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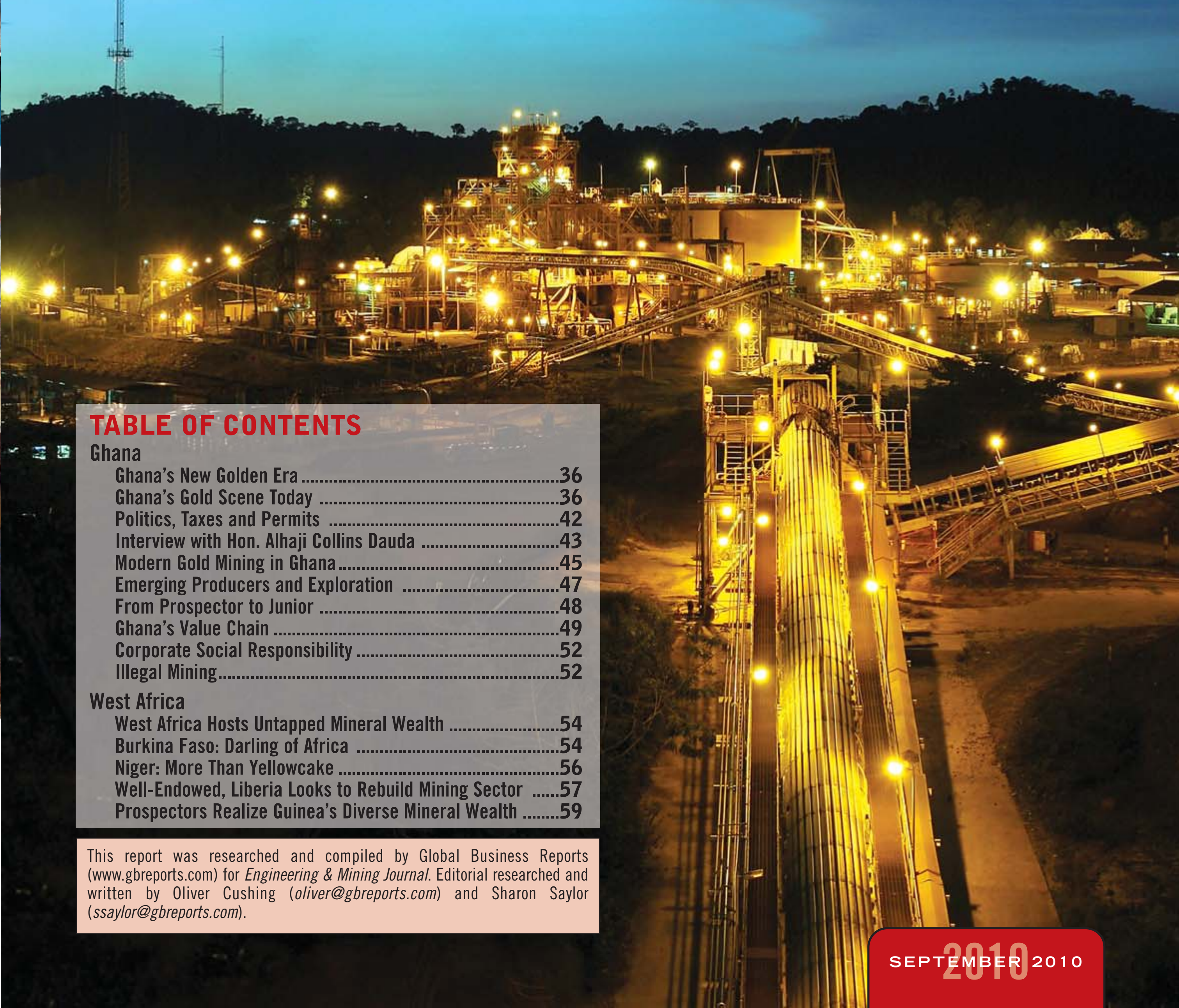
GLOBAL BUSINESS REPORTS

Ghana/West Africa Mining

Ghana has become a leading gold producer and several West African nations with considerable mineral wealth are looking to emulate its path.

A REPORT BY GBR FOR E&MJ



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Ghana's New Golden Era

A stable mining climate attracts investments from the majors while a group of emerging explorers use Ghana as a launch pad to achieve producer status

Gold Fields Tarkwa mine, located in southwestern Ghana, recently completed the construction of a CIL plant that is expected to increase throughput to 1 million tons of ore per month on a sustainable basis. (Photo courtesy of Gold Fields Ghana Ltd.)

As gold prices continue to climb to new highs, Ghana has an opportunity to capitalize upon its long history of mining and position itself as a mining friendly, low risk destination for capital. Ghana has long been the choice for service companies looking for a regional hub, but as mining takes off across the region, the country has the opportunity to add value and create highly skilled jobs throughout the value chain.

Mining, particularly for gold, forms part of the heritage of Ghana. In 1890, local traders Joseph E. Ellis and Chief Joseph E. Biney negotiated a lease with the King of the Ashanti for 25,900 hectares of mining concessions in the Obuasi district and started work on what became the first modern mine on the continent outside of South Africa. Ellis and Biney had purchased a prime parcel of what was later recognized as one of the world's greatest orebodies; the Ashanti Gold Belt. Over a century later the mine Ellis and Biney founded has produced in excess of 30 million oz, and the man in charge of Obuasi today, Senior Vice President of Anglo Gold Ashanti Dr. Toby Bradbury, said: "At current production levels the mine has the resources to operate for another century."

Ghana's association with gold dates back well beyond Ellis and Biney. Ghana is the land of the fabled Ashanti kings, whose incredible gold jewelery attracted the notice of Portuguese explorers to the region in the 16th century. Such is the enduring significance of gold to the social, political and economic fabric of the country, the founding fathers of independent Ghana incorporated gold into the country's new flag.

"Ghana is by far the most developed mining country in West Africa and we have some of the most talented and experienced workers on the continent," said Alhaji Abudulai, president, Ghana Chamber of Commerce, and CEO of consultancy CME Ghana.

Today, the country remains gold focused and consistently ranks as Africa's second largest producer. Gold represented the lion's share of revenue from mining, accounting for $2.84 billion of a total $2.95 billion generated from mining in Ghana. In the premier league are Gold Fields with 30% of production, followed by AngloGold Ashanti with 19% and Newmont with 18%. Behind these sit Golden Star with 14% and Red Back Mining's Chirano subsidiary at 6%.

The Precious Minerals Marketing Co., a government body mandated to purchase small scale miners' production, sold 13% of Ghana's gold in 2008. Concerning other minerals, the Ghana Manganese Co., operator of a 100-year-old mine, sold 1 million metric tons (mt) generating revenue of $64 million, while its neighbor, Ghana Bauxite Co., mined 613,000 mt representing $11 million.

Ghana's Gold Scene Today

After decades under state control, Ashanti Gold Fields, which owned Obuasi and the smaller Iduapriem mine, merged with AngloGold to form AngloGold Ashanti. While AngloGold Ashanti is perhaps the company most readily associated with Ghana, it has been pushed into the No. 2 spot by fellow South African company Gold

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Peter Tuner, executive vice president, head of West Africa operations, Gold Fields.

Fields. Gold Fields produced 870,000 oz (against AngloGold Ashanti's 570,000 oz) in 2009 and Obuasi has now been overtaken by Gold Fields' open-pit, high-volume, low-grade Tarkwa concession which is now the largest mine in Ghana.

Newmont entered Ghana following its acquisition of Normandy, and its Ahafo and Akyem deposits have proven to be some of the best properties in its portfolio. Ahafo is a highly efficient bulk, low-grade pit which has become the second largest gold mine in Ghana at about 500,000 oz/y.

Despite a tradition of mining dating back a century and playing host to some of the world's largest gold mining companies, Ghana is still not fully understood from a geological perspective and remains far from fully explored. "There is an enormous amount of opportunity in Ghana. There is still a lot of exploration potential," said Stuart Love, regional manager-West Africa, Coffey Mining.

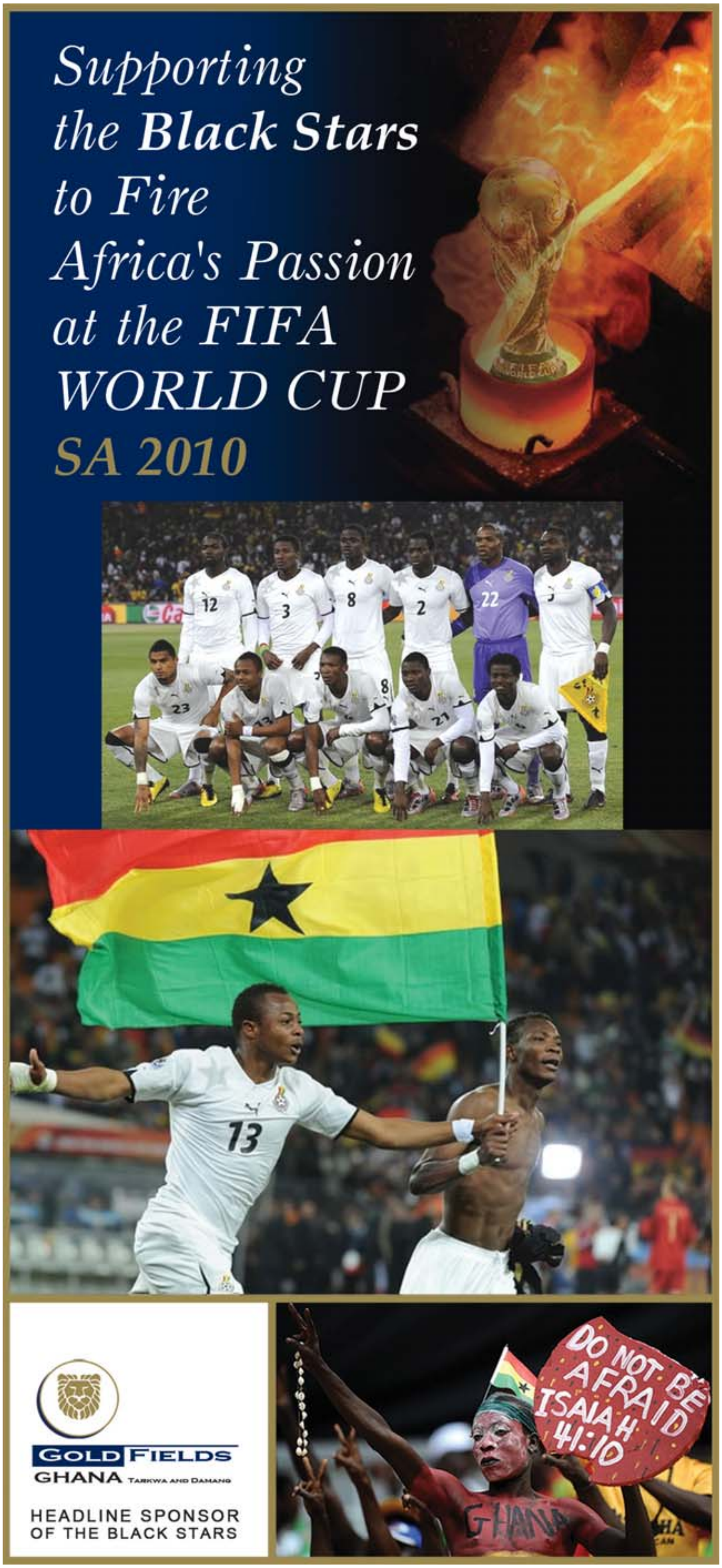
John Agui, head of the Ghana Geological Survey Department, noted the last wide scale survey of the country was conducted in the 1950s. His department recently launched a new geological mapping of the country based on a €12 million European Union-funded airborne survey. This should increase understanding of the country's geology and draw attention to the large portions of the East covered by sedimentary rock.

The significance of mining to Ghana cannot be underestimated. Dr. Toni Aubynn, head of corporate affairs and social development at Gold Fields Ghana, estimates more than 40% of Ghana's export earnings are attributable to the sector. Sulemanu Koney, director of research at the Ghana Chamber of Mines, claims

Dr. Toni Aubynn, of AngloGold Ashanti, is also head of corporate affairs and social development for Gold Fields Ghana Ltd.

18% of national tax revenue is paid by the mining industry directly, with a substantial further amount being contributed by firms in the value chain that support the sector and through income tax of employees.

An important addition to the legal mining industry is the role of artisanal, or "gallamsay" mining in Ghana. The Honorable Ohena Kena, chairman of the government regulatory body, the Minerals Commission, estimates between 500,000 and 1 million people work in the small scale sector, rep-



resenting an incredible 5% to 10% of Ghana's labor force. The gallamsay issue is never far from the surface in Ghana and the country's management of the problem will help determine how successful the country is at attracting investment from the large scale, legal mining companies.

Ghana was the first African nation to win independence from Britain in 1957 and has maintained a proud tradition of stability, peace and (through much of its history) democracy since. "Ghana is recognized as a stable democracy. The 2008 election was very peaceful despite the narrowest of margins and this has further built investor confidence in the country," said Jeffrey Huspeni, regional senior vice president, African operations, Newmont.

Ghana had a GDP per capita of just $1,500 in 2009, making it one of the 30 poorest nations on earth. Despite this, Ghana is often used as an example of good governance and a model from which other African nations can learn. It is no coincidence Barack Obama made the country the first African port of call of his presidency.

Huspeni's sentiments regarding the stability of Ghana are echoed throughout the industry and there seems to be a widespread belief that Ghana is a good place to invest. "The value system of individuals we deal with in this country is very good and our climate surveys, which we perform annually, clearly highlight this. This is a nation with really good people, which is a huge advantage for us as a company. Mining has been a culture in Ghana for a long time, with a very old chamber of mines, mining institutions and universities educating the society

Jeff Huspeni of Newmont Ghana is also the regional senior vice president of African operations.

Newmont Ghana's Ahafo mine processing plant at night. (Photo courtesy of Newmont Ghana)

about the mining industry. The systems, regulations and laws in Ghana work," said Gold Fields' executive vice president and Head of West African Operations Peter Turner.

Politics, Taxes and Permits

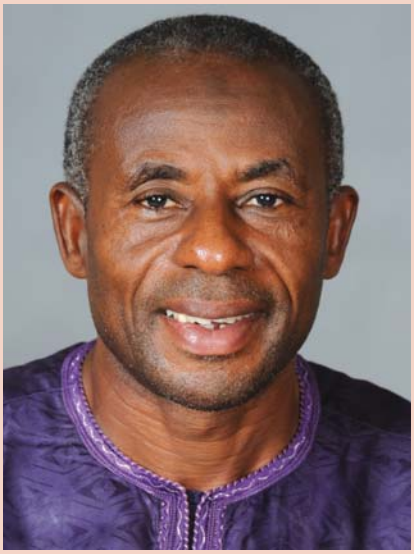
Ghana's current mining code was implemented in 1992 and falls under the remit of the recently amalgamated Ministry of Land, Forestry and Mines, currently the portfolio of Minister Alhaji Collins Dauda. The code is administered by the Minerals Commission, which is a professionally staffed body intended to act as a "one stop shop" for explorers, miners and other relevant parties. Unlike in some other jurisdictions, the granting of environmental permits is dealt with by a second body, the Environmental Protection Authority.

An explorer will likely only need to deal with the Minerals Commission up until the point when a resource is defined and a development phase is initiated. Under the code, foreign companies are not required to have local partners and this holds true in real life, unlike in many other emerging markets.

A company wishing to prospect in Ghana can either acquire a Reconnaissance License in a private deal with an existing holder, or apply for an open concession from the Minerals Commission. "If the Commission sees you are a reputable company that can finance what you propose, after a 21-day local consultation period, the Commission will recommend to the Minister that the license is granted," said Simon Meadows Smith, SEMS Exploration Services.

The Reconnaissance License allows a company to conduct surface work and lasts for a period of two years. If the decision is taken to pursue work and undertake sub-

Exclusive Interview with Hon. Alhaji Collins Dauda, Ghana's Minister for Lands and Natural Resources



One of the government's stated aims when it came to power was to build the mining services industry in Ghana. How can the mining sector contribute to the creation of skilled, value-adding jobs in the country?

Increased mining activities due to the high price of gold automatically come with increased demand for expert mine support services such as contract drilling, assay laboratories, contract mining and geological consultancies by mining companies. This motivates both the mining and mine support service companies to train their workers to acquire the requisite skills for their work. The government's aim is to ensure Ghana's mineral endowment is managed on a sustainable, economic, social and environmental basis. The government has funded minerals related education, training and career development for personnel in the Regulatory Agencies and students in mining related Universities in Ghana. This provides adequate skills to personnel in the mining industry and enables them to perform their duties efficiently and effectively.

In 2009, Ghana produced 3 million oz of gold. In spite of this level of production, there is no big gold refinery in the country and the bullion is exported for final refining elsewhere. The government is giving priority to the granting of licenses to prospective mine support services companies which are interested in the opening and active operations of refineries and other value-added jobs.

Ghana has a long tradition of artisanal mining, but small local miners are now being supplanted by larger scale illegal mining operations. What is the government doing to combat this?

The government acknowledges illegal mining is a major issue in the country and is taking appropriate steps to curb it. These steps include the establishment of District Mining Committees chaired by the Chief Executive of Assemblies to assist the District Mining Officer in carrying out relevant educational programs for the regularization and proper monitoring of their activities. Where the problems are out of control, district, regional and national security councils are brought in to handle the situation. A national committee on illegal mining, comprising members from the National Security Council and the mining sector agencies has also been formed.

More areas are being explored to find suitable areas for small scale miners. A total area of 300 km^2 has been identified for geological investigation. It is expected that a significant percentage of these areas would prove viable for parceling to small-scale miners. Under this project about 2,000 small-scale miners are expected to be employed after viable areas have been made available.

Credit Facilities to organized, licensed and credible Small Scale Mining Associations and Cooperatives for acquisition of mining equipment to improve production will continue as an incentive for miners. Alternative Livelihood Projects (ALPs) are being developed by government along with those of mining companies in mining communities to ensure excess labor is employed.

The law states proportions of the royalties paid by a mine must be spent within the local communities. Are you confident the appropriate amounts are being paid to local governments and they are being spent in the correct manner?

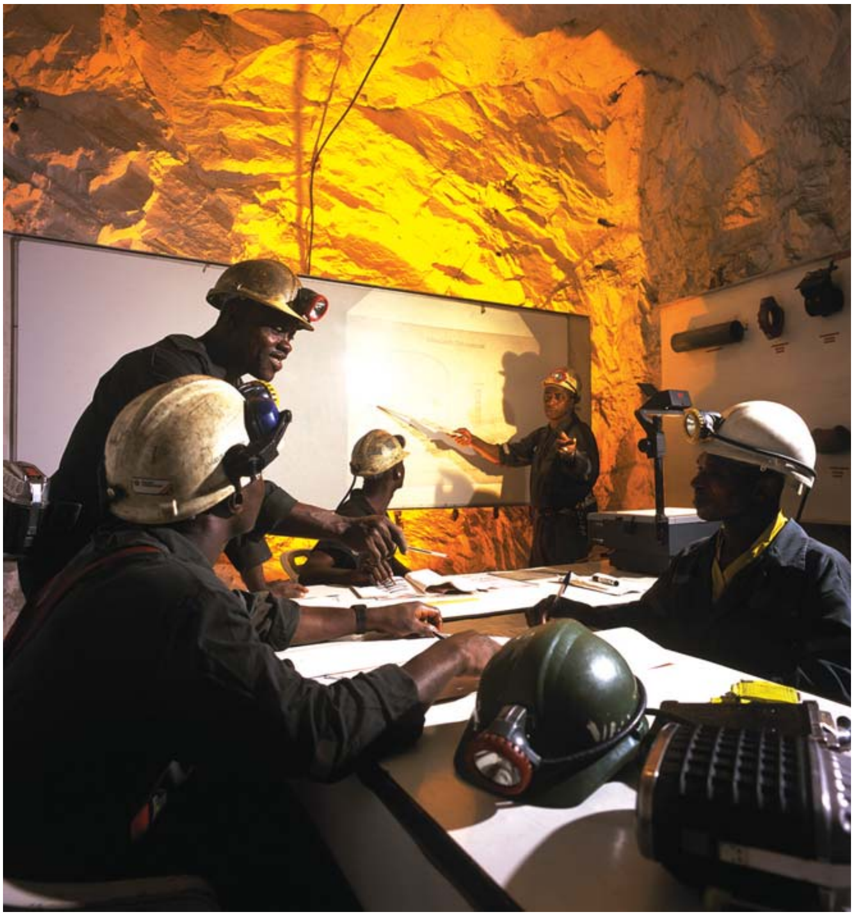
There are records to show the appropriate amounts from royalties are paid to local governments. Many local governments had no guidelines on the usage of the share of the royalty payments and as a result they used the funds for district wide projects or other expenditures. Guidelines on the usage of royalties have been developed for government's approval. When these guidelines are approved government will ensure the local governments follow them to the letter.

What is your final message to readers about investing in Ghana?

Ghana remains an attractive destination for mining and related investment in Africa for the following reasons:

- Political stability: Ghana boasts almost two decades of multi-party democracy. The country continues to mature in its democratic principles. The result has been major national economic gains over the years.
- Availability of geological data: For the first time in the history of the country, high-resolution airborne data, made up of magnetic and radiometric information, covering the whole country is available. Some areas have also been covered with gravity and electromagnetic surveys, the data of which is also available.
- Favorable investment climate: Ghana operates an attractive legal and fiscal regime that is in line with international best practices. This is evident in the number of major multi-national companies investing in the country
- Improved governance: Government has created a stable regulatory environment that provides for transparent and even handed treatment of all investors.

I look forward to your early participation in the development of our enormous natural resources in an efficient, economic and environmentally-sustainable manner to ensure mining contributes to the sustainable development of our people as well as ensuring good returns to investors. I extend to you all, a warm welcome to Ghana: the investment gateway to the West Africa sub-region.



AngloGold Ashanti's Obuasi gold mine, located in the Ashanti region of southern Ghana, has more than 100 years of mining history and has produced more than 30 million oz of gold. (Photo courtesy of AngloGold Ashanti)

surface exploration, the company must then apply for a Prospecting License, which can cover 150 sq km and lasts for two years. After the conclusion of the two year Reconnaissance License, there is a facility for one year extensions of the permit and the consensus in the industry seems to be the Minerals Commission is reasonable in its granting of these. However, at the end of the initial term the licensee is required to shed 50% of the concession.

Assuming an economically viable resource is defined, a Mining Permit from the commission and approval from the Environmental Protection Agency (EPA) are required prior to the construction of any mine. Unsurprisingly, this is the greatest hurdle any developer is likely to face and the process, though not the code itself, has drawn criticism from those who have made applications in recent years. The period it takes to get approval appears to have increased. There are a number of reasons why this might be the case, including a more questioning approach to mining since the election of President Mills' NDP in 2008 and because an under-resourced EPA and commission are struggling to cope with an ever increasing number of applications.

Ghana has a carefully cultivated reputation for respecting tenure, but the cases of two Canadian investors threaten to undermine this. The first involves Volta Resources, currently developing the 2.65-million-oz-plus Kiaka site in neighboring Burkina Faso, who has been active in Ghana since 1994 (through its predecessor company Birim Gold Fields). "We have spent more than $25 million in the Bui belt of Ghana and are currently at a stalemate as the EPA feels that a discovery on one of our properties that leads to a mining operation might affect the structural integrity of a new dam being built upriver," said Kevin Bullock, CEO, Volta. "As our nearest target is 25 km away we don't feel this would be the case and are currently trying to meet with the EPA to resolve the issue."

The second case concerns Ghana and Niger focused AMI Resource, who has drilled in excess of 20,000 m at its 162-km^2 North Ashanti gold project and have identified 327,000 oz and numerous further targets along a 15-km anomalous zone. The site sits adjacent to a lake and the company has adapted its mining proposal in line with the findings of an independent government commissioned report to ensure tat the lake is not impacted. Despite the alterations, which include avoiding any activity on the lake side of the watershed, the company has not been able to progress their application.

The key problem for both companies is that the decisions have, after extended periods, yet to be formally confirmed. This means the companies cannot seek compensation, as might be expected when policy changes are made after an exploration lease is granted and executed. In the case of AMI, whose problems relate to a natural ancient water body, an exploration license should not have been granted if the area was off-limits to miners. Volta and AMI hold extensive portfolios in other West African jurisdictions and are focused on developing their non-Ghanaian assets. Ghana risks a more systemic diversion of exploration budgets to its rival jurisdictions unless a swift and fare resolution is achieved in both cases.

Ghana's "take" from mining is in-line, or perhaps slightly below, international and regional norms. The government takes a 10% carried interest in any mining project and the industry seems comfortable with both the principle of carried interest (perceiving it to focus both parties on a common goal) and the level at which it is currently set. Corporate tax is set at 25%, with exemptions for manufacturing companies located in the hinterlands.

The mining industry is fighting a battle with the government over a proposed

Dr. Toby Bradbury, senior vice president, AngloGold Ashanti.

increase in royalties from 3% to 5%. The government argues it has accepted a relatively low level of royalty while gold prices were depressed, and it is only fair the country take its share now that prices are buoyant. Benjamin Aryee, CEO of the Minerals Commission, pointed out that the current law allowed for royalties to be increased by up to 12% and the new cap will be half this amount.

Those who have already built operations are pragmatic on the issue, as Peter Turner, executive vice president and head of West Africa for Gold Fields, said: "If fiscal changes are due, we have to comply and work with these changes objectively. But it is important not to damage the fiscal regime or model as it increases all costs and we are very sensitive to price. Gold Fields has invested about $3 billion in Ghana, thus the significance of ensuring a return on investment."

The fear is any royalty hike will reduce return and also create a climate of uncertainty as companies realize a crucial part of the 'contract' between themselves and the government is not a golden as once thought.

Many of the larger mining companies hold confidential tax stabilization agreements with the government and it is clear projects that have the potential to create large numbers of jobs and revenue have historically been favored. However, the role of miners in supporting the state should not be understated; Gold Fields is Ghana's number one taxpayer and Newmont is number two.

Modern Gold Mining in Ghana

As much as 87% of Ghana's legally sold gold is produced by five companies operating eight mines. The expansion, closure or suspension of operations at any one mine is therefore likely to have a substantial impact on the country's production figures and indeed its wider economic performance. Currently, Ghana produces some 2.9 million oz/y of gold, approximately 4% of global production, making the country the second largest producer in Africa and the tenth largest in the world.

The key challenge faced by the mining sector is offsetting low grade ore against rising costs and managing expectations set by the rapidly rising price of gold. How companies manage their relationships with the central government, local chiefs and officials, their workforces and the communities in which they operate represents at

NADEf—Representatives of Newmont Ghana Gold Ltd. and leaders of its Ahafo mine host communities signing the contractual Ahafo Social Responsibility Agreements on Employment, Foundation and Relationship. (Photo courtesy of Newmont Ghana)

least as much of a challenge as any engineering problem presented by Ghana's diverse orebodies.

The trend in Ghana over recent years has been to focus on low grade, surface operations where volume and cost management are the key to success. This trend is largely a reflection of the country's geology, but also demonstrates that mining houses, who find it ever more difficult to gain permission for open-pits in Western jurisdictions, are drawn to countries such as Ghana that have a more excepting attitude to open cast mining.

Tarkwa is Ghana's largest mine in terms of current production. This mine is centered around an old state-owned subsurface operation, but the current owner, Gold Fields, closed the shafts and has instead turned its attention to building a high volume, low grade operation. "Ghana has been a major contributor to profit growth, notably due to cost of production," said Toni Aubynn, head of corporate affairs and social development, Gold Fields Ghana. "The grade that we operate with in Ghana is quite low (1.2-1.5 g/mt)... you have to be meticulous on how you manage the mine to alleviate unnecessary costs and avoid diluting your profitability. There is also a huge employment of technology to keep costs low [$521/oz cash cost in 2009] and margins acceptable."

Gold Fields continue to focus on building output, improving efficiencies and increasing mine life at Tarkwa. "The company has invested more than $1 billion since commencing operations," said Aubynn.

Gold Fields has been focused on bringing a new CIL plant into operation at Tarkwa. After teething problems in 2009, the plant is now up and running and has increased recovery rates and volume substantially. The CIL plant, which has a 90% recovery rate, is running alongside two existing heap leaches (which ensure recovery of 60%). "Investment at Tarkwa is an integral part of how Gold Fields can achieve its vision of producing 1 million oz/y (in West Africa) within the next five years," said Turner.

Newmont's Ahafo mine is only four years old. "It already produces about 10% of our global gold production [and represents] an important slice of our revenue," said Huspeni.

Newmont, consistently ranked as the world's largest or second largest gold mining company, views Ghana as a major driver of growth in the medium term. "Ghana is also a place where Newmont can grow [as it holds] about 25% of our global reserves," said Huspeni.

In addition to the Akyem advanced stage project, where Newmont hopes to build a second 500,000-oz/y mine, the company is evaluating two projects at Ahafo that have the potential to increase production levels and change the footprint and the nature of the mine substantially.

"Ahafo North is a series of seven or eight individual deposits 30- to 40-km to the north of the Ahafo mine. This area has about 5 million oz of combined reserves and we are working on optimizing this series of projects," said Huspeni.

The company has a good hold on the deposits from a geological perspective and would process the ore at its existing facilities on the core site offering a neat and low capex way to increase production. "The challenges we face are making sure we understand the community impact, the costs of land access and working on some re-engineering," said Huspeni, reflecting on some of the social issues that present a major challenge to mine developers across the country.

In the core Subika pit Newmont has started on a decline. The decline will supplement lower grade ore being extracted from the current open-pit mine with higher grade ore extracted from deeper deposits and will help Newmont optimize the ore it feeds through Ahafo's CIL plant.

Obuasi, the mine that started it all, enjoys a special place in the heart of the nation and this, combined with legacy issues associated with a century's worth of mining, exacerbated by underinvestment while under state control, means the property is every bit as challenging as it is appealing.

"Obuasi is still a world class resource [even] after more than 100 years," said Dr. Toby Bradbury, AngloGold Ashanti's newly appointed head of Ghana Operations. "Our key competitive advantage in Ghana is the high grade of the Obuasi deposit. To take advantage of this ore body and turn it into a world class mine, AngloGold Ashanti will focus on its current operations to continually improve its efficiencies."

Its strategy includes an extensive investment program and substantial changes to working practices and mining techniques. The decision has been made to move from a transverse to a longitudinal system across much of the mine. "The longitudinal approach will have the positive impact of reducing the amount of waste development we have to undertake," said Frederick Attakumah, general manager-engineering, Obuasi.

The company has placed great emphasis on improving the working conditions of Ghana's largest mine workforce. AngloGold Ashanti recently installed industrial washing machines so employees no longer have to wash their uniforms and, at great cost, chillers to cool this deep mine. The company is in the process of moving from an 8-hr shift system to a 12-hr system which will reduce blasting down time and the amount of time workers have to spend travelling from pit heads to the work faces.

Gold Fields' second mine, Damang, produced some 200,000 oz in 2009, representing a small but significant contribution the country's output. Damang demonstrates that the major mining companies can operate smaller operations profitably in West Africa and goes against the doctrine that the majors are only interested in +5-million-oz deposits in the region.

AngloGold Ashanti's second mine, Iduapriem, lies contiguous to Gold Fields' Tarkwa concession in the West of Ghana. Iduapriem, an open-pit operation, produces ore at 1.76 g/mt to turn out 200,000 oz in 2008 with extraction facilities focused around a carbon-in-pulp (CIP) plant.

In the second tier of production come American Golden Star which produced 410,000 oz in 2009 from its Bogoso/Prestea and Wassa mines and Canadian Red Back's 183,000 oz/y Chirano mine. For both companies, Ghana is the bedrock of operations; Golden Star's reputation was built upon turning around Bogoso and Wassa, and today they remain its only operating mines.

Emerging Producers and Exploration

In addition to the brownfield growth, Ghana has a healthy pipeline of new projects in the advanced stages of planning or development, and an extremely active exploration sector. Ghana's output looks likely to grow substantially over the next five years from its current 2.9 million oz/y. All eight operating mines have relatively long projected lives and, there are substantial options for growth. In addition to brownfield growth, three new mines look set to change the landscape, adding output of nearly 1 million oz/y within five years. Australia-based Adamus Resources and Perseus Mining aim to bring their mines into operation during the first quarter of 2011, adding 330,000 oz/y to the country's output. Newmont also has a mining license and EPA approval for its second mega pit, Akyem, and intends to make a development decision in the second half of 2010. Akyem could add as much as 550,000 oz/y to Ghana's output.

Perseus Mining chose to focus on developing an old mine rather than go down the pure exploration route for the company's first project. The project has, however, been as much, if not more, about redefining and extending the resource base as it has about designing a new mine. "In 2006, Perseus conducted a deal to acquire the Ayanfuri project from Ashanti Gold," said Kevin Thompson, exploration manager, Perseus. "The initial six month due diligence entailed drilling to confirm that gold persisted to depth below the old mined out oxide pits at Ayanfuri. We started off slowly and then became considerably more aggressive throughout 2007 and 2008, driven by very encouraging results and investor interest."

In 2008, Perseus drilled an impressive 170,000 m at Ayanfuri and its second Tengrela project in Ivory Coast. "This year [2010] will be an even bigger year of drilling for us," said Thompson.

Perseus is the first of a spate of companies who are using Ghana as the launch pad to make the step up from explorer to producer status. "Perseus has grown a company resource base shy of 1 million oz to more than 7 million oz. We expect to see the Ayanfuri project produce 200,000 oz/y to 300,000 oz/y for the next 15 years or so," said Thompson.

The Perseus story illustrates that Ghana is not just the domain of the powerful multinational mining houses and that the country has the environment required for juniors to succeed.

From Prospector to Junior

At a similar stage to Perseus is fellow Australian junior Adamus Resources. The company is in the final stages of developing its 1.1 million oz fully-permitted greenfield Nzema mine. The company secured a mining lease and EPA approval in 2008 and moved rapidly to raise capital and develop the property. The Nzema concession is located in a well populated area, in common with most of Ghana's gold belts, and securing a social license was as important to building the mine as any of the central government permits.

"Adamus has agreements with all of the surrounding tribes, the community has embraced our project and we are having a positive impact on seven surrounding communities. They have given us great support, this has endorsed Adamus in Ghana," said Mark Connelly, COO, Adamus.

"Once we decided to mine, we built 600 structures in four months to resettle the resident population," said Connelly, who, at the peak of construction, employed 2,000 people on the site.

Adamus has focused on developing a mine to create cash flow and transform the stock from prospector to junior miner. "It is important and crucial to have an asset that is real and not just great ideas," said Connelly.

A common theme among explorers who hit pay dirt (and chose to develop in house) is the stock is very much viewed in terms of the asset under development and capital markets neglect the upside potential of the company's remaining exploration portfolio. The mine at Nzema is only for 150-km^2 of the total 650-km^2 package. The company has yet to explore 400-km^2 of the highly prospective property, to say nothing of further concessions in the Ivory Coast.

Following rapidly behind the likes of Adamus and Perseus are a group of Canadian and Australian juniors bent on defining, and in some cases developing, viable gold reserves in Ghana. PMI Gold is at the advanced stages of exploration, having chosen to follow a similar route to Perseus. President Douglas MacQuarrie has been acquiring concessions in Ghana since 1993. "By 2003, I had acquired enough property to make a deal with PMI [of which he subsequently became president]. In 2006, we took over the Obotan project and, as the price of gold began to creep up, it made it viable to start extracting the lower grade reserves. In 2007, we acquired the former Kubi mine from Nevsun Resources."

PMI's strategy has been to acquire properties which the management are familiar with, but have been misunderstood or ignored by the wider market. PMI's Obotan and Kubi concessions had both been worked, but lacked modern resource estimates. As well as pursuing the drilling programs that are a junior's bread and butter, PMI had focused on establishing compliant resource estimates at the old workings. The company currently has an NI43-101 indicated resource of 604,000 oz at Kubi and 241,900 oz at Obotan. However, MacQuarrie estimates the company will double its compliant resource base in the near future. PMI are targeting near term production. "On completion of financing, we expect that a full mine mill complex

AngloGold Ashanti's Obuasi gold mine at night. (Photo courtesy of AngloGold Ashanti)

can be completed at Kubi for circa $50 million—with a 12- to 16-month time to production," said MacQuarrie.

The intention is to produce 60,000 oz/y at Kubi, while development across the company's portfolio leads MacQuarrie to aim for. "Production up to circa 150,000 oz/y of gold in five years time."

Next door to Obotan is Ghana and Tanzania focused Midland Mineral's Kaniago concession. This 50-km^2 highly prospective property is the company's second Ghanaian asset with attention very much focused on developing it and the adjacent Sian-Kwahu Praso concession.

Midlands Minerals acquired the Sian concession from a troubled Ghanaian-Chinese consortium in 2006. By combining it with their adjacent Kwahu Praso property they neatly avoided the rigmarole of securing licenses and EPA approval. "We reached an agreement through which Midlands acquired the 50-km^2 property, which was fully permitted, had a 30 year mining lease and the entire infrastructure in place, and a 500 tons per day CIL plant which can be expanded. The Sian gold project has everything," said Kim Harris, CEO, Midland Minerals.

At Sian, Midlands inherited about 2 million tons of low grade ore left behind by the previous owners, and have a NI43-101 compliant proven reserve of 400,000 oz. "Our priority now is to increase the ounces. We have 20,000 m of drilling planned for and we are about 30% into that right now," said Harris in mid-2010.

Harris hopes that the nine month drilling program will increase the reserve to 1 million oz with at least 30% of new resources in the measured category and to expand the deposit by demonstrating a 16-km strike length.

Ghana's Value Chain

Ghana is the obvious choice for any service company looking for a West African base. "Ghana has had a gold mining industry for 100 years or more. We can deploy our Ghanaian staff to projects in the rest of the


Newmont Ghana's environment department has in partnership with the local communities developed natural biodegradable mats from the shallow-ridged bark of the invasive York tree. These jutes mats are sold to the company for use in erosion prevention. (Photo Courtesy of Newmont Ghana)

West Africa region...(It) is the country which has people with the right skills," said Peter Jenner, managing director, Knight Piesold Ghana.

Similarly, Michael John Gliddon, SGS's regional manager for Geochem in West and Central Africa, said, "Ghana has a very good reputation. We use Ghana for support as it is the hub of West Africa, it is stable and it offers expertise."

The limited size of the mining sector in Ghana and in the wider regional market means that major capital purchases are normally done at the international level, with a mining client head office purchasing directly from European or American factories. "A project is normally put together from multiple Metso facilities in locations such as South Africa, Australia, Finland, the United States and France... [Ghana] would normally coordinate the projects with [these] locations," said Seth Quaye, regional manager-West Africa, Metso Minerals. "We come in fully during the installation/commissioning stage of such projects to support them, and eventually take over the client management process. Our main revenue comes from after sales business: supporting the operating mines—that is 90% of what we do."

While Ghana may be a developing country, standards across the value chain have to meet international levels. "Our EIAs are to an international standard. This is what is required of our larger clients such as Newmont and AngloGold," said Chris Fell, regional manager, Golder Associates.

With multinational clients often required to meet western standards across their portfolio by governments at home, the challenge for consultants is to meet these requirements in an emerging market. Fell's colleague at Golder Associates, Lead Engineer Laurent Gareau, said, "The pace is different; we have international clients expecting the same level of service from us, so our biggest challenge is trying to find the balance."

"Our team has met with the environmental protection agency [EPA] and discussed the international standard environmental impact assessments," said Fell. "This helps them to build their capacity and work with the guidelines from the beginning of the project so that everyone is on the same page."

There are few misconceptions that Ghana is ready to design or manufacture complex machinery at this point in time. There is, however, a recognition that the county can benefit from provision of service in the consultancy, logistics and engineering sectors. After South Africa, Ghana has the most sophisticated mining education system on the continent and there is a desire to further build human capacity in the country. "There are abundant numbers of technical persons available to fill most vacancies when they arise. Ghana's two mining schools at Tarkwa and Kumasi produce graduates in significant numbers that we recruit and train. As a consequence of this system Ghanaians are found in nearly every country that is going into mining or exploration, especially in Africa," said ALS Ghana's Head of Operations Francis Donkor-Baah.

Blasting services provider Maxam is an international company doing its bit to help. "Maxam established a program with the Tarkwa University of Mines to develop Ghanaian engineers and give them the opportunity to train and work for Maxam globally. Once selected, Maxam provides the potential employees with extensive training lasting six months. If the graduate successfully completes training, he or she can join Maxam to be employed in one of the many Maxam operations around the world," said Maxam's Deputy Managing Director Johan Kotze.

The Ghanaian skills base has already developed significantly in recent years. "We have moved from two thirds of our workforce being expatriates to only one-tenth today. We aim to be wholly Ghanaian within 10 years," said Jenner.

The market for both equipment and technical services has grown markedly in recent years. "Since 2003, we have had a very steep growth curve, helped by the price of gold globally," said George Apostolopoulos, managing director, Atlas Copco Ghana. "In 2006, our annual turnover in Ghana was $25 million; in 2009, our turnover had doubled to $50 million. In the mining sector you develop close bonds with your clients. The relationships are built over many years and the loyalty established makes it very challenging to replace existing service providers."

George Apostolopoulos, general manager, Atlas Copco Ghana Ltd.

Apostolopoulos sees substantial room for growth driven by the expanding domestic and regional markets as well as the emergent oil and gas sector. "I expect Atlas Copco's business in Ghana to substantially increase by 2014," Apostolopoulos said.

With exploration cash flowing into the wider region and countries such as Senegal and Burkina Faso going from unknowns to hosts of major mines in the space of half a decade, Ghanaian-based companies are inevitably looking to expand into the wider market. "Now that all of Ghana has been mapped, our internal demand is more irregular. We are focusing our attention in West Africa," said George Kwasi Asiamah, regional manager of Fugro Airborne Surveys, who conducted the recent aerial geological survey of Ghana. "We now have contracts in Nigeria, Sierra Leone and Liberia. There is still huge potential for growth in the mining and exploration sectors here in West Africa."

When a major international player enters the country, an occasional but significant event, it is likely to bring with it trusted suppliers and service partners. Commercial explosives, initiating systems and blast based services provider Orica Mining Services came to Ghana with Newmont. It has since chosen to go the integrated route, locating its manufacturing plant at Ahafo. However, once a major international player such as Orica is drawn into a market through a global service alliance, there is a natural desire to grow and leverage investment to build new relationships.

Inevitably growth in demand, at a time when revenue was collapsing in other parts of the world due to the economic crisis, has lead to increased competition in West Africa. "The market is extremely competitive," said Gliddon. "Recently, Intertek and ALS arrived, but the market in Ghana is still expanding and great opportunities exist."

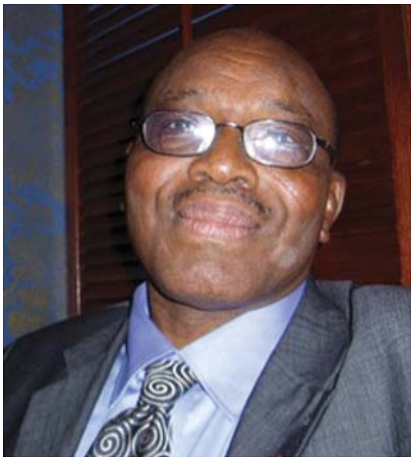
"An increasing number of major players believe Ghana requires direct representation and are opening offices or taking over their old partners. Buying out a local company allowed us to start with a strong client base and revenue. While Boart Longyear is a relatively new company in Ghana, we have been able to build on the 15 or 20 years of experience that came with Saloboart (its former local partner)," said Boart Longyear's West African Zone Manager Salvatore Scervini. "There are a lot of opportunities, but we expect new competitors in the market and we are prepared for this."

Corporate Social Responsibility

Across the mining world it is understood that good relationships with neighbors are key to profitable operations. Nowhere is this more the case than in Ghana. In developing countries a miner or explorer cannot worry solely about governmental relationships; traditional social structures and more novel methods of interaction may need to be considered in order ensure that host communities benefit from and appreciate the value of the work taking place around them.

The mining company's CSR programs go well beyond window dressing in Ghana and are having a serious impact on the development of the country. AngloGold Ashanti's malaria control program is perhaps the most well-known scheme to come out of Ghana in recent years.

"In 2005, AngloGold Ashanti decided to implement an integrated malaria program in the Obuasi district," Bradbury said. "The objective was to reduce the incidence of malaria by 50%. Malaria cases have dropped by some 73% in a community of around 200,000 people. The program has been recognized as a highly effective and cost efficient solution and AngloGold Ashanti has been awarded a \$133 million grant by the Global Fund to implement and operate our program across a much wider area of the country."



Alhaji Abdulai Nantogma, president, Canadian Chamber of Commerce.

Newmont has established a development fund and Gold Fields has created a special foundation to support their local communities. The concept is the local community decides on how money is spent through a formal process and thus reduce the risk that one group receives, or is perceived to have received, a disproportionate allocation. The foundations are funded through a set transparent formula and help align both parties in the objective of producing as much gold, as efficiently as possible, from the relevant mines.

There is concern within the mining industry that CSR programs are providing services which should normally be provided by the state. "Mining is adding value to the system; the only shortfall is that there is little evidence of this at the local level," said Jurgen Eijendaal, managing director, Ghana Manganese Co., and president, Ghana Chamber of Mines.

"The law states 10% of royalties paid should go to traditional rulers in the mining communities, to be spent in the areas affected by mining. We do not see enough evidence this money is filtering down to the people on the ground in our neighborhoods. Discretion is due as the industry is improving communal infrastructures, for example the roads to Tarkwa. But the industry should not be expected to replace the state. The royalties we pay and the money we contribute voluntarily are intended to provide facilities and services over and above what the government provide," said Eijendaal.

Illegal Mining

Illegal mining is a familiar problem in many developing markets, but in Ghana it has reached an epidemic level. Illegal mining poses a very real challenge to the development of the mining sector and the country as a whole. By its very nature, as an unregulated industry the size of the illegal mining sector is impossible to accurately measure, but the Honorable Ohena Kena, chairman of the Minerals Commission, estimates between half and 1 million people work in small scale mining. With small scale miners representing such an important part of the economy and the electorate, there appears to be a reticence to deal with the problem of illegal mining among sections of the political hierarchy.

For the mining sector, illegal miners can impact on the safe operation of mines and erode, literally, the economic viability of concessions. For the explorer, artisanal workers can act as a useful guide to rich veins but, with concessions being invaded by thousands of illegal workers at a time, the highest grade ore can be stolen within months. Many of Ghana's newer mines are large volume, low grade concessions where the ore is of little interest to artisanal workers. But where the grade is high companies are likely to face regular, organized incursions by illegal miners.

The law makes some provision for local villagers to work their lands using traditional methods, and there persists a romanticized image of farmers digging small pits in the corners of fields to supplement their meager incomes. The reality is more often of organized gangs using large earthmovers, mechanized recovery plants and selling their product through international criminal channels.

Illegal mining is having more than just an economic impact on Ghana. It is causing human tragedy and environmental degradation with alarming regularity. In June 2010, an underground mine in the Central Region collapsed trapping and killing more than 70 workers. Unmarked, abandoned workings litter the landscape of the main gold belts and rarely a week goes by in Ghana without the local media reporting on another incidence of a fatal shaft collapse or of villagers slipping into and drowning in old pits.

As Bradbury, whose Obuasi concession has suffered large scale incursions into the underground workings in the past, said, "Illegal mining occurs without any accountability for the future liabilities that are inevitably created...Illegal mining used to be tolerated by governments on the basis that it was being conducted by people who claimed to have no other livelihood. However, predominantly in Ghana it is now being undertaken by sophisticated operators and it is effectively organized crime."

Ghana is capitalizing on a century of mining expertise to become a regional hub and a key destination of investment in its own right. "Although it is not a global leader, Ghana is catching up," said the head of the region's largest investment banking team, Standard Chartered Bank's Kweku Bedu-Addo (managing director of origination and client coverage for West Africa).

"There has been a great increase in foreign investment and I see this trend continuing as we start to pump oil at the end of 2010. There has been huge investment in the telecoms and transportation sectors. This will make it much easier for investors to create new businesses here. With the possibilities the oil and gas and mining sectors have brought, it is very easy to see that Ghana is at the forefront of West African economies," said Bedu-Addo.

Unlike in younger emerging markets, Ghana has the momentum and the expertise to build a service industry to service not only its own steadily growing domestic market, but also the emergent regional market. Value adding is about skills, and Ghana has a head start in this field. With the commitment of international players and support from local institutions, the service sector can carry on growing at a rapid place. While Ghana cannot expect to become a major exporter of hardware in the foreseeable future, it can become an exporter of expertise. As Orica's Francis Decker, a Ghanaian who has worked across the continent, said, "Wherever you go in the African mining world, you are likely to find Ghanaians in middle and senior management roles."

Sanjay Narain, co-founder of rapidly expanding camp and mine services company, All Terrain Services (ATS), echoes that sentiment. "Ghana is going to increasingly be the training ground for ATS. We are looking to hand over management to local staff. Currently nearly 50% of our senior management are Ghanaian and we will increase that proportion."

ATS is a Ghanaian success story, having been founded in the country, but driving a 50% growth rate between 2003 and 2008 by winning contracts from as far afield as the DRC and Liberia.

Ghana's key mines are the object of substantial investment programs and still have long predicted lifetimes. A group of young companies are using Ghana as the launch pad to move from explorer to producer status, having emerged from an extremely active prospecting sector. It is clear Ghana's gold production will continue to grow substantially in the near and medium term and that the country is viewed as an attractive destination for mining capital. To ensure the country continues to enjoy and develop this status, the government needs to achieve reasonable and transparent resolutions to issues such as the royalty increase and the administration of permits. A failure to do so runs the risk of damaging investor confidence in the competitive worlds of exploration and mining capital. For its part, the industry has to continue to strive to ensure that their neighbors benefit from and understand mining.

West Africa Hosts Untapped Mineral Wealth

Prospectors and miners flock to four countries surrounding Ghana

Ghana might host the region's oldest mines, the largest proven reserves and the most developed service sector, but explorers and early stage miners are rushing to secure positions in fast emerging neighboring countries. This special report prepared for *E&MJ* by GBR profiles the mining environment in four West African countries: Burkina Faso, Niger, Liberia and Guinea.

Avocet Mining plc has determined its Inata project will produce at least 120,000 oz of gold annually over an initial seven-year mine life. (Photo Courtesy of Avocet Mining)

Burkina Faso: Darling of Africa

Between West African's premium gold countries, Mali and Ghana, lies the "land of honest people," as Burkina Faso is sometimes known. Home to 15.2 million people, stretching across 274,200 km^2, Burkina Faso hosts some of the richest untapped geological wealth on the African continent. But due to a history of political instability, military coups, extreme drought and unfavorable investment legislation, it is not surprising that, until recently, both majors and juniors alike have steered clear of the country.

Times have changed; today Burkina Faso is perceived by many explorers to be the "Darling of West Africa." More than 20 years of stability, large investments in infrastructure and the inception of a new mining act in 2003 have succeeded in bringing the nation to the cusp of exponential growth. "In the space of two and a half years, six mines have gone into production and there are several projects like ours with 1.1 million oz," said Paul Anderson, vice president of exploration, Riverstone Resources, which controls six exploration projects in the country.

"Burkina Faso has been stable for 25 years and the country is very under explored. The mineral endowment is a lot more than you see right now. If you look at what's been discovered in Mali and Ghana, it is just a matter of time before something similar is discovered in Burkina," said Colin McAleenan, president and CEO, Channel Resources. "The promise is there, and they certainly need the investment."

Channel Resources was one of the first Canadian companies to explore in the country. "Between 1993 and 2001 we did a lot of basic grassroots exploration… Riverstone Resources and Orezone Gold are working on properties that were once part of Channel's portfolio," said McAleenan.

After a difficult period, the company regained ownership of the Tanlouka gold project and, although still at a relatively early stage, Channel has identified drill targets with excellent potential for a new discovery. "We're going in with an RC rig and will drill approximately 2,500 m in five main target areas. Based on this, we believe there is potential here to discover a significant deposit deserving of a Phase II drilling program," said McAleenan.


Peter C. Jones, CEO, Iamgold.

One of the newer companies to enter the country is Canada's leading mid-tier gold company Iamgold. It plans to spend $14 million on exploration during 2010. "A year ago Iamgold made the Essakane deal with Orezone which, without a doubt, has been the best deal done by this company," said Peter Jones, president and CEO, Iamgold. "It is difficult to say what the lifetime of the mine will be, but at present we have 3.8 million oz of proven and probable reserves and found a resource base of 6 million oz and climbing. The asset has a very large land package attached and there is a lot more exploration potential on the site."

The mine is ahead of schedule and on budget. "We are looking at production per year in the high 300s (during the initial years of production) with an average life of mine production of 315,000 oz/y." said Jones.

Ron Little, president and CEO, Orezone, despite losing the Essakane asset to Iamgold, is confident in his plans to expand and develop the company's other gold assets in Burkina Faso. "Bomboré, Sega and Bondi collectively have 3.7 million oz. We made a very significant discovery with Essakane, but had to make the decision to sell during the economic downturn. Nevertheless, it is very possible we can repeat this finding," said Little.

Another recent acquisition was Avocet's purchase of the Inata mine from Wega in 2009. The company was looking for the opportunity to grow its production base. "We like exploration and hold a large amount of exploration land, but we wanted to increase output in the near term and deliver a demonstrable return to our shareholders," said Mike Norris, executive vice president and financial director, Avocet. "Developing a mine from scratch takes at least two years."

Avocet's Inata mine is one of only five gold mines contributing to Burkina's production, the others include High River Gold's Taparko-Boroum complex, Semafo's Mana mine, Etruscan's Youga mine, and Cluff Gold's Kalsaka mine.

Cluff Gold, dual-listed on AIM and TSX, saw its first pour at the Kalsaka gold mine in October 2008. Algy Cluff, chairman, Cluff Gold, said, "We will maintain our active growth strategy of developing our assets into increased gold production. Right now Kalsaka has an annualized production of 60,000 oz and has significant potential to increase beyond this."

Also in early stages of development are Volta Resources and Goldrush Resources. Volta Resources already has a portfolio of 26 properties in Burkina Faso, Ghana and Mali. Kevin Bullock, president and CEO, Volta Resources, has an aggressive development plan for its flagship property Kiaka, which it acquired from Randgold. "We had the intention to buy a project that we could progress fast with, so we acquired Kiaka in November 2010 and within two days we had a drill on site," said Bullock. "Randgold had identified some 2.65 million oz of reserves. We have drilled 17,000 m of RC and core drilling. What we are finding is that we are able to identify and interpret higher grade zoning within the overall package and this changes the dynamics of a potential mining operation completely."

The company has secured IFC (part of the World Bank Group) investment. "Their investment is a big rubber stamp for Volta and I think it has helped us with our recent rounds of financing," said Bullock.

"Mining in Burkina is a new phenomenon, but geology does not respect political borders and I would assume there will be as many mines in Burkina as in Ghana once a similar amount has been spent on exploration. It is very much in the limelight at the moment and when you combine the geology with the recent proof that mines can be built on time, on budget and operate smoothly, then it is only natural the country is becoming very attractive to investors," said Bullock.

Burkina Faso more than doubled its gold production in 2009. At this rate, with most of the land secured, early entrants into the market are hoping Burkina Faso can become the fourth largest gold producing country in Africa.

Niger: More Than Yellowcake

Niger is a sparsely populated desert country with a well established tradition of mining. The country has suffered a troubled political history and remains desperately poor. In early 2010, a coup deposed President Tandja (democratically elected in 1999, but attempting to extend his term beyond that allowed by the constitution), bringing to power a military junta which has pledged to restore democracy.

Niger has long been known as a major source of uranium, mining of which has been dominated by French state and quasi-state companies since independence in 1960. These have built Niger's uranium industry to become the world's fourth largest. The long-term association with uranium and a lack of political willpower can perhaps explain why Niger, twice the size of Texas, has for so long remained under the radar of explorers. Given the country was known to host the Eastern extensions of the great West African Birimian gold belt, it was only a matter of time before explorers started taking an active interest.

In 2004, Canadian juniors Etruscan Resources and Semafo Inc. heralded the start of a new era for Niger by putting into production the Samira Hills gold mine. A review of the mining code in 2006 facilitated wider foreign participation in the industry and has resulted in the licensing of numerous new concessions.

Samira Hills demonstrated Niger is more than just a uranium province and has prompted serious attention from explorers. The mine at Samira Hills is relatively small; initially it had a resource of some 600,000 oz and an anticipated mine life of six years, but the owners have carried on defining resources and the concession currently is estimated to contain more than 1 million oz of reserves and resources.

In 2009, Semafo consolidated control of the asset, bar 20% government interest, and have committed to extending the mine life. Costs are relatively high at \$665/oz, but the mine produced 56,000 oz in 2009 and the company is continuing to grow defined resources with a \$6 million exploration program on the concession under way.

AMI Resources is another early stage mover in Niger and has found the jurisdiction offers a refreshing change from some more established mining countries in the region. "Niger has been a breath of fresh air. They have a modern mining code and a pragmatic attitude toward exploration," said Dustin Elford, president, AMI Resources. "Niger, in terms of gold, is many years behind Ghana, and creates a lot of opportunity for early stage juniors like us."

AMI Resources has done a deal with Golden Star to access two contiguous concessions on the North Eastern extensions of the West African gold belt—prime gold hunting country between the border with Burkina Faso and the Niger river. The concessions, which the company has branded the Sirba gold project, are adjacent to Semafo's Samira Hill mine and total some 920 km^2.

AMI Resources has been able to able to build on previous exploration work undertaken in the area. "Barrick was here in the late 1990s and St. Jude in 2004 and 2005 when gold prices were low," said

African Aura's Yirisen UN pit. (Photo Courtesy of African Aura)

William Pettigrw, CFO and director, AMI Resources. "We had airborne surveys and a number of gold targets identified before we arrived." Building on the inherited data and its new work, the company has been able to identify some significant anomalies. "Our latest drill program included intersections of 24 m at 3.08 grams," said Pettigrew.

Despite the long-term depression of uranium prices, commitments to large scale nuclear power station programs in China, India, the United States and Europe have triggered a renaissance in Niger's uranium exploration sector. Early movers include Orezone Gold and North Atlantic Resources, who recently formed joint venture Brighton Energy to hold their Niger uranium assets. "We have combined our Niger concessions in the North West of Niger with North Atlantic's," said Ronald Little, CEO, Orezone. "This has created a really significant and highly prospective land package of 5,000 km^2."

"Assembling a team to actively explore is crucial and you need a large holding to justify," said Scott Waldie, CEO, North Atlantic Resources. "That is what we created in Niger."

For much of its post independence history, the Niger minerals industry has remained under the control of a select few uranium companies. The early part of the millennium has witnessed the start of a new era for Niger as the market has opened up to new participants. The search for uranium, back in fashion after years in the doldrums, is being pursued full tilt by a range of companies, not just the usual suspects. The last decade has witnesses the diversification of the mining sector in Niger and gold production can only be expected to grow substantially in the coming years.

Well-Endowed, Liberia Looks to Rebuild Mining Sector

Liberia was once a major iron ore exporter. Iron ore exports accounted for more than half of the country's total export income and it was a major source of local employment. The iron industry was abruptly interrupted by civil war and continual fighting between 1989 and 2003. Violence left the war-torn nation crippled and poor, even by West African standards.

However, a stable democratically elected government took power in 2005 which allowed the first female African president, Ellen Johnson-Sirleaf, to start piecing the country back together. One of her top priorities is to reduce the unemployment rate (which skyrocketed to 85%) by resuscitating the nation's mining sector, which is well-endowed in gold, diamonds and iron ore.

Today a politically stable government, a new Mineral Development Policy and Mining Code, and a decision in 2007 by the U.N. Security Council to lift the ban on Liberian diamond exports has resulted in an influx of majors and juniors into the country.

ArcelorMittal, the world's leading steel company, and BHP Billiton, the Australian mining giant, are investing $1.5 billion and $3 billion respectively in iron ore projects. Iron ore projects are long-life assets and require significant investment in infrastructure. ArcelorMittal is expected to generate about 3,500 direct jobs and about 15,000 to 20,000 indirect jobs. The company is also committed to the Mining Development Agreement, which obliges them to provide $75 million over the next 25 years to support socio-economic development in Liberia.

Unmatched in the nation's industrial history, this will lead to significant improvements in communities where the company is operating. BHP's Liberian deal covers four mining leases, which are within striking distance of the existing 250-km rail corridor that runs from the Guinean border to the Liberian coast.

The Chinese are also involved in developing Liberia's iron ore industry, with China Union securing an iron ore concession at the

Core drilling at Kiaka. The Kiaka project lies at the intersection of the northeast striking Tenkodogo greenstone belt and the regionally significant north striking Markoye Fault, in whose proximity some of the larger gold resources discovered in Burkina Faso so far, have been discovered. These include Iamgold's Essakane deposit (5.1 M oz), High River Gold's Taparko deposit (1.7 M oz), Orezone's Bombore deposit (2.1 M oz) and Etruscan'sYouga deposit (1.5 M oz). (Photo Courtesy of Volta Resources)

beginning of 2009 and promising to invest $2.6 billion, one of the largest investments China has ever made in Africa.

Also poised for growth, African Aura is on track to be producing by 2012. African Aura Mining originated from the merger of Mono River Resources, which has a long history of mining activity in the country, and African Aura Resources. Dual-listed on the TSXV and AIM, the company's main Liberian assets are the New Liberty gold deposit (1.4 million oz, awaiting results of a new scoping study). "Because of the nature of the deposit [it is deeply dipping] it is going to be a trade off between open pit and underground," said Luis Da Silva, president and CEO, African Aura.

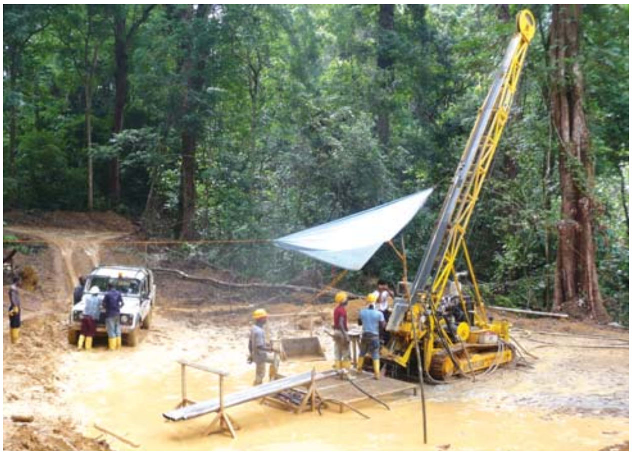
The company's second Liberian asset is the Putu iron-ore project. Putu will be the main economic driving force for three counties in eastern Liberia. There is no other active greenfield project in Africa as close to a port as Putu. "This year [2010] will be a very different year for us," said De Silva. "The political risk in West Africa is much more acceptable to investors and the assets are at a more advanced stage."

Another active explorer is Canadian company Liberty International Mining Corp., which currently holds 9,050 km^2 of delineated territory within the Archæan and Birimian greenstone regions, which contain 18 potential gold exploration projects identified to date.

Also to be found on the Birimian is Hummingbird Resources, a privately-owned company which holds the largest number of licenses in eastern Liberia. Daniel Betts, managing director, Hummingbird Resources, acknowledged Liberia is not without its challenges. In the remote eastern part of the country, the company has had to overcome considerable difficulties in terms of terrain and logistics. "In this area the infrastructure has been virtually destroyed and the interior remains almost impenetrable for long periods of the rainy season," Betts said. "It is testimony to the hard work and dedication of the field teams that these challenges have been overcome and so much data has been collected so quickly. The company's strategy is to list on the most appropriate stock exchange in the final quarter of 2010 to realize shareholder value."

Mining has the potential to be the key economic driver in the country, with Liberia's untapped mineral wealth providing significant exploration potential for world class mineral discoveries. The magnitude of new investment in the past five years is positioning Liberia for a brighter future.

Prospectors Realize Guinea's Diverse Mineral Wealth



Hummingbird Resources focusing on exploring 5,000 sq km of ground in Eastern Liberia. (Photo courtesy of Hummingbird Resources)

Guinea, also known as Guinea-Conakry, is a country long associated with bauxite, which has traditionally been perceived as the exclusive domain of the majors. Guinea gained independence from France in 1958 and plunged straight into authoritarian rule. The elections in June 2010 were touted as the first democratic elections in the country's history (though at the time of writing in July 2010, quite how democratic an election remained undetermined). Guinea is believed to host at least 30% of the world's bauxite reserves and majors such as Rusal, Rio Tinto Alcan and Alcoa have substantial operations in the country.

Over recent years, however, the diverse mineral wealth of the country has begun to be recognized. Iron ore deposits have been identified and majors Rio Tinto, Vale and Aluminum Corp. of China (Chalco) are involved in developing assets. The western extreme of the hard rock Birimian belt, which hosts all of West Africa's largest gold mines, terminates in the eastern region of Guinea and is the location of AngloGold Ashanti's +300,000 oz/y Siguiri gold mine. The country borders well-known diamond jurisdictions of Liberia and Sierra Leone, and Guinea's potential to become a significant producer of the precious gem has been long recognized. A number of Canadian and British companies, such as Stellar Diamonds, are now trying to build on that potential.

Coups, political unrest and violence are regular occurrences in Guinea, but successive governments have tended to ensure the miners are left free to mine, perhaps recognizing as the sector is the main source of tax income, the country can ill afford mine shutdowns. However, a recent series of incidents has damaged the country's reputation in regard to property rights.

Rio Tinto experienced significant setbacks at its Simandou iron ore project. In 2008, the government awarded blocks one and two of the concession to maverick entrepreneur Benny Steinmetz's BSG Resources, which subsequently sold a 51% stake to Vale for $2.5 billion. Rio Tinto maintained the blocks belonged to them according to the country's mining code and specific contracts. The dispute has become increasingly acrimonious and in June 2010 Rio Tinto experienced a further set back when the government declared its intention to exercise a right to purchase a 20% stake in the remaining blocks.

There is no doubt Guinea remains one of the most challenging jurisdictions in West Africa; however the phenomenal exploration potential is drawing a band of hardened juniors to the country. "There really is tremendous exploration potential in Guinea, but the political situation has hindered serious work for the last few years in particular," said James Gillis, a veteran explorer who is president of Guinea-focused juniors, Cassidy Gold Corp. and Anglo Aluminium Corp.

"Cassidy Gold has spent about $26 million so far on a 1 million oz resource, but then about three years ago we ran into some horrible circumstances," said Gillis. "Workers called a general strike and shut down a lot of the country, pretty much forcing the Prime Minster to accept a consensus government. There was a lot of brutality associated with this period and we had to evacuate."

The company has returned to the country and it is looking to develop its Kouroussa discovery. Gillis intends to develop a small mine centered around a simple gravity processing system to generate cash flow while further exploring the concession.

Gillis' second project is Anglo Aluminium, situated on the Boke Belt. "The Boke Belt hosts the world's highest grade bauxite, consisting of 40% to as much as 60% alumina, and we control 536 km^2 of it," said Gillis. The company has so far established a resource with 343 million mt, averaging 42.78%, and a further 63 million mt inferred at 43.81%.

While Guinea remains one of Africa's poorest and most troubled countries, it hosts a diverse wealth of minerals. Exploration and mining companies are weighing political risk against the upside and are seeing great potential. Of comfort to the junior is the fact that some of the world's largest mining companies have been operating unhindered, by and large, in Guinea for decades. Many believe times will be less troubled ahead, and mining can play a major role in enriching Guinea's impoverished population.