

**PACIDIAN OCEAN MINERALS LIMITED**

**BUSINESS PLAN**

**FOR**

**COPPER MINING AND MINERALS**

**PROCESSING AT RUVUMA REGION**

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## **PART I: GENERAL PROJECT INFORMATION**

### **1.1 PREAMBLE**

This study covers the business plan of medium scale mining by **MINERAL ACCESS SYSTEMS TANZANIA LIMITED** in Ruvuma. The activities will be geared towards mining purposes. This report is for obtaining a 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 OWNERSHIP</b>	<b>NATIONALITY</b>
1	GLENDON ARCHER	33.6	American
2	DANISH MIR	33.6	American
3	JULIA WONG	7.4	American
4	GEORGEFREY EUSTACE KENTE	25	Tanzanian

### **1.3 LOCATION**

The mining and processing plant will be set up and installed in Ruvuma Region.

### **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 mine site plant, distribution hub, administration block, warehouses, sales points, providing a gross floor area of approximately 10,000m<sup>2</sup> estimated at **USD 1,000,000.00**.

## 1.6 REVENUE

Following an assessment of the market, the anticipated sale of the minerals is expected to be **USD 3,060,000** for the first year and would increase to **USD 3,400,000** during the 2<sup>nd</sup> and **5,100,000** during the 3<sup>rd</sup> year.

**Table 1.0**

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

	No. of consignments sold per product (In tons)	Sales prices (USD per tons)	Gross Sales (USD)
<b>Year 1</b>	<b>Copper 90,000</b>	<b>3 4</b>	<b>3,060,000</b>
<b>Year 2</b>	<b>Copper 100,000</b>	<b>34</b>	<b>3,400,000</b>

<b>Year 3</b>	<b>Copper 150,000</b>	<b>34</b>	<b>5,100,000</b>
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## **2.0 THE MARKET**

### **Current Market of Copper**

There is a good demand of copper in manufacturing industries of glass, scillators in radios, watches, and pressure gauges, and in the study of optics. Copper is also used as an abrasive for sandblasting, grinding glass, and cutting soft stones. It is also essential in the computer industry, as the important silicon semiconductors are made from Copper.

### **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**

Competition is the key factor facing the project. The management team together with the various consultants have taken this on board and come up with a highly quality picked copper.

Another area where the competition can be beaten is by delivering the best quality products to compete with the imported products and always ensure constant and continuous supply of products.

### **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 mining 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 so as to minimize abrupt changes in pricing of the products.

### 3.0. Table 3.0

#### Showing the SWOT ANALYSIS

STRENGTH	WEAKNESS
<ul style="list-style-type: none"> <li>• Experienced Shareholders of the Company</li> <li>• Experienced Consultant team</li> <li>• Shareholders Commitment for the project to takeoff</li> <li>• Encouraging regional and inter region legal framework</li> </ul>	<ul style="list-style-type: none"> <li>• Potential increase of prices due to global economic changes</li> <li>• Competition from counterparts</li> </ul>
OPPORTUNITY	THREATS
<ul style="list-style-type: none"> <li>• Increase in sale in the Eastern and Southern Region (export market)</li> <li>• High demand in export market</li> <li>• Friendly investment policy</li> </ul>	<ul style="list-style-type: none"> <li>• we are a new cooking oil production company and we don't have the financial capacity to engage in the kind of publicity that we intend giving the business.</li> <li>• Competition from other companies and importers</li> </ul>

### 3.0 TECHNICAL INFORMATION

#### 3.1. OBJECTIVES OF THE DEVELOPMENT

The objectives for the development are as follows:

- To provide a framework to set up of copper mines 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 copper and copper 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** 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** 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. FINANCIAL PROPOSAL**

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

The total project investment is estimated at **USD 1,000,000** including the land, manufacturing plant, distribution center, machines and equipment, raw materials and initial operation capital.

**5.2. 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 16%:

		<b>USD</b>
<b>Equity</b>		<b>3,300,000</b>
<b>Debt</b>		<b>0</b>
<b>TOTAL LOAN AMOUNT</b>		<b>3,300,000</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>

**5.3. 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. MANPOWER REQUIREMENTS AND ORGANISATION**

**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 30 persons in the first year of production, and from the second year the employment opportunities will increase up to 100 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 carton the starting years.

**APPENDIX: I MINERAL ACCESS SYSTEMS  
TANZANIA INVESTMENT COST**

ITEM	USD \$
<b>Fixed Asset</b>	
<b>Civil Works &amp; Building</b>	<b>1,000,000</b>
<b>Machinery and Equipment</b>	<b>500,000</b>
<b>Furniture and Fittings</b>	<b>1,200,000</b>
<b>Raw materials</b>	<b>600,000</b>
<b>Pre-Operational Expenses</b>	<b>500,000</b>
<b>Sub total</b>	<b>3,300,000</b>
<b>Initial working capita!</b>	<b>500,000</b>
<b>GRAND TOTAL</b>	<b>3,800,000</b>

**Table 5.0**

**Showing the cash flows and financial projection for MINERAL ACCESS SYSTEMS TANZANIA- Tanzanian Shillings**

**(Note: The Revenue line represents Earnings Before Interest, Tax, Depreciation and Amortization Cash flow)**

Item	Year 1	Year 2	Year 3	Year 4	Year 5
Cash Inflows					

Equity	3,300,000				
Loan	-				
Revenue	3,060,000	3,400,000	5,100,000	6,500,000	8,000,000
Total Cash Inflows	6,360,000	3,400,000	5,100,000	6,500,000	8,000,000
Cash Outflows					
Machines, furniture, vehicles purchase	700,000				
Construction work	250,000				
Development coast	1,000,000				
Investment in working capital	1,000,000	1,050,000	1,200,000	1,350,000	1,500,000
Raw materials	600,000				
Total Cash Out Flows	2,550,000	1,050,000	1,200,000	1,350,000	1,500,000
Net Cash Flows	8,910,000	4,450,000	6,300,000	7,100,000	7,385,000
Cum.(Deficit)/Excess cash flows	8,910,000	13,360,000	19,660,000	26,760,000	33,045,000

**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>3,300,000</b>
<b>Debt</b>		<b>0</b>
<b>TOTAL LOAN AMOUNT</b>		<b>3,300,000</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**

ITEM	RATE %	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
<b>Civil works &amp; building</b>	<b>4.00%</b>	-	-	-	-	-
Opening balance		1,000,000	960,000	921,600	884,740	849,350
Annual depreciation	<b>4.00%</b>	400,000	300,840	333,686	543,539	643,397
Closing balance		600,000	520,160	680,474	340,935	210,537
<b>Machinery and Equipment</b>	<b>10.00%</b>	-	-	-	-	-
Opening balance		500,000	288,000	259,200	233,280	209,952
Annual depreciation	<b>10.00%</b>	50,000	332,800	405,920	623,328	820,995
Closing balance		450,000	259,200	233,280	209,952	188,957
<b>Raw Materials</b>	<b>25.00%</b>	-	-	-	-	-
Opening balance		1,200,000	1,500,000	1,800,000	2,000,000	2,300,000
Annual depreciation	<b>25.00%</b>	500,000	375,000	281,300	210,900	331,582
Closing balance		700,000	1,225,000	1,619,700	1,879,000	1,989,418
<b>Furniture and fittings</b>	<b>10.00%</b>	-	-	-	-	-
Opening balance		500,000	900,000	810,000	729,000	656,100
Annual depreciation	<b>10.00%</b>	100,000	90,000	81,000	72,900	65,610
Closing balance		900,000	810,000	729,000	656,100	590,490

