



ER KANG TANZANIA COMPANY LIMITED

MINERAL PROCESSING FACTORY

Executive Summary

ER KANG Tanzania Company Limited is establishing a modern gold ore processing located in Matundasi, Chunya District, Mbeya Region, Tanzania. The facility will process gold-bearing ore sourced through licensed mining operations, third-party supply agreements, and its own exploration or extraction rights. The plant will produce high-purity doré bars through a fully integrated circuit combining crushing, milling, gravity separation, leaching, adsorption, electrowinning, and refining processes.

Strategic Rationale:

The Matundasi area lies within the Lupa Goldfield belt, one of Tanzania's most productive gold zones with established geological data, road access, and proximity to multiple proven deposits. By locating its operations here, ER KANG leverages existing mineral infrastructure while contributing to the Government of Tanzania's agenda of local value addition and beneficiation. The project supports import substitution, export growth, and the creation of technical employment in the southern highlands.

Company Overview

Legal Status

Private Limited Liability Company incorporated under the Companies Act, Cap 212 of Tanzania.

Core Business

Development and operation of an industrial-scale gold ore processing and beneficiation plant, designed to produce high-purity doré bars through advanced metallurgical technologies—crushing, milling, gravity separation, leaching, adsorption, electrowinning, and refining.

Vision

To become a leading and sustainable mineral-processing enterprise in Tanzania, known for operational efficiency, regulatory compliance, and environmental responsibility.

Mission

To enhance the value of Tanzania's mineral resources through modern processing, technology transfer, and local capacity building that aligns with the national beneficiation and industrialisation agenda.

Strengths & Advantages

- **Strategic Location:** Matundasi (Chunya) lies within the Lupa Gold Belt, a proven gold-rich region with road access and mining infrastructure.
- **Advanced Technology:** Plant designed for ~200 t/day throughput with modular expansion to 300 t/day.
- **Experienced Management:** Multidisciplinary team combining technical, financial, and operational expertise.
- **ESG Commitment:** Comprehensive environmental management, tailings control, and community engagement frameworks.
- **Policy Alignment:** Fully compliant with Tanzania's local content and in-country processing policies.

Project Description

ER KANG Tanzania Company Limited is developing a modern gold ore processing in Matundasi, Chunya. The project will establish an integrated industrial plant capable of processing gold-bearing ore into high-purity doré bars. Designed for both efficiency and sustainability, the facility will use advanced metallurgical technologies to achieve recoveries exceeding 85 percent while adhering to Tanzania's mining and environmental standards.

Component	Description
Plant Capacity	~200 tonnes per day (≈ 66,000 t/year), expandable to 300 t/day
Processing Method	Crushing → Grinding → Gravity concentration → CIL/CIP leaching → Electrowinning → Smelting (doré production)
Product Output	Doré gold bars refined to international purity standards
Recovery Efficiency	~88 % average recovery, ore-dependent
Land Area	Approx. 6–8 hectares covering the process plant, tailings facility, workshops, and utilities
Total Investment	USD 10 million (Plant US\$ 5 M + Civil Works US\$ 2 M + Working Capital US\$ 3 M)**
Employment	100 – 140 direct jobs plus indirect opportunities in logistics, construction, and services

Project Objectives and Expected Outcomes

The ER KANG Gold Processing Project is designed to position Tanzania as a regional leader in responsible mineral beneficiation. The facility at Matundasi, Chunya District, will combine advanced technology, environmental stewardship, and local participation to create long-term value. The project's objectives and outcomes reflect ER KANG's commitment to operational excellence, sustainability, and alignment with national industrialization and mining policies.

Objectives

- Establish an industrial-scale gold processing hub in Southern Tanzania.
- Apply modern beneficiation technology to maximise recovery and reduce environmental impact.
- Support local content through employment, training, and supplier development.
- Comply fully with Tanzanian Mining, Environmental, and Local Content Regulations.
- Contribute to national foreign-exchange earnings through export of refined gold.

Expected Outcomes:

- Production of high-quality doré for domestic refining or export.
- Creation of skilled jobs and industrial linkages in Mbeya Region.
- Demonstration of best-practice mineral processing aligned with Tanzania's beneficiation and sustainability policies.
- Establishment of ER KANG Tanzania as a regional benchmark for modern gold-processing operations.

Facility Components

The ER KANG Gold Ore Processing Plant at Matundasi, Chunya is designed as a fully integrated industrial complex combining processing, laboratory, administrative, and environmental management systems. The layout ensures efficient material flow, worker safety, and environmental compliance while allowing future expansion.

Process Plant Components

Component	Description
Ore Receiving & Crushing Section	Equipped with a primary jaw crusher, secondary cone crusher, and screening system.
Grinding Circuit	Ball mill system operating in closed circuit with hydrocyclones to achieve a target grind size (P80 \approx 75 μ m).
Gravity Concentration Unit	Centrifugal concentrators
Leaching & Adsorption (CIL/CIP)	A cascade of mechanically agitated leach and adsorption tanks.
Elution & Electrowinning System	Desorption of gold from loaded carbon using heat and caustic solution.
Smelting & Gold Room	Secure, access-controlled area where precipitated gold is dried, fluxed, and melted to produce high-purity doré bars.
Carbon Handling	Carbon regeneration kiln, acid wash station, and storage tanks to maintain carbon activity and optimise recovery.
Detoxification Unit	SO ₂ /air or peroxide detox circuit to neutralise residual cyanide before tailings discharge, ensuring compliance with environmental limits.

Process Flow Description

1. Feed Intake & Crushing

Gold-bearing ore is delivered by contracted haulers and weighed at the plant's digital weighbridge.

The ore passes through a primary jaw crusher and secondary cone crusher, reducing it to <10 mm size for milling.

2. Grinding & Classification

Crushed ore enters the ball mill circuit for fine grinding.

A cyclone classifier separates fine pulp for gravity concentration and leaching, while coarser material is recirculated.

4. Leaching and Adsorption (CIL/CIP)

Remaining ore slurry undergoes cyanide leaching, followed by activated carbon adsorption in a series of tanks.

Loaded carbon is stripped using the elution system, with gold recovered through electrowinning and smelting into doré bars.

3. Gravity Concentration

Shaking tables and centrifugal concentrators recover free gold prior to leaching.

Concentrates are directed to the gold room for direct smelting, reducing cyanide consumption.

5. Tailings Disposal

Detoxified tailings are pumped to a lined Tailings Storage Facility (TSF) with seepage control and monitoring wells.

Excess water is recycled back to the plant, ensuring efficient resource use.

6. Product Refining & Dispatch

Doré bars are refined to ~92–95% purity and dispatched under secured custody for further refining or export through licensed channels.

Target Market

The ER KANG Gold Ore Processing Plant is positioned to serve the industrial and regional gold value chain in southern Tanzania and neighbouring mining zones. The facility's target market includes licensed mining operations, exploration companies transitioning to production, and traders or joint-venture partners seeking a reliable, compliant processing solution for gold-bearing ores and concentrates.

Primary Market Segments

Segment	Description	Market Potential
Medium- and Large-Scale Mining Companies	Companies holding primary mining licences or prospecting licences in Mbeya, Chunya, Songwe, and nearby regions that lack their own processing plants.	High – steady feed supply and long-term contracts.
Exploration & Development Firms	Early-stage gold developers who produce bulk samples or pilot production during resource definition. They require temporary processing capacity without building their own facilities.	Moderate – short-term but recurring demand.
Regional Traders & Strategic Offtakers	Licensed mineral traders and export houses that aggregate ore or concentrates for processing. They seek certified output, traceable supply chains, and secure	High – supports steady plant utilisation.
Institutional & Industrial Buyers	Government-approved gold buying centres and refineries that require doré sourced from compliant Tanzanian processors	High – aligned with the Central Bank and Ministry of Minerals policies.

Investment Plan

The ER KANG Gold Ore Processing Project at Matundasi, Chunya District, is a USD 10 million industrial investment designed to establish a modern, fully integrated gold-processing facility. The investment will be implemented in structured phases—covering design, construction, commissioning, and production ramp-up—to ensure technical efficiency, cost control, and early revenue generation.

Investment Structure

Category	Estimated Cost (USD)	Description
Plant & Equipment	5,000,000	Crushing, milling, gravity separation, CIL/CIP tanks, elution, electrowinning, gold room, pumps, laboratory, and automation systems.
Civil Works & Infrastructure	2,000,000	Site preparation, concrete foundations, buildings, TSF starter dam, water ponds, drainage, access roads, and utilities (power & water).
Working Capital & Ramp-Up	3,000,000	Feedstock acquisition, reagents, spares, commissioning expenses, initial payroll, and operational reserves.
Total Initial Investment	10,000,000	To be funded through equity and debt financing.

Investment Phases

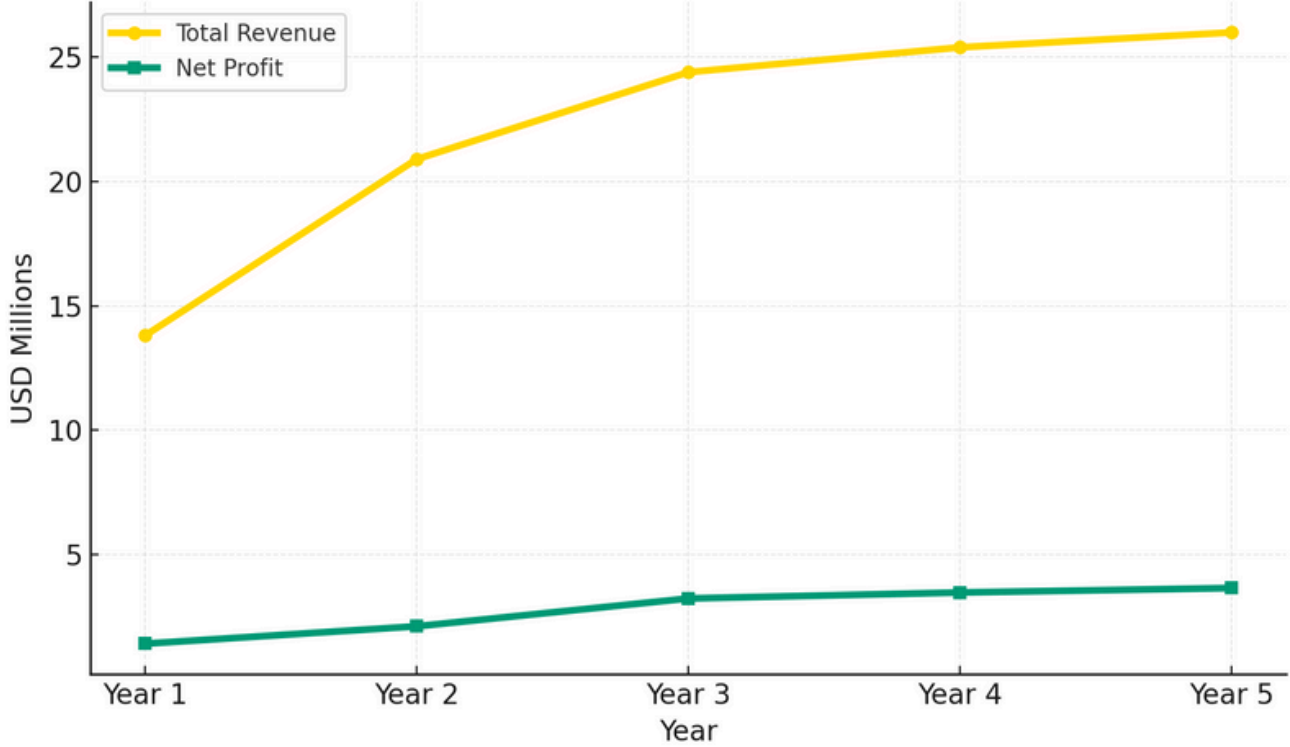
Phase	Duration	Key Activities	Capital Allocation
Phase 1: Design & Permitting	Months 0–3	Detailed engineering, EIA studies, mineral processing licence, procurement contracts.	US\$ 0.5 M
Phase 2: Civil Works & Infrastructure	Months 3–9	Earthworks, concrete, utilities, access road, TSF starter, water boreholes.	US\$ 1.5 M
Phase 3: Plant Fabrication & Installation	Months 6–12	Delivery and installation of crushing, milling, gravity, and CIL circuits.	US\$ 5.0 M
Phase 4: Commissioning & Ramp-Up	Months 12–15	Wet commissioning, operator training, first doré pour, process optimisation.	US\$ 2.0 M
Phase 5: Operational Stabilisation	Months 15–24	Achieve nameplate throughput; financial close on expansion readiness.	US\$ 1.0 M

Five-Year Projection Summary (USD Millions)

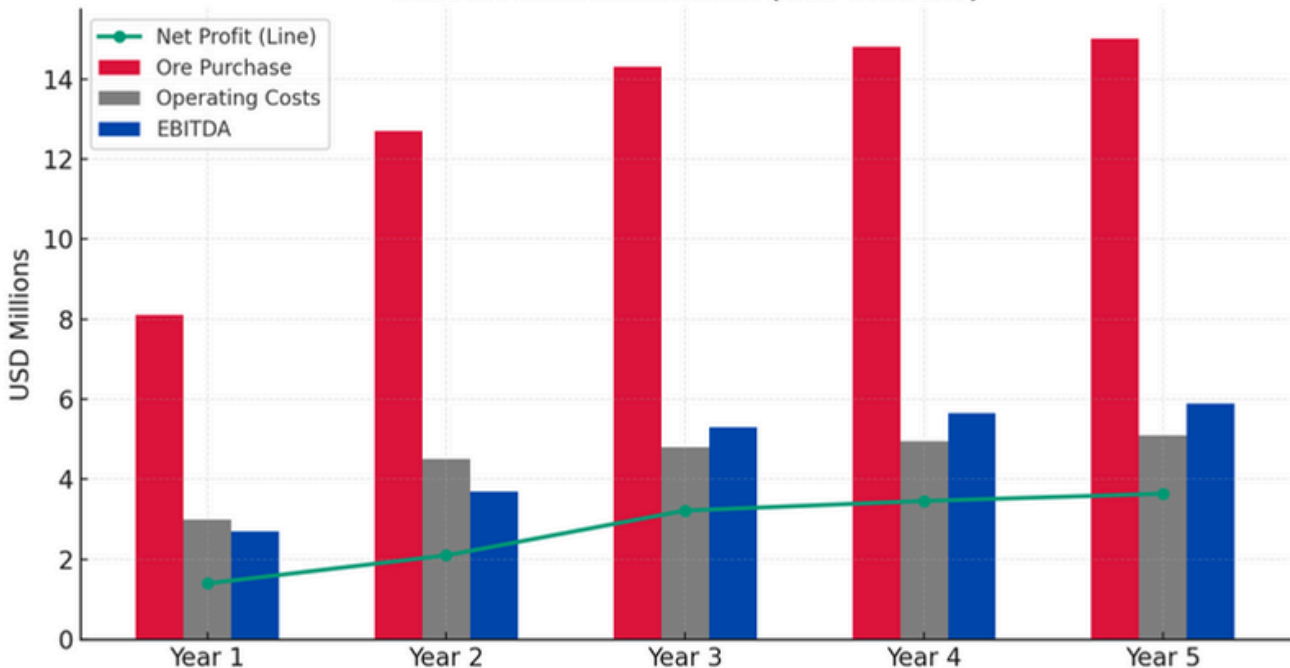
Item	Year 1	Year 2	Year 3	Year 4	Year 5
Plant Utilization	60%	90%	100%	100%	100%
Gold Revenue	12.8	19.6	22.9	23.8	24.3
Tolling Revenue	1	1.3	1.5	1.6	1.7
Total Revenue	13.8	20.9	24.4	25.4	26
Operating Costs	(3.00)	(4.50)	(4.80)	(4.95)	(5.10)
Ore Purchase	(8.10)	(12.70)	(14.30)	(14.80)	(15.00)
EBITDA	2.7	3.7	5.3	5.65	5.9
Depreciation	(0.70)	(0.70)	(0.70)	(0.70)	(0.70)
EBIT	2	3	4.6	4.95	5.2
Tax (30 %)	(0.60)	(0.90)	(1.38)	(1.49)	(1.56)
Net Profit After Tax	1.4	2.1	3.22	3.46	3.64
Free Cash Flow	1.8	2.5	3.6	3.9	4.1
Cumulative Cash Flow	1.8	4.3	7.9	11.8	15.9

Financial Projection Charts

Revenue & Net Profit Growth (USD Millions)



Cost & Profit Breakdown (USD Millions)



Human Resource and Employment

Department / Function	Key Positions	Approx. Headcount
Operations & Production	Plant supervisors, control-room operators, process attendants, equipment operators	40
Metallurgy & Laboratory	Chief metallurgist, lab chemists, assay technicians	12
Maintenance (Mechanical & Electrical)	Maintenance manager, fitters, electricians, welders, instrumentation technicians	18
Health, Safety & Environment (HSE/ESG)	HSE manager, safety officers, environmental technician	6
Supply Chain & Logistics	Procurement officer, warehouse clerks, drivers, weighbridge operators	8
Finance & Administration	Accountant, HR officer, admin assistants, payroll clerk	10
Security & Gold Room	Security manager, guards, gold-room custodians	6
Management & Support Staff	General manager, operations head, plant engineer, community relations officer	6–8
Total Direct Employment		100–140

Environmental, Social and Governance (ESG)

Environmental Commitment

ER KANG operates with a firm commitment to environmental protection and resource efficiency. The company integrates modern, sustainable technologies in all stages of operation to minimize environmental impact.

- **Water Management:** Closed-loop recycling system with over 80% reuse rate, reducing freshwater consumption.
- **Tailings Safety:** Engineered tailings facility with liners, seepage control, and continuous monitoring.
- **Cyanide Handling:** Compliance with the International Cyanide Management Code, ensuring safe storage, detoxification, and disposal.
- **Energy Efficiency:** Use of energy-efficient equipment and planned integration of solar hybrid power.
- **Rehabilitation:** Progressive restoration and revegetation of disturbed areas to restore the environment.

Social Responsibility

ER KANG's operations are designed to create shared value for the communities around Matundasi and the Mbeya Region.

Local Employment: Minimum 70% Tanzanian workforce, prioritizing Mbeya and Chunya residents.

- **Skills Development:** Partnerships with Mbeya University of Science and Technology (MUST) and VETA for training, apprenticeships, and internships.
- **Community Development:**
- Support for education and health facilities.

Environmental, Social and Governance (ESG)

Social Responsibility

- Construction of community boreholes and road maintenance.
- Funding for youth and women entrepreneurship programs.
- Health & Safety: Zero-harm culture with continuous safety training, PPE provision, and an on-site medical unit.
- Human Rights: No tolerance for child labour, forced labour, or discrimination; promotion of gender equality across all roles.

Governance and Ethics

ER KANG upholds integrity, accountability, and transparency as core business principles.

- Board Oversight: ESG performance reviewed quarterly by the Board ESG & Safety Committee.
- Regulatory Compliance: Full adherence to Tanzanian Mining, Environmental, and Labour laws.
- Transparency: Annual sustainability reporting and disclosure of payments under EITI guidelines.
- Anti-Corruption Policy: Strict compliance with anti-bribery laws, supplier vetting, and whistleblower protection.
- Independent Audits: Regular financial and environmental audits conducted by certified third parties.

Risk Analysis and Mitigation

Category	Description of Risk	Mitigation Strategy	Risk Level
1. Market & Price Risk	Fluctuating global gold prices and exchange rates may reduce revenue	Use conservative gold price (USD 3,800/oz); blend tolling and	Medium
2. Feedstock Supply Risk	Inconsistent ore supply could lower plant utilization.	Secure long-term supply agreements; diversify feed sources from	High
3. Operational & Technical Risk	Equipment failure or low recovery rates may disrupt production.	Preventive maintenance; qualified metallurgists and	Medium
4. Environmental & Safety Risk	Tailings leakage, cyanide spill, or pollution could cause	ESIA approval; lined TSF with seepage control; cyanide code compliance;	Medium
5. Regulatory & Legal Risk	Delays or non-compliance with mining, tax, or environmental	Continuous liaison with authorities; compliance calendar; legal	Low-Medium
6. Financial & Funding Risk	Cost overruns or delayed loan disbursement may affect liquidity.	Structured project finance with DSRA; phased disbursement; cost	Medium
7. Community & Social Risk	Local conflicts or unmet expectations may disrupt operations.	Community engagement plan; grievance mechanism (30-day	Low-Medium
8. Security Risk	Theft or unauthorized access to gold materials or plant	24-hour security, CCTV, access control; dual custody in gold	Medium

Conclusion

The establishment of ER KANG Tanzania Company Limited's Gold Processing Plant at Matundasi, Chunya District, represents a major step toward industrial-scale mineral beneficiation and value addition in southern Tanzania. With a total investment of USD 10 million, the project will create a state-of-the-art facility that combines advanced technology, environmental responsibility, and economic sustainability.

ER KANG's gold processing operations will not only increase Tanzania's refining capacity but also contribute significantly to employment creation, skills transfer, and infrastructure development within the Mbeya region. The company's strong adherence to ESG principles ensures that growth is achieved responsibly – with due regard for the environment, local communities, and ethical governance.

Strategically located in the Lupa Goldfield belt, the project is well positioned to serve as a regional processing hub, supporting the government's goal of expanding domestic beneficiation and reducing export of unprocessed minerals.

Financial projections demonstrate robust returns, stable cash flows, and an attractive investment profile with payback within three years of operation. The modular design also provides flexibility for future expansion, ensuring long-term competitiveness in both domestic and international gold markets.

Through its commitment to excellence, transparency, and innovation, ER KANG Tanzania Company Limited aims to become a benchmark for responsible mineral processing in East Africa – proving that industrial progress and sustainable development can go hand in hand.