662 kg. Silver production increased by 67% to 329 kg, and uranium production increased by 7.3% to 4,667 t. Production data for other mineral commodities produced in the country were estimated for 2012. 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, which was the only industrial gold operation in the country, produced a total of 1,549 kg compared with a revised 1,453 kg in 2011. Samira Hill was operated by Société des Mines du Liptako S.A. (SML), which was owned by Semafo Inc. of Canada through its wholly owned subsidiary African GeoMin Mining Development Corp. Ltd. (80%) and the Government (20%). As of December 31, 2012, proven and probable mineral reserves for the Samira Hill Mine were estimated to be about 7.9 Mt at a grade of 1.25 grams per metric ton (g/t) gold. Measured and indicated resources were estimated to be about 11.7 Mt at a grade of 1.43 g/t gold. Semafo planned to produce between 1,400 and 1,600 kg of gold in 2013. Artisanal gold production was estimated to be slightly more than 100 kg during the year (Semafo Inc., 2013, p. 6, 16, 33).

Semafo also carried out reverse-circulation drilling for several targets within the premises of the Samira Hill Mine. On June 19,

the company announced the discovery of a new mineralized zone, known as the Tonde Boubangou Horizon, about 20 km north of the Samira Hill processing plant. The area, which was traced across a distance of 10 km along strike, reportedly returned values of up to 1.48 g/t gold across 43 m. The company reported that the area could have a geologic environment similar to that of the main Samira Hill Horizon and planned to conduct reverse-circulation drilling in the area in 2013 (Semafo Inc., 2013, p. 33, 36).

Mineral Fuels and Related Materials

Petroleum.—Niger officially became a petroleum-producing country in November 2011 when China National Petroleum Corp. (CNPC) announced first production from the Agadem oilfield and the inauguration of the country's first petroleum refinery. Crude petroleum production did not reach the production target of 16,000 barrels per day (bbl/d), however, and only 6,000 bbl/d of the 13,000 bbl/d produced in 2012 was exported. The International Monetary Fund estimated that the shortfall in expected production and exports was caused by the inadequate pricing of crude petroleum exports and estimated that the shortfall contributed to losses for the refinery equal to about 1% of the GDP. Although the in-country production of petroleum was reportedly sufficient to meet domestic demand, the Government continued to import petroleum products for domestic consumption, which resulted in the temporary shutdown of the refinery as petroleum product inventories were high. The temporary shutdown, coupled with technical and administrative problems, affected the refinery's performance during the year. The 20,000-bbl/d Soraz refinery is located in the city of Zinder about 900 km east of the capital city of Niamey near the border with Nigeria. The Soraz refinery produced diesel, fuel oil, gasoline, and liquefied petroleum gas (Petzet, 2012; International Monetary Fund, 2013, p. 5–6).

The Government awarded nine petroleum exploration contracts to several international companies in 2012. International Petroleum Ltd. of Australia was granted exploration rights to the Aborak, the Manga 1, the Manga 2, and the Tenere Ouest Blocks. Nigerian companies Advantica Gas and Energy, Labana Petroleum, and Sirius Energy Resources were granted the Mandaram 2, the Dallol and Dibella 1, and the Grein Blocks, respectively; and Genmin Ltd. of Bermuda was granted the rights to the Djado 1 Block. The exploration rights to these blocks were granted for an initial period of 4 years with the option to renew at least two more times for an additional period of 2 years each time (Petzet, 2012).

During the second half of 2012, the Government of Niger signed an agreement with the Government of Chad for the construction of a 600-km crude petroleum pipeline that would connect to the existing Cameroon-Chad crude petroleum pipeline. Niger planned to export about 60,000 bbl/d of crude petroleum through the proposed pipeline to the Port of Kribi in Cameroon (Thomson Reuters, 2012).

Uranium.—The Arlit Mine achieved record-high production of 3,065 t of uranium in 2012, mostly as a result of the additional processing of lower grade ore from the Somair Lixi deposit and the doubling of the size of the company's

mining fleet, among other factors. The mine was operated by Société des Mines de l'Air (SOMAIR), which was 63.6% owned by Areva Group of France and 36.4% by the Government. Areva also held majority interest in the Imouraren uranium project, which is located 80 km southwest of Arlit, and in several exploration permits in the Agadez region. The Imouraren Mine was expected to be operational by 2015 and to produce about 5,000 metric tons per year of uranium during an estimated mine life of 35 years. Once in operation, the mine was expected to directly employ about 1,100 people and more than 800 contractors. Other companies exploring for uranium in the country included Artemis Resources Ltd., Aura Energy Ltd., and Paladin Energy Ltd. of Australia; and GoviEx Uranium Inc. and Homeland Uranium Inc. of Canada (Areva Group, 2013, p. 34, 42–43).

References Cited

Areva Group, 2013, 2012 annual report—Forward looking energy: Paris, France, Areva Group., 79 p. (Accessed January 17, 2013, at http://www.areva.com/finance/liblocal/docs/2013/Relations Investisseurs/Pack Investisseurs/100713_AREVA_RA 2012_GB_MEL.pdf.)

Hicks, Celeste, 2012, Global development—Mali conflict sends refugees fleeing across border to Niger: Mangaize, Niger, Guardian News and Media Ltd., February 27, 1 p. (Accessed February 27, 2012, at <http://www.theguardian.com/global-development/2012/feb/27/mali-conflict-sends-refugees-niger>.)

International Monetary Fund, 2013, First review under the three-year arrangement under the extended credit facility and request for a waiver of nonobservance of performance criterion—Staff report; Staff supplements; and press release: Washington, DC, International Monetary Fund country report no. 13/104, April, 49 p.

Oxfam International, 2012, Worst flooding in more than 80 years affecting half a million people in Niger: Oxfam International, September 20. (Accessed January 17, 2013, at <http://www.oxfam.org/en/pressroom/pressrelease/2012-09-20/worst-flooding-more-80-years-affecting-half-million-people-niger>.)

Petzet, Alan, 2012, Niger awards nine production sharing agreements: Oil and Gas Journal, August 2. (Accessed August 3, 2012, at <http://www.ogj.com/articles/2012/08/niger-awards-nine-production-sharing-agreements.html>.)

Semafo Inc., 2013, Annual information form for the year ended December 31, 2012: Saint-Laurent, Quebec, Canada, Semafo Inc., 62 p.

Thomson Reuters, 2012, Niger signs MOU with Chad on oil pipeline: Niamey, Niger, Thomson Reuters, June 30. (Accessed December 4, 2012, at <http://www.reuters.com/article/2012/06/30/ozabs-niger-chad-oil-idAFJ0E85T01120120630>.)

World Nuclear Association, 2013, World uranium mining: World Nuclear Association, July. (Accessed October 31, 2013, at <http://www.world-nuclear.org/info/Nuclear-Fuel-Cycle/Mining-of-Uranium/World-Uranium-Mining-Production/>.)

TABLE 1
MALI AND NIGER: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Country and commodity		2008	2009	2010	2011	2012 ^e
MALI ²						
Gold, mine output, Au content ³	kilograms	41,160	42,364	36,360	35,728	40,132 ⁴
Phosphate rock		--	--	1,600 ^e	18,000 ^{r,e}	20,000
NIGER ^{4,5}						
Cement, hydraulic		56,400 ^r	41,848 ^r	32,008 ^r	72,510 ^r	72,500
Coal, bituminous		182,912	225,072	246,558	246,016 ^r	235,072 ⁴
Gold, mine output, Au content ⁶	kilograms	2,314	1,985	1,950	1,957 ^r	1,662 ⁴
Gypsum		8,661	19,737	7,559	6,058 ^r	6,000
Limestone		25,619	29,691	23,152 ^r	23,200 ^{r,e}	23,200
Salt ^e		30,000 ^r	30,000 ^r	30,000 ^r	30,000 ^r	30,000
Silver, mine output, Ag content	kilograms	289	256 ^r	326 ^r	197 ^r	329 ⁴
Petroleum, crude	thousand 42-gallon barrels	--	--	--	300 ^e	4,750 ^e
Tin, mine output, Sn content ⁷		--	6	6	10 ^r	10
Uranium, U content		3,032	3,243	4,198	4,351	4,667 ⁴

^eEstimated data are rounded to no more than three significant digits. ^rRevised. -- Zero.

¹Table includes data available through December 18, 2013.

²In addition to the commodities listed, Mali also produced diamond, salt, sand and gravel, and semiprecious stones (amethyst, epidote, garnet, prehnite, and quartz), 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 (kg/yr) of gold.

⁴Reported figure.

⁵In addition to the commodities listed, phosphate rock, sulfuric acid produced from imported sulfur, tungsten ore, and a variety of construction materials (clays, sand and gravel, and stone) are produced, but information is inadequate to make reliable estimates of output.

⁶Includes artisanal and small-scale production of gold, which averaged 267 kg/yr from 2008 to 2012.

⁷Production of tin was by artisanal miners.

TABLE 2
MALI AND NIGER: STRUCTURE OF THE MINERAL INDUSTRIES IN 2012

(Metric tons unless otherwise specified)

Country and commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
MALI				
Gold	kilograms	Artisanal miners	Kenieba Valley	5,000
Do.	do.	Endeavour Mining Corp., 80%, and Government, 20%	Tabakoto Mine, Kenieba Valley	3,400
Do.	do.	Morila Ltd. (AngloGold Ashanti Ltd., 40%; Randgold Resources Ltd., 40%; Government, 20%)	Morila Mine, 280 kilometers southeast of Bamako	6,300
Do.	do.	Sadiola Exploration Company Ltd. (AngloGold Ashanti Ltd., 40%; IAMGOLD Corp., 40%; Government, 20%)	Yatela Mine, 50 kilometers southwest of Kayes	11,000
Do.	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	15,000
Do.	do.	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. (Somilo) (Randgold Resources Ltd., 80%, and Government, 20%)	Loulo-Goukoto Mine complex, 350 kilometers west of Bamako	11,000
Do.	do.	Société des Mines de Syama S.A. (Resolute Mining Ltd., 80%, and Government, 20%)	Syama Mine, 300 kilometers southeast of Bamako	7,800
Phosphate rock	do.	Toguna Agro-Industries SA	Tilemsi Valley, northeastern Mali	20,000
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) (Semafo Inc., 80%, and Government, 20%)	Samira Hill Mine, 90 kilometers west of Niamey	3,000
Petroleum	thousand 42-gallon barrels per day	China National Petroleum Corp. (CNPC), 60%, and Government, 40%	Agadem oilfields	20,000
Petroleum refinery products	do.	China National Petroleum Corp. (CNPC), 60%, and Government, 40%	Soraz refinery, City of Zinder, 900 kilometers east of Niamey	20,000
Salt		Artisanal mining	Bilma salt pans, Ténéré desert, northern Niger	33,000
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	2,000
Do.		Société des Mines de l'Air (SOMAIR) (Areva Group, 63.6%, and Government, 36.4%)	Arlit open pit mine, 6 kilometers northwest of Arlit, Agadez region	3,000
Do.		Société des Mines d'Azelik	Azelik Mine	700
Do. do. Ditto.				