

**MINERAL ACCESS SYSTEMS TANZANIA LIMITED**

**BUSINESS PLAN**

**FOR**

**ESTABLISHMENT OF COPPER MINING AND LEACHING PLANT**

**AT MBEYA**

**REGION**

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## **PART I: GENERAL PROJECTS INFORMATION**

### **1.1 PREAMBLE**

This study covers the business plan of establishing a mining and materials processing projects i.e. copper projects by **MINERAL ACCESS SYSTEMS TANZANIA LIMITED** in Mbeya Regions. The activities will be geared towards the setting up of mining and materials processing project purposes. This report is for obtaining an industrial license and certificate of incentives from Tanzania Investment center.

### **1.2 THE PROJECT PROMOTERS**

The project is being promoted by **MINERAL ACCESS SYSTEMS TANZANIA LIMITED**; a limited liability company incorporated under the laws of Tanzania whose shareholders are as follow;

<b>S/N</b>	<b>NAME OF SHAREHOLDERS</b>	<b>PERCENTAGE OF</b>	<b>NATIONALITY</b>
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		<b>OWNERSHIP</b>	
1	GLENDON ARCHER	450	American
2	DANISH MIR	450	American
3	JULIA WONG	100	American
4	GEORGEFREY EUSTACE KENTE	340	Tanzanian

### **1.3 LOCATION**

The Copper mining and minerals processing project shall be located in Mbugani village, in Chunya district, Mbeya region, Tanzania.

### **1.4 THE PROJECT JUSTIFICATION/MANUFACTURING PROCESS**

The manufacturing process can be summarized as follow;

- I. Comminution
  - a. Ore crushing
  - b. Screening
  - c. Grinding
- II. Flotation Circuit
- III. Concentrates recovery
- IV. Detoxification
- V. TSF/ Tailings

### **Ore Crushing**

Ore Crushing is the process of size reduction of ore. Size reduction process begins with usage of explosives at the area for production of ore. In later stages, the size reduction process performed with crushers before grinding in mills is called "crushing".

Crushing is accomplished by **compression of the ore against a rigid surface or by impact against a surface in a rigidly constrained motion path**. Crushing is usually a dry process and carried out on ROM ore in succession of two or three stages, namely, by (1) primary, (2) secondary, and (3) tertiary crushers.

### **Screening**

Mechanical screening, often just called screening, is the practice of taking granulated or crushed ore material and separating it into multiple grades by particle size. This practice occurs in a variety of industries such as mining and mineral processing, agriculture, pharmaceutical, food, plastics, and recycling.

The screening process **serves to separate particles of different sizes and is ideal to ensure that the product reaches the market in the right size, shape and quality**. In aggregate production, the screening process is a key part of the production process and is carried out on a large scale.

### **Grinding**

Grinding is a powdering or pulverizing process using the rock mechanical forces of impaction and attrition. The two main objectives for a grinding process are:

To liberate individual minerals trapped in rock crystals (ores) and thereby open up for a subsequent enrichment in the form of separation.

Grinding is **machining process that's used to remove material from a work piece via a grinding wheel**. As the grinding wheel turns, it cuts material off the work piece while creating a smooth surface texture in the process.

### **Flotation circuits**

Flotation circuits are **a common technology for the concentration of a broad range of minerals and wastewater treatments**. Froth flotation is based on differences in the ability of air bubbles to adhere to specific mineral surfaces in a solid/liquid slurry.

Flotation is a technique, widely used by the mining industry, **for the separation of minerals, phosphates, or coal from gangue**. Coal and minerals particle size and surface hydrophobicity are two main parameters that affect three key steps in froth flotation process: particle–bubble collision, adhesion, and detachment.

### **Concentrates recovery**

$C = F/K = F(f - t) / (c-t)$  = the weight of the concentrate. Recovery % Represents **the ratio of the weight of metal or mineral value recovered in the concentrate to 100% of the same constituent in the heads or feed to the process, expressed as a percentage**

### **Detoxification**

Detoxification processes are used to reduce the concentrations of toxic constituents in tailings streams and process solutions, either by dilution, removal, or conversion to a less toxic chemical form (sometimes referred to as “destruction” or “degradation” in the case of toxic cyanide species).

### **TSF/ Tailings**

A tailings storage facility (TSF) is a structure made up of (one or more dams) built for the purposes of storing the uneconomical ore (ground up rock, sand and silt) and water from the milling process. The waste from this process is called tailings. Due to the nature of the ore separation processes, tailings are commonly in the form of a slurry of fine mineral particles and water. Management of tailings **involves storage in a specially-designed impoundment called a tailings facility.**

## 1.5 PROPOSED DEVELOPMENT

The proposed development shall consist of a manufacturing plant, distribution hub, administration block, warehouses, sales points, providing a gross floor area of approximately **10,000m<sup>2</sup>** estimated at **USD 2,040,000.00**

## 1.6 REVENUE

Following an assessment of the market, the anticipated sale of leather related products is expected be **USD 10,147,877** for the first year and would increase to **USD 22,751,671** during the 5<sup>th</sup> year.

### Table 1.0

**Showing the Estimated Revenue from MINERAL ACCESS SYSTEMS TANZANIA LIMITED**

	<b>No. of consignments sold per product (In Cartons)</b>	<b>Sales prices (USD per carton)</b>	<b>Gross Sales (USD)</b>
<b>Year 1</b>	<b>3,000,000</b>	<b>4.50</b>	<b>13,500,000</b>
<b>Year 2</b>	<b>4,000,000</b>	<b>4.50</b>	<b>18,000,000</b>
<b>Year 3</b>	<b>5,000,000</b>	<b>4.50</b>	<b>22,500,000</b>
<b>Year 4</b>	<b>6,000,000</b>	<b>4.50</b>	<b>27,000,000</b>
<b>Year 5</b>	<b>7,000,000</b>	<b>4.50</b>	<b>31,500,000</b>

## **2.1. RISK FACTORS FACING THE PROJECT**

There is always an element of risk in any investment. It is therefore important to identify the risk and consider measures for their mitigation. Risks to the project have been identified as follows:

## **2.2. COMPETITION**

Tough Competitions from other firms that are carrying out the same activity as ours.

## **2.3. COST OVERRUNS**

The consultant team has rigorously gone through the market, production requirements, machinery, specifications, legal compliance, so as to ensure that it is comprehensive so as to eliminate/minimize any variations. Furthermore, value management shall be carried out throughout the manufacturing process to forestall any cost overruns.

## **2.4. INCREASE IN PRICE OF MATERIALS AND DELAYS DUE TO COVID RESTRICTIONS**

The directors and shareholders are aware of the risk of fluctuation of prices and together with the consultants and where possible the Company shall be encouraged to make arrangements for the procurement of the raw materials right from the outset and have bulk storage so as to minimize abrupt changes in pricing of the products.

## **3.0. Table 3.0**

## Showing the SWOT ANALYSIS

<b>STRENGTH</b>	<b>WEAKNESS</b>
<ul style="list-style-type: none"><li>• experienced Shareholders of the Company</li><li>• Experienced Consultant team</li><li>• Shareholders Commitment for the project totakeoff</li><li>• Encouraging regional and inter region legal framework</li><li>• Increasingly demand of metals</li><li>• Mining Resources</li><li>• Economic Infrastructures</li></ul>	<ul style="list-style-type: none"><li>• Potential increase of prices due to global economic changes</li><li>• Competition from counterparts</li><li>• Artisanal mining practices of the material supplier</li><li>• High Trans positional cost</li><li>• High Mining and operational cost</li><li>• Unstable World Market Price</li></ul>

- Mining Technology and manpower
- Company Recognitions
- Safety Policies

**OPPORTUNITY**

**THREATS**

<ul style="list-style-type: none"><li>• New technologies both in mining and beneficiation</li><li>• Skill developments</li><li>• Environmental Protection</li><li>• Increasing Research and Exploration work</li></ul>	<ul style="list-style-type: none"><li>• Competition from other companies and importers</li><li>• International Issues</li><li>• Inadequate Geoscientific data</li></ul>
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### 3.1. **OBJECTIVES OF THE DEVELOPMENT**

The objectives for the development are as follows:

- To provide a framework to set up mining and materials processing project and distribution hub from which the Company expects to receive

return on investment

### **3.2. THE CONSULTANCY TEAM**

The Management has selected a team that it believes shall be able to produce best products that are safe and of high-quality fit for consumers.

### **3.3. WORK PROGRAMME**

Financial charges must be paid from the day money is borrowed, and yet cannot be repaid until the sales made. The relative timing of expenditure and revenue will have an impact on the project, it is therefore imperative that the project is completed within a short and reasonable time frame, say a maximum of 1 (one) year. The Company has already identified a production team that shall be committed to completing the production within the set time frames.

## **4. MARKETING AND SALES**

The management understands that for success of the investment, they should embark on marketing and right from the conception stage the company has engaged a team of professionals to ensure that strategies are put in place right from the outset.

The company uses a modern approach of multi-selling in collaboration with other reputable key agencies to ensure maximum exposure and onward sales of its products.

#### **4.1. THE MARKETING PROPOSAL**

The marketing strategies that shall be put in place for **MINERAL ACCESS SYSTEMS TANZANIA LIMITED** will aim at attaining maximum exposure and onward sales at the optimal price so as to maximize on the return on investment. The marketing shall commence right from the conceptual stage of the manufacturing.

##### **i. Identification of the Target Market**

Identifying and listing the target market, followed by products group to cater for the identified groups.

ii. **Putting in place competitive pricing and top sales terms**

The results of the comparative analysis shall be embodied in the sale prices to ensure that the sale prices offered to the buyers are competitive in view of the products that shall be produced to compete with other brands in the market.

iii. **Promotion Strategies**

Promotion strategies that shall be adopted by **MINERAL ACCESS SYSTEMS TANZANIA LIMITED** will be aimed at informing, influencing, and persuading prospective buyers to purchase our products and beauty products through the use of the below promotion tools:

♦ Advertising

♦ E-Marketing

- ‡ Personal Selling
- ‡ Sales Promotion
- ‡ Selection Mix

- **Advertising**

Various forms of Print media and visual imagery will be used to create awareness of our products the public. The advertising will call for public attention through paid messages in newspapers, magazines, billboards, signboards, and display areas.

- **E-Marketing**

Our Products shall be available via the company website and social media pages for easy viewing by prospective buyers. Furthermore, emails shall be sent out to prospective clients with a link to the order/purchase gateway. The E-Platform shall also create an opportunity for enquiries.

- **Personal Selling**

- Personal selling in contrast to the impersonal and mass appeal of advertising will consist of individual interpersonal communication to include:
- Direct canvassing to the target market. This is a very good prospective method; a list of prospects shall be prepared and they shall be contacted and given presentations.
- Handling of enquiries over the telephone

- **Sales Promotion**

- This will be in the form of presentation of marketing brochures for the Company that shall be carefully prepared and distributed to the target market with select information to capture key information which will serve to inform, attract, influence and persuade prospective buyers.

#### 5.0. **ESTIMATED COST OF THE PROJECT**

The total project investment is estimated at **USD 2,040,000.00** including the land, manufacturing

plant, distribution center, machines and equipment, raw materials and initial operation capital.

**5.1. MODE OF PROJECT FINANCING**

The development shall be entirely carried out by the Company shareholders who intend to seek financing from the financial institutions at a sharing of Equity 40%:

	<b>USD</b>
<b>Total Development Cost:</b>	<b>2,040,00</b>
	<b>0</b>
<b>Equity:</b>	<b>1,020,00</b>
	<b>0</b>
<b>Debt:</b>	<b>520,000</b>

## 5.2. INVESTMENT COST FINANCING PATTERN

The total investment cost is estimated at **USD 2,040,000.00** a summary of the breakdown is as indicated in the table below

ITEM	USD \$
Fixed Asset	
Civil Works & Building Machinery	100,000
and Equipment Vehicles	320,000
Furniture and Fittings Raw	80,000
materials	
Pre-Operational Expenses	20,000
	1,000,000

	20,000
Sub total	<b>1,540,000</b>
Initial working capital	500,000
<b>GRAND TOTAL</b>	<b>2,040,000</b>

5.3. **FINANCING PLAN (USD)**

Equity	66%	1,020,000
Debt	34%	520,000
<b>TOTAL LOAN AMOUNT</b>		<b>1,540,000</b>
Interest rate p.a. on USD Borrowing		16 %
Loan Period	Years	5
Capital Repayment Grace Period	Years	1

#### 5.4. REVENUE

**Table 5.0**

**Showing the cash flows and financial projection for MINERAL ACCESS SYSTEMS TANZANIA LIMITED - Tanzanian Shillings(Note: The Revenue line represents Earnings Before Interest, Tax, Depreciation and Amortization Cash flow)**

<b>Item</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
<b>Cash Inflows</b>					
Equity	1,020,000				
Loan	520,000				
Revenue (EBITDA)	13,500,000	18,000,000	22,500,000	27,000,000	31,500,000
Total Cash Inflows	15,040,000	18,000,000	22,500,000	27,000,000	31,500,000
<b>Cash Outflows</b>					
Direct Materials	2,500,000	3,000,000	4,500,000	6,000,000	7,500,000
Direct Labor	1,000,000	2,000,000	3,000,000	4,000,000	5,000,000

Manufacturing overheads	4,000,000	5,000,000	6,000,000	7,000,000	8,000,000
Depreciation	-				
<b>Total Cash Out Flows</b>	7,500,000	10,000,000	13,000,000	17,000,000	21,500,000
<b>Net Cash Flows</b>	6,000,000	8,000,000	9,500,000	10,000,000	10,000,000
<b>Cum.(Deficit)/Excess cash flows</b>	6,000,000	14,000,000	23,500,000	34,500,000	35,500,000

#### 5.5. FINANCIAL VIABILITY RETURN ON INVESTMENT

The project indicates a very healthy return on investment with a payback period of within 3.8 years. of the completion of construction

**6.0. STAFF STRUCTURE**

I. General Manager

II. Logistic Manager

III. Warehouse Manager

IV. QAQC

V. Mining Engineer

VI. Geologist

VII. Mine supervisor

VIII. Warehouse Supervisors

IX. Plant Operators

## **6.1. MANAGEMENT**

This success of a venture of this kind depends on the competence of the personnel recruited to manage. It is assumed that relevant personnel with requisite skills shall be available within and outside the country.

In Order to streamline the manufacturing and sales operations, it is proposed to engage a team of qualified and experienced personnel to meet the Company target. These along with the Project Manager and Management will form the central operational core that will ensure the success of the project.

## **6.2. MANPOWER REQUIREMENTS**

Based on the proposed organization structure the project will initially employ 100 persons in the first year of production, and from the second year the employment opportunities will increase up to 600 people will be employed in the industry.

## CONCLUSION

We are of the opinion that the project is viable and the proposed marketing strategies will achieve maximum exposure for the achievement of 100% sales as summarized hereunder:

- The proposed sales prices for cosmetic and beauty products are reasonably priced and competitive comparative pricing from USD 4.50 per cartonthe starting years.

**APPENDIX: I**

**MINERAL ACCESS SYSTEMS TANZANIA LIMITED COST**

<b>ITE</b>	<b>USD</b>
<b>M</b>	<b>\$</b>
<b>Fixed Asset</b>	
<b>Civil Works &amp; Building</b>	<b>100,000</b>
<b>Machinery and Equipment</b>	<b>320,000</b>
<b>Vehicles</b>	<b>80,000</b>
<b>Furniture and Fittings</b>	<b>20,000</b>
<b>Raw materials</b>	<b>1,000,000</b>

<b>Pre-Operational Expenses</b>	<b>20,000</b>
<b>Sub total</b>	<b>1,540,000</b>
<b>Initial working capita!</b>	<b>500,000</b>
<b>GRAND TOTAL</b>	<b>2,040,000</b>

## MINERAL ACCESS SYSTEMS TANZANIA LIMITED FINANCING PATTERN

(Note: Borrowing assumed to be local borrowing in Tanzanian Shillings hence interest rate of 16%)

		<b>USD</b>
<b>Equity</b>		<b>1,020,000</b>
<b>Debt</b>		<b>520,000</b>
<b>TOTAL LOAN AMOUNT</b>		<b>2,040,000</b>
<b>Interest rate p.a. on usd Borrowing</b>	<b>16%</b>	
<b>Loan Period</b>	<b>Years</b>	<b>5</b>
<b>Capital Repayment Grace Period</b>	<b>Years</b>	<b>1</b>

**MINERAL ACCESS SYSTEMS TANZANIA LIMITED DEPRECIATION SCHEDULE IN USD**

<b>ITEM</b>	<b>RATE %</b>	<b>YEAR 1</b>	<b>YEAR 2</b>	<b>YEAR 3</b>	<b>YEAR 4</b>	<b>YEAR 5</b>
<b>Civil works &amp; building</b>	<b>4.00%</b>	-	-	-	-	-
<b>Opening balance</b>		<b>100,000</b>	<b>96,000</b>	<b>92,160</b>	<b>88,474</b>	<b>84,935</b>
<b>Annual depreciation</b>	<b>4.00%</b>	<b>4,000</b>	<b>3,840</b>	<b>3,686</b>	<b>3,539</b>	<b>3,397</b>
<b>Closing balance</b>		<b>96,000</b>	<b>92,160</b>	<b>88,474</b>	<b>84,935</b>	<b>81,537</b>
<b>Machinery and Equipment</b>	<b>10.00%</b>	-	-	-	-	-

<b>Opening balance</b>		<b>320,000</b>	<b>288,000</b>	<b>259,200</b>	<b>233,280</b>	<b>209,952</b>
<b>Annual depreciation</b>	<b>10.00%</b>	<b>32,000</b>	<b>28,800</b>	<b>25,920</b>	<b>23,328</b>	<b>20,995</b>
<b>Closing balance</b>		<b>288,000</b>	<b>259,200</b>	<b>233,280</b>	<b>209,952</b>	<b>188,957</b>
<b>Vehicles</b>	<b>25.00%</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Opening balance</b>		<b>20,000</b>	<b>15,000</b>	<b>11,250</b>	<b>8,438</b>	<b>6,328</b>
<b>Annual depreciation</b>	<b>25.00%</b>	<b>5,000</b>	<b>3,750</b>	<b>2,813</b>	<b>2,109</b>	<b>1,582</b>
<b>Closing balance</b>		<b>15,000</b>	<b>11,250</b>	<b>8,438</b>	<b>6,328</b>	<b>4,746</b>

<b>Furniture and fittings</b>	<b>10.00%</b>	-	-	-	-	-
<b>Opening balance</b>		<b>1,000,000</b>	<b>900,000</b>	<b>810,000</b>	<b>729,000</b>	<b>656,100</b>
<b>Annual depreciation</b>	<b>10.00%</b>	<b>100,000</b>	<b>90,000</b>	<b>81,000</b>	<b>72,900</b>	<b>65,610</b>
<b>Closing balance</b>		<b>900,000</b>	<b>810,000</b>	<b>729,000</b>	<b>656,100</b>	<b>590,490</b>

**MINERAL ACCESS SYSTEMS****TANZANIA LIMITED*****CASHFLOWS PROJECTION (Tanzanian Shillings)***

<b>YEAR</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Sources</b>						
<b>Profit before interest/depreciation</b>		<b>3,243,119,016</b>	<b>4,142,415,566</b>	<b>4,651,437,814</b>	<b>5,289,846,207</b>	<b>5,747,192,341</b>
<b>Other Sources</b>	<b>11,506,150,000</b>	<b>3,243,119,016</b>	<b>4,142,415,566</b>	<b>4,651,437,814</b>	<b>5,289,846,207</b>	<b>5,747,192,341</b>
<b>Total sources</b>	<b>11,506,150,000</b>					

<b>Applications</b>						
<b>Capital expenditure</b>	<b>9,345,043,000</b>				460,246,000	460,246,000
<b>Other Applications (excl. working capital)</b>		1,126,734,576	2,418,269,661	2,442,107,456	2,504,761,094	2,513,096,054
<b>Total Applications</b>	<b>9,345,043,000</b>	1,126,734,576	2,418,269,661	2,442,107,456	2,965,007,094	2,973,342,054
<b>Working capital</b>	<b>2,071,107,000</b>	800,000,000	1,500,000,000	2,000,000,000	2,200,000,000	2,700,000,000