GHANA

By Joseph Yaw Aboagye

There has been a significant downturn in the global economy since late 2000 with the events of September 11, 2001 exacerbating an already difficult situation. All the world's leading economies registered slower growth in 2001. This trend of affairs impacted adversely on the developing countries by way of lower commodity prices, and deteriorating financing conditions, especially in Latin America and other emerging markets. Overall, GDP growth for 2001 was 4.2% as compared with 3.7% growth in 2000. This was accounted for by 4% growth in the agricultural sector, 2.9% and 5.1% in the industrial and services sectors respectively.

Government monetary policy during 2001 was focused on reducing the rate of inflation as well as the rate of depreciation of the cedi. The Central Bank continued to tighten monetary policy through intensified open-market operations. End-of-year inflation dropped from 40.5% in December 2000 to 21.3% in December 2001. The cedi to the US dollar exchange rate on the inter-bank market increased from C7,049.24 at the end of December 2000 to C7,312.24 at the end of December 2001, indicating a depreciation of only 3.7% for the year as compared to 49.5% the previous year. On the forex bureau market, the depreciation of the cedi to the US dollar in the year 2001 was 7.7% as compared to 49.8% recorded in the year 2000.

Reasons for the stability of the cedi exchange rate include among others, the increased confidence of Ghanaians in the prudent fiscal policies of government. The stability has been achieved on the fiscal side by strict limitation of government borrowing whilst on the monetary side by shifting its financing from bank to non-bank sources through co-ordinated open-market operations. The reduced demand for foreign exchange for debt servicing, as well as lower government spending and money supply growth, are contributory factors to the observed stability of the cedi exchange rate.

Traditional export commodities namely, cocoa and gold continued to dominate the export trade and together accounted for 54.5% of total exports. However, exports performed below expectation largely due to the under performance of both cocoa and gold. On the one hand, the shortfall of US$21 million in gold was attributable to labour unrest in one of the major mines as well as the closure of some of the surface mines. The shortfall of US$46.9 million in cocoa was mainly on account of lower than projected crop size. The export value of timber at US$169.2 million was lower than the value of US$175.2 million in 2000. A drop in unit price accounted for this lower value. Volume of timber exports increased 1.9% over that of 2000.

Non-traditional exports were valued at US$300.6 million as compared with US$226.3 million in 2000. Total value of imports (fob) was estimated at US$2,691.1 million for 2001 as compared with US$2,766.6 million in 2000.

SOFRECO of France last year carried out preliminary studies towards the implementation of an EU-funded SYSMIN Project. The project is aimed at assisting mining sector institutions to carry out projects aimed at stimulating private investment in the mining sector in an environmentally sustainable manner. The main components identified under the project include: institutional reinforcement; mineral exploration; infrastructure upgrade; a national gold refinery; environmental impact assessment; establishment of mining investment funds; and project management.

Gold Mining

Gold exploration and mining continue to be the main focus for mining companies in Ghana. During 2001, 15 reconnaissance/

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prospecting licences were issued to local and foreign companies. Normandy Gold, Rank Mining Co. Ltd, Bogosu Gold Ltd and Ghana Manganese Co., were granted mining leases after having submitted acceptable feasibility studies and environmental impact statements on their proposed projects.

The country's mining sector has been bedevilled with numerous problems in recent times. Notable among these are the following:

- low commodity prices;
- reduced international competitiveness;
- mining in forest reserves;
- conflicts between mining companies and local communities;
- retrenchment of mine labour force;
- and mine closure problems.

These problems have led to dwindling exploration expenditures and activities, and some companies relocating to other African countries. Anmericosa, for example, has relocated to Togo to explore for base metals. Also, some companies have disposed of their properties; Abosso Goldfields Ltd has been sold to Gold Fields Holdings; Satellite Goldfields Ltd is being disposed of; and negotiations are ongoing for Normandy Ghana Ltd to dispose of its mining assets.

Some of the measures being put in place include a review of legal and fiscal regimes, with the aim of ensuring international competitiveness and commensurate returns to all stakeholders, and studies to identify local economic development (LED) projects in mining communities which will address some of the socio-economic issues associated with mining in the mining communities.

Ashanti Goldfields Co. (AGC)
Obuasi's gold production for the year 2001 fell by 17.6% to 528,451 oz. The underground mine was the only source of primary ore at Obuasi. The closure of the surface mine as well as the Pompora and oxide treatment plants during the year affected production.

Productivity in the main mechanised stoping areas at Obuasi was improved by the introduction of new trucks and improved designs. In addition, fully developed reserves have been increased, providing greater operational flexibility.

Apart from ongoing surface rehabilitation work on landscaping and revegetating the old pits and waste dumps, there was no surface mining activity at Obuasi in 2001. A total of 4.06 Mt was processed compared with 5.33 Mt in 2000. As was the case in 2000, the main objectives of the underground diamond-drilling programme were the upgrading of the resource status across the mine and the delineation of new resources in the south section above 41 Level, the north section of the mine above 20 Level and below 50 Level across the base of mine between the Adansi shaft and the brown sub-vertical shaft (BSVS).

Production continued at Ayanfuri on a reduced scale for the first half of the year as some small deposits were extracted and old pits cleaned up. Ayanfuri produced a total of 11,517 oz in 2001. However, mining ceased at the end of the second quarter.

Gold production from the Iduapriem mine for 2001 was 205,130 oz, exceeding the previous year's total of 193,868 oz by 6%. Ore mined in 2001 amounted to 4.85 Mt, approximately the same as the previous year, with the mined grade of 1.58 g/t Au being 26% higher than the 1.25 g/t achieved in 2000. The higher grades resulted from mining of the Teberebie ore blocks. Waste mined was 13.8 Mt, compared with 15.0 Mt in 2000. During the year, mining operations on the Iduapriem blocks were completed.

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During 2001, a feasibility study was undertaken on upgrading the plant capacity to 4.0 Mt/y from its present 2.9 Mt/y in order to reduce unit costs. The project includes the installation of an additional SAG mill, upgrading of the elution circuit, conversion from CIL to carbon-in-pulp (CIP), relocation of crushing facilities to a larger crusher (which is already operational close to the Teberebie pits) and the installation of an overland conveyor to transfer crushed ore to the Iduapriem processing plant. The results of the study are positive, indicating improved cash flows and ore reserves. The project is presently at the approval stage and is expected to be completed during 2002.

Bibiani produced 253,052 oz during 2001 compared with 273,711 oz in the previous year. Reduced mill feed grade and lower plant recovery accounted for the reduction in gold production at the mine. This was due to the processing of more refractory ore types during the second half of the year.

During the year, the evaluation of a trackless underground mining operation to exploit extensions of the open-pit resources at depth continued but was not finalised. In 2001, a small deposit, Mpesetia, containing 30,000 reserve ounces was acquired and approvals to mine this ore and truck it to Bibiani are presently being sought.

In Guinea, Ashanti has an 85% equity interest in Siguiri. This mine produced a total of 283,199 oz last year, compared with 303,381 oz in 2000. Production was impacted by lower-than-expected metallurgical recovery from the stacked material during the year. A total of 8.52 Mt of ore was mined compared to 10.80 Mt in 2000 and the heap leach plant processed a total of 9.06 Mt grading 1.33 g/t Au, compared with 8.88 Mt at 1.34 g/t the previous year.

At Freda-Rebecca mine in Zimbabwe, full year production in 2001 was 102,654 oz compared with 112,164 oz in 2001. Underground production for the year of 1.16 Mt was 11% higher than the 1.04 Mt achieved in 2000. Some 56,000 t of open pit oxide ore were also extracted from the Phoenix Prince pit adjacent to the processing plant.

Persistent interruptions to the processing plant combined with reduced leach tank capacity made it difficult to maintain steady operating conditions which adversely affected gold recovery. The lower plant recovery and feed grade accounted for the decrease in gold production relative to 2000.

The uncertain economic and political situation in Zimbabwe during 2001 continued to pose a series of difficult problems for the management team. The lack of foreign exchange coupled with the fixed exchange rate and high inflation put severe pressure on the supply function and operating costs.

The Geita mine in Tanzania produced 545,562 oz in its first full year of production. A total of 4.52 Mt of ore grading 3.80 g/t Au was mined at a strip ratio of 6.0:1. This compares with 1.24 Mt at 3.00 g/t Au at a strip ratio of 9.6:1 in the previous year. In 2001, 4.58 Mt were processed at a grade of 3.91 g/t Au and a metallurgical recovery of 93.1%, compared with 2.08 Mt at 2.94 g/t Au and a recovery of 92.0% in 2000.

In the final quarter of 2001, the haul road between the Kukuluma deposit and the processing plant was completed and a haulage contract was signed to commence production from that deposit in the first quarter of 2002.

Ashanti's exploration effort continued to focus in and around its existing mining operations. At Geita, exploration during the year focused on the identification and evaluation of several prospects within Geita Gold Mines' extensive mining and prospecting licences. An indicated resource of 4.5 Mt grading 2.2 g/t Au, equivalent to 313,000 oz of contained gold was delineated at Chipaka, situated 6 km northwest of the plant. Significant mineralisation was intersected down plunge

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from the Geita Hill open pit and will require follow-up. Encouraging results were also received from the Prospect 30, Samena and Nyamatigata prospects. Infill drilling of the Nyankanga underground resource commenced at year end as part of the full feasibility study while pit optimisations will also be undertaken on the Roberts and Chipaka resources to delineate open pit reserves.

In Guinea, exploration around the Siguiri mine-site was mainly targeted at locating and defining oxide mineralisation. Saprolite reserves were outlined at Sintroko, 4 km south of the Kosise pit. Definition drilling of both laterite and saprolite was also completed at the newly identified and nearby Sokunu deposit, and in an area immediately south of the current Kosise pit limits.

In Cote d'Ivoire, rotary air-blast (RAB) and aircore drilling showed that the 20 km-long M'Basso/Bebou trend and the 7 km-striking Abrabine gold-in-soil anomaly, in the Allangaou permit of south-eastern Cote d'Ivoire, were related to minor bedrock mineralisation. Exploration has re-focussed on a package of permits, subject to an agreement signed with Rio Tinto in October 2001.

In Mali, follow-up geochemical sampling and RAB drilling were undertaken on a number of prospects in the southeast of the country. Additional targets have been identified and are currently being evaluated.

Exploration and assessment in Ghana continued at a number of prospects on, and in the vicinity of, the Bibiani, Iduapriem and Obuasi operations.

In Zimbabwe, at the RAN project near Freda Rebecca, an initial resource of 2.8 Mt averaging 2.6g/t Au and 0.42% Cu was outlined, a portion of which should be amenable to open-pit mining. A feasibility study is currently being undertaken. In addition, a small open-pit oxide reserve was delineated at the Phoenix Prince prospect.

During the year, Ashanti increased its Kimin concession in the Democratic Republic of Congo by 6,000 km^2 to cover most of the historically productive Kilo greenstone belt. Exploration is still to commence pending future political developments.

Resolute Amansie Ltd

The company's Obotan gold mine produced 108,827.93 oz at an average cash cost of US$212/oz. This represents an 18.9% decrease from last year's production. With the operations main ore source at the Nkran pit nearing completion and the satellite deposit at Adubiaso proving erratic, the company succeeded in acquiring the Abore deposit which is expected to see operations extended for a further twelve months. Resolute continued its pro-active approach to community development by promoting sustainable development. One key element of this is the continued tripartite arrangement between the local community, the District Administration and the company.

All Environmental Protection Agency (EPA) standards with respect to water and air quality were met or exceeded during the year. Following the completion of mining at Adubiaso Pit in December 2000, final reclamation, spread of topsoil and revegetation of the slopes on the waste dump and other distributed areas was completed. The Adubiaso pit was allowed to recharge with ground and rain water and treated by fertilising with chicken manure to increase biological activity in the aquatic ecosystem to support fish. The ultimate objective is to return the mined out pit to the community as a fish farm at the end of the project. The second lift of the Nkran waste dump was re-vegetated by year end with a mixture of grasses, nitrogen-fixing plants and timber trees. Crop trials are ongoing on the Nkran waste dump to establish whether the rehabilitated areas can be returned to the appropriate landowners as farmland. These trial plots contain cocoa, oil palm, plantain, cocoyam, cassava, maize and tomato.

Revegetation trials continued throughout the year on Saddle Dam #2, a completed portion

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of the year tailings dam, to determine the most suitable methods and crops to be used in reclaiming and revegetating the tailings dam to return it to agricultural use. Trial planting included crops of nitrogen fixing grasses of vertiver and citronella, nitrogen fixing trees, timber species, cash crops of avocado, teak, etc. and food crops on test plots with varying usage of topsoil, fertiliser, mulching, etc.

Abosso Goldfields Ltd

During 2001 the company's Damang mine produced 302,563 oz of gold at an average cash cost of US$208/oz. Overall, the operating cost structure was in line with the budget predictions. Whilst actual mining costs were lower than budgeted, the mill costs were higher owing to the increased tonnage and wear rates associated with the hard primary ore, which comprised the majority of the mill feed. Blending of lower-grade oxide ore was offset by increased throughput resulting from continuing incremental improvements in the milling circuit and improved ore fragmentation in the pit The 2001 annual review of the Life-of-Mine Plan demonstrated that despite the falling gold-price environment, the mine plan for the Damang open pit is still optimised and robust. Excellent industry-leading safety statistics were again recorded at Damang throughout the year. An updated resource model for the Damang ore body was constructed in February 2001 by consultants Hellman & Schofield in conjunction with mine staff.

The new estimate of 41.6 Mt averaging 2.26 g/t Au represents a 28% decrease in tonnage compared to the estimate at December 31, 1999. Again, this change results from changing cut-offs, mined material depleting the resource, and the adjustment of the historical undercall of tonnage in the 1.1-1.8 g/t range. The measured plus indicated component of the mineral resource, above 1.1 g/t, is estimated to be 30.0 Mt at 2.23 g/t Au.

A new pit-optimisation plan was developed from the measured and indicated component of the mineral resource estimate to provide the basis for the 2001/2002 operating budget. The pit shell adopted was based on a life-of-mine (LOM) realisable gold price of US$300/oz, and the mining schedule for the year to June 30, 2002, calls for the production of 337,000 oz of gold. If unchanged in subsequent revisions, this LOM plan would lead to the cessation of mining in 2006 and completion of processing of the remaining stockpiles two years later.

Other potential sources of ore within the mining lease include the Rex prospect, 12 km south of the treatment plant, where drilling has indicated approximately 2 Mt at 1.7 g/t Au and in the Tomento-Amoanda areas where recent drilling has yielded encouraging results.

In May 2001, the EPA published in the press a list of all mining companies operating in Ghana. Abosso was judged the best company on the basis of: compliance, reporting, reclamation and responsiveness to social issues. Abosso actively engaged the EPA during the year on the introduction of reclamation bonds and became the first mining company in Ghana to reach full and final agreement with the EPA on the terms and conditions.

During the year under review, negotiations were completed for the sale of the company's Damang mine to Gold Fields Holdings of South Africa.

Gold Fields Ltd

The company's gold production at the Tarkwa mine, which is an open-pit heap leach operation, increased by 39.16 % to 504,278.21 oz during the year under review. The Tarkwa mine commenced surface mining of auriferous reefs out of several open pits in 1998 and ceased underground operations during 1999. The transformation from an underground mine to a primary surface operation has led to a fundamental review of the evaluation methodology, geology and categorisation of resources.

Early in 2001, Tarkwa acquired the northern portion of the assets of the old Teberebie mine and the Teberebie plant, now called the South facility. The additional crushing and pad capacity enabled a major increase in monthly production from 740,000 t to above 1.2 Mt by January 2001. Output has continued to increase. The mine has a number of initiatives under way that will assist with cost control and facilitate further cut-off reductions. These include a possible move away from contractor mining to owner-operated mining at estimated lower unit costs. Long-term strategic studies are underway to determine optimal cost and recovery configurations, and the possibility of in-pit crushing is being considered. The mine has also commenced an exploration drilling programme to determine the viability of the underground resources.

Small-scale Gold Mining

Extension services in good mining practices, health and safety, basic entrepreneurial skills and environmental management to ensure high standard of performance were delivered to the small-scale gold miners during the year. Training of these miners in mercury pollution abatement continued throughout the year. Production by these miners which was sold through Precious Minerals Marketing Corp. (PMMC), Miramex and Licenced Buying Agents, increased by 27.41% to 185,595.70 oz.

Bonte Gold Mines Ltd

The company's production fell by 4.1% to 65,293.30 oz in 2001. Mine ore is loaded onto trucks and hauled to a central processing plant. As ore is placed into the hopper, a high-pressure water jet breaks up clay clumps and begins the slurry formation. The slurry passes over a series of grates, which further remove rocks greater than five millimeters in diameter and through rotating srubbers, which further break down the gold-bearing clay clamps. The resulting ore slurry is then pumped through a cyclone to remove additional lightweight material and finally passes over a sluicebox. The concentrate is smelted into gold dore bars weekly. The company is making all efforts to return the disturbed land surface to a condition as good as the original condition. After mining, the land is re-contoured to the original valley configuration. Nitrogen-fixing species of trees and shrubs are grown in Bonte's nursery and are planted in the reclaimed areas at the start of the rainy season.

Obenemase Gold Mines Ltd

The company notified government on March 22, 2001, of its intention to surrender its three mining leases because of weak gold prices and lack of investor support for gold exploration. The company, after spending US$6.2 million over a three year period on acquisition and evaluation of new surface resources, has been unable to define any economically viable project. According to the company, the project still has potential for significant underground resources but definition is risky and would require exploration expenditure of US$5-10 million to outline such a resource.

Gold Output (kg)

	1999	2000	2001
Ashanti Goldfields			
Obuasi	23,114	19,937	16,437
Ayanfuri	1,381	1,132	358
Iduapriem	4,976	5,191	6,380
Bibiani	8,146	8,514	7,871
Asikam	34	-	-
Teberebie/GAG	-	839	-
Ashanti Total	**37,651**	**35,613**	**31,047**
Teberebie	8,578	917	-
Bogoso Gold Ltd	4,164	3,380	2,710
Small-Scale Mines	4,069	4,531	5,773
Dunkwa Continental	1	-	-
Bonte Gold Mines	1,498	2,119	2,031
Gold Fields (Ghana)	7,956	11,271	15,685
Prestea Sankofa	357	371	257
Barnex Prestea	-	-	-
Resolute Amansie	4,173	4,174	3,385
Abosso Goldfields	9,446	10,276	9,411
Midras Mining Ltd	-	79	-
Ghana Consolidated Diamond	-	11	41
Prestea Gold Resources Ltd	894	742	390
Satellite Goldfields Ltd	2,709	3,039	2,171
TOTAL	**81,496**	**76,522**	**72,902**

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Satellite Goldfields Ltd

The company's Wassa project, located approximately 35 km east of Bogoso and Prestea, was developed in 1998 as a 3.0 Mt/y heap leach mine as a joint venture between Glencar Mining plc, Moydow Mines International Inc. and the Government of Ghana. Since then, average annual production from Wassa for 1999 and 2000 has been 92,500 oz at an average cash cost per ounce of US$220/oz. Metallurgical test-work indicates that the ore is non-refractory, however the gold recovery of the heap leach operation has not met design expectations. As a result of this and the decreasing gold price over the past 3-4 years, as well as a project debt burden totalling in excess of US$40 million, the company has suffered from persistent cashflow and liquidity problems, resulting in the current owner's election earlier in 2001 to sell it. Golden Star is negotiating to acquire the mine. On acquisition it will be put on care and maintenance while conducting a feasibility study on the redevelopment of the mine as a 3 Mt/y CIL operation. Based on its own preliminary engineering studies for the CIL redevelopment, Golden Star expects that an average of about 100,000 oz/y of gold at an average cost of US$185/oz can be produced at Wassa for a period of six years. The total cost for the CIL feasibility study, construction and commissioning is estimated at approximately US$13 million. Satellite Goldfields Ltd produced 69,808.68 oz for the ten months it operated last year.

Bogosu Gold Ltd (BGL)

Since the acquisition of BGL by Golden Star Resources Ltd of the US, BGL has been working towards the creation of a strong economically viable mining industry in the Bogoso/Prestea area. The company hopes to achieve this through consolidation and allowing the optimal utilisation of mineral infrastructure in the area. During the year under review, BGL was successful in acquiring a mining lease for the Prestea concession to a depth of 200 m below the surface. BGL has also entered into an option agreement to acquire Prestea Gold Resources Ltd, which operates the Prestea underground mine. Negotiations are under way for Golden Star Resources to acquire a 90% interest in Satellite's Wassa Gold Mine. BGL's production of 87,122 oz in 2001 was 19.8% less than that of the previous year.

Prestea Gold Resources (PGR)

After being granted a 15-year mining lease over both the surface and underground operations, PGR was faced with operational problems. The company was unable to meet the cost of utilities, supplies and salaries of workers. The company started negotiations with Bogosu Gold Ltd (BGL) with a view to BGL taking over the surface rights, PGR's liabilities and injecting capital for the underground operations. PGR's reserve position as at April 7, 2001, stood at 2,845,759 t at an average grade of 10 g/t. PGR's production for 2001 fell by 47.34% to 12,552.78 oz (390.44 kg).

Diamonds

Diamond production of 1,169,632.66 cts for the year shows an increase of 33.21% over that of the previous year. Ghana Consolidated Diamonds Ltd (GCD), whose divestiture has had a chequered history, produced 196,600 ct. Contribution from the small and medium-sized mines was 973,032 ct. So far no company has taken over GCD's Akwatia diamond mine. The government is still looking for a strategic investor.

Other Minerals

	1999	2000	2001
GCD Diamonds (ct)	207,289	191,460	196,600
Small & Medium Mines (ct)	476,744	686,551	973,033
Diamond Total (ct)	684,033	878,011	1,169,633
Bauxite (t)	355,263	503,825	678,446
Manganese (t)	611,500	895,339	813,329

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Bauxite

Ghana Bauxite Co., the only company mining bauxite in the country produced 678,446 t. This represents an increase of 35% over that of the previous year. The company's production trend has been positive increasing from 341,121 t in 1998 to 678,446 t in 2001. This significant increase is as a result of improvement in the western rail line and the use of dump trucks to haul ore from the mine site to the port at Takoradi.

Manganese

At Ghana Manganese Co.'s Nsuta mine, output fell by 9% to 813,329 t. The company's production effort depends on the efficiency of the railway system.

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