



# CHAMBRE DES MINES

FEDERATION DES ENTREPRISES DU CONGO

## DRC MINING INDUSTRY

### 2016 ANNUAL REPORT



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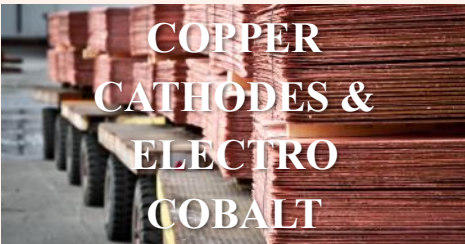
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For further information:  
John Nkono, [j.nkono@fec-rdc.com](mailto:j.nkono@fec-rdc.com)  
[www.chambredesminesrdc.com](http://www.chambredesminesrdc.com)

# EDITORIAL

## Develop the country's mining potential



2016 was another difficult year for the mining industry in general and the DRC's in particular. Mining companies were forced to make significant efforts to survive: cost-cutting by all of them and deferment of several developments and expansion projects.

The consensus of forecasts doing the rounds at the IMF, the World Bank and among investment bankers, suggests a rise in commodity prices. If this becomes true, the mining environment could once again become a source of optimism and ambition, and activity and development will hopefully resume in the coming year.

It goes without saying that the industry can only benefit from a appeased political situation and a recovery in the image of the country in respect of the business climate. These are the two most fervent wishes of the Chamber of Mines for the future.

The DRC's mining companies reiterate their commitment to invest more, to develop the country's mining potential, in order to create wealth for both the country and the investors. They consider that this is a condition for fostering the emergence of an active and competitive Congolese middle class by offering business opportunities to the country's citizens and a decent income to the local workforce.

The Chamber of Mines will work with determination towards these goals in 2017.

## Production Data

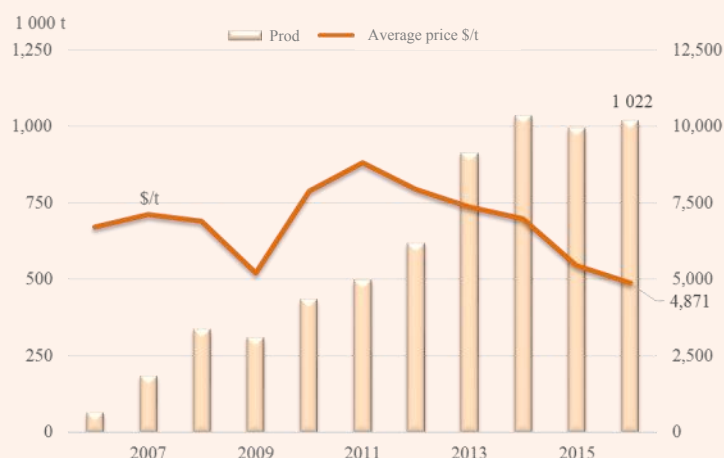
	Unity	Q3 2016	Oct 2016	Nov 2016	Dec 2016	2016 a	2015 a	2016 vs 2015
Copper	Tonne	765,764	85,136	80,995	89,739	1,021,634	995,805	2.6%
Cobalt	Tonne	47,249	5,777	5,134	5,847	64,007	69,328	-7.7%
Gold	Kg	15,979	2,223	2,223	2,223	22,648	25,806	-12.2%
Diamond	1000 cts	10,860	1,296	1,296	1,296	14,746	17,152	-14.0%
Zinc	Tonne	8,143	1,253	1,171	1,083	11,650	14,193	-17.9%
Cassiterite	Tonne	6,809	879	904	834	9,426	8,827	6.8%
Coltan	Tonne	804	25	21	19	869	992	-12.4%
Wolframite	Tonne	59	15	17	21	112	44	154.5%

The last column shows the annual trend compared to 2015  
a: actual



# COPPER

During 2016, DRC production of 1.02million tonnes exceeded forecast and was 2.6% ahead of 2015's, partly on the first full year's production of 110 000 tonnes from Sicomin, as well as new production from other, notably Chinese players including CNMC, OCMS, CMBC, Huachin, Luisha Mining and Kambove SAS. There are some 30 copper producers in the DRC of which 12 account for 80% of the total tonnage.



# COBALT

After a three-year upward trend in output, cobalt production of 64 000 tonnes was almost 8% lower than the record attained in 2015. Electrolytic cobalt production fell away because of the suspension in 2015 of operations at KCC. There are 15cobalt producers, of which six account for 80% of the total. This cobalt is a by-product of copper production and contributes significantly towards low unit operating costs.



# COPPER CATHODES & ELECTROLYTIC COBALT

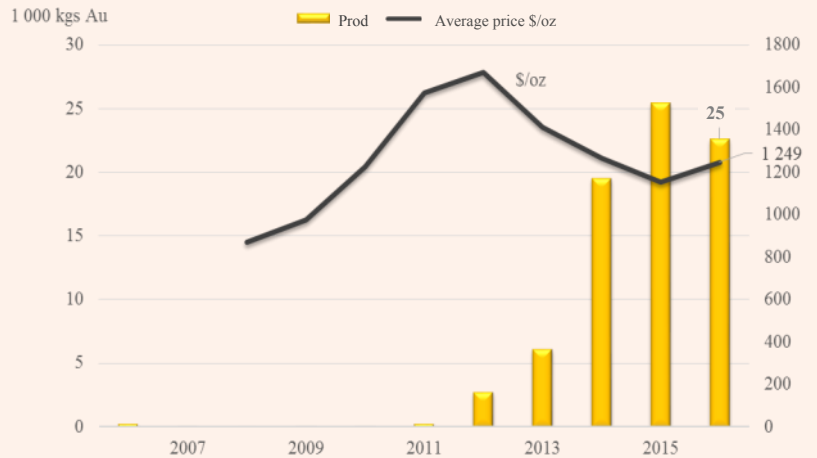
	Cu Cathodes	Cu Total	
2013	684 653	914 631	74,9%
2014	866 595	1 029 799	84,2%
2015	886 308	995 805	89,0%
2016	840 524	1 021 036	82,3%

	Co Electro	Co Total	
2013	2 828	58 357	4,8%
2014	2 935	66 678	4,5%
2015	3 124	69 328	4,5%
2016	134	63 789	0,21%

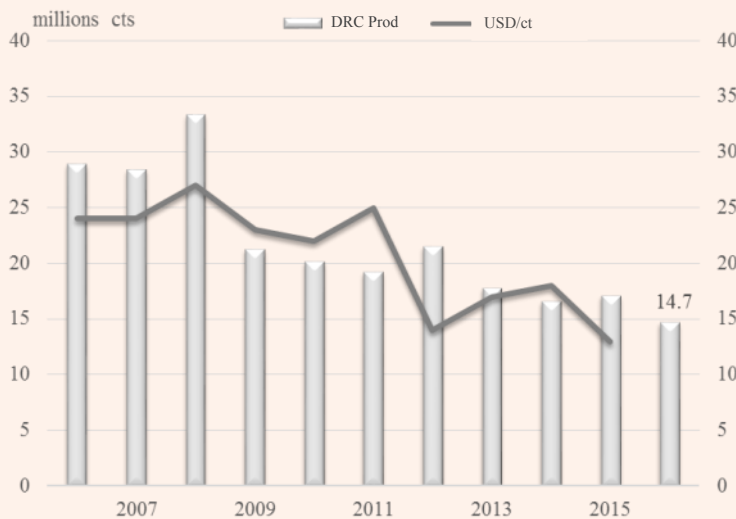
Production of electrolytic cobalt has fallen in 2016 following the ceasing of operations at KCC. Gecamines produces 134 t Co Electro

# GOLD

Gold production fell by 12% to 25.8 tonnes, interrupting a six-year upward trend. First-half production was impacted by the construction by one of the main operators of an underground mining section which is expected to reach full production in 2018. One major gold producer recently announced a successful recapitalisation partly aimed at optimising operations and enhancing its substantial gold mining assets in the DRC.



# DIAMONDS

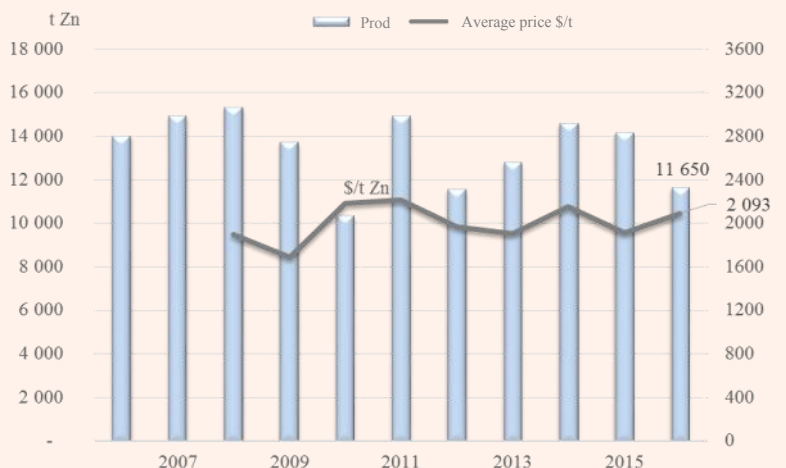


Production was projected to be some 3-million carats below 2015's 17.1-million carats, continuing the 10-year downtrend in output.



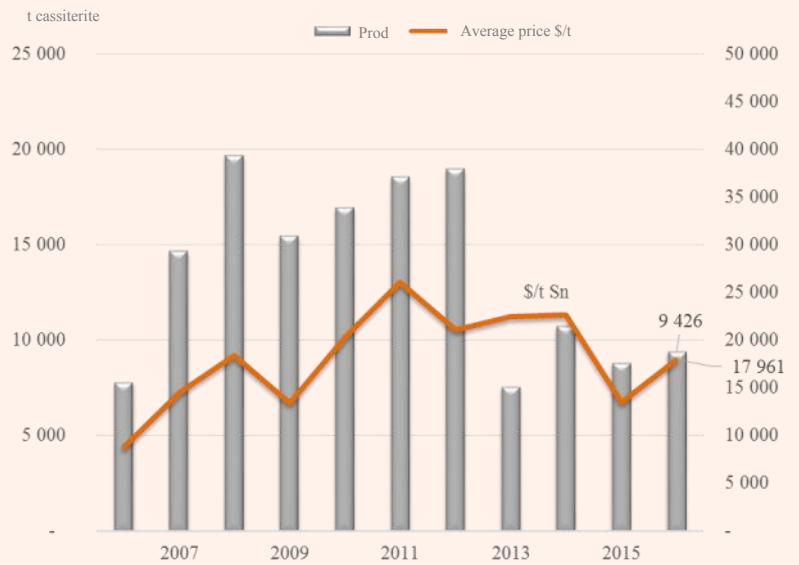
# ZINC

Zinc production was projected to be of the order 11 600 tonnes in 2016 – down by more than 3000t on the previous year. The decline is due partly due to the shutdown of facilities for maintenance activities between late in February and mid-May 2016.



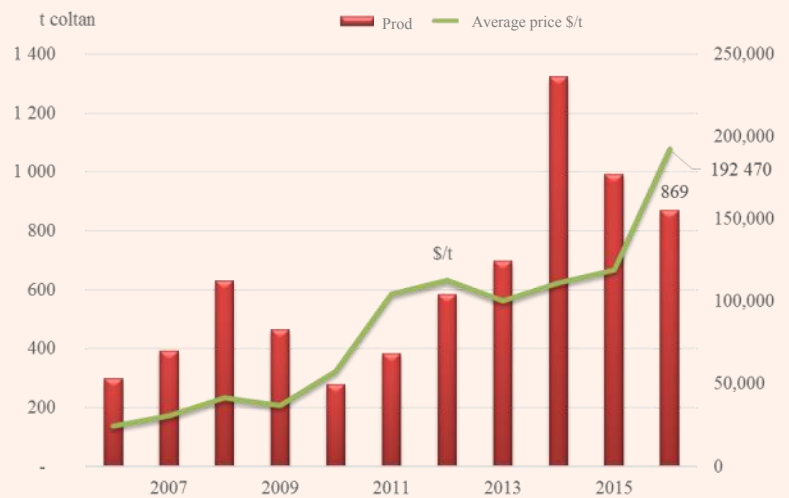
# TIN

Production of 9400 tonnes was 7% above 2015's figure on a stable tin price, the opening up of newly approved artisanal mining areas and better weather conditions which allowed artisanal mining to be sustained without interruption. The trend of the past four years is broadly higher, but barely half of the average produced from 2010 to 2014. A new industrial producer due to come on stream in 2019 should help to double the country's current output.

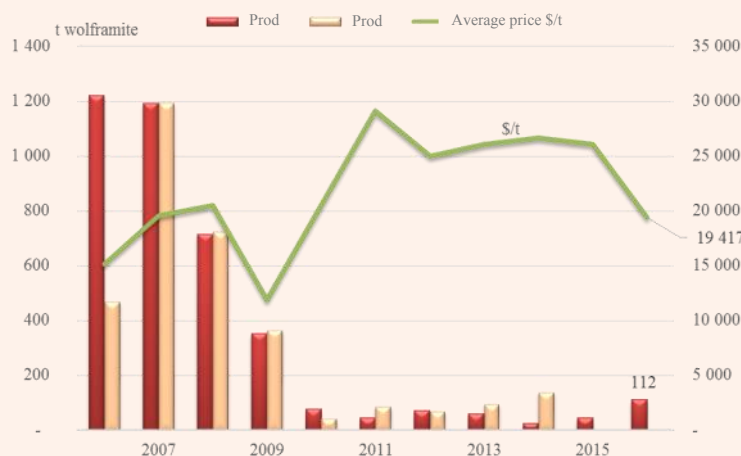


# COLTAN

For the second year in a row, output slipped by more than 12% to 869 tonnes for 2016 in spite of a sharp uptick in the price. Challenges to producers include security, logistics and both internal and external bureaucracy in terms of exports, certification and so on.



# TUNGSTEN



There was a 150% rise in output to 112 tonnes in 2016, marking a welcome uptick following several lean years.

# COMMODITY MARKET TRENDS

## Copper

From as low as \$4320/t in January 2016, the copper price began to rally in the last quarter, briefly topping \$6000/t on the back of lowered production estimates from leading miners. Political instability in the DRC itself is one of the contributing factors in respect of these concerns.

Copper output should increase from 2018 as Glencore brings back mothballed production in the DRC and Zambia, First Quantum's Cobre Panama project comes on line, and capacity at Escondida in Chile increases. However, the five-year downturn meant that many mining companies cut spending on exploration and there are consequently few new projects.

Investment banker Goldman Sachs has reversed its forecast from a surplus of 360,000t of copper in 2017 to a deficit of 180,000t. A range of average 2017 price estimates from other influential players runs from \$5200 to \$6800. The January 2017 price was \$5770 and firming. The fees charged by copper smelters and refiners have also surprisingly fallen – a sign that there is a shortage of material to be processed.



Copper demand from America's Trump-led infrastructure renewal is unlikely to be reflected in the physical market until 2018 but will be seen in speculative activity. Even a 10% rise in US demand for copper would mean less than an additional 200,000 tpa. Chinese demand will remain the most important factor in determining the copper price.

## Cobalt

Cobalt was a star performer, climbing from below \$22,000/t early in 2016 to above \$35,000 by January 2017. Investment analyst Trading Economics forecasts a price above \$37,500 a year's hence.

A shift in Chinese buying patterns became clear during 2016 when Chinese buyers increased their imports of cobalt intermediates (mainly cobalt hydroxides such as produced by the DRC's international producers) rather than cobalt concentrates. The cobalt content of hydroxide is around 25% whereas concentrates contain less than 10%.

In the first three quarters of 2016, total shipments of cobalt concentrates and ores to China fell by more than a third on 2015's figure to 129,462 tonnes, according to Chinese customs data, whereas 139,419 tonnes of cobalt intermediates were imported.

There are both push and pull factors behind the trend. The DRC nominally bans the export of raw ores and concentrates, although the moratorium continues because there is insufficient electrical power to process all ore and concentrate. Notwithstanding, Chinese buyers are pre-empting the ban by buying intermediates. The other factor is that China's refineries were mostly built to handle feedstock from shallow deposits. At deeper levels, only unoxidised sulphide material is mined; this requires additional processing. However, intermediates can be processed in the existing plants.

In addition, Chinese refineries are aware of the need to buy from ethical producers rather than from artisanal sources which are often the subject of human rights violations.

The cobalt market is expected to remain tight on the expectation of new demand for electric cars and rechargeable batteries, whereas production from the DRC – the world's largest – could be interrupted if political instability escalates.

## Gold



Gold had a volatile year, rising from a January 2016 low of \$1118/oz to a midyear peak of \$1366/oz, retreating to \$1129 at yearend then climbing to \$1215 by mid-January 2017 on the back of political fears about America's new presidency. The forecasts for 2017 are equally diverse: anywhere from \$1000 to \$1500. Historically, gold underperforms when stock markets strengthen and interest-rates rise, and the consensus is for these two latter conditions to prevail in 2017. Physical demand alone seldom dictates the price trend.

# COMMODITY MARKET TRENDS

## Zinc

Zinc almost doubled from its 12-month low to high, climbing from \$1480 to above \$2980 in November 2016. It had eased to around \$2700 by January 2017 and Trading Economics is expecting the price to be of the order \$2500 over the year. China accounts for half of global demand and the steady rise in zinc usage is expected to continue. Supply remains tight following the 2015 closure of the Lisheen and Century mines and production cuts by others. Reports are that China has ordered 26 smaller mines to be closed on the back of environmental breaches. The International Lead and Zinc Study group expects a 5.9% fall in zinc production to 13.20 million tonnes in 2017. The zinc price is being driven by physical demand rather than speculative activity.

## Tin

The North Kivu provincial government has established a committee to support TSX-listed Alphamin Resources' 80.25%-owned subsidiary Alphamin Bisie Mining to develop its Bisie tin project. The committee will offer technical and specialized services. Scheduled to begin full production in 2019, the mine should produce 10,000 tpa of tin in concentrate on average over the 12-year lifespan. This represents

about 3% of the world's current tin production and will double the DRC's current tin exports.

From barely \$13000/t in January 2016, tin rallied to above \$21000 by January 2017. Research company BMI Research has forecast tin prices at US\$19 500/t for 2017 – some \$2000 ahead of its earlier forecast. BMI also predicts that prices will increase gradually to average \$22 000/t by 2020 as the global tin market posts sustained market deficits and inventories dwindle.

The Chinese government's support of the economy in terms of public infrastructure spending and industrial development is buoying tin demand, while there are production concerns in Indonesia.

## Tungsten

After a weak 2016, a price recovery and increase in demand for tungsten are expected. Market leader Almonty Industries entered into a number of one-year fixed prices for tungsten concentrate at \$210 per metric tonne unit for 2017. Almonty predicts that the industry will move to a negotiated fixed price contract environment due to the continued limited availability of tungsten concentrate in the spot market and the ongoing illiquidity of the current pricing mechanisms.

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## SOUTH KIVU

### Gold Mining in the Ulundi River, Shabundu, South Kivu Province

The Ulundi River is extensively dredged for gold which is illegally taken out of the country and cannot be traced. In addition, the mined material contains thorium and uranium – both highly radioactive substances. The Prime Minister of the DRC suspended mining activity in March 2015, yet mining continues. The international agency Global Witness published a report in July 2016 accusing the Chinese company Kun Hou Mining of providing AK-47 assault rifles, Motorola walkie-talkies and money to local militiamen.

This was backed up by an article in Jeune Afrique in November which claimed it had photographic evidence of collabora-

tion between Kun Hou and armed groups in the area. A workshop, 'The challenges of securing artisanal mining areas in South Kivu', was held in Bukavu by IDAKI (Sustainable Investment in Kivu) in November 2016. The panels discussed the state of play on the ground, regulation, security and traceability of products. Confirmed reports were received of the murders of mineral traders, accidental deaths of artisanal miners and the arrest of current and former government officials dealing illegally.

In mid-December, Bukavu's gold processing plants were sealed by the Bukavu Public Prosecutor's Office at the request of the Province because of non-payment of provincial tax. The processors countered with complaints of harassment. Activities remained suspended at yearend.



# NORTH KIVU

North Kivu Province has ten processing operations: four 3T miners (including two state-owned), three exploration companies, two coloured stone mines and one gold mine.

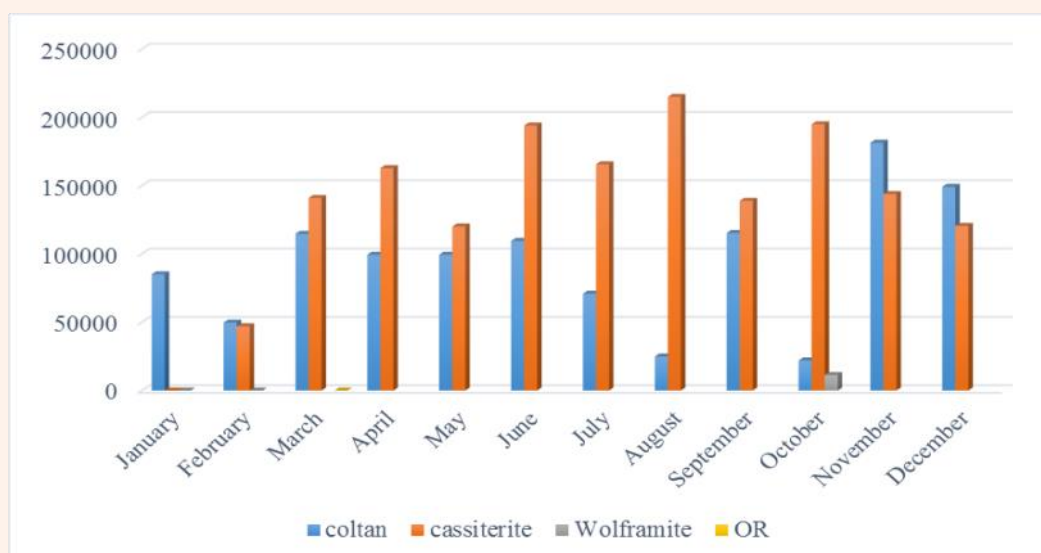
During 2016, product prices were not stable, but the uptrend trend remained for coltan and tungsten which peaked in

March and April respectively. Tin began the year weak, but an upturn towards yearend allowed the miners to prosper. The North Kivu Professional Miners' Committee validated by ministerial decree another 16 mining sites in 2016, and attended many workshops aimed at improving mining in general.

Table 1 : 2016 Exports

Month	COLTAN kg	CASSITERITE kg	WOLFRAMITE kg	Gold grams	Total Value in \$US
January	85.050	-	-	-	3.143.977
February	49.700	47.000	-	-	2.209.530
March	114.485	140.958	-	107	5.358.818
April	99.400	162.764	-	-	4.918.781
May	99.400	120.065	-	-	4.210.736
June	109.477	194.013	-	-	4.956.742
July	70.862	165.577	-	-	3.497.176
August	24.850	214.990	-	-	2.296.880
September	115.300	138.857	-	-	4.880.048
October	21.992	194.882	11.371	-	2.244.185
November	181.402	143.813	-	-	6.930.583
December	149.100	120.477	-	-	5.702.825
<b>TOTAL</b>	<b>1.121.018</b>	<b>1.643.395</b>	<b>11.371</b>	<b>107</b>	<b>50.350.281</b>

Table 2 : Exports by month in 2016



- Compared to 2015, exports of 3T minerals in general and cassiterite in particular increased significantly.
- Coltan and cassiterite remained the biggest exports on and require special attention, given the global demand.
- The increase in cassiterite exports is due partly to well-managed stock reduction, and partly to the increase in the number of verified green mining sites in North Kivu, - up from 30 in 2015 to 62 in 2016.
- After five years, the first export of tungsten was registered. Although low, it is indicative of buyer interest in this product.
- Difficulties remained in respect of handling artisanal production through the official marketing channel. It is hoped that with the implementation of I.T.O.A traceability, these difficulties will gradually be overcome.
- North Kivu hosts credible deposits of pyrochlore and rare earths which are not yet being mined. Support is required for the resumption of SOMIKIVU's exploration for pyrochlore, and potential buyers for rare earths are being sought.

Table 3 : Exports by market value

PRODUCT	QUANTITY in kg	VALUE in \$
COLTAN	1.121.018	39.292.135
CASSITERITE	1.643.395	10.952.972
WOLFRAMITE	11.371	101.316
GOLD	0,107	3.858
<b>TOTAL</b>		<b>50.350.281</b>



Although significant progress has been made in increasing the volume of cassiterite exports, it is still well short of 10,000tpa. Technical support to improve artisanal yields will be the focus for 2017. A new, industrial-scale tin-mining project should also increase tin exports.

North Kivu validated 32 new green sites, giving a total of 62 ; consequently, iTSCi traceability was extended to 12 new sites in Walikale and 20 in Masisi.

### Challenges

A) Security remains topical. There were armed incursions at two new green sites, resulting in the suspension of activities. Unfortunately, three processors had to explain to the UN expert group ; the matter is being followed by the Ministry of

Mines and by diplomats in New York. Resolution is important, because a negative outcome could alienate final consumers from North Kivu's exports.

B) The high cost of traceability increases the burden on exporters. The Ministry of Mines has undertaken to lower the cost of ITRI from March 2017, and to standardise it throughout the DRC and the Great Lakes region.

C) The lack of basic infrastructure and energy constrains the industrialisation and local processing of commercial mining products.

D) The low number of qualified and validated green sites in relation to the potential limits development.

E) Fluctuations in commodity prices on the international market.



# EXPLORATION TRENDS IN 2016



While the DRC remained one of Africa's best exploration destinations, there was a shift in exploration spending towards West African gold during 2016, according to SNL Metals & Mining's research encompassing data from 1,580 companies.

Global mining exploration budgets fell for the fourth straight year to \$6.89-billion – barely a third of the amount spent in 2012.

By region, Latin America received the most expenditure, followed by Russia/China (Rest of the World), and Canada displaced Africa into third place in 2016, with 14% of the global total compared to Africa's 13%.

SNL's report notes that the most significant African exploration destinations included Democratic Republic of Congo, South Africa, Burkina Faso, Mali and Tanzania. However, a continued focus on West Africa (Burkina Faso in particular) gave gold the largest allocation in 2016, with the metal's share of overall African budgets jumping to 51% from 43%

in 2015. Led by lower allocations for DRC, budgets for base metals were down 35%, lowering their share of overall budgets to 23% from 27% in 2015.

Globally, gold remained the top-explored commodity in 2016 at \$3.3-billion, accounting for 48% of the total spend. Base metals were second at \$2.2-billion or 31%. In dollar terms, the largest declines were among the base metals.

By region, Latin America commanded 28% of the global total, with six countries — Chile, Peru, Mexico, Brazil, Argentina and Colombia — together accounting for 92% of the region's total. Gold was most sought with 44%, while base metals' share slipped to 38%.

Rest of World had the second-largest budget, led by \$394 million and \$325 million for China and Russia respectively. China held the region's top position with 31% of total allocations. Gold was the region's top target for the second year in a row.

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## BUSINESS CLIMATE

Late repayment of VAT credits remains a burden on the industry. In mid-2016, the State – already experiencing lower tax-take on account of the downturn – owed \$700-million to miners and suspended the collection of VAT on imports for miners except on petroleum products. Many mines are obliged to generate their own power because of the energy deficit and are still building up large VAT credits which the State cannot repay.

The State banned imports of cement and iron bars in an attempt to protect local producers. However, this presents major obstacles in respect of new mining projects in the southern and eastern regions where there is no local cement or iron-bar production, and the country lacks the infrastructure required to distribute these inputs economically.

Unwarranted government inspections of mines and their offices have caused many problems over the years, yet they continue in spite of a three-month suspension from November 2016 to January 2017 authorised by the Minister of Fi-

nance. Investigations continue to be conducted, with multiple "forced invitations to inspect" from several State services. The DRC remains 184th out of 189 in the World Bank's « Doing Business 2016 » rankings. Major reform is essential.

The GUICE platform for the completion of customs clearance formalities was established in November 2016. While a desired one-stop shop in theory, its implementation remains incomplete because very few administrations, particularly those still using manual procedures, can actually participate. Moreover, because GUICE entails additional costs, it also contradicts article 234, paragraph 3, of the Mining Code, which limits royalties and fees for services rendered for export to 1% of the value.

Finally, the security situation deteriorated at the end of the year when an outbreak of violence led to the closure of the principal national road through Lubumbashi for several days.

# MINING CODE

Engagement on the mining code has been a quiet chapter as the chamber of mines was more on an information sharing duty to address queries on the subject. In that regards, a number of engagement meetings were initiated with various stakeholders including: government officials, local and international civil society organizations. The Chamber remains supportive of the decision by the government to suspend the review process and remains positive with regards to the expansion of the sector in the near future.

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## CORPORATE SOCIAL RESPONSIBILITY



Human rights abuses, good corporate governance, education and the division of the former province of Katanga into four new provinces gave rise to many challenges requiring the attention of the Chamber of Mines' Corporate Social Responsibility (CSR) committee in 2016. The CSR committee organized, attended and arranged events as follows:

- A networking conference for delegates of the four provinces formerly comprising Katanga.
- The Corporate Social Responsibility Reporting Survey, which ensures the implementation of the CSR guidelines on best practice.
- Establishment of the Provincial Monitoring Committee (SPC) for IDAK:- Lualaba PSC workshop; tripartite dialogue; working session with the Commissioner General of Planning; meeting with the Provincial Governor to seek a commitment from the SEM Provincial Governor to support IDAK activities financially; meeting between IDAK and the Governor of Lualaba, and the presentation of a contribution from the province for the operation of IDAK (dispute settlement).
- Kinshasa office: Participation in the evaluation meetings of the project "Good Governance in the Mining Sector" (follow-up committee); evaluation meeting for GIZ projects.
- Yaoundé office: Central Africa Regional Workshop on corporate social responsibility for organizations in the mining industry. Participation in meetings on the Voluntary Principles and visit to the children's prison with members of the 'Katanga Working Group' on the Voluntary Principles of Security and Human Rights.
- Discussions at the Kinshasa workshop on the Voluntary Principles of Security and Human Rights with representatives of the Embassies of Switzerland and Canada.
- Discussions on the action plans of the Chamber of Mines' CSR and Subcontracting committees.