

Business Plan for YKKY Mining (T) Company Limited in the Heavy Minerals Projects

1. Company Background

YKKY Mining (T) Co., Ltd. was established in 2022 under Tanzanian Company law, specializing in mineral exploration and development. The company is majority-owned by Henan Yukuang Kaiyuan Mining Company Limited (99% equity), a leading Chinese mining enterprise with expertise in mineral processing and international resource development, and Henan Afro-Asia Geo-Engineering (T) Company Limited (1% equity), a geotechnical services provider with extensive experience in African mineral exploration.

2. Executive Summary

YKKY Mining (T) Co., Ltd holds five heavy minerals prospecting licenses with the application number of PL30494/2024, PL30492/2024, PL30493/2024, PL30268/2024 and PL30539/2024 in Tanzania's eastern coastal region, covering Pwani, Bagamoyo, Mkange; Tanga, Pangani, Mkwaja, with a total area of 269.1 km². All the applications have been recommended by the Mining Commission and we have already paid the application fees, preparation fess and the first annual rents. The Mining Commission is preparing the licenses for the company.

The projects leverage low-cost beneficiation processes, proximity to export ports, and strong global demand for zircon and titanium minerals. This plan outlines a phased development strategy to rapidly advance production, maximize profitability, and deliver economic benefits to Tanzania. With a guaranteed offtake agreement from LB Group and a low-cost operational model, the project is positioned to become a key supplier in the global titanium-zircon value chain while adhering to Tanzanian local content requirements.

3. Project Advantages

- **Resource Accessibility:** All five licenses are located in coastal regions with well-documented placer deposits of zircon-titanium sands, reducing exploration risks.
- **Low-Cost Operations:** Simple mining and processing methods (e.g., dredging, gravity separation) minimize capital and operational expenses.

- **Market Demand:** Rising global demand for zircon (ceramics, foundry) and titanium (TiO₂ pigments, aerospace), driven by industrial growth in Asia and Africa.
- **Infrastructure Proximity:** Coastal location enables direct access to Dar es Salaam or Tanga ports, cutting logistics costs.

4. Development Strategy

Phase 1: Preliminary Exploration (Months 1-6)

- **Geological Survey:** Conduct a geological survey to identify potential zircon-titanium sand deposits.
- **Desktop Study:** Review existing geological data and maps.
- **Field Reconnaissance:** Perform field visits to assess the accessibility and potential of identified sites.
- **Sampling:** Collect surface and subsurface samples for laboratory analysis.

Phase 2: Detailed Exploration (Months 7-18)

- **Drilling:** Conduct drilling operations to determine the extent and quality of the deposits.
- **Geophysical Surveys:** Use geophysical methods to map the subsurface geology.
- **Resource Estimation:** Estimate the mineral resources based on exploration data.
- **Environmental Impact Assessment (EIA):** Conduct an EIA to identify potential environmental impacts and mitigation measures.

Phase 3: Feasibility Study (Months 19-24)

- **Technical Feasibility:** Assess the technical viability of the mining operation, including mining methods, processing, and infrastructure requirements.
- **Economic Feasibility:** Evaluate the economic viability, including capital and operating costs, revenue projections, and financial modeling.
- **Social Impact Assessment:** Assess the potential social impacts and develop a community engagement plan.

Phase 4: Development and Construction (Months 25-36)

- **Mining License Application:** Apply for and secure the necessary mining licenses and permits.

- **Infrastructure Development:** Construct necessary infrastructure, including access roads, processing plants, and power supply.
- **Equipment Procurement:** Purchase and install mining and processing equipment.
- **Recruitment and Training:** Hire and train local staff for the mining operation.

Phase 5: Production (Months 37-60)

- **Mining Operations:** Commence mining operations, focusing on efficient and sustainable extraction of zircon-titanium sands.
- **Processing:** Process the extracted sands to produce zircon and titanium concentrates.
- **Marketing and Sales:** Establish sales channels for the concentrates, targeting both domestic and international markets.
- **Monitoring and Evaluation:** Continuously monitor the environmental and social impacts and adjust operations as necessary.

5. Technical Plan

- **Mining Method:** Hydraulic dredging or dry mining (depending on deposit depth).
- **Processing Flow:**
 1. Screening → 2. Gravity separation → 3. Magnetic separation → 4. Final concentrates (zircon, ilmenite, rutile).
- **Key Metrics:**
 - Target recovery rate: 85–90% for zircon, 75–80% for titanium minerals.
 - Production cost: \$80–120/ton.

6. Financial Projections

Revenue Model (Based on 2024 Market Prices):

- **Zircon ($ZrSiO_4$):** \$1,200–1,500/ton
- **Ilmenite (TiO_2):** \$150–200/ton
- **Rutile (TiO_2):** \$1,000–1,200/ton

Annual Production & Revenue (Full Capacity):

- **Output:** 60,000 tons of concentrates (zircon: 20%, ilmenite: 60%, rutile: 20%).
- **Revenue:** \$18 million/year.

- **Operating Cost:** \$6–8 million/year.
- **Net Profit:** \$10 million/year.

Capital Expenditure (CAPEX):

- Pilot Phase: \$2.3 million
- Expansion Phase: \$5 million
- Contingency
(10%): 1million**TotalCAPEX**:
1million**TotalCAPEX**:
11.3 million

Return on Investment (ROI):

- Payback Period: 5 years (post-expansion).

7. Risk Mitigation

- **Market Volatility:** Secure long-term supply contracts with price adjustment clauses.
- **Regulatory Compliance:** Partner with local consultants to navigate Tanzanian mining laws (e.g., Local Content Regulations).
- **Environmental & Social:**
 - Implement zero-discharge water recycling systems.
 - Allocate 2% of profits to community development (e.g., schools, healthcare).

8. Economic Impact

- **Job Creation:** 200+ direct jobs (mining, processing) and 500+ indirect jobs (transport, services).
- **Government Revenue:** Royalties, corporate taxes and net dividend
- **Infrastructure:** Upgrade local roads and power supply in partnership with Tanzanian authorities.

9. Conclusion

Those five zircon-titanium projects in coastal regions are positioned to become a low-cost, high-margin operation capitalizing on Tanzania's mineral wealth and global market trends. By prioritizing rapid scaling and community engagement, the company aims to establish itself as a leading supplier in the African critical minerals sector.