Gold was the most economically significant mineral commodity produced in Mali during 1997. Production from the newly opened Sadiola Hill Mine propelled Mali to fourth on the list of African gold producers, after South Africa, Ghana, and Zimbabwe. Extensive gold exploration continued during the year in the Birimian Series greenstone belts in the southwestern and southern parts of the country near Bougouni, Kéniéba, and Sikasso. The country had a wide variety of other mineral deposits, but few have been developed because of the condition of the nation’s transportation network and lack of local demand.

Mining was overseen by the Direction Nationale de Géologie et des Mines, which is part of the Ministère des Mines, de l’Energie et de l’Hydraulique. The mining code included Decree No. 96-214/PM-RM of August 16, 1996, Ordonnance No. 91-065/P-CTSP of September 19, 1991, Decree No. 91-277/PM-RM of September 1991, and Decree No. 91-278/PM-RM of September 1991. The Government had the right to 20% equity in all new mining ventures, of which 10% was a free share and the remainder, a buy-in option. Net profits were taxed at the rate of 35% after a 5-year exemption period. The ad valorem tax was 3%, and the depletion allowance was as high as 27.5%. Petroleum exploration and exploitation were regulated by Decree No. 30 of May 23, 1969, and by Decree No. 21, April 20, 1970. Produced petroleum was subject to a 6% royalty. Natural gas was subject to a 5% royalty if exported or a 3% royalty if the gas was for the domestic market.

The Malian gold rush continued during 1997. La Société d’Exploitation des Mines d’Or de Sadiola, S.A. (Semos), operated the open pit Sadiola Hill Mine, about 80 kilometers (km) southwest of Kayes in western Mali. Semos is a consortium of Anmecorsa Mining (West Africa) Ltd. (38%), a subsidiary of Anglo American Corp. of South Africa; AGEM Ltd. of Barbados (38%); a subsidiary of International African Mining Gold Corp. of Canada; the Government of Mali (18%); and the International Finance Corp. (IFC) (6%), a member of the World Bank Group. Ore was run through a semiautogenous grinding mill and leached with cyanide. Gold was recovered by two carbon-in-pulp processing lines. The $303 million mine began commercial operations on March 1, 1997, and produced 11.3 t of gold during the year (IAMGOLD, January 12, 1998, Sadiola gold mine to produce 500,000 ounces in 1998 at a direct cash cost of US$112 per ounce, email from portfolio@newswire.ca). Mine and plant operations reportedly exceeded the ore-handling design capacity of 4 million tons per year of ore during the last half of the year (IAMGOLD, November 12, 1997, IAMGOLD issues 1997 third quarter results, email from portfolio@newswire.ca). (See table 1.)

The Société des Mines d’Or de Syama, S.A. (Somisy), operated the open pit gold mine at Syama, 75 km southwest of Sikasso. During 1997, Randgold Minerals Mali Inc. acquired an additional 10% equity interest in Somisy from the IFC. Somisy’s ownership structure at yearend was Randgold (75%), the Government of Mali (20%), and the IFC (5%). Randgold reported that proven open-pit reserves at Syama were 15.71 million metric tons (Mt) at a grade of 4.4 grams of gold per ton (g/t), measured/indicated gold resources from the open pit and potential underground operations were 12.7 Mt at a grade of 4.2 g/t, and measured gold resources of 3.76 Mt at a grade of 1.75 g/t in the medium-grade stockpiles (Randgold Resources Ltd., 1997). Randgold proposed a two-phase upgrade for the plant, including a new crusher, a new mill, and process-engineering changes.

ICI Ltd. of South Africa divested itself of its joint venture interest in the former Kalana underground gold mine. Nelson Gold Ltd. of Canada subsequently acquired 70% interest in the property from Ashanti Goldfields Co. Ltd. of Ghana, which retained 10% interest. A mid year feasibility study by Nelson proposed to deepen existing shafts and upgrade the plant’s treatment capacity. Action on the proposal, however, was postponed because of declining gold prices. North of Kalana, Société pour le Developpement des Investissements en Afrique S.A. (Sodinaf) of Mali was engaged in predevelopment activities on the Kodieran permit. The proposed Kodieran open pit was projected to be Mali’s third largest gold mine by 1999 (Geert De Clercq, September 2, 1997, Mali gold rush pits diggers against mining groups, accessed September 10, 1997, at URL http://elet.org/Content/?arn=a0401LBY32r...mining&lk=fr&c=5&col=NX&kt=A&ak=allnews).

The ownership of the Société Minière de Loulo S.A. was altered when Randgold increased its interest in the joint venture to 51%, with Mine Or, a subsidiary of LaSource of France, retaining 29% equity interest and the Government of Mali keeping 20% equity interest. Somilco was evaluating the development possibilities of the Loulo 0 and the Yalea deposits on the Loulo permit. A number of companies were active on exploration permits along the western border with Senegal in the area encompassing the Kéniéba gold district and the exploitation permits at Loulo and Sadiola. Exploring the area were Afko Corp. Mali, a subsidiary of Afko Korea Inc.; Sanou Mining Corp., the partnership of Azco Mining Inc. of the United States and West
African Gold and Exploration Ltd. of the British Virgin Islands, on the Médinandi and the Dandoko concessions; Echo Bay Mines Ltd. of Canada on the Dag Dag permit; Emerging Africa Gold Inc. of Canada on the Mankouke West, the Koulo, and the Siribaya permits; and International Tournigan Corp. of Canada on the Diangouante West property. During 1997, International Tournigan also entered into a joint venture with Société Nationale de Recherches et d’Exploitation des Ressources minières de Malé (SONAREM) to earn 70% interest in the Kolomba and Mogoyafara properties. Marchmont Gold Corp., formerly Timbuktu Gold Corp., drilled the Sitakili permit.

Nevsun Resources Ltd. of Canada was studying the Tabakoto and the Kakadian concessions. Oliver Gold Corp. of Canada and Consolidated Mining Corp. (West Africa) of Mali (CMCWA) were negotiating to sell the Segala and the Dar Salam concessions at year end. Oxford Resources Inc. of Canada was evaluating the Séléou, the Dialafara-Rhama, and the Kényéba group exploration permits. Marchmont Gold Corp., formerly Timbuktu Gold Corp., drilled the Sitakili permit.

In March, African Selection Mining Corp. (ASM) obtained an option to earn 50% of Pan African Resources Corp. of Canada’s (PARC) interest in the Dioulafoundou permit. In September, ASM terminated its option. PARC subsequently terminated its interest in the Dioulafoundou property. A sister company of Randgold Resources Mali Inc., Randgold Resources (Mali) Ltd., through subsidiary Randgold Resource Mali S.A.R.L. explored the Kérékoto 1, the Kérékoto 1 Extension, the Kérékoto 2, the Ouiaiga, and the Yanifilila permits. Randgold indicated it would relinquish the Kérékoto 1 and the Ouiaiga permits in 1998. Randgold, through affiliate Dialafara Exploration S.A., continued the evaluation of the Dialafara permit.

Also working in the Kényéba region were Raymor Resources Ltd. of Canada and Cie. de la Falame S.A. of Mali on the Yeremounde gold property. Raymor also was evaluating the Bogodo gold placer. Ressources Robex Inc. of Canada increased its interest in the Diangouante and the Kata concessions to 85% from 51%. Ressources Robex and N’Gary Transport were drilling on the properties. Ressources Robex (25%) was drilling the Baroya concession for its joint venture partners, Shiega Resources Corp. of Canada, formerly Alpine Exploration Corp. (65%), and SOMEX S.A.R.L. of Mali (10%). Reunion Mining plc of the United Kingdom abandoned the Sanoukou exploration permit it had optioned from SONAREM. Sadiola Exploration Ltd. of the British Virgin Islands (SADEX) was evaluating the Farabakouta zone north of the Sadiola pit in the Sadiola I exploration permit area and the Alamoutala deposit, about 15 km north of Sadiola in the Sadiola II exploration permit. SADEX also acquired the Yatela concession from Eltin Ltd. of Australia and looked at the Niamboulama mineralized zone on Yatela. In 1996, the Korean Institute of Geology, Mining, and Materials had begun mineralogical research in Mali.

Companies evaluating exploration permits in the Kalana, the Kangaba, and the Syama regions south of Bamako included Alagona Trading, Barrick Gold Corp., Mink Mineral Resources Inc. of Canada, Oxford, Pacific Galleon Mining Corp. of Canada, and Pangea Goldfields. Prospex Mining Inc. of the United States was acquiring the Samalofila property from Nearerco Jersey (Nominees) Ltd. Randgold ran an aerial geophysical program over the Morila permit, and Sahelian Goldfields Inc. of Canada studied the Kourémalé-Salémalé property. North of Kalana, Young Poong Mining and Construction of Korea was evaluating the Gouenso concession. The Metal Mining Agency of Japan and the Japan International Cooperation Agency contracted to explore the Baoule-Banifing area.

In the northeast, CMCWA and Oliver Gold increased their equity interest in Taghlit S.A. of Mali and Taghlit’s Anéfis and In Darset exploration permits.

Diamonds were recovered as byproduct by artisanal gold miners. The Mali Diamond Exploration B.V. joint venture of Ashton West Africa Pty. Ltd. of Australia (51% interest) and Mink Mineral Resources (49%) completed an aeromagnetic survey of their Kényéba area diamond prospect.

Sodinaf evaluated the development of a spodumene deposit near Bourgoini.

Sahelian Oil Ltd. of Canada merged with Malahide Petroleum Corp. of Canada to form Stratic Energy Corp during the year. Stratic reprocessed existing seismic data that covered its three petroleum exploration leases in Mali.

Mali’s transportation infrastructure was underdeveloped. The highway network totaled about 15,700 km, mostly in the south. The 1,286-km railroad connecting Bamako with Dakar, Senegal, and the major roads to Côte d’Ivoire were used to import mineral-related products, particularly fuels, as well as equipment and supplies. The gold rush and anticipated development activity will strain Mali’s electrical power system. Gold will likely continue to dominate the country’s mineral economy with current exploration efforts likely to lead to development of additional gold deposits by the turn of the century.

References Cited


Major Sources of Information

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Société Nationale de Recherches et d’Exploitation des Ressources minières du Mali
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Fax: (223) 222-160, (223) 272-042

Major Publications

Ministère des Mines, de l’Energie et de l’Hydraulique, 1995, The statutory rule of the mining sector and the given opportunities for the private investors in Mali: Bamako, Ministère des Mines,
de l’Energie et de l’Hydraulique, 8 p.
### TABLE 1
MALI: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

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<tbody>
<tr>
<td>Cement, hydraulic</td>
<td>20,000</td>
<td>15,000</td>
<td>13,000</td>
<td>12,000 t/</td>
<td>10,000</td>
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<tr>
<td>Gold, mine output, gold content 3/</td>
<td>kilograms</td>
<td>5,500</td>
<td>6,200</td>
<td>7,800</td>
<td>8,400</td>
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<td>450</td>
<td>500</td>
<td>100</td>
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<td>Iron</td>
<td>kilograms</td>
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<td>69</td>
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<td>Phosphate</td>
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<td>1,039</td>
<td>3,000</td>
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<td>Salt</td>
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<td>5,000</td>
<td>5,000</td>
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<tr>
<td>Silver 4/</td>
<td>kilograms</td>
<td>190</td>
<td>200</td>
<td>250</td>
<td>270</td>
</tr>
</tbody>
</table>

2/ In addition to the commodities listed, Mali produced clays, stone, and sand and gravel for local construction purposes in addition to diamond, marble, and tin, but information is inadequate to make reliable estimates of output levels.
3/ Includes estimate of artisanal production.
4/ Estimated silver content of doré bullion.