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Mining in Colombia

Exploring the last Andean frontier

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Cover photo: Cerrejón's world-class Colombian coal mining operations (Courtesy of Cerrejón)

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Introduction to Colombian Mining

A new opportunity based on political stability and increasing security

Exploratory drilling in Colombia's spectacular, but challenging, Andean topography (Photo courtesy of Logan Drilling)

On arrival in Colombia, Spanish conquistadors heard tales of a fabulously wealthy king that would cover himself in gold leaf and throw enormous quantities of gold and precious stones into the depths of a sacred lake. The Spanish called this king El Dorado, the gilded one, and Colombia attracted generation after generation of explorers that sought his lost treasures.

Even today, the first thing that will greet many foreign visitors on arrival in the country will be Bogotá's El Dorado airport. This is not only a reminder of the nation's mythical past, but a hint towards the potential that still exists for the discovery of great fortunes.

In recent history, Colombia gained a much less welcomed international fame. Its long history of civil unrest had led to such deterioration in security that its population lived in fear and its economy was utterly crippled.

However, Colombia has undergone a renaissance over the last 10 years in political stability, safety and security. It is now ranked as the third most attractive investment destination in Latin America, according to the Fraser Institute, and is quickly becoming one of the more desirable destinations for mining investment worldwide.

For the past 15 to 20 years, mining companies have rotated into Chile, then Peru and now finally into Colombia. It is the last Andean frontier, largely untouched by modern exploration. It has been compared with Peru in the early 1990s; excellent mineral potential but under explored due to the adverse security situation of the past.

"Colombia reminds me of Chile or Peru 20 years ago. I think there is a lot that Colombia can learn from both of those markets in terms of the legislation that was put in place and created the parameters for development," said Jeff Stufsky, global sector managing director – metals and mining, BNP Paribas corporate and investment banking.

However, the absolute absence of development in much of the country has led others to see Colombia as a distinct and possibly much greater opportunity. "We all know there hasn't really been exploration here for more than 40 years. It's not like when Peru opened up or Chile opened up and there were 2 or 3 million oz known deposits that just required ownership resolution. That does not exist here. It is a grass roots country," said Ari Sussman, president and CEO of Continental Gold, a company that is aiming to be first to bring a large modern gold mine into operation in Colombia.

While its nearest neighbors are now suffering increasing critical or negative attention, Colombia has been making headlines for its vast mineral resources, fast-growing economy, relatively stable politics and a steady stream of big-name acquisitions in the resource sector. "If you go to Toronto, Colombia is perhaps the single hottest story right now. The gating issue has been security and, while it's not entirely solved, it's been greatly improved. There is now a tremendous intersection of security, geology, gold price and equity availability. It's just being brought to bear right now in Colombia," said Stufsky.

Among them has been Eike Batista, CEO of MPX and Brazil's richest man, who made his first gold mine acquisition at the age of 24. He acquired Ventana Gold earlier this year for a rumoured US$1.5 billion. This deal in particular has trained a great deal more investors' eyes on Colombia.

However, concerns have been raised after Greystar, having invested heavily in the exploration and development of its Angostura mine, have been stalled in development due to environmental concerns. Some investors now fear the growing environmental lobby and the deteriorating reputation of the mining industry may derail the boom.

Ari Sussman, president and CEO, Continental Gold

Jeff Stufsky, global sector managing director – metals and mining, BNP Paribas

Security as a basis for prosperity

One of the things Colombians are most eager to tell you is how much their country has changed in the past 10 years. Although international news agencies often seem curiously insistent on maintaining the country's dangerous reputation, the eight year leadership of former President Álvaro Uribe utterly transformed Colombia.

The security situation in Colombia cannot be generalized, nor even considered on broad regional basis. The serious risk exists in small pockets in distinct parts of the country. The government, through the army, has shown its keenness to collaborate with the private sector and has expressed the belief that the mining industry can help them maintain security in rural areas.

"The government has the political will to support investment and a clear understanding that mining and oil can create the conditions in the remote parts of the country that will allow them to maintain the level of security that has been achieved. We all want jobs, medical care for our children and the lights to stay on. This occurs through economic development and commercial activity," said Timothy Russell, president and CEO of Trident Gold Corp., a Canadian-listed resource development company.


Colombia's armed forces have made enormous improvements to in-country security.

Despite calls to amend the Colombian constitution in order to stay in office, Uribe made the decision instead to name his Defence Minister, Juan Manuel Santos, as his successor. Santos was the individual widely credited with taking on the criminal elements in the country side, and pushing them out.

Given the outgoing president's popularity, it was no surprise to see his Social Party of National Unity (UP) candidate, Juan Manuel Santos, win a landslide victory, with 69% of the votes. History will likely remember the Uribe-Santos era for its "Democratic Security" campaign that, under Santos' stewardship, greatly curtailed the size, scope and impact of both the leftist guerrillas and the right-wing paramilitary groups. However, beyond this, the closely tied leaders should equally be remembered for their pro-business stance. Both realized that the fate of the country revolves around the ability to attract foreign investment and develop industry.

Colombia is now the fourth largest economy in South America, with a GDP of US$240 billion, and the central bank expects the Colombian economy to expand around 4.5% this year after growing an estimated 4.1% in 2010.

In addition, the country's 12-month running inflation rate is nearly 2% and it's very likely that the central bank will be able to maintain its current benchmark lending rate of 3%.

As the oldest democracy in South America, Colombia has never defaulted on a foreign loan or expropriated foreign assets. It is the most business friendly country in Latin America according to the World Bank and it recently achieved investment grade from the three major agencies; Standard and Poors, Fitch and Moody.

A recent World Bank "Doing Business" report said that: "Colombia has been one of the top 10 reforming economies for three consecutive years: 2008, 2009 and 2010." Colombia's international ranking has improved by 42 positions from 2007 to 2010.

The mining locomotive

In 2010, President Santos laid out his vision of how Colombia can continue its progress from "Democratic Security" to "Democratic Prosperity". His plan was founded on the encouragement of five economic locomotives; housing, infrastructure, mining, agriculture and innovation.

In this way, the potential for Colombia to benefit from its vastly unexplored mineral wealth has been recognized and Santos has clearly expressed his desire to support that development.

Colombian underground gold mining operations (Photo courtesy of Mineros)

According to the Fraser Institute Annual Survey of Mining Companies 2010/2011 (released March 2011), a benchmark for gauging global mining risk, the main positive improvement within Latin America is the emergence of Colombia as an attractive investment destination.

In the 2006/2007 Fraser Report, Colombia was ranked seventh within the region behind Chile, Mexico, Brazil, Argentina, Ecuador and Peru. The 2010/2011 report ranks Colombia in third place in South and Central America, obehind only Chile and Mexico.

Of the 79 global jurisdictions covered in the Fraser Institute Annual Report, Colombia is currently rated as the third highest in terms of mineral potential. Vast tracts of the country have not been thoroughly explored using modern exploration techniques.

This has not gone unnoticed by the exploration community. From 2002-2010, areas with mining titles boomed from 2.8 million acres to 21 million acres.

According to ANDI, the National Business Association of Colombia, the Colombian mining industry contributed 2.2% to GDP growth and represented 23.7% of the country's exports. Legal mining operations also create an estimated 300,000 jobs for Colombians. "We are important to Colombia's economy, but we want to have a bigger role in the next years. We think that in the short time the mining industry may have over a 5% share of Colombia's GDP through the beginning of the operations of almost 10 mining projects as big as the ones that are already working in the country," said said César Díaz, executive director of the Cámara Colombiana de Minería (Colombian Chamber of Mines).

In the international race by majors to replace their reserves, Colombia represents a true elephant hunting opportunity. Several major companies have offices and exploration or mining operations in Colombia, including BHP Billiton, Vale, AngloGold Ashanti, Drummond Coal, Glencore and Anglo American.

Luc Gerard is CEO of Tribeca, a firm that he established in order to bring the first international standard private equity firm to Colombia. The fund is backed exclusively by Colombian pension funds and Colombia currently accounts for 65% of the firm's investment. Tribeca initially focussed their investments in the oil and gas sector but, in 2010, launched Brexia as a vehicle for mining investment. Gerard believes this will be the newest wave of opportunity for inves-


Luc Gerard, president, Tribeca


Eduardo Chaparro, president, ASOMINEROS

tors in Colombia. “The next boom of foreign investment into Colombia over the next five or six years will be through the mining sector,” said Gerard. He feels that this sector could one day outstrip the current high levels of oil investment. “The difference between oil and gas and mining is that Colombia will never become a world leading oil and gas power. We can be significant and it can be of huge benefit to the country, but we simply do not have the geological potential to be world leading. However, experts agree that Colombia could become one of the world’s key players in mining alongside Canada, Chile and Australia,” he said.

Uniting a budding industry

Colombia has been mining since pre-Colombian times, but the current influx of investment and activity is a relatively recent phenomenon. As such, the mining sector is undergoing the typical challenges of finding a united voice, obtaining clear guidelines and regulations, and communicating its benefits to a public that is concerned for its people and its environment.

“We need to understand that we will not survive if we do not act together. There are several mining associations that do exist here and that we believe have an important role to play. Some of the issues cannot be, and should not be, transmitted by individual companies, but really through the associations that represent the industry as a whole,” said Rafael Herz, president of AngloGold Ashanti Colombia.

Three main institutions support the mining industry in Colombia. ASOMINEROS was founded in 1932 to represent the organized mining industry. It has 36 member companies and its president is Eduardo Chaparro. “Our main purpose is to promote and maintain an optimum business environment, through participation with the public sector, for the sustainable development of Colombia’s mining industry,” Chaparro said.

“We were the first association established and have represented small, medium and large size companies that are mining for coal, gold, nickel, cement and other materials. Behind ASOMINEROS is a long history of cooperation, respect and honest communication between the private sector and policy makers,” said Chaparro.

ASOMINEROS is part of the ANDI, the association of the industries in Colombia that is divided into 22 chambers by sectors. Five years ago, when some of the mining companies that had left returned to the country, the industry considered that in Colombia there should be an independent union organization, for that reason the companies created a new Colombian Chamber of Mining.

“Cámara Colombiana de Minería is an organization that unionized the companies of the mining industry in Colombia and our main objective is to defend and promote responsible mining,” said César Díaz Guerrero, executive director of the chamber.

“In this country, despite a lot of big projects that started many years ago, like Cerrejón or Cerro Matoso, there is a new generation of companies in the mining industry and our purpose is to ensure that these new firms work with the best social, environmental, corporate and security practices,” said Díaz.

Last year, Colombia’s large scale miners decided that their issues are sufficiently distinct from those of small scale, artisanal miners and established the Sociedad de Minería a Gran Escala (SMGE). The SMGE is headed by Claudia Jiménez, a close ally of Uribe and former ambassador to Switzerland.

“SMGE is the result of the need for an association that could represent the large scale mining companies in a collective way and that could communicate their needs, results and their opinion about the national mining policies,” said Jiménez.

Claudia Jiménez, president, SMGE

"The companies in our association need to have the best practices in the industry, environmental programs and sustainability operations that can guarantee that companies are committed to the development of Colombia and its economy."

"We want people to know our sector and our market as a different thing from oil and gas. Mining is not as developed as oil and gas and there are still a lot of things to do in this industry. Now we are focusing our agenda on things that matter to the sector such as taxation and the new mining institution and vice ministry," said Jiménez.

International interest

As discussed previously, the pro-business mentality of the government has brought in a new wave of foreign investment into the country. According to Proexport, the mining industry provided US$2 billion in FDI in 2010 and Colombian policymakers are keen to continue to encourage foreign companies that have the expertise and capital required to exploit the country's mineral resources.

As with the whole of Latin America's mining development, and indeed many other regions across the world, it has been companies backed by Canadian capital that have entered this market first and in the greatest numbers. There are certain bars and restaurants in Medellín where Canadian accents are more likely to be heard than Colombian.

According to the Mining Association of Canada, Latin America is the largest recipient of Canadian direct investment abroad in mining, which in 2008 was valued at US$57 billion. Free trade agreements have strengthened ties with Latin America, which translates into jobs and opportunities for Canadian miners and mining service suppliers.

Australian companies are now also awakening to the Colombian mining opportunity. Although Canadian companies seem to dominate the junior sector in Colombia, Australian companies are beginning to appear in ever greater numbers, particularly in coal projects.

"We are seeing a lot of junior exploration companies coming into Colombia from Australia who are responsible miners. We have a good reputation and we are not scared of going into greenfield exploration, which requires a lot of upfront capital and risk," said Daniel Sullivan, Latin American mining trade leader, Austrade.

While there are more than 200 Australian companies currently exploring in Africa, in Latin America there are just 30 Australian companies, half of which only arrived in the last 12 months. At the same time, there are 300-400 Canadian companies active.

One of those recent arrivals is New Age Exploration, an Australian listed company whose key focus is to build a portfolio of coal projects in Colombia. The company represents one of the first ASX listed juniors to enter this market but, the company's president, Gary Fietz, believes that more could follow as the Colombian story gains traction in Australia.

Fietz believes this trend could open up a whole new source of investment for Colombian projects. "Australian investors are turning around to the opportunity here and that gives Colombia access to another financial market. Coal is a very strong commodity and a lot of ASX junior companies are doing very well with coking coal projects. The access to capital is, therefore, excellent on the ASX and they understand bulk commodities as well as any market in the world," said Fietz.

The Australian Government recently announced the opening of a Consulate General in Colombia, a reflection that it believes the commercial outcomes and the deepening of the economic relationship will be well served by the upgrading of its presence in Colombia. "We focus on attracting Australian investment into Colombia and actively assist junior miners and other companies who are looking to set up a presence here as we believe that trade follows investment," said Sullivan.

Colombian Mining Code

Outside of a few operations, large scale modern mining is relatively new to Colombia. This has forced a period of transition in policy as decision makers struggle with the desire to attract investment while ensuring that Colombians take maximum benefit.

Colombia's constitution, written in 1991, established that the state is the owner of the subsoil and non-renewable natural resources. Colombia's Mining Code (Law 685) was put into place in 2001, with the aim of encouraging sustainable exploration and mining. This was further amended in 2010 (Law 1382) to enhance productivity and competitiveness.

The great strengths of the code are that the same rights are granted to national and foreign investors, as well as the predictability of the ownership of mining titles and the long tradition of Colombia in respecting contracts. It is practically impossible to find a case in Colombia in which the government has breached or ignored a contract or obligation in concession agreements of any type.

Luis Gabriel Pérez is a partner at leading Colombian law firm Brigard & Urrutia and an expert on the mining code development. He feels that these recent changes have allowed the country to take the best elements of a more mature market's regulations.

"The set of rules that deal particularly with mining contracts and mining concessions is very modern. It was enacted no more than 10 years ago and allows for great flexibility in terms of transferability of mining properties and in the independence of the operator. The owner of a mining title has total independence and autonomy to develop

Luis Gabriel Perez, partner, Brigard & Urrutia

the project as they see fit for that area. The role of the government is only to ensure that the terms of agreement are being complied with, specifically payment of royalties and environmental protection," Pérez said.

However, changes to the country's mining act in 2010 (Law 1382) were recently ruled unconstitutional in court; the government has two more years to pass new laws before it reverts back to the old code.

Pérez says there is no doubt the Mining Code remains in transition. "There is no question of this. We know the government has already engaged an international consultancy firm to analyze what is the best way to proceed."

Tenement costs, tax and royalty framework

According to Proexport, the mining sector contributes 2.3% of Colombia's gross domestic product and US$852 million in royalties and another US$908 million in taxes. There is a current debate on whether the amount of return that the country is receiving from the mining industry is appropriate.

The country's tax code has stayed mostly unchanged since 1974. The code compares favourably to other Latin American jurisdictions, with a corporate income tax rate for miners of 33%, and royalties

Insights into Recent Regulatory Restructuring

By Luis Gabriel Pérez, Partner, Brigard & Urrutia

The mining industry has new challenges on the regulatory side. As a result of some powers granted to the National Government by the Congress through Law 1444 of 2011, the National Government issued on November 3rd, 2011 a number of Decrees whereby it reforms the structure of the administration with a significant impact on the mining industry.

First and foremost, the National Government created the National Mining Agency ("ANM") to substitute Ingeominas in most of the relevant activities concerning the exploration and production of minerals in Colombia. Ingeominas remains as a technical body in charge of producing, storing and processing mining information. ANM assumes, therefore, the responsibility of granting mining areas and keeping the record of the mining property in Colombia. The National Government has high expectations that this new organization will emulate the experience of the National Hydrocarbons Agency ("ANH") created in late 2003 and will produce astonishing results similar to those produced by ANH in the hydrocarbon sector. It is also expected that the Government with withdraw most of the delegations given to the provincial governments to grant mining areas.

Secondly, the National Government has announced that it will take additional regulatory measures to ensure a greater degree of professionalization in the mining activity. For instance, it has announced that it will reject a number of mining applications that are pending for study and do not comply with the requirements of law. In the current system, the mere application by a person for area has the effect of precluding other parties to apply for the same area and a granting process may take several months if not years with the effect of "freezing out" areas. Thus, the current system does not encourage the competition for the assigning of areas. The Government has identified this as a major weakness for the granting of mining properties in Colombia. It is expected that new regulation will be issued to move towards a system of competition or "rounds" as it is now the practice of ANH.

Thirdly, the National Government recreated the Ministry of Environment as an autonomous entity. In 2002 the Government decided to merge the Ministry of Environment into the Ministry of Housing and Land Development. The rebirth of the Ministry of Environment will promote specialization hopefully bringing a better predictability to the mining industry particularly in the design of the national environmental policy and the granting of environmental licenses.

paid on the value of production at rates that vary between 3% and 12%, depending on the product. All royalties are paid at the federal level only.

Ernst & Young, the global accountancy and management consultancy firm, has been active in Colombia for more than 25 years and, beyond that, some of the companies that merged to create Ernst & Young have a much longer history here. "Here in Colombia, we are 700 people out of 140,000 globally. We are significant in terms of Latin America because of the growth in the economy being experienced and, in particular, the growth in the oil and mining industries here," said Joss McGregor, a partner at Ernst & Young Colombia.

The international firm believes there are very positive elements in this framework for international mining investors "The government has reined in some of the tax benefits over the last year but that has been necessary for the government to balance its books. There is still a fiscal deficit that the government needs to fix and it's trying to do that without hitting the foreign investors too hard, but it is a delicate balance," said Ricardo Andrés Ruíz Cabrera, a senior manager at Ernst & Young Colombia.

Joss McGregor, partner, Ernst & Young Colombia

Ricardo Andrés Ruíz, senior manager, Ernst & Young Colombia

As the debate moves forward, with increasing rumblings of mining tax increases, Ruiz advises caution to policymakers. "The government wants to be well educated before taking its first moves on this. They want to know what the potential consequences are, where we are on the competitiveness standpoint and how they can move to a system that is investor friendly while ensuring the country takes legitimate gains from its resources. Accurate figures are absolutely vital in this debate."

"This is the most critical moment for the mining sector here. There is a great deal of interest in investing in our mineral potential, but we must be seen as a country that has stability in the rules. At the same time, the people of Colombia must be convinced that we are getting a reasonable return for the state," Ruiz said.

Ernst & Young now employs more than 700 people in-country and has the goal of doubling in size in three years, mostly based on oil and mining client growth. "Our mining practice is second in size only to oil and gas. We want to be seen as a specialist in the mining sector and we have created a specialist team that is going to attend to the mining companies," said McGregor.

Creating Institutions of Strength

A period of transition for Colombia's mining sector regulators

Colombians need to strengthen their regulatory institutions. The Ministry of Mines and Energy is the main central government mining authority. The Ministry shoulders the responsibility for both the mining and the oil and gas industry.

A number of observers believe that the Mining Code that the ministry has put in place is strong and improving but feel that it has been the implementation of this framework that has begun to constrain Colombia's mining industry.

"It was said that a lot of corruption and inefficiency had crept into some institutions. If the country is able to clear that up, it will have achieved a great deal," said Carlos Gustavo Arrieta, partner, Arrieta Mantilla & Asociados, a local law firm that specializes in the resources and infrastructure sectors.

The decline and fall of Ingeominas

Ingeominas was originally founded in 1916 as a geological institution to oversee the mapping and exploration of the country's mineral wealth. Several restructurings increased the scope of its initial responsibilities, which were to perform geological mapping, exploration of mineral resources and the study of groundwater. In 2004, its role adapted to that of delegated mining authority in relation to royalties, promotion of the mining industry and management of the mining cadastre. It was also given the responsibility of granting and controlling the performance of concessions.

In the past few years, the level of interest and activity has overwhelmed Ingeominas. According to the news weekly, Semana, a government study found that on average, as a result of the systemic faults in Ingeominas, concession requests took 600 days to be awarded, representing a bureaucratic nightmare for explorers.

Such delays and uncertainty also became a fertile breeding ground for corruption as Ingeominas officials are widely believed to have sold privileged information, allowed concessions to be granted in protected areas and offered speedy expedition of titles for a fee. In addition, Ingeominas had allowed substantial increases in land speculation by awarding concession titles to individuals that presented the bare minimum of information; presumably with the sole intention of selling them on to other companies.

"At the moment, there are people that have held mining concessions for two or three years without paying anything to the government or developing their property at all and they are now asking for millions of dollars for them," said Alejandro Mesa, partner, Baker & McKenzie Colombia, an international law firm that is well established in Colombia.

"It has been said by a number of leading players that the mining institutions have been exposed to the typical vulnerabilities in the market regarding the leakage of information and potential corruption and collusion. Even though we have a good set of rules, they have not so far been applied effectively by Ingeominas," said Luis Gabriel Pérez, partner at law firm Brigard & Urrutia.

A moratorium on applications was enacted for a six-month period on February 1, 2011, to clear a massive backlog of

Alejandro Mesa, partner, Baker & McKenzie Colombia

19,629 concession requests. This was then extended further, provisionally until February 2012, to give the state geological survey Ingeominas additional time to clear this backlog of requests.

"I think that the moratorium on new titles was necessary. I don't think that the legal system can work without a good re-thinking over the way that mineral titles are granted so that speculators can be taken out of the system," said Mesa.

Beyond the moratorium, the Ministry of Mines has undertaken a profound review of the system for assigning acreage and recently decided to take the authority away from Ingeominas to a special agency.

Applying an oil industry model

The government is creating a National Minerals Agency (ANM) to regulate the sector similar to the way the National Hydrocarbons Agency (ANH) regulates Colombia's the oil sector. The ANH has been lionized in Colombia for how the oil and gas sector has blossomed under its regulation in the past seven years.

"We have seen what can happen when the institution is strong from the example of the ANH. From the end of the nineties until 2004, we saw very few contracts, but once an effective agency was put in place we saw the industry really take off," said Mesa.

The new ANM is expected to try and replicate how the ANH awards the titles based on competitive rounds of bidding processes where a company must show that it has financial capability and make an offer based on the work that you will do to develop a property.


Carlos Gustavo Arrrieta, partner, Arrieta, Mantilla & Asociados


Tamara Romero Restrepo, general manager, Alianza W.J.

However, some concerns have been raised about whether this is an adequate model for the mining industry. "The oil sector is a much more sophisticated world than the mining sector. If you are going to concentrate your mining agency for major international investors it might work. But, I don't think that is where the problem lies. I don't know how the mining agency is going to cope with the social problems associated with small miners," said Carlos Gustavo Arrieta, of law firm Arrieta, Mantilla & Asociados.

In addition, the concerns of some relate more to the system Ingeominas works in rather than the agency itself. A few figures interviewed for this report feel that responsibility for the corruption that crept into Ingeominas must be placed on a lack of policy clarity. "I think the corruption problems will not disappear by changing Ingeominas, they will only change when we have the needed policy clarity. The government must realize that, if it is serious about encouraging foreign investment, the politics must be clear and mining must be supported by an efficient, competent and legal model," said Tamara Romero Restrepo, general manager at Alianza W.J., a law firm and consultancy group based in Medellín.

Colombian Gold

Project development and exploration investment

A current view of AngloGold Ashanti's potentially huge La Colosa project (Photo courtesy of AngloGold Ashanti Colombia)

A visit to Bogotá's Museo del Oro (gold museum) has been described as a cultural highlight of Latin America. Its collection of many thousands of indigenous gold artefacts includes the famous "balsa de guatavita", a pure gold depiction of the El Dorado ceremony that caught the imagination of so many treasure hunters. In the museums' dark passages, the cultural significance of gold in Colombia is obvious and clearly predates the Conquistadors' arrival.

Colombia has the longest and most productive history of gold exploitation in South America, dating from both the pre-Colombian period and Spanish colonial times. Up until the 20th century, 30% of the world's gold came from Colombia and the country was the largest gold producer in South America until 1937.

Although it has estimated reserves of more than 25 million oz, officially Colombia is in the second tier of world gold producers, with an output of 1.57 million oz in 2009. While the real figure is higher, as much gold mining has long been undertaken by unregulated miners, the capacity for expansion is enormous and the majority of mining investment is flowing into gold exploration. Production rose more than 30% in 2010 and ASOMINEROS expects production to reach 3 million oz/y by 2015.

By 2020, ASOMINEROS expects that US$4.5 billion will have been invested in gold exploration and development in Colombia. That level of investment, combined with the known reserves, should increase production significantly and make Colombia a globally significant producer once again.

Most of Colombia's current gold production is produced from alluvial operations, mostly by local artisanal miners. Gold recoveries from these operations are poor, with recoveries of less than 60% being reported. The real gold potential to be observed in modern-day Colombia is that which remains in the country's relatively un-tapped hard rock or in situ resources spread throughout the Andean region of the country.

AngloGold Ashanti – the major that dared to stay

As described earlier, in the last few years Ingeominas has been so overwhelmed with applications for concessions that it is currently in a moratorium for new applications while the entire system is redesigned. Therefore, although many opportunities continue to emerge, those that are already well established in Colombia can enjoy a significant advantage and are in high demand for partnership.

The South African based international mining house AngloGold Ashanti has been credited as one of the earliest and most extensive of the international gold companies to invest in Colombia. The company has spent more than US$250 million in Colombia since arriving in 2003 and plans to invest US$110 million this year and US$100 million annually in 2012 and 2013.

"Around 10 years ago, AngloGold Ashanti decided to increase its exploration focus in Colombia as it was the unexplored frontier of the Andes. When we arrived, not many companies were willing to invest in the country because of the security problems that existed," said Rafael Herz, president of AngloGold Ashanti Colombia.

AngloGold Ashanti conducts an extensive greenfield program across the Americas, most notably in Colombia, where it holds a significant land position and has made two greenfield discoveries at Gramalote and La Colosa which together account for 13.5 million oz of mineral resource.

Rafael Herz, president, AngloGold Ashanti Colombia

"Colombia is the long term play for AngloGold Ashanti in the Americas. We are in the exploration phase in Colombia, without any operations as of yet, but some of the exploration projects here are extremely interesting for the company and could represent a substantial increase of the region's production from the middle of this decade and into the following decade," said Herz.

AngloGold Ashanti is now concentrating on systematically exploring and developing its tenements, which total more than 1.5 million hectares. "The company was the first big exploration player in-country and has systematically explored a substantial amount of tenement holdings here, either through initial prospecting or physical exploration. Given our first mover status, we feel that we are already in the areas that are most interesting to us," said Herz.

AngloGold is working in joint venture with B2Gold on a number of land holdings and Clive Johnson, B2Gold's CEO, agrees that early foresight on Colombia will now represent a great coup for the international major. "AngloGold did a very bold thing by going into Colombia several years ago, when it was still a very dangerous place. They were able to tie up so much ground because many other companies feared to tread there. I tip my hat to them for that."

The initial strategy of the company was to search for larger porphyry type projects. But, now that it has a presence in-country and two advanced projects at the prefeasibility stage, it has reached the critical momentum that allows it to consider projects of the smaller sizes that could be developed faster.

"The leading characteristic is no longer size but profitability, and whilst there is a minimum size required for a company of our scale, I can now see us potentially developing smaller, profitable projects," said Herz.

The South African company's main project in Colombia is the La Colosa project in the central state of Tolima, which contains 12.8 million oz of gold according to early estimates.

"It is a substantial focus as it is a substantial project for this company. It is a project that in terms of size, location, technological and environmental issues poses significant challenges and therefore is a challenging opportunity for the company that we are putting most of our resources in-country into from all points of view. It has all the elements to become an important project not only for the company but also for the country," said Herz.

Clive Johnson, CEO, B2Gold

B2Gold and AngloGold Ashanti– Partners in Gramalote

B2Gold was formed by the management of Bema Gold, a company that was acquired by Kinross at great profit to their shareholders. The team is now looking to replicate their success with a continued Latin American focus that includes producing mines in Nicaragua. B2Gold and AngloGold Ashnati now have a number of joint ventures in various stages of development in Colombia. Clive Johnson, CEO of B2Gold, believes that both joint venture partners are fairly unusual among mining companies. "Most juniors that make discoveries don't take their mine to production and most majors don't make discoveries, although AngloGold is one of the exceptions as we've seen at La Colosa," he said.

Currently, the most exciting of their joint venture projects is Gramalote, a project that continues to show encouraging drill results and may represent a relatively challenge free opportunity. "We are very fortunate that the deposit lies in one of the most desirable areas in the country to build a gold mine."

It is at a low altitude, there is not a great deal of agriculture or population in the area and it's in a very business friendly district. While La Colosa project is perhaps a long term proposition for AngloGold due to its size and the drilling and permitting required, Gramalote presents a more near term opportunity.

"It's a great place to have one of the first significant gold mines in Colombia. It will be important, not only for AnlgoGold and ourselves, but also for the whole industry to demonstrate how an environmentally a responsible mine can be built that is a great benefit to the country and the local population. As this project is getting larger than we thought, we had a 2.4 million ounce gold resource but the recent exploration results and positive metallurgical test results are showing it to be a lot bigger. We are looking to announce a much larger resource by the end of this year. We are well into pre-feasibility. The study will be finished in June 2012, and together we are spending US$ 38 million this year in order to do the exploration drilling and infill drill the main deposit and final feasibility study is scheduled for completion at the end of 2013. Recent results have led us to see the opportunity of now of building a mine that could produce in excess of 400,000 oz/y," said Johnson.

Early movers now reaping the rewards

Robert "Bob" Allen, founder of Grupo de Bullet has been staking mineral rights and properties in Colombia since the early 1980s. Grupo de Bullet S.A. is now a private Colombian company with an incredibly extensive portfolio of gold, copper, and polymetallic mineral projects totalling more than 1 million hectares.

"We've been in Colombia for 25 years and basically our goal has always been to discover and develop mining projects. We are a private company that specializes as project generators but we have been able to find joint venture partners to develop our projects and eventually bring the properties into production. We have done deals with AngloGold Ashanti, B2Gold, Antioquia Gold and Colombia Crest. We were one of the founders of Continental Gold and Solvista," said Allen.

Allen is considered by many to be a father figure for gold exploration in Colombia. Upon investigating the emerging Colombian gold mining sector it becomes apparent that most projects have the fingerprints of Grupo de Bullet on some point of their development. In the course of our research, many interviewees commented that a trip to Colombia in pursuit of concessions is wasted unless Grupo de Bullet is consulted.

Allen emphasizes that it has been very important for the company to build and maintain a good local reputation. "We're not a big company by any means but we have a very good name here. Our most important asset has been our reputation. That's what people have to consider when they come here; if you can maintain good ethics throughout all phases then you will be able to operate," he said.

Grupo de Bullet remains open to partnerships in developing their projects but Allen pointed out that staying ability and the ability to work in Colombia is what they look for in new partners.

"A lot of people have come to Colombia over the last 20 or 30 years. They come in and do a stock promotion, and then, due to


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Paul Dias, CEO, Minatura

a dot com bubble burst or a world economy crash, they're gone and we're liable to clean up after them. We're looking for people that are quality and people that have not only the economic capacity but the know-how in order to operate in Colombia," said Allen.

Minatura is another company that now commands a very large land package in Colombia. The company's CEO, Paul Dias, first invested in Colombia at the end of 2001: "From the period up until 2006 it was very quiet. There was not a lot of activity. You had to travel very carefully and needed to know the areas you were in very well due to the social issues of the time," he recalled. "In 2001, I came to start one mine, but organically the operation grew. I learned the country through osmosis. I didn't arrive with a grand scheme, but realized its potential day by day. "Wow, there's nobody here!" I was in one little area and it grew from there," Dias explained.

In its current portfolio, Minatura is managing around 380,000 hectares with potential that includes from copper, gold, platinum and other metals. Minatura, as a holding company, is now an incubator that will be spinning off a number of projects.

"We are planning on taking around four projects to the market over the next 12 months. We are looking to invest around US$15 million in exploration across our projects this year," said Dias.

In addition to its many hard rock assets, Minatura is also looking to create a paradigm shift in alluvial. "We feel we have found a much more efficient method of establishing a resource in alluvial. It takes an extensive amount of time to do that and the methods are old and out-dated."

Dias has found technology that Minatura have helped develop with Dutch and American partners. "The technology has never before been used for mining but it allows us to drill 30 m in around four hours, where it would take a week before," he said.

The company has already drilled some areas and found some resources. "Alluvial is expensive but it is the shortest way to production. You don't hear a lot about these projects, because most of the companies are private, but it can be achieved in an eco- friendly manner. We are not an alluvial company but we have a hybrid model. Our long term interest and big value is going to be in hard rock structures, but alluvial has mind blowing short term possibilities," said Dias.

Now that Dias is well entrenched with the first mover advantage, he sees great potential for growing Minatura in Colombia. "We're building value both for the people and for the shareholders. There is no better feeling than that. I expect us to be one of the leaders in the country. We are on our way to being a world class exploration company and eventually a world class alluvial mining company. I think that Colombia's potential could supersede that of many Latin American countries. The Andes has not really been investigated in Colombia. We've seen some early successes, but I think it's going to surprise a lot of people."


Continental Gold staff handling some of the result of their aggressive drilling campaign (Photo courtesy of Continental Gold)

Mid-Cauca Belt

The mid-Cauca belt is currently attracting the most interest from gold explorers in Colombia. Its porphyry potential has held the attention of exploration companies both large and small and is likely to be the first region to enter large scale gold production.

Continental aiming to be first

Continental Gold Ltd. is an advanced-stage exploration and development company with nine gold projects covering over 197,000 hectares in highly prospective areas of known historical gold production in Colombia.

"AngloGold was the first in the country in modern times, but their model was to look for porphyry style targets. They know those structures very well," said Continental's CEO and President Ari Sussman. "Our model is to look for other things. We are looking for high grade vein systems primarily, of various styles, and we have a way of targeting them from a very broad base. This allows us to start from a satellite image and then focusing down once we find the suitable targets."

Continental's cornerstone project is at Buriticá, where they see great potential for low cost, high grade gold vein production. Continental has undertaken a policy of very aggressive drilling and has an approximate budget for the calendar year of 2011 of around US$30 million. "It's really a statement of ambition," said Sussman. "We are going to drill and we are not going to stop drilling here. It's our view that we are going to build the first modern day gold mine in this country."

Continental is aiming to be in production at Buriticá sometime in 2014. Sussman sees the project as being a relatively straight forward underground mine. "It has simple metallurgy and there is a very clear path on how to get to production. To do that we just need to drill and drill hard."

Sussman is aiming for a 2.5 million oz maiden resource but believes that Buriticá may hold much more. "A resource is just a

snapshot in time and we believe there are a lot more ounces than that held in the project, perhaps over 5 million oz, but getting them into a 43-101 or JORC compliant category is important. By that time we will have drilled over 100,000 m of diamond drilling," he said.

Continental are keen not to be mistaken for a one-property junior explorer as their extensive land holding includes several properties with potential for providing additional discoveries. In addition, through an option agreement with Grupo de Bullet, the company has sustainable growth potential via a unique project portfolio in key Colombian gold districts.

Sussman feels this is what really sets Continental apart. "We've got the deepest portfolio in country of projects and the ability to generate more. We have a dedicated team whose sole function is to evaluate new opportunities in the 4 million plus hectares of property that we have a right of refusal on. That is ongoing and we continue to generate more projects as well as ways to extract full value from our portfolio."

Gran Colombia

2011 saw the merger of two of Colombia's most promising gold mining companies to create a major new player.In June, Gran Colombia Gold announced the completion of its merger with Medoro Resources, which created the largest underground gold and silver producer in Colombia with six underground mines in operation. The company expects to grow its combined gold production from 120,000 oz/y in 2011 to over 600,000 oz/y by 2016.

A key part of the new group's portfolio is the famous Frontino gold mine in Segovia, Antioquia, which has been in operation for more than 150 years. During this period the mine has produced over 4.5 million oz of gold using relatively unsophisticated mining technology.

Another highlight of Gran Colombia's portfolio is the Marmato project. An underground operation at the mine has been producing intermittently since 1900. The company are now reviewing a long term open-pit development at this project. Gran Colombia Gold's website states that the project contains 10 million oz of gold and an estimated 64 million oz of silver in the Measured and Indicated categories.

The company commenced pre-feasibility on this project this year, in the hope of going into production in 2015.

However, the plan would require the town of Marmato to be moved from its present location and has yet to gain full support from the community.

Sunward – targeting large porphyries

Sunward Resources Ltd. is focused on the exploration of large porphyry gold-copper projects in Colombia. "We are looking for large and long life gold and copper projects. Our strategy for our acquisitions is the previous mining history in the areas of our interest. The areas that we own right now have had mining operations since 1990, and it was definitely a good title, it had all the licenses, an initial resource, and it became a part of a large production," said CEO Colin Andrew.

Its core asset is the Titiribi project, which hosts 3.7 million oz of gold in a 43-101 compliant resource. Sunward believes Titiribi is the most accessible of all the Au-Cu porphyry projects being investigated in the mid-Cauca belt.

The company currently has seven drill rigs on site and Andrews has been encouraged by the welcome reception from the community to date. "I think that an advantage for our project is that it is located in an area where there has been mining activity for ages, so we are working with a community that understands mining or that wants to learn more about it," he said.

Sunward has also acquired the Mande Norte project in northern Colombia, which it considers to be one of the best undrilled porphyry copper prospects in South America.

Solvista – bridging Colombian and Toronto expertise

Solvista Gold currently owns two exploration projects in the northwest Colombian department of Antioquia: Guadalupe and Caramanta. Solvista Gold Corp. was incorporated in Ontario, Canada, in 2010 as a result of a joint venture agreement between Toronto-based Norvista Resources Corp. and Grupo de Bullet. While Grupo de Bullet has unmatched Colombian experience and contacts, Norvista provides the finance and capital market experience.

"There are 2,000 or so listed exploration companies in Toronto. You have to do something a little bit special to raise yourself above the crowd," said Solvista's CEO, Miller O'Prey. "I think we have a very strong group of people within Solvista and from our partners at Grupo de Bullet and Norvista. I don't think there are many companies in Colombia that have access to that level of expertise both at a local and at a corporate financial level."

The geological models of Solvista's two projects are quite different. While they are both gold focused, Caramanta is more a bulk tonnage, low grade, open-pit style of mineralization and at Guadalupe, the present thinking is of a more structurally controlled, higher grade deposit that is more amenable to underground mining.

Both projects are being advanced jointly, although it is fair to say Guadalupe, for logistical reasons, is a little more developed. It is a little easier to access and the geology is a little more straight-forward. "We are in the permitting process at Guadalupe right now. We expect to start drilling by November. The campaign will be a minimum of 4,000 m but hopefully that will grow on the back of some good results," said O'Prey.

O'Prey feels that operating in Antioquia is a great advantage for the project. "It was a conscious decision on various levels. Antioquia is the home of mining in Colombia. It has the most mining experience in terms of finding people to explore and mine but also in terms of management of the regulations. It has less social issues and a local environmental authority that seems more in-tune with the needs of the region."

Brad Van Den Bussche, vice president of exploration at Anitioquia Gold

The Antioquia batholith

Away from the mid-Cauca belt, Antioquia also offers a great deal of exploration opportunities on its batholith, an intrusive body of granodiorite to quartz diorite composition. A number of companies are developing projects in this region that show early signs of becoming world class deposits.

Antioquia Gold – backed by Peruvian expertise

Antioquia Gold has been exploring for precious metals in Colombia since 2007. The company has a land package of close to 40,000 hectares located throughout Colombia. Antioquia Gold's principal asset is its 5,630 hectare Cisneros project, located 55 km northeast of Medellín.

The Cisneros project is considered a structurally controlled vein gold deposit and it is critical to concentrate effort into understanding the structural geology and its control on gold mineralization. We have done this and it is paying off with continuous drilling success states Van Den Bussche, Vice President of Exploration at Antioquia Gold.

"This is a tremendous project and I think we will get recognised for our potential when we define a significant resource to demonstrate that there are real opportunities there," he said. At the Cisneros project, the company is currently in the third year of drilling and by the end of the program will be over 32,000 m.

"The exploration focus is to finish the current drilling program, which is concentrated on multiple structural zones in the core of the project area and work towards defining a resource in the near future. ," said Brad Van Den Bussche. The company is also continuing to aggressively explore regional targets throughout the property and continues to define additional drill targets. A lot of the finance and support for Antioquia Gold comes from Desafio Minero.

Van Den Bussche sees this as a hugely important strategic partner. “They have a very similar project to Cisneros, at Parcoy, Peru, and when their Vice President of Exploration came to Cisneros he said it was very similar to what they saw in their Peruvian mine 25 years ago. They saw really good potential.”

Desafio has participated in two financings and currently hold about 35.5% of Antioquia Gold Inc. Desafio produces approximately 200,000 oz/y of gold and has 32 years of experience in the exploration, development and operation of underground narrow-vein deposits. “We have been able to get some valuable training from this company and there’s a plan to send some of the local people from Cisneros to take mining training in Desafio’s world class project,” said Van Den Bussche.

Waymar – a gypsum to VMS story

Waymar Resources Ltd. is a Canadian mineral exploration company with an option to buy 100% interest in the Anzá project located in the west of the Antioquia. Anzá used to be an open-pit gypsum mine, within which miners started to encounter sulfide, which they were treating as waste. As the amount of sulfide increased, someone decided to have a look at it. A massive sulfide lens was discovered, surrounded by an unknown type of mineralization that carries high zinc and gold grades outside of the massive sulfide body.

Over the last few years the gypsum mine changed into two underground mines, separated by a river. So, there are two interesting elements; one is the massive sulfide, which is polymetallic, but also the region has a lot of gold deposits being worked by artisanal miners.

There was a group of several title holders on the original gypsum mine and Continental Gold and Grupo de Bullet owned some of the surrounding properties. Several companies became involved between 2007 and 2008 to look at Anzá but Waymar was able to secure its deal in 2010.

“We came in and consolidated and ended up buying the properties of Continental and signing a three year option over all of the central properties that constitute the gypsum mine and the sulfide finds,” said Pablo Marcet, president and CEO of Waymar.

Marcet has found the presence of the gypsum mine has been hugely beneficial. “There was already a camp onsite which we initially shared and locals have been trained and working in mining there for some time. There is already a good relationship with the communities and fortunately most of the area’s illegal mining is outside of our properties,” he said.

Cordillera gold

Cordillera entered the market in November 2010, and made its initial acquisitions and is now conducting initial exploration in the hope of building a 43-101 in order to list. The company controls more than 21,000 hectares in the Antioquia Batholith.

“Our strategy was basically to get properties in the Antioquia district; we were interested in that region because there is a high level of data on the area that geologically points towards a lot of opportunities,” said managing director Robert Fia.

Cordillera’s key project is Guatape in San Francisco, made up of two concessions. The company has completed its ground exploration program of soil, stream and rock sampling.

After combined analysis with aeromag and radiometric surveys, several targets will be identified for drilling in the near future. Although still at an early stage, Fia has high hopes for their operations. “We hope that in five years we have found deposits with 1 or 2 million oz of gold in this area and with some other exploration projects.”

California Mining District

Outside of the Mid-Cauca belt developments, a lot of gold exploration attention has centred on the California gold play in the district of Santander. Although the area is not as familiar with mining as Antioquia, it is quickly becoming a second hard rock mining hub for Colombia.

Eco Oro – the rebirth of Greystar

The Greystar story was one of the most promising gold plays in Colombia, whose Angostura project showed enormous promise. However, after a significant investment in exploration and development, the company's plans for a large open-pit mine was undone by public concerns over the socio-environmental impact of the project.

The company is now aiming to undergo a renaissance under a new name, Eco Oro, and a completely redesigned mine plan.

Angostura is now to be mined underground instead of the open-pit project that was first proposed and the company hopes to project a complete fresh start and will place a much stronger emphasis on social and environmental issues.

Angostura will remain the flagship project. If the results from the drilling operation and some other studies confirm their estimates, they hope to have the environmental licenses by the end of 2012 in order to start the construction stage, which might take one or two years.

AUX – Batista's big bet

In March 2011, Eike Batista acquired control of Canadian gold-mining company Ventana Gold in a deal valued at US$1.5 billion. Ventana's flagship project was La Bodega, which is located in the Calfornia district Santander.

EMJ reported in December 2010 that Ventana had released a 43-101 with an inferred mineral resource of 3.5 million oz of gold, 19.2 million oz of silver and 84.6 million lb of copper. The scoping study outlined 14 years of underground mine life at a planned production rate of up to 7,500 mt/d.

Batista said that he bought Ventana because he believes that the assets are three times bigger than what people who owned it thought it was. He also stated a plan to invest a further US$100 million in Ventana's assets, consider acquiring further assets and then listing them together in Bogotá, London and Sao Paulo under the banner AUX this year.

CB Gold – rich veins at Las Vetas

CB Gold started with a greenfield project in Norte de Santander in June 2009. Upon arriving at the site, Fabio Capponi, CB Gold's CEO, was immediately impressed by the potential of the area: "Vetas is a mining district where mines have legally been in operation for more than 60 years and gold has been produced for over 400 years. The potential was obvious and so we established ourselves there and never left."

Although mines were in operation on the site, CB Gold has suspended them in order to focus on their exploration. "These mines have only been mining visible gold and they never felt the need to drill a single hole. As a professional mining company that wants to achieve its 43-101, we have to operate in a different way," said Capponi.

Capponi has been very much encouraged by its exploration results so far. "We spent the first year and a half mapping and sampling the entire area, both underground and at surface. At the surface, the visible gold samples reached grades of 667 g/mt of gold and over 3,000 g/mt of silver. From the 2,000 plus samples that we took, on average the underground grade is around 7 g/mt gold and about 75 g/mt of silver. On surface, the average is about 1 g/mt gold and 6.7 g/mt. Therefore, the ratio is around 10:1 silver/gold."

CB Gold started drilling in December

2010: "We started with a plan to drill 25,000 m by the end of the year but we have extended that to 30,000-35,000 m by the end of the year. The drilling program has become more targeted since we completed the geophysical survey in May 2011," he said.

One concern of investors was that, like Greystar, CB Gold's properties are also at high altitude. The project's altitude extends from 2,800 m to a maximum of 3,500 m. However, Capponi does not see this as a constraint and is keen to differentiate the situation from that of the Greystar's. "We have had no issues with the altitude. Our operations are checked by the environmental bodies every 15 days and we have been complimented more than once on our performance," he said.

"It is not an open-pit project, but underground and so the issue is very different because the surface is not touched where it is not needed. The mine mouth is expected to be at 3,300 m and at that point we are below the paramos line. None of our land holding has been defined as paramos and activities have been taking place at these altitudes in this area long before CB Gold. The town of Vetas itself is at 3,200 m. Mines have been operating here legally for 60 years or more."

Galway Resources

Galway Resources is focused on developing both coal and gold in Colombia. As the company's coal assets are currently mired in approvals processes, the core focus is gold exploration in northeast Colombia, with drill programs occurring at the California and Vetas gold projects.

"We saw the gold potential of Santander and specifically California, and we feel proud for being the first company that has put together several concessions in the area," said Robert Hinchcliffe, president and CEO at Galway. "We focused on this region and in this area we have Vetas and California. We expect that these projects may be able to produce 1 million oz of gold," said Hinchcliffe.

Galway has secured a significant land position in California. Galway's California concessions are located adjacent to AUX's La Bodega and Eco Oro's Angostura projects. This year, Galway plans to invest US$13 million in both projects. "In Vetas project, we plan to drill 10,000 m in the first stage and in California we keep having better results every week, so we are going to have to change some things in the project," explained Hinchcliffe.

The project is well under 3,000 m altitude and so should not have any concerns over contact with the paramos. However, since the problems of Greystar's Angostura project, all companies have realized the need to be proactive about changing the perspective that mining has in the region.

"The problem now is that there is not much real information about the traditional economical activities developed in those areas, and in all cases mining may not be the worst or best option. That's why the government and companies are studying more the economical and cultural conditions in the areas with mining potential, to know if the project is socially and environmentally viable," said Hinchcliffe.

Los Mates

Los Mates is a Colombia-based gold producer, founded as a private company in 2009, with primary projects in the mineral-rich Senderos de Oro region that neighbors California and Vetas. "Senderos de Oro is a project composed by two of our four licenses and it is more than 1,300 hectares, so it has a lot to be explored," said Ary Marquis Pernett, president and CEO of Los Mates.

The company have budgeted to spend no less than US$5 million on exploration this year and are using technology and consulting from Canadian companies to assist them in the early stage of exploration. "Right now we are preparing more geophysical field work and more surface studies, but I think that at the end of this year beginning 2012 we will be able to start drilling," said Pernett. Los Mates has a stated aim of becoming a 100,000 oz/y gold producer from its first mine within five years of formation. Despite its already significant landholding, in order to achieve that, the company continues to look to acquire other mining assets. "Right now we have 5,000 hectares of mining license but we are looking for larger titles," said Pernett.

Opening new districts

In addition to these gold mining provinces that are becoming better known internationally, other highly prospective areas are also now opening to exploration companies.

Ashmont in Choco

Ashmont Resources is a private Canadian company based in Vancouver. This company is the result of the initiative of two Canadian firms that had some mining activities in Africa, and a Colombian investment banking firm, which entered the mining sector by capitalizing two mining companies in Colombia.

After the investors looked at the opportunities that Colombia offered, the company, founded in November 2010, started working in three different projects in Choco, Cordoba (El Alacran mine), Bolivar (Santa Cruz mine) and three other properties. The company took the decision to work in areas where there was not much activity but with potential opportunities as well. “What we saw in Antioquia is that a lot of companies were going for the same assets. Besides that, we wanted diversification, because our objective was not going just for gold, and the only mine with positive results in copper was El Alacran,” said Mario Escobar, president of Ashmont Resources.

Choco is a Pacific coast region that still suffers a lot of social issues and where there has been some history of mining project failures. However, Escobar is prepared to face that. “In Choco, we are going to develop our project in a special way, in a long term strategy. Because of its transportations issues, guerrilla and trafficking problems, we must be careful and work in a well planned project,” said Escobar.

Cordoba Minerals

Paul Dias, CEO of Minatura, also thinks that more and more opportunities are to be found in new mining provinces. “Antioquia is rich in mining history, but other districts are improving rapidly. It’s just a matter of time before they catch up,” he said.

In Cordoba, for example, his company has been finding extremely high prospectivity in base metals. “It is right next to Cerro Matoso, Minera El Roble and Carbones del Caribe. I also expect Sur de Bolivar to emerge as a world class region for large gold deposits. These are areas that are unexplored and undeveloped but you’ll be hearing a lot about soon,” he said.

Dias plans to spin out the Cordoba assets into Cordoba Minerals Corp., a copper gold play. “The outcrops in this region are monstrous; they range from 3 m in width to 200 m in width in structures that extend for kilometers. We have approximately 26,000 hectares there and have some very interesting partners.”

Cosigo - Colombia’s Witwatersrand - The Taraira gold belt

Well away from other developers, Cosigo have been trying to open a new Colombian exploration province well south of the Andes, deep in the Amazon rainforest.

The company’s flagship project is its 100% owned Machado project in the Taraira gold belt of south eastern Colombia, along the border between Colombia and Brazil. Cosigo’s ongoing work on the 9,973 ha. Machado project is the first modern exploration program in an area known to have hosted more than 100 historic gold mining operations.

This area is underlain by rocks that have similarities to the world famous Witwatersrand complex in South Africa where approximately 40% of all gold in the world has been mined. Colombian government geologists first worked on the Machado Project in the late 1980s. “The government did 12-13 holes in this area. They found an interesting deposit in the area that they estimate to be around 40 mt. This is of course not viable for a 43-101. Our intent is to get in and add to that understanding,” said Andy Rendle, vice president of South American operations at Cosigo Resources Inc.

Cosigo has completed an extensive soil geochemistry survey and, together with geological mapping, has identified large anomalous targets for the two reverse-circulation drills that are already onsite. The company is currently awaiting a Forestry Reserve Subtraction permit from the government in order to proceed with their drill program.

Beatriz Uribe, president, Mineros

An aerial view of Mineros' ever expanding operations (Photo courtesy of Mineros)

Cosigo is having to work in a triangle between themselves, the native groups and the NGOs to come to a resolution in order to best help the area. However, Rendle sees this as not just a challenge to be overcome but part of the overall ethos of the company. "Our dream is that the native tribe in the Taraira South area could be one of the wealthiest tribes in the world. If Cosigo is only known for one thing, we want it to be that. We are helping them in their own projects and showing them that mining can be done in a way that is safe and does not harm the environment."

Cosigo wants indigenous communities from the U.S. and Canada to come down and act as a sort of mentor to the local tribes they are working with. One example is the BC Aboriginal Mine Training Association (BCAMTA), which has worked with a lot of different companies and they help bring the native youth up to a technical standard so that they can work with a mining company. This enables small mining companies with small budgets trust the local community with expensive equipment that requires proper training.

Colombian participation in gold exploration

In addition to the excited interest from the international community, Colombian capital is also being employed in the exploration and development of the country's gold resource. While Colombia may not have the deep pockets of Toronto, locally backed companies have the in-country expertise that can provide an edge.

Mineros – Colombia's major gold house

With more than 35 years of experience in the Colombian mining sector and currently the largest gold producer in the country, Mineros can perhaps be considered the most established gold player in Colombia. It is the only gold developer currently listed on the BVC, Colombia's stock exchange and is backed entirely by Colombian capital.

As the leading producer, Mineros' goal for this year is to produce over 120,000 oz/y of gold. 80% of this production will come from alluvial mining and the other 20% from underground mining, all from producing mines in the department of Antioquia.

"Thanks to the growth campaign that we started four years ago, our production has been increasing and we expect it to keep rising. Right now, we have exploration activities in Antioquia and in some other regions of Colombia," said Beatriz Uribe, president of Mineros.

For the last four years, Mineros have worked in a joint venture with AngloGold Ashanti to explore some of their properties. "I think these kinds of partnerships are really good because they help both parts to share, learn and improve their practices, just as we have done with AngloGold," said Uribe.

Mineros now has plans to expand beyond Colombia into a major regional mining force. In addition to exploration targets around the country, it is also considering exploration activities in Ecuador and Peru. "In five years, we want to be an international company with activities in at least three countries of Latin America and duplicate the production that we have right now," said Uribe.

Brexia –a private equity fund's mining vehicle

Brexia, a subordinate of the private equity fund TRIBECA, aims to turn assets with hidden value into large scale, profitable and, most importantly, sustainable operations. With projects and operations in Colombia, Peru and Brazil, the firm is looking to make an impact on the regional stage. Brexia Resources is the mining investment vehicle of Tribeca, Colombia's first international standard private equity fund led by Mr. Luc Gerard, backed mainly by Colombian pension funds. With that significant financial backing and private equity fund mentality, Brexia is acquiring suitable projects both in Colombia and across Latin America.

The company is particularly looking for early stage exploration near to production projects with high upside. "We are looking for that hidden value. These things are not evident to everyone. It is very easy to value a property when you have 20,000 m of drilling completed. However, when there are none, what do you do to value and see the real potential of that property? What we do is to apply the best practices for resources evaluation," said Alexey Duarte, president of Brexia.

The company has already started its exploration and development activities in Colombia through its Brexia El Bagre gold project, a vein type resource, located in the northwest of the department of Antioquia. "El Bagre is the starting point for this company, where we expect to start production in the third quarter 2012," said Duarte. Brexia Resources is currently starting operations on a gold/silver/copper/zinc porphyry deposit and a gold/silver vein type deposit in the south of Peru, near Tintaya and the Antapaccay project. This operation, Brexia

Alexey Duarte, president, Brexia Resources

Goldplata Peru, will produce gold, silver, and zinc, and lead concentrates; additionally the exploration team will assess the real potential of this 20,000 Ha tenement package. Also, Brexia is currently closing a deal in a very attractive gold/copper porphyry resource with about 12,000 m of drilling, in the Cauca state in Colombia. More recently, Brexia is in negotiations in Brazil for the development of a 43,000 Ha package with already defined 300,000 oz of gold at the inferred resource level and a large exploration potential.

In summary, Brexia Resources' strategy is based on a balanced portfolio of options near to or in production with large exploration potential, ensuring a promising development horizon for the foreseeable future by mixing organic growth with M&A.

Latam Resources – providing partnership and finance

Latam Resources is a newly formed company of Grupo InterBolsa, the leading financial group in Colombia's capital markets. Latam is focused on the purchase and sale of mining assets in Colombia. It has more than 100 projects under review that it is able to technically evaluate to TSX ready standard.

As InterBolsa saw the mining sector becoming increasingly important to their investment banking business, Latam was created as a means of connecting with future clients early on. "One of the most important sectors for capital raising is natural resources. We saw that there would be more opportunity for us to be more pro-active in the process and that there would be benefits for us to go in as early players," said Latam CEO, Leonel Narea.

Through InterBolsa, Latam can aid financing and enter into joint ventures with natural resource companies in the exploration and discovery phase of a project.

"Our package is to create enough information to attract international juniors. We will then provide financing with our investment banking arm and we are able to provide other services such as the management of assets," said Alejandro Ochoa, director of Latam Resources. "The investment banking side of InterBolsa can help to raise capital. We are in a better position than most competitors because we have the largest broker dealer in a market like Colombia. We offer more of a turn-key operation," said Narea.

Latam is now looking for partners to take its project portfolio forward. "We are looking for companies who can take projects to the next level. We want to enable these companies to access these assets," said Ochoa.

Caramante Conde

Ezequiel Llanes is a Colombian mine engineer that has been involved in many of the country's most famous projects, such as Frontino and Providencia. Together with partners, Llanes recently acquired a new project called Caramanta in the south west of Antioquia that is being developed under the company name Caramante Conde.

The project includes more than 480 hectares in a highly prospective region that has been mined in an artisanal fashion for over 100 years. "We believe Caramanta may be one of the most important mining projects in Colombia in the short term," said Llanes.

Llanes concedes that if the project meets his expectations, they will require a partner. "We have the logistics needed for an explorations project but not for the building of a mine. I think that once this project starts to show some good results, a big international company would like to have a partnership with us."

However, at this stage, the company is considering its options. "Once we know exactly the reserve of this project, we might think about the possibility of listing the company. Once we are sure about the value of the company and the project we would also be interested in hearing proposals on potential partnerships," Llanes said.

Colombian Coal

Project development and exploration investment

World class facilities at Cerrejon have contributed greatly to Colombia's reputation as a global coal exporter. (Photo courtesy of Cerrejón)

Colombia has the largest coal resource base in South America, estimated in excess of 6.4 billion mt and is the world's fifth largest coal exporter, exporting 68 million mt in 2010. In 2010, coal taxes and royalties amounted to COP$931,428 million ($484 million). According to Proexport, the country plans to increase its production to 200 million mt/y by 2020.

The majority of thermal coal resources are located in the Guajira and Cesar provinces, and the majority of the coking coal resources, estimated to be in excess of 1.4 billion mt, are located in the North Santander, Santander, Cundinamarca and Boyacá provinces.

Cerrejón leading the coal expansion

Cerrejón is the country's largest producing mine and one of the world's largest open-pit thermal coal mining operations. It is an integrated mine and transport complex situated in the department of Guajira that currently has an export capacity of 32 million mt/y.

The company is the largest private employer, the largest private tax payer and one of the largest payers of royalties in the country. The project is seen as a leader in the country.

Long standing CEO of Cerrejón Leon Teicher is now leaving his post to spend more time with his family but said, "Cerrejón has been a pioneer in terms of serious large scale mining. The operation started around thirty years ago. We have an advantage in that we have been here for a long time and know the country very well. We have already enjoyed good returns on our investment and anything that we start now is a brownfield expansion rather than a greenfield start-up. This is a great head start on those companies that are only now entering Colombia."

Teicher plans to use that advantage to continue Cerrejón's growth. "Expansion is part of our DNA. In terms of road, rail and port, our mine's infrastructure was originally designed for 15 million mt/y of coal exports. At the time, that was the largest operation in the world."

Through successive expansions, Cerrejón have reached the level where today it can export 32 million mt/y and we have recently approved an expansion to 40 million mt/y.

The mine is owned by a consortium of tier one mining companies; namely BHP Billiton, Anglo American and Xstrata. There is no over-riding control from any one of them and, as the operator, Cerrejón is a self contained autonomous company.

Leon Teicher, former CEO, Cerrejón

It is this significant backing that has allowed Cerrejón to continue its ambitious growth path. "Although Cerrejón is a large cash producer itself, we also have access to some of the most capitalized companies in the world in order to continue our growth. A company culture and wealth of experience that has been built up over the past 30 years is complemented by the deep mining knowledge of our owners," said Teicher.

Cerrejón plans to start upgrades this year, with completion expected in 2013 and ramp-up to 40 million mt/y by the end of 2015. The key element is the creation of a new berth and direct ship loader at the Puerto Bolivar port, but the company are also investing in new equipment at the mine site and at the railroad.

Drummond looks to Asia

The second largest coal mine in Colombia is owned by Drummond. During the late 1980s, Drummond Ltd. acquired the mining rights to significant coal reserves located in northern Colombia. Drummond coal is one of the lowest sulfur and ash coals currently exported from Colombia.

The Drummond Ltd. Colombian operation includes the Mina Pribbenow and El Descanso open-pit coal mines located in the Cesar Coal Basin near La Loma; Puerto Drummond, a deep-water ocean port on the Caribbean Sea near Santa Marta; and coal transportation and handling facilities.

Japan's Itochu Corp has teamed up with U.S. Drummond Coal in a US$1.5 billion deal under which it will take a 20% stake in the Drummond's Colombian subsidiary and market its coal in Asia.

At the second Coaltrans Colombia conference in September 2011, Augusto Jimenez, Colombia CEO for Drummond, outlined the increasing role that the company sees Asian exports having for Colombia. He also laid out Drummond and Itochu's new growth vision.

Drummond International plans to raise coal production by 10 million mt/y to 35 million mt/y by 2014. Itochu said 70% of that 10 million extra coal output will be sold to Asia, especially to China, India and Japan, though Europe will remain the key market for Colombian coal.

Glencore's Prodeco

Prodeco, 100% owned by Glencore, the world's largest commodity trader, consists of two open-pit mine complexes (Calenturitas and La Jagua) in the department of Cesar; export port facilities (Puerto Zuniga and Puerto Nuevo) and a 39.76% share in the Fenoco concession operating the railway which links mines to the ports in Colombia. The mines supply U.S.-compliant thermal coal and high volatile metallurgical coal (PCI) to Europe and the Americas.

Prodeco has a total 337 million mt of coal JORC reserves and total coal resources of 540 million mt (inclusive of reserves). Prodeco forecasts a mine life of 30 years for Calenturitas and 20 years for La Jagua, based on reserves and the assumption that some of the existing resources will be converted at Calenturitas.

Prodeco is going through a period of significant expansion, as coal production is planned to increase from 10 million mt/yin 2010 to 19.9 million mt/y in 2013 and to 20.7 million mt/y by 2015. This expansion has an estimated capital cost of approximately US$2.6 billion of which approximately US$1.5 billion has been spent on mining concessions, mining equipment, transport, port and other infrastructure as end of 2010.

Vale – Brazilian giant participates

Vale is now one of the world's most diversified and successful mining companies and the global player has also not failed to appreciate the potential that lies in Colombia.

Vale acquired the El Hatillo mine in 2009 in the department of Cesar for US$300 million. "Colombia is the major coal producer in the Atlantic market and supplies the U.S. and a lot of European countries. We saw an opportunity, we came and knew and understood the market and evaluated the chances we may have," said Leonardo Pires, general manager for coal operations at Vale Colombia and an architect of the acquisition.

Since that acquisition, the company has invested heavily in efficiency improvements to increase production. "We brought new equipment and installed a new system to load the coal in the train in order to improve the techniques and operations in the mine. This year we decided to revise the production goal to 4 million mt/y, but we are still working on the expansions we need," said Marco Puccini, operational general manager for Vale Colombia.

MPX- seeking the Carajas of coal

MPX is the energy wing of Eike Batista's EBX Group. In Colombia, the company owns 68,000 hectares in La Guajira where it is currently undertaking an exploratory campaign in the hope of starting production in 2012 on two open-pit mines at Canavaerlaes and Papayal, to be followed by a large underground operation that it hopes to have in operation in 2015.

In total, the company hopes to have its integrated mining project, inclusive of its own port and railroad, that will produce 35 million mt/y of high quality thermal coal. At the second Coaltrans Colombia conference in September 2011, Gustavo Gomez, COO of mining and gas for MPX, termed the Guajira basin as "the Carajas of coal".

Leonardo Pires, general manager for coal operations at Vale Colombia

Carajas is one of the world's best iron ore deposits that has been developed with enormous success in Brazil and Gomez feels the Guajira shows all the characteristics to be equally significant to coal as Carajas has become to iron ore.

Gomez also said subject to the markets, MPX sees the possibility for significant additional expansion in Colombia beyond the 35 million mt/y production currently stated.

The infrastructure that they are putting in place will be designed with duplication in mind as Batista wishes to take every advantage of Colombia's coal potential.

Many more projects emerging

In addition to these projects, a number of other expansions are two words, from local and foreign groups alike. Exploration outside of these main projects is also being undertaken by a number of international firms. For example, Anglo American, Goldman Sachs, Argos and Mitsui have large land holdings under development.

Not all coal projects are being developed by foreign companies, Carboandes was founded as a family company in 1987. The company was the original developer in La Jagua, later sold to Prodeco. Since 2007, Carboandes started to increase its coverage in the country with mining titles in different regions. The most important coal project for the company now is La Rondon in Boyacá. “It is in the exploration stage and so far it has had really good results. We already have the environmental license for early mining which means that we can continue with the exploration operations and at the same time we can have some production,” said María Victoria Saade Mejía, general manager of Carboandes.

Metallurgical coal

Despite Colombia’s exceptionally high quality deposits of metallurgical grade coal, to date, coking coal and coke production has represented only a small proportion of exports. The majority of these mines are semi-manual or manually mined.

These inland coal seams have been affected by the Andean geology into relatively thin, steeply dipping seams of very high quality coal. It’s been mined for many hundreds of years, but on a very small scale and proper mechanization is still to be achieved.

However, small quantities of coking coal have been exported. It has been noted for its high quality and accepted by international steel mills. Camco was founded in 1976 in Bogotá as a trading operation that originally supplied steam coal from the center of the country to its plants as combustion fuel. In 2002, it began exporting coking coal.

“We have since designed a blend to comply with the needs of the steel industry, first with the technical aid of the Turkish steel mills ISDEMIR-ERDEMIR group. This opened the European market to us and we have since started to supply some of the biggest steel mills in the world,” said Guillermo Camacho Fajardo, president of Camco.

Camco has since sought to try to build a brand for their Colombian coke blend. “We have focused our efforts into producing the best possible blend of coal from the producing areas of Cundimarca, Boyacá and Santander. We have proven with our blend that we can control the quality of the mines that supply us. Our coking coal quality has been accepted by the most demanding steel mills in the world,” said Camacho.

Milpa – A local leader in modernisation

Milpa is a family company that was founded in 1983 and operates three different mines, transport activities and a port company on the Magdalena River, close to Barranquilla. Milpa develops all of the stages needed for the coking coal production, including coal washing and coking. The company’s current reserves are around 100 million mt of coking coal, spread over four mines.

Carlos Enrique Parra is general manager of the company and explains it is the challenging geological conditions of Colombia’s metallurgical coal deposits that have constrained large scale projects. “The geology of the center of the country is really hard, which has limited the development of big mines with a production of 1 million mt/y. But we have seen that with the mining blocks that we have in the region we have proved that a medium mining can be developed there.”

To overcome this challenge, Milpa have investigated all available techniques. “We have been working really hard to modernize the entire production process in our company. The first thing we started to work on was changing the exploitation methods, with a stronger hydraulic support, and better exploration processes. We also replaced the washing plants which are now more efficient,” Parra said.

The budget for the modernization process is US$120 million, distributed in the improvement of mining, coal washing, coking and the port. Right now, the company exports 500,000 mt/y of coke and 200,000 mt/y of coking coal. In 2012, Milpa expects to be able to produce an additional 240,000 mt/y of coal. When all of the announced investments come into fruition, Milpa wants to reach a production of 1 million mt/y of coke and 500,000 mt/y of coking coal. Parra feels that as these techniques become more common in Colombia, the metallurgical coal industry may become increasingly significant. “We believe this is going to be a big industry, but it may not equal the coal production from the north region of the country. We are sure that the coking coal has an important growth potential,” he said.

The company continues to be open to new advances and to consider partnerships where it could benefit their company. “We are definitely interested in a partnership with companies that can work with us for the development and improvement of our operations,” said Parra.

NAE - Exploring international partnerships

New Age Exploration is an ASX listed exploration company that is focused on becoming a significant player within the Colombian coal industry. The company has European partners with abundant underground mining expertise and New Age have the access to Australian capital markets. In addition, the company has formed a partnership with Aurora, a leading supplier of mining and processing equipment and consultancy services within the Colombian coal sector.

"We have looked at other commodities and projects in other parts of the world, but as of the end of February of this year, the Colombian coal opportunity has become our focus. We have far greater access to opportunities than we do in other parts of the world," said Gary Fietz, managing director at New Age Exploration.

The groups formalized a joint venture agreement whereby anything that is acquired is 90% New Age Exploration and 10% Aurora. This year, the company has rapidly built a substantial portfolio of Colombian coal assets which now include hard coking coal concessions 40 km northeast of Bogotá in the district of Cundinamarca and export thermal coal concessions in the Cesar Basin.

New Age Exploration's model is to find two or three good coking coal projects that they can mechanize and produce around 500,000 mt/y of clean coal from each mine with a 10 to 20 year mine life. "Coking coal is such a great commodity today that it's very feasible. These projects are not of the size that would interest the blue-chip companies, but, for a company of our size, it's a very good model and we've found a number of these opportunities," said Fietz.

New Age believes that the potential of mechanization could make a major impact on these mines: "If you've been to any of the coking coal mines here in Colombia, they are using primarily hand labor and are restricted in the depth that they can go to as they are basically hauling one ton skips via tractors or trucks. We feel that there is an opportunity to come in and demonstrate how to mechanize and go deeper. The dips here are 20-30 degrees plus and the seam thicknesses are 2-2.5 m, but we believe that by using our skills in short haul mining and wash backs that we can make it viable," said Donald Garner, vice president for business development at New Age.

Their partner in this operation believes this type of opportunity is what is most realistically available to new entrants. "If you are thinking about open cast mining in Cesar, it's not going to happen. Everything has been taken by the big guys. You have to go underground. We are targeting underground operations that have so far been left behind. Ten years ago, these areas were not so interesting but, at current prices, they certainly are interesting. But yes, it is difficult to go to Cesar or Guajira where the major players are that have unlimited financial capabilities. But, if you look close enough, opportunities still exist," said Carlos Felipe Barrera, project manager, Aurora Energy.

Gary Fietz, managing director, New Age Exploration

Fietz feels the partnership with Aurora has been critical to their success to date in Colombia and that finding the right partner is vital to operating effectively here as a foreign resources company. "The network of contacts that Aurora has across all of Colombia's coal basins, through its mining equipment business, has been an enormous bonus for us. They know the people and have relationships and have pointed us to a number of good opportunities. Their reputation has allowed us to close negotiations very quickly," said Fietz.

CERX - Building Colombia's first modern coking plant

Colombia Energy Resources, Inc. (CERX) is an emerging coal mining and clean energy technology company. They currently control just under 12,000 hectares in Colombia and hope to be operating in two main locations; Santander and Boyacá.

In Boyacá, CERX is in the process of defining large resources at Otanche and Rukú and is simultaneously developing several mines that are going into operation by the end of the year on these properties. In addition, CERX is developing a third property, Boavita, that will be operative early in 2012. These mines will supply coal to Colombia's first modern coking plant, at 200,000 mt/y, that CERX hopes to have in operation within two years. CERX controls more than 160 million mt of coal resources.

"Colombian coke is not sold on the international market in a big way and its price is usually discounted heavily," said Carlos J. Soto, president of Colombia Clean Power SAS, CERX's operative company in Colombia. "One of the issues that Colombia's coke industry has suffered from to date is that the quality is very variable. Producers are using antiquated technologies and the quality of input is not well controlled. What we plan to do is to bring in a system that is more sophisticated, efficient and quality controlled than current standards. It will give us a significant advantage."

CERX is expending significant amounts of capital this year and next to develop metallurgical coal reserves and begin operations at multiple mines. Within the next two years, CERX's intention is to have their first coke plant up and running and to have their mines filling its capacity. "The next stage that we envision for the long term, is to develop an energy park to process both thermal and coking coal into other products like methanol, urea, or electrical power," said Soto.

Infrastructure constraints – Coal's Achilles' heel

While Colombia sits in an enviable location, with port access to both Pacific and Atlantic oceans, the reality is that the country was forced to abandon most of its internal infrastructure around forty years ago. This is a particular constraint to its coal export ambitions.


Jaime Olivella, president, Fenalcarbon

Fenalcarbon is Colombia's National Federation of Coal Producers. Its president, Jaime Olivella, fears that infrastructure could be the one Achilles' heel in the way of Colombia's enormous export potential.

"Infrastructure is not just a problem for mining; it is an issue for all economic sectors because it is delaying the development of industries. I think it is the biggest challenge that Colombia has for the near future to support the exportation of the mining production of the center of Colombia," he said.

Currently, infrastructure costs in Colombia can exceed the market price of coal. Naturally, this is a major deterrent to development, particularly for low-value thermal coal projects. Santos has stated his intention to invest US$55 billion in infrastructure over the next ten years. However, the question is where such investment is best placed.

Getting the rail network back on track

The once extensive Colombian rail network is now all but extinct. Major coal projects near the coast, such as Cerrejón and Drummond, invested in their own rail and port infrastructure. Other coal mines in the north of the country are served by Fenoco, which runs from Chiriguana to Santa Marta.

Fenoco was created as an administrator of the railroad system of the north of Colombia in 2000. The company is owned by a consortium of coal producers from the region that includes Drummond, Prodeco, Vale and Carboandes. "Our transport capacity is growing every year thanks to more efficient processes and the best technology. This year we could transport 48 million mt of coal, which is really close to our total capacity," said Peter Burrowes, president of Fenoco.

In 2006, the company agreed with the government to invest US$250 million to build a second railroad line, parallel to the one that already exists. The objective of this project is to provide all shareholders from the coal industry the service needed to transport their production.

Expansion of the Fenoco railway capacity from the current 45-50 million mt/y to 80 million mt/y is expected to be completed by 2012. The cost of expanding the capacity will be shared pro-rata by shareholders. Fenoco has spent US$120 million to date, with total costs expected to be US$250 million. "In five years, we want to have the double line of the railroad finished and maybe we will be thinking of a third. We also would have investments for US$60 to US$80 million in technology, train management and railway maintenance. We also would like to double our transport capacity to 96 million mt/y," said Burrowes.

Carare conundrum

One project that is most of interest to Colombia's metallurgical coal miners is the Carare line. This, long proposed, rail development will connect the Andean interior with its Caribbean ports.

The project aims to link the Carare rail network with the Ferrocarril Central railway, forming a network that would transport an estimated 30 million mt/y of coal. The rail line will start in central Cundinamarca department, pass through Boyacá and Santander departments, and eventually reach the south of Cesar department before connecting with the northern coast.

It has been a complex project that was first proposed in the early 1980s. The central part of Colombia is very important for future coal production, but even though it is significant, it is not currently large enough to justify the level of investment required.

"If you look at the levels of current production in the Andean range, there is simply not enough to finance on reasonable terms a train like Carare. However, the alternative, transport by road, is not only expensive but also has environmental effects that should be considered," said Carlos Gustavo Arrrieta, former attorney general and current partner at Arrieta, Mantilla & Asociados, a law firm that specializes in oil and gas, mining and infrastructure issues.

In addition to rail investments, many companies are also investing in river barging operations. As the Magdalena River is navigable by barge well into the country's interior, there is the possibility of barging operations that are far more economic than trucking. International trading houses such as Mercuria and Trafigura see this as a useful entry point for investment into the Colombian market. In addition, many local and international investors are developing dry bulk port facilities along the length of the river.

Adding port capacity

Colombian ports are also nearing capacity. Aware of this opportunity, a number of foreign and domestic developers are trying to get port projects off the ground. However, like in rail, securing the finance for multi-user ports is difficult.

Obtaining the necessary permits in a country that is keen to protect its coastal tourism is also a challenge. A new government regulation requires direct loading into ships and eliminating the usage of barges to limit the environmental impact. This means many ports need to modify their port facilities. This is an expensive investment and it must be made by 2014 or the ports will probably face a large nmber of legal issues.

Puerto Brisa is one of the largest and most ambitious port projects in Colombia right now. It is being developed in the north region of the country in a town called La Dibulla in the department of La Guajira in an area of 1.363 hectares. The first stage of the project should be ready in the second quarter of 2012. With this first platform the port will be able to transport 30 million mt/y.

"We think Puerto Brisa is an immediate answer to the delays that Colombia has. I think that once our project is ready and other infrastructure projects begin, there are going to be more investments in the Colombian mining sector," said Fernando Sanclemente Alzate, president of Puerto Brisa.

He feels projects like Puerto Brisa are critical for the future of the mining sector. "Colombia has big and important mining reserves and the only way to promote investments in exploration operations is to have the right infrastructure," he said.

Boris Cordovez is a well known and respected figure in the Colombian mining sector, having played a role in a number of the country's mining operations. With his son, Camilo Cordovez, Boris founded C&ENER SA as a holding company that has explored more than 800,000 hectares of Colombia joint ventures with large and small companies, including Vale and options agreements with Votorantim and Rio Tinto among others.

C&ENER is developing gold opportunities and moving forward on the flotation of their coal exploration vehicle, Colombian Mineral Resources Ltd. Colombian Mineral Resources Ltd. has a total of 25 mining titles in Colombia where an initial 604 million mt of coal in a resource category were estimated, including steam and coking coal.

However, C&ENER are also advancing their own infrastructure project. "Through my father's experience in a number of projects in Colombia, we are well aware of the infrastructure constraints that endanger future coal development in Colombia. Because of that we began to explore possible solutions and opportunities and developed the Puerto Sinu and La Prosperidad rail corridor solution," said Camilo Cordovez. "Puerto Sinu will bring Post-panamax capacity to Colombia's Atlantic coast, with excellent inland connectivity, including our proposed La Prosperidad rail line. This will travel 422 km inland to the heart of Antioquia and the coal producing interior which is crying out for infrastructure solutions."

Cerrejón invested in its own rail infrastructure. (Photo courtesy of Cerrejón)


Camilo & Boris Cordovez, founders, C&ENER SA

Colombia's Other Commodities

Project development and exploration investment

Nickel

Colombia has six nickel deposits with measured reserves totalling 37.8 million mt and indicated reserves of 46.48 million mt, according to the government. BHP Billiton's Cerro Matoso mine, which is located in the department of Cordoba, is the only producing nickel operation in Colombia. Cerro Matoso has the highest grade lateritic nickel deposits in the world and produces around 4% of the world's nickel and 10% of the world's ferronickel.

The operation is the largest nickel mine in Latin America and combines a lateritic nickel ore deposit with a low-cost ferronickel smelter. High-purity, low-carbon ferronickel granules are produced by the smelter. Mining commenced in 1980 and nickel production started in 1982, peak production of 50,800 mt/y of contained nickel was achieved in 2007.

Cerro Matoso employs more than 900 Colombians and the mine is estimated to have a 42 year reserve life. BHP Billiton is confident that it can expand this significantly through the building of a third and fourth processing line and a heap leaching operation.

After extensive negotiations, in 2005 BHP Billiton renegotiated the original contract to explore and exploit the resources at Cerro Matoso. However, that contract expires in September 2012. The company has requested a 30 year extension, but as the sole producer of nickel in Colombia, negotiations over the royalties and the rent that BHP Billiton should now pay has now been settled, clearing the way for a renewal of the company's contract to operate.

Copper

Although gold is obviously a much higher priority for most explorers, Colombia also offers exceptional copper development opportunities.

Minera El Roble is a private company that has been producing copper concentrates since 1990. The mine is located in the department of Choco, near to the border with Antioquia. It has an installed capacity of 96,000 mt/y and 6,000 mt of concentrates per month.

Guillermo Gaviria, president of Minera El Roble, is a legendary industry figure that has no doubt that this is the moment for mining in Colombia. "Because of the security issues, we had a lot of delays compared with the rest of the region, but now that things are better, I think we have a great scenario and a good future," he said.

"The deposit that we are exploiting right now is roughly 1.5 million mt. We own 8,000 hectares and we think that in our properties there is a lot of potential to find many more new deposits. We are investing in a new exploration program in our properties with a Peruvian-Canadian company called Atico," said Gabriel Ramírez, technical manager at Minera El Roble.

CuOro is a base and precious metals exploration and development company whose flagship Santa Elena copper project is a porphyry and poly-metallic deposit located in the Antioquia Batholith district. It has the option to earn 100% on the project, which comprises more than 1,200 hectares.

The initial drilling program has been started and returned near surface high grade VMS mineralization in the first six diamond drill-holes. "Before the main drill rigs came on site we had a held unit to get an understanding of some of the geology. We found very interesting results with some core sections running up to 9.5% copper," said Robert Sedgemore, president and CEO of CuOro.

One of the features that excites Sedgemore about Santa Elena is its fantastic infrastructure, which would be of huge benefit were it to go into production. "We have a paved road right to the gate of our property. In the area we have a switch yard and power through two nearby hydroelectric plants. Water supply is within 5 km," he said.

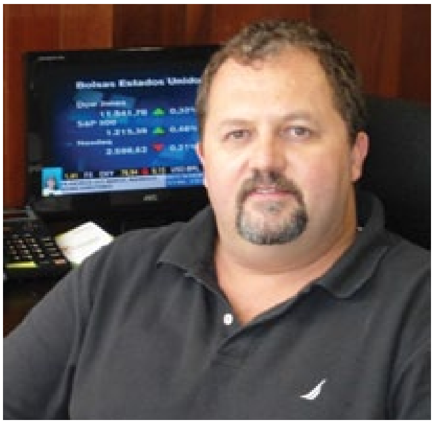
The first stage-drilling program is 25,000 m and the company to date has completed a total of twenty drill holes for a total of more than 4,000 m. With approximately US$20 million in the treasury, the company has also expressed an interest to look for additional opportunities.

Uranium

In addition to its better known assets, Colombia also holds promise as a source of uranium. U308 Corp. is a Canadian exploration company that bases its strategy on Latin America's potential as an untapped source of uranium. Within that strategy, Colombia is now a significant part of its portfolio: "While uranium mining is not going to reach the scale of coal and gold projects in Colombia, I think that there is certainly the potential for uranium mining to play a significant role in the mining sector. I do think there is the potential for world class uranium discoveries in Colombia," said Dr. Richard Spencer, CEO of U308 Corp.

Berlin was originally explored in the 1970s and 1980s. The available historical information was a huge advantage to U308 in indicating what to expect and highlighting some of the points to concentrate on. "Although this data couldn't be used in a 43-101, it was still very important in our decision to go ahead with the project and, to some extent, guiding our exploration," said Dr. Hugo Bastias, executive vice president at U308. The company is now focused on producing the 43-101 for the project this year. They have two drill rigs onsite and will be conduct more than 30,000 m of infill drilling. Trenching has verified the historic data and highlights the upside of the project beyond the historic resource.

Beyond uranium, the sediment-hosted deposit also has the strength of being a mixture of commodities such as vanadium, phosphate and rare earth mineralization. These represent very interesting options for co-products and by-products that could represent a basket of green commodity development. Being the first and mining a new commodity for the country, always has its associated challenges acknowledges Dr. Spencer. "I certainly expect challenges will arise as we move forward, but I don't see anything insurmountable."



Robert Sedgemore, president and CEO, CuOro

Environment and Community

Protecting and enhancing Colombia's natural world and unique cultural mix

Ashmont Resources president, Mario Escobar, interacts with a children from Colombia's Pacific coast. (Photo courtesy of Ashmont Resources)

Despite its relatively small size, Colombia is ranked among the most biologically diverse countries in the world. Its rich ecosystems range from tropical rainforests to high-altitude moorlands to the open sabana, valley of ponds and wetlands.

As with many nations, two industries that Colombians hold close to their hearts are agriculture and tourism. A balance needs to be struck between the need of the country to exploit its natural resources and the obligation to protect the environment.

It is now globally recognized that HSE and community relations have gone from soft issues to a reliable indicator of project success. "The environmental protection and the community relations are keys for the development of mining activities in Colombia. Without good practices in this industry it would be impossible to think of future opportunities in this sector because people and the government just wouldn't support activities that put in danger the sustainability of the country," said César Díaz, executive director of the Cámara Colombiana de Minería.

César Díaz, executive director, Cámara Colombiana de Minería

Although Colombia's large coastal coal operations and nickel mine at Cerro Matoso are well established, there is still a feeling that Colombia is not a country accustomed to mining. "We don't have a mining culture or a mining language. The international interest is now huge and is coming in volumes that have never come before. It is coming to vulnerable ecosystems and vulnerable communities and a country in conflict," said Felipe Arango, director of BSD Consulting.

BSD Consulting is sustainability management consultant firm for various sectors, focused on providing knowledge and solutions for sustainable development. The firm has prioritized mining because it is a sector which hasn't always fitted comfortably with sustainable development.

"We have to work on the image of mining in Colombia because right now, must Colombians don't think it is a good industry for development. What they don't know is that companies like us are not illegal and are not using the techniques that have hurt the environment in the last years," said Mario Escobar, president and CEO of Ashmont Resources, a developer that is working in some of Colombia's most delicate communities.

Rafael Herz, president of AngloGold Ashanti Colombia, believes Colombia should look to countries like Peru, Chile, Argentina and Brazil that have shown that extractive industries can not only live alongside agriculture, but can complement agro-industry growth dramatically. "Chile's agribusiness success is based on the fiscal resources, the technological developments and the infrastructure improvements provided by their copper industry. In terms of biodiversity, mining and environmental development can and will successfully co-exist..," he said.

"This perception that the country needs to decide whether to go for mining or agriculture; mining or water; mining or sustainable development is absolutely wrong. Mining can be an 'addition to', and not an 'instead of'. Mining is not there to compete with other vocations for Colombia but to compliment them," said Herz.

Communication between ministries

Decisions regarding factors critical to the continued success of Colombia's mining sector involve the Ministry of Transport, the Ministry of Defence, the Ministry of the Interior and Justice, the Ministry of Social Protection and the Ministry of the Environment.

Colombia's mining sector has complained over the slow decision-making process for licenses and, at times, miscommunication between Ministries has been blamed. "There is currently a lot of confrontation between the Environmental Minister and the Mining Minister about the legislation and the objectives that need to be shared. But so far, there has not been much discussion and the victims in this conflict are the companies, because they get stuck in the middle of this process and their environmental licenses become increasingly difficult to acquire. It is another example of the need for clear policies for the sector," said Tamara Romero Restrepo, general manager of Alianza, a Medellín based law firm and consultancy that specializes in the mining industry.

Environmental protection laws need to be more clearly developed. Confidence was shaken in 2010, when changes to the mining code appeared to ban mining in the country's Paramos ecosystems. These are high-elevation valleys of wet grasslands in the Andes that contain high levels of biodiversity and are home to various endangered species as well as flora and fauna found only in that area. This prompted shares of Vancouver-based Greystar Resources to plummet, as much of Greystar's flagship Angostura gold project is in one of these paramos.

Community relations

Colombia sometimes gives the impression of a country that is trying to decide whether or not it wants to become a mining country. Dialogue is the key to alignment and eventual project success. Companies at all stages of mine exploration and development must consider how to develop plans for working

Nicolás López Correa, Antioquia's former secretary for mines

with locals to maximize local employment, provide proper compensation for displaced peoples, and diminish the impact of baleful damages to the area.

Felipe Arango, of BSD consulting, sees this as a means of adding value. "It is a way of creating value. If you have established good relations with your stakeholders and you are adding environmental and social value, you will have more stable operations, access to more markets and smarter investors that will be analyzing those risks."

He emphasizes how stakeholders can often emerge as a far more important ally than big government. "Stakeholders are becoming more active and so communicating effectively with these groups will be key to obtaining a license to operate in the long term. A government license can be lost in a moment if a society decides to mobilize against a project. Forward looking investors should be worried about what kind of social and environmental management systems projects have," he said. "It is vital to be honest with communities and only offer the truth at all times, even if it is unpopular," said Antioquia's former secretary for mines, Nicolás López Correa. "If you are acquiring land that will impact communities you must offer them viable alternatives, otherwise you may damage the overall economy of the region. This is in no one's interest."

López also emphasizes the importance of following the correct procedures and working closely with the authorities. "Regional and local authorities have their own plans for how to best develop an area and mining companies must work within that. If you work together the results can be on a shorter timescale and a larger benefit for both parties."

It is something that most companies see as a priority. "We place a major emphasis on bringing community involvement with mining," said Paul Dias, CEO of Minatura.

"If you have the community support, this will lead to local government support and so on up the chain of governance. The community has to welcome you in order to be successful and sustainable. We've benefited tremendously from this emphasis; wherever we go, people welcome us and the opportunity to work with us," he said.

Incorporating illegal miners

At least one third of the country's gold production comes from illegal operations. With roughly 3,600 illegal mines operating nationwide according to an official estimate, 70% of Colombian gold production is informal and causes major environmental damage. Illegal mining accounts for nearly 1 billion pesos (US$600,000) in lost royalties and tax revenue in Colombia, reported *Portafolio*.

Colombia has always had an informal gold sector, but because of the incredible increase in the price of gold, it now has illegal groups using the small miners for finance and to launder their money. "It would be senseless and naïve to try to eradicate small scale illegal mining. It is a social problem and you cannot eradicate social problems. You have to do whatever is necessary to try to incorporate those people into a more formal approach," said Arrieta.

"The artisanal miners are a challenge for Colombia. Wherever we step, or wherever we begin development, we see ourselves as a small part of the solution. Artisanal miners use a very low level of technology and a high level of mercury. I've heard a statistic that one fifth of the world's mercury consumption is in Colombia, and that's all in the processing of alluvial and vein gold-hosting rock. All of the mercury ends up in the water system, in the creeks, rivers and food chain. This has devastating effects on the health of the people," said Timothy Russell, president and CEO of Trident Gold Corp.

Drill equipment being delivered by mule to reduce environmental footprint (Photo courtesy of Trident Gold)

Trident Gold was founded in June 2010 as a gold exploration company sourcing quality early stage projects in Colombia. Trident has in excess of 50,000 Ha of highly prospective tenements within some of Colombia's emerging gold zones.

Russell sees the involvement of artisanal miners not as a challenge but rather as a labor pool that works hard and wants to work. "It's just a matter of communicating who we are and what our way of working is. It's impossible to say that we won't change a community, that's inevitable, but the challenge is to make a positive, lasting change that fits in with the specific needs and wants of the community," Russell said.

Russell believes Trident is extremely well placed to take advantage of the opportunities that exist in Colombia. "We have strong relationships in government, industry and the community, and a very strong technical team. We have the ability to finance and we look forward to strong sustained growth."

Colombian Mining Services

Local and international players see a great new opportunity

Like all countries with an emergent mining industry, Colombia is keen to develop a mining services sector to complement its resources and broaden its economic benefit. As the industry is still relatively young, most mining services are not well established; certainly not on the scale prepared to meet current demand.

Innovation is one of the five priorities for economic growth expressed by President Santos. The government is trying to incentivize technology transfers with tax breaks on mining equipment. These incentives only make the appeal of including Colombia in an international mining service company's portfolio even more inviting.International service companies are now pouring into the country in to order to take advantage of the opportunity. Medellín has emerged as a hub, evident from the astronomic growth of its Feria Minera, mining expo, held each year. In 2011, it attracted more than 12,000 attendees and 280 exhibitors.

The new arrivals are bringing new technologies and new standards that can benefit miners and explorers and are forcing local providers to become internationally competitive. "With the arrival of new investments, there are also many services companies coming to Colombia. For that reason our main purpose is to improve our services and make them as good as the standards of international firms. In that way, we are open to work in associations with companies that arrive in Colombia," said Gonzalo Escobar, CEO of Geominas, a local leader in engineering services.

Daniel Sullivan, Latin American mining trade leader, Austrade, feels it is an excellent opportunity for Australia's mining services. "Our supply industry has grown in a very strict regulatory environment and we have some leading suppliers in terms of environmental and safety technology. We can boast some of the world's leading engineering companies such as WorleyParsons, SKM and Ausenco."

Drill demand

As an exploration play, with projects that are now moving into feasibility phases, the need for extensive drilling campaigns is obvious. A number of internationally recognized drilling companies have entered this market including Kluane, Logan, Major and Globexplore.

Steve Mundle, of Logan Drilling, first visited the country in September 2009 to see if potential clients were interested in drilling services. "We made the decision to set up an office in December 2009 and by April 2010 we had equipment here. There were 25-30 drills when we entered the country, many that did not work. Now there are more than 100 drills in Colombia," Mundle said.

Logan Drilling has been a key part of that increase. Logan has 78 employees in Colombia and six rigs, and by the end of 2012 hopes to have 12 rigs. "Our unique strength is that we have the most portable drills that have the deepest drilling capacity. Our drills only take a few hours to move


Pedro Cano, president, Kluane Drilling Colombia

and start drilling again, whereas it can take several days here because everything has to be taken apart," said Mundle.

While Logan has found that the availability and access to equipment has been a challenge in Colombia in the past, he feels that the situation is now improving. "We used to ship equipment from Canada but the cost was very high. As our name spread, suppliers started to approach us. There is nothing that you cannot manufacture in Colombia and the quality of the workmanship and technology is fantastic," he said.

Kluane Drilling entered the Colombian market because of a request from AngloGold Ashanti. Kluane now operate 34 rigs in Colombia which represents 50% of their business across Latin America. "For many years, drilling companies haven't come to Colombia because of the security problems here and the investment risk. Despite this, we decided to enter and to commit to this market. We have had very good results, which has kept our business sustainable and now we are experiencing a great surge in demand," said Pedro Cano, president, Kluane Drilling Colombia.

International laboratory standards

Laboratory services is another area experiencing increasing demand. There are two main coal lab companies in Colombia, with major international players such as SGS and Burea Veritas (through Inspectorate) having a presence. In hard rock, there are also a number of options, including SGS, ALS Group, Acme Labs and most recently ActLabs.

SGS started working with the mining sector in Colombia around 20 years ago with a contract for Cerrejón. It implemented the first coal lab in Colombia and Ivan Dominguez Villamil, mineral services manager for Colombia and Venezuela, has tracked a continuous growth ever since. "We then opened our current lab in Barranquilla 15 years ago, and have been steadily expanding our capabilities at that lab to a full service offering. A few years ago, we opened a preparation lab for hard rock samples in Medellín. In addition, we also operate several on-site laboratories for mining companies here. Our mineral division represents around half of the revenues of the company. We are going through an amazing period of growth, growing around 35% a year," he said.

The company has clearly identified this as a major market and is currently investing around US$7 million this year in Colombia. "This will allow us to build two new mineral labs, including a complete gold metallurgical lab and another coal lab. We will also build a new environmental lab. We have around 50%-55% of the market share here. Our main strength is quality. Others may be faster, but everyone knows that our results are absolutely reliable. The clients that we work for understand that we do not take shortcuts," Ivan said.

The arrival of these labs is leading to laboratory equipment providers taking a closer interest in Colombia. FEI develops software and hardware and provides the application support for Automated Mineralogy Solutions using electron microscopy based technologies. "Colombia has a huge potential in the development and growth of its mining industry. There is increasing demand for our products and we have seen that our local presence is very well received and appreciated, and our laboratory and mobile solutions are unique, so that is an advantage," said Patricio Jaime, business development manager for natural resources, South America at FEI.

In Colombia, FEI has worked with local distributor BEL for more than ten years to provide the hardware support to their customers. Carlos Villamil, manager of the electron microscopy division at BEL, agrees that the market is in an interesting time: "There are lots of resources yet to be developed across the entire country. This is the time for mining to grow, and that's why we are very interested in being part of this industry," he said.

Surveying systems

As exploration campaigns become more sophisticated, the opportunity for other services have also been noticed. "When I arrived nobody was doing geophysics in Colombia and so I saw an opportunity. But, it's been a struggle for the past few years and now for the first time I am starting to have contracts lined up. This has allowed me to reinvest in additional equipment and build the business," said Albert Crutcher, managing director of KTTM Geophysics. "I hate to say that a boom has arrived, but yes, everybody seems to have money in the bank and everybody seems to be achieving reasonable results that aren't affecting their share price much."

MPX Geophysics was formed in Toronto in 2005 to provide airborne magnetic, airborne radiometrics and electromagnetics. It expanded into Mexico in 2007 and had its first project in Colombia later in 2007. "We spoke with a number of other companies like KTTM and Logan Drilling and realized there was a huge opportunity," explained Daniel McKinnon, president of MPX Geophysics.

Daniel McKinnon, president, MPX Geophysics.

Nelson Lopez, general manager of Kaeser Compresores Colombia

"In Colombia, they now have two L3 Long rangers, one jet ranger and a Cessna 206 fixed wing and are growing. Along with KTTM, on the ground geophysics, we can offer turnkey solutions. Our main focus is the airborne magnetics and radiomagnetics, given the type of geology that we're faced with," said McKinnon.

Like Logan Drilling, it took a while for McKinnon's Colombian business to take off. "There was very little work here in 2009 but since 2010, we have seen activity dramatically increase, especially since interest shifted from Ecuador to Colombia. Patience has paid off. "When we first starting flying in Colombia, the company was turning over between US$3 and US$5 million. We are now turning over around US$7 million and I expect that to remain steady or grow next year. It takes a little while to establish yourself here, but we haven't stopped flying since August 2010. With the second and third systems coming soon, this shows that we have much further potential. Our focus has shifted from Canada to Colombia because of the opportunity here," he said.

MPX owns and operates all of its own gear and charters helicopters and fixed wing aircraft. In each country where it operates, it sets-up joint ventures with local aircraft companies, in this case Helifly. McKinnon cites that as being key to their success here. "Being a foreigner in this country Helifly provides us with a lot more protection. They know the country and how it works. They have contacts in the military and the police and can advise on the security. Operations, logistics, safety and security are very complicated here."

Equipment needs

Many small scale mines across the country have been operated more or less manually. The recent appetite for mechanization has led to many opportunities for suppliers. One example is in the demand for compressed air. Kaeser Compressors are a market leader in Colombia and over the last three years 40% of their revenue has been from the mining and oil and gas industries. Nelson Lopez, general manager of Kaeser Compresores Colombia, sees further growth potential here as the sector is consistently growing and the technology in the industry has progressed a lot over the last several years. "We are the leaders in the market because our competitors' approach is different; we have a special tool that allows us to go to our customers' land and use tools to measure their specific requirements. We analyze the land and apply our knowledge to develop an air station according to our code to enable our clients to conserve energy and our clients trust us. Our secret is that we are not doing business, we are bringing technology into Colombia to allow our customers to improve their services by becoming more cost efficient and more competitive. Many mining companies buy from us and our brand is well known," he said.

Xylem Inc., a global leader in fluid technology, has been in Colombia for five years and currently has around 20 employees based in country. It is the market leader, with around a 20% market share. "The hope is to double that market share in the next three or four years. We have found very basic mining operations in many places. In the past, it has only been the major mining companies that have invested in technology. Now though, we see more small companies looking to invest in technology also. To those small companies, we can offer training, seminars and finance options. We can show them the right way of doing things and how they can improve the safety of their people and the productivity of their mine," said Alex Eduardo De La Ossa, managing director for Xylem Inc. Colombia.

International EPCMs pour in

Colombia's growing mining sector has attracted the attention of many of the world's leading engineering houses. Many globally recognized names are increasing their presence in the country.

SKM, the Australian engineering house, aims to export its expertise in bulk commodity projects, specifically related to coal, that it has developed from its Brisbane head office. "We are able to transfer that knowledge and use our technology in Colombia, which represents a big part of our expansion in Latin America," said Jorge Alberta Nemina, general manager of SKM Colombia.

"We want to expand in Colombia and we have high expectations for the country as its mining industry is increasing in sophistication and requires a lot of support from an environmental and infrastructure perspective," said Nemina.

One of SKM's largest projects is the expansion of Cerrejón's mine. The EPCM contract is a 50:50 joint venture between SKM and SNC-Lavalin. "It is not the first joint venture between both companies as we have worked together in Australia. SKM provides the engineering management and project controls management," said Nemina. "We are working with SKM in Cerrejón and have established an alliance with them on other projects around the world. We have a long relationship with them as they have experience which complements ours," said Fernando García, senior vice president of minerals and copper at SNC-Lavalin Chile.

SNC-Lavalin has been doing business in Latin America since the early seventies. It founded its first operation in Chile in 1994, through an acquisition, and that remained the only permanent presence in Latin America until 2007. At that time it began organic growth in Colombia and this year undertook an acquisition in Colombia that increased its presence in-country to more than 1,000 employees. García feels Colombia represents an enormous opportunity for companies like SNC-Lavalin. "It's an emerging market in terms of mining. Up to now, only coal and nickel have really been exploited. We have seen the oil and gas sector flourish in Colombia in the last few years. It looks like the government is very keen on promoting mining and so there is a political will to create a stable market," he said.

Ausenco is another international player that is growing in Colombia, but is focusing on an organic model. "Some of the other larger companies have come here through acquisitions whereas we have worked our way into the market slower and have grown organically and conservatively through a lot of collaborations. The key goal is to grow our office, while working with offices in Peru and Argentina," said Rafael Bernal, assistant general manager for Ausenco in Colombia.

To continue that growth, the company is closely following developments in the mining sector. "Mining is our main focus, although oil and gas have great potential and some of our other business lines have an interest in those markets. We need to find opportunities within mining, but also in other markets and we have plans to look at infrastructure in the future," said Bernal.

Other firms are setting up offices with the purpose not only being to serve domestic clients but also to provide engineers for international projects. "We work a lot on a work share basis internationally in order to spread the work around our global operations. This translates to better costs for our clients and the benefit of our global experience," said Juan Llovet, managing director for Worley Parsons Colombia. Llovet expects to be strongly established in Colombia within five years.

Mundo Minero For additional and up-to-date information on Colombia's mining industry, visit Colombia's periodical publication at http://mundominero.com.co