EURASIAN RESOURCES GROUP

ERG

Our mission

- Be the best at what we do
- Navigate global change whilst holding true to our values
- Responsibly unlocking the potential of the Earth and its people, ensure the prosperity of those who rely on us

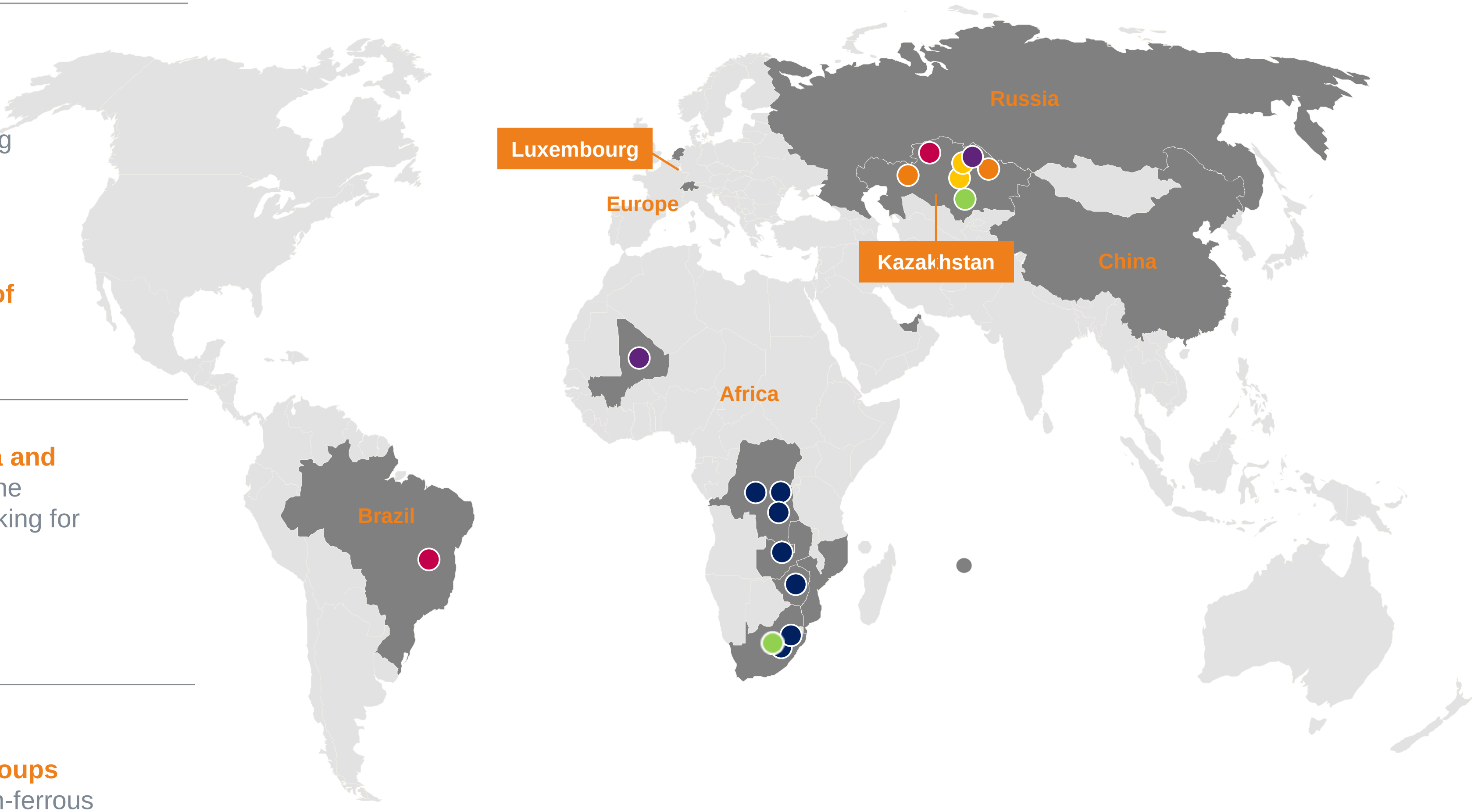
July 2021

ERG Today: International Metals and Mining Major with a Diversified Product Portfolio and Fully Integrated Production Cycle

- **Eurasian Resources Group (ERG)** is a leading diversified natural resources group with integrated mining, processing, energy, logistics, and marketing operations
- **Headquartered in the Grand Duchy of Luxembourg**, ERG's main shareholder **(40% stake)** is the **Government of the Republic of Kazakhstan**

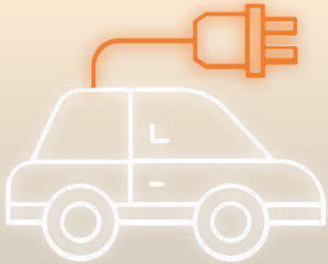
- Operating in **15 countries in Asia, Europe, Africa and Latin America** – one of the biggest employers in the global industry. **More than 75,000 people** are working for the Group
- **Supplying products to over 40 countries**

- **One of the most diversified mining & metals groups with a balanced product portfolio** in ferrous, non-ferrous and energy
- **Cost competitiveness:** global cost competitive industry leader of **high-carbon ferrochrome** production; enjoys its highly-competitive first-quartile position on the global **aluminium** cost curve; one of the world's most cost-efficient **copper and cobalt** producers



- Ferroalloys
- Alumina and Aluminum
- Other Non-ferrous (copper and cobalt – core business)
- Iron ore
- Energy
- Logistics

ERG: Materials of the Future for Some of the Most Innovative Products



Electric vehicles

Clean sources of energy

Infrastructure development

In the top 3 producers of ethically produced cobalt with the world's 2nd largest standalone production facility **(Metalkol RTR)**

27
Co
58,993

Cobalt

KAS: the only supplier of high-grade primary aluminium in Kazakhstan and a major operator in the CIS region

13
Al
26,982

Aluminium

Kazchrome: the world's largest high-carbon ferrochrome producer by chrome content

26
FeCr
55. 845

Ferrochrome

ERG Africa: an established and growing producer of copper

29
Cu
63.546

Copper

SSGPO: one of the largest suppliers of iron ore products in Eurasia

26
Fe
55,845

Iron ore

> Three Core Regions for Production and Business Development Operations

Majority of production assets are located in **Kazakhstan** where ERG represents **one third of the metals & mining industry**. It is **one of the largest electricity producers (17% share of the country's market)** with 2 550 MW of installed electric power capacity at its main plant in Aksu servicing Kazakhstan and Russia. ERG is also **a large railway operator in Central Asia** with capacity of over 13 k units of railroad park and transportation of 58 mln tonnes per annum.

A strategic investor in **Africa** with copper and cobalt production facilities in the **Democratic Republic of the Congo and Republic of Zambia. This includes Metalkol RTR, the world's second largest cobalt producer, and Frontier, a large scale producer of high quality copper concentrate.** ERG also holds a portfolio of development-stage assets in South Africa, Mozambique, Zimbabwe, and Mali.

In **Brazil**, ERG is developing an integrated mining and logistics project that comprises the **Pedra de Ferro iron ore mine, the Porto Sul multi-use deep water port, and Stage 1 of the FIOL[1] transcontinental railway.** Pedra de Ferro has a full target capacity of 18 mtpa of high-quality iron ore and started commercial operations in January 2021. The Group recently **won an auction to complete and operate the first stretch of the FIOL railway.**

1. The West-East Integration Railway

International Partnerships

The Global Battery Alliance (GBA) where ERG is a Founding Member and whose CEO is Co-Chair

- ERG was **one of the first organisations to seek collaborative solutions for the supply chain of the global li-ion batteries sector**
- It **supported the World Economic Forum** to mobilise the Global Battery Alliance, a **public-private multi-stakeholder collaboration**
- The GBA was **officially launched in 2017 in New York and includes many international organisations including the World Bank Group, UNICEF, OECD, UNEP, African Development Bank, leading automotive OEMs, mining and metals majors and tech giants.**

Vision - Develop an inclusive, innovative and sustainable battery value chain to power the Fourth Industrial Revolution

- ✓ **In 2019** the GBA published, jointly **with McKinsey,** a landmark **2030 Vision report** outlining a sustainable and circular battery value chain - a major driver to meet the **Paris Agreement targets**.
- ✓ **At the WEF jubilee 50th annual meeting in Davos, 42 members of the Alliance** have endorsed **10 guiding principles** to foster the creation of a sustainable battery value chain. The 42 signatories included **businesses representing annual revenue of close to a trillion US$, along with international organisations and global NGOs.**
- ✓ The GBA also launched the **Battery Passport** concept. The Passport will work as a type of **quality seal on a global digital lifecycle platform for sharing value chain data of batteries. The Battery Passport demo** is closed to its launch.

GLOBAL BATTERY ALLIANCE
BATTERIES POWERING SUSTAINABLE DEVELOPMENT

Corporate members

ERG, BASF We create chemistry, TESLA, VOLVO, AngloAmerican, GLENCORE, enel, TRAFIGURA

Governments, International Organisations and NGOs

OECD, WORLD BANK GROUP, GOOD SHEPHERD INTERNATIONAL FOUNDATION, pact building local promise., CCCMC, UNEP

> Key International Memberships, Partnerships and Frameworks…

WE SUPPORT
UN GLOBAL COMPACT

WORLD ECONOMIC FORUM

GLOBAL BATTERY ALLIANCE
BATTERIES POWERING SUSTAINABLE DEVELOPMENT

icda

IBRAM
INSTITUTO BRASILEIRO DE MINERAÇÃO

Cobalt Institute

AIFC Astana International Financial Centre

Foreign Investors’ Council
chaired by the President
of the Republic of Kazakhstan

ҚР ҰКП НПП РК
АТАМЕКЕН
АГРОБІЛІКТІЛІК ОРТАЛЫҒЫ • ЦЕНТР АГРОКОМПЕТЕНЦИЙ

GOOD SHEPHERD INTERNATIONAL FOUNDATION ONLUS

pact building local promise.

А Г М П

…And the Most Recent Multi-Stakeholder Collaborations

The World Economic Forum's Mining and Metals Blockchain Initiative

<u>The first industry-level blockchain consortium</u>

- Released a unique proof of concept in December 2020 to trace emissions across the value chain using distributed ledger technology

Re | Source

- A solution to trace responsibly produced cobalt from the mine to the electric car.
- A unique industry partnership between EV supply chain majors
- Founded by CMOC, ERG and Glencore

Fund for the Prevention of Child Labour in Mining Communities – A Global Battery Alliance Collaboration

<u>Administered and programmed by UNICEF</u>

- Addressing the root causes of child labour
- Supporting the UN SDGs.
- With initial target to raise US$21 mln over a three-year period.

<u>ERG is one of the initial funders</u>

'Terra Carta' under leadership of HRH The Prince of Wales and the Sustainable Markets Initiative

<u>Provides a roadmap to 2030 moving towards a sustainable future</u>

- Rooted in the transformative power of Nature and the energies, resources and innovation of the private sector.

<u>ERG was among the first 25 world-leading organisations to support the Initiative</u>

8

Key Assets

Operational overview

Kazchrome

The world's largest high-carbon ferrochrome producer by chrome content

- **Facility description:** Chrome mining and processing facilities in Khromtau, ferroalloy plants in the cities of Aktobe and Aksu, manganese mining and processing facilities in Karaganda region
- **Products:** High carbon ferrochrome and other ferroalloys, refined ferroalloys (medium and low carbon), ferrosilicochrome, ferrosilicomanganese, ferrosilicium
- **Capacities:**
  - Donskoy GOK – 5.64 mtpa of chrome ore
  - Aktobe ferroalloy plant – 0.63 mtpa of ferroalloys
  - Aksu ferroalloy plant – 1.12 mtpa of ferroalloys
  - Kazmarganets mining enterprise – 0.48 mtpa of manganese ore and 0.16 mtpa of manganese concentrate
- **Key markets:** Japan, China, Korea and Europe
- **Key investment project:** construction of the "10 years of Independence of Kazakhstan" underground mine

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Operational overview

Metalkol Roan Tailings Reclamation (Metalkol RTR)

A facility reprocessing cobalt and copper tailings from historical operations in the area

Ramping up Phase 2 expansion stage, second largest standalone cobalt producer (2020), one of the largest suppliers of cobalt to China

Facility description: a hydrometallurgical plant reprocessing cobalt and copper tailings previously deposited in the Kingamyambo Tailings Dam and Musonoi River Valley. The two tailings deposits host ~ 119.4mt of resources at average grade of 0.31% cobalt and 1.46% copper.

Products: cobalt hydroxide and copper cathode

Capacity (Phase 2): 20ktpa cobalt and 105 ktpa copper

Ownership: 95% ERG

Sustainability: launched Clean Cobalt Framework in 2018, independently assured by PwC, underscoring commitment to the production and sourcing of clean cobalt in compliance with OECD Due Diligence Guidance and with zero tolerance for child labour in the cobalt supply chain. Transparency and traceability is also being achieved through the application of blockchain technology.

Location: 20km west of Kolwezi, Lualaba province in the Democratic Republic of the Congo

Operational overview

Kazakhstan Aluminium Smelter (KAS)

The only producer of high-grade primary aluminium in Kazakhstan

- **Founded in 2007**
- **Facility description:** processing and smelting plant
- **Capacity:** more than 250 ktpa
- **Key Markets:** Southern Europe, Turkey, Kazakhstan, Russia and other CIS countries
- **Full integration with ‘Aluminium of Kazakhstan’**
- **Location:** Pavlodar

Aluminium of Kazakhstan (AoK)

The only producer of alumina in Kazakhstan

- **Capacity:** more than 1.5 mtpa
- **Location:** Pavlodar plus open pit mining of bauxites in the Kostanai region (KBRU and TBRU mines)
- **Key Markets:** Kazakhstan (KAS), Russia, China

Operational overview

SSGPO

Operations comprise mining and processing to produce iron ore concentrate and pellets

- **Founded in 1954**
- **Facility description:** Open pit mines – Kachar, Sarbai, Kurzhunkol, underground mining
in Sokolovski mine, processing plant
- **Products:** iron ore concentrate, pellets
- **Capacity:** 40 mtpa of iron ore, 8 mtpa of concentrate, 8 mtpa of pellets
- **Key markets:** Kazakhstan, Russia and China
- **Key investment project:** the Smart Mine initiative at Kacharshy open pit iron ore mine aims to improve productivity by 40%: successfully implemented and being rolled out at ERG's other iron ore mining sites and across other production divisions
- **Location:** Rudnyi, Kostanai region

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Operational overview

Frontier Mine

Frontier mine comprises an open pit copper mine and processing facilities to produce copper sulphide concentrate

Facility description: 10mt of high grade copper sulphide ore are treated annually through a conventional flotation circuit to produce high quality copper concentrate with high sulphur and iron ore content and low impurities. Frontier hosts mineral resources of 163.5Mt at 1% copper grades.

Products: Copper sulphide concentrate

Capacity: ~100ktpa copper contained in concentrate

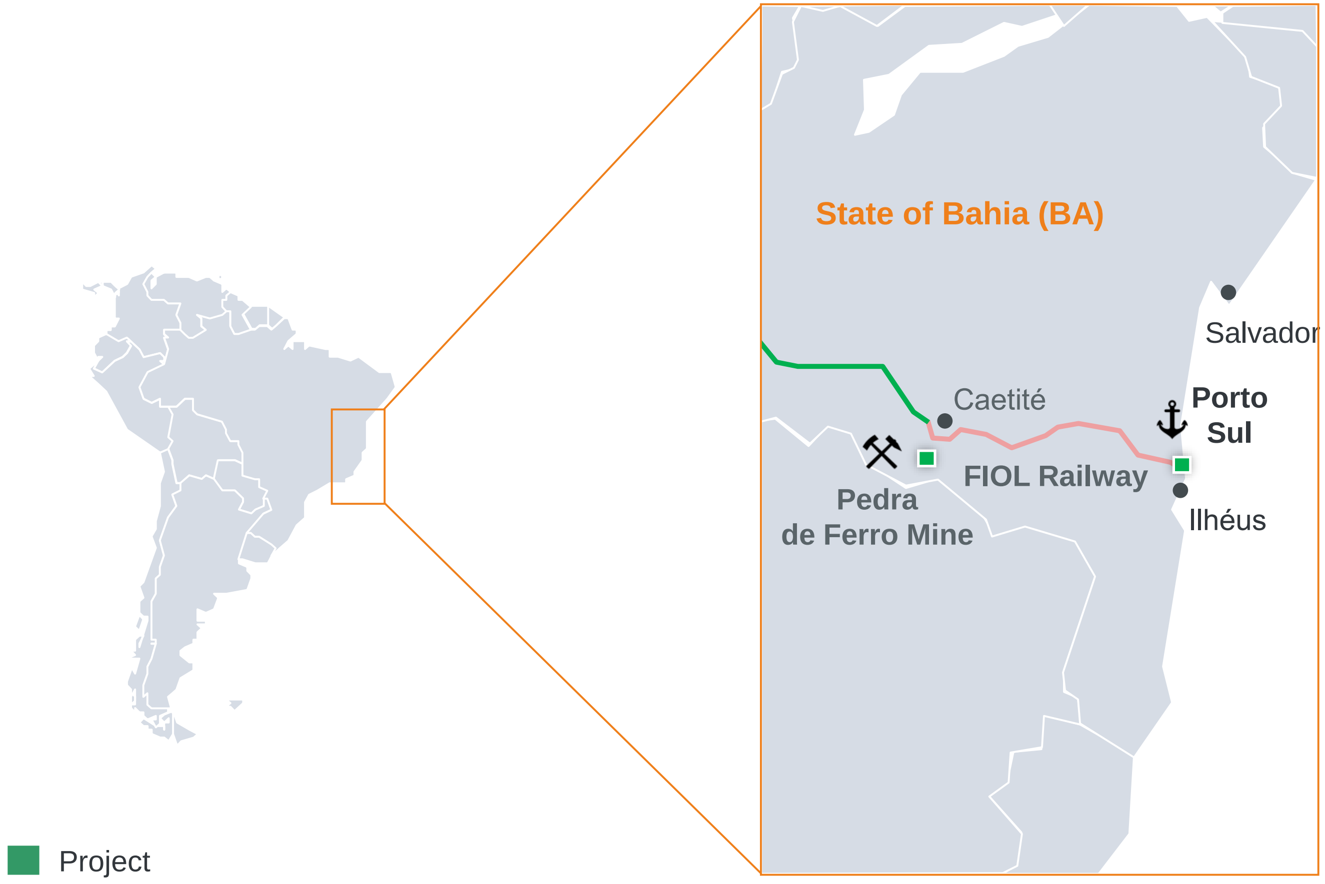
Ownership: 95% ERG

Key Markets: domestic and export markets

Location: Kishiba in the territory of Sakania in the Haut-Katanga Province, Democratic Republic of the Congo. The mine is within 2km of the Zambian border.

Iron Ore | BAMIN - Integrated Logistics and High Quality, Low Impurity Iron Ore Mining Project in Brazil

- A **large, fully integrated iron ore mine, deep-water port and transcontinental railway project**
- BAMIN is **making the State of Bahia the third largest iron ore producing region in Brazil**



Pedra de Ferro Mine near Caetité

- **Commercial operations commenced in Jan 2021** with initial production capacity of **2 mtpa**
- 535 Mt reserves at 42.4% Fe
- Target full capacity of 18 mtpa and total mine life of 30 years
- High quality products: direct shipping ore (DSO) and direct reduction pellet feed (DRPF)
- Anchor shipper on the FIOL railway and Porto Sul

Porto Sul

- **Multi-use deep-water port** near Ilhéus, capable of handling Capesize vessels up to 220,000 dwt
- Sole import/export point for the new West-East Integration (FIOL) Railway)
- Initial use for dry bulks (iron ore, soy, grain and fertilizer)
- **Design capacity of 26 mtpa, expandable to >40 mtpa**

Operational overview

Eurasian Energy Corporation (EEC)

One of the largest electricity producers in Kazakhstan

- **Founded in 1996**
- **Facility description:** extraction of thermal coal, production of electricity
- **Capacity:** 20 mtpa of coal, 2,550 MW of installed electric power capacity
- **Key Markets:** Kazakhstan, Russia
- **Locations:** Vostochny open pit coal mine (Pavlodar region), Aksu power plant (Pavlodar region)

Shubarkol Komir

Coal and semi-coke producer

- **Founded in 1985**
- **Facility description:** extraction of thermal coal, production of semi coking coal
- **Capacity:** 10,3 mtpa of coal, 240 ktpa of semi-coke
- **Key Markets:** Kazakhstan, Russia
- **Location:** Shubarkol, Karaganda region

Sustainable Development

ERG carries out a comprehensive digital transformation program in Kazakhstan

In 2019, **ERG finalised our Group-level Digital Strategy** which places particular focus on the development of key employee capabilities (including with respect to robotisation and big data), ensuring cost-effective digital investment decisions and the building of adaptive/modular digital architectures to support our broader business and production processes.

ERG is working closely with the Astana International Financial Center (AIFC) to establish an AIFC-based **Fourth Industrial Revolution Center** in collaboration with the World Economic Forum.

ERG is a partner in the Digital Ventures fund. The Fund engages and supports innovative start-ups to develop an ever-growing range of new solutions that can benefit both ERG and a wide range of stakeholders. Together, the services delivered by the Fund's portfolio of companies form the **Aitu Digital Ecosystem.**

ERG, CMOC, Glencore and Umicore are piloting RelSource, a solution to trace responsibly produced cobalt from the mine to the electric car. Tested in real operating conditions, from upstream cobalt production facilities in the Democratic Republic of the Congo (DRC) to downstream electric vehicle production sites, the pilot will run until the end of 2021, with the roll-out of the final solution expected in 2022.

ERG is working with the World Economic Forum's Mining Metals and Blockchain Initiative, alongside companies like **Glencore and Anglo American,** to apply **blockchain technology** to promote **value chain transparency, connectivity and responsible practices.**

ERG received the SAP Value Award 2018 in the Digital Transformation Leader category for its project called "Development of a SAP ERP platform-based ERP system for the ERG Group companies"

The group founded the **Industrial Data Laboratory** at the international hub of startups called the **Astana Hub.** This laboratory provides startups with access to current industrial data of mining and smelting companies, allowing them to use it to develop IT solutions for the companies in the industry.

Student Entrepreneurship Ecosystem Programme

- A **multi-year initiative** to **develop entrepreneurial skills** throughout our operating regions
- **Joint implementation with the Kazakhstan Tel-Aviv University Friends Association and the Almaty Management University**
- **5000+ students participated** across Kazakhstan, **hundreds of business ideas** were given and dozens been implemented
- **Nine Kazakhstan universities and a centre for higher education**

Establishment of STEM Laboratories

- Innovative institutions to increase **access to modern teaching methods and educational technologies for school children** in remote operating regions in **Kazakhstan**
- The programme is being implemented **in partnership with local educational authorities,** including the Education Department of Astana, and **educational charity Bolashak Engineering**
- The **first Laboratory opened in February 2018** at a secondary school near Nur-Sultan

School of Active Citizens

- Launched in **2021**
- Volunteering initiatives to **improve the local environment** in the areas of residence
- **Courses available to ERG's employees and local residents to also improve their financial literacy**

Sustainable Development | Some of the Key Success Stories (2)

ERG

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Partnership with the Good Shepherd International Foundation (GSIF) to support the Bon Pasteur Alternative Livelihood programme*

- A funding agreement to support the programme at **Kolwezi in Lualaba Province.**
- The programme is aiming to **help break the cycle of violence and abuse against children and women in artisanal mining communities** and improve their living conditions.
- **Agreement commenced in 2017.**
- **More than 3,000 children** have already been **protected** from the worst forms of child labour.

Launch of an inaugural Bon Pasteur child protection centre in Kolwezi*

- **Has capacity to take about 1000 children out of mining and provide free education, nutrition and other services.**
- **Part of ERG's partnership with the GSIF.**

Support for "Children out of Mining-Northern Kolwezi", an initiative carried out by international development organisation Pact

- The initiative is aimed to **raise awareness and strengthen child protection.**
- Implementation of a range of **tailored capacity-building interventions** focused on tackling the risks faced by children in artisanal and small-scale mining (ASM) in the DRC.

** Photos courtesy of the Good Shepherd International Foundation/Nyokabi Kahura*

ERG's Clean Cobalt Framework

We are committed to the responsible production of cobalt and have developed the ERG Clean Cobalt Framework, **launched at Metalkol RTR in 2018**

Our goal is to ensure that our cobalt is produced responsibly and to address risks associated with human rights violations and unethical business practices, in particular child labour.

We also seek to harness opportunities to drive sustainability along the cobalt value chain, especially in partnership with others.

The ERG Clean Cobalt Framework aims to drive positive outcomes for local communities in the DRC as well as wider global society by pursuing **seven commitments**:

- Compliance with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals
- Our cobalt is free of child labour
- Our cobalt is traceable
- Our cobalt does not come from artisanal and small-scale mining (ASM)
- We restore the environment
- We collaborate to support sustainable community development
- We support our industry towards more sustainable cobalt value chains

CLEAN COBALT

Assurance of the performance report on the implementation of the ERG Clean Cobalt Framework **at Metalkol by PwC.**

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