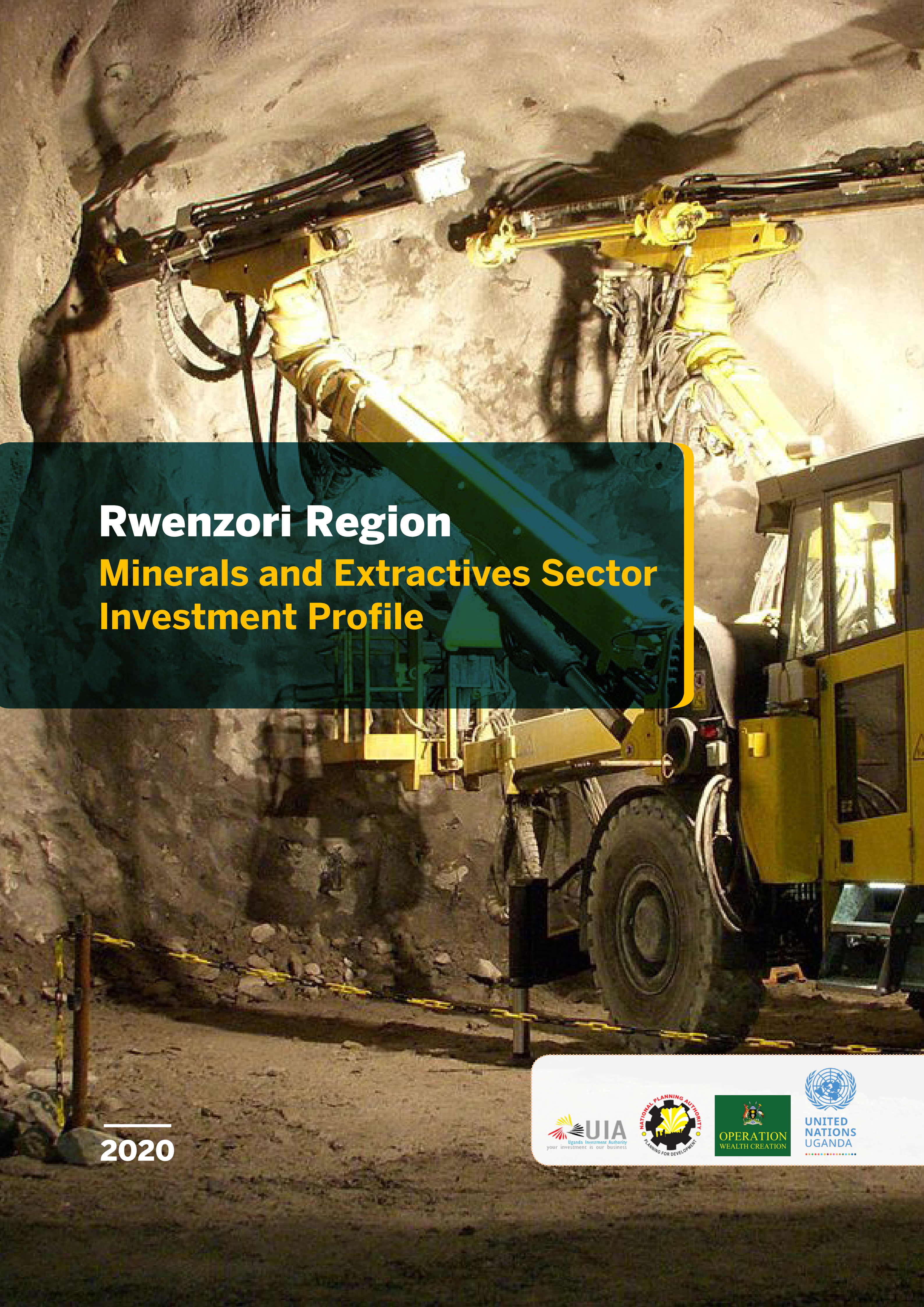

Rwenzori Region

Minerals and Extractives Sector Investment Profile

2020

UIA
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Rwenzori Region
Minerals and Extractives Sector Investment Profile

2020

Contents

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Acronyms

ASM	-	Artisanal and Small-scale Miners
CAGR	-	Compounded Annual Growth Rate
CREFAA	-	Convention on the Recognition and Enforcement of Foreign Arbitral Award
CAGR	-	Compound Annual Growth Rate
CSOs	-	Civil Society Organisations
CMA	-	Capital Markets Authority
DGSM	-	Department of Geological Survey and Mines
DSCR	-	Debt Service Coverage Ratio
EMD SDP	-	Energy and Mineral Development Strategic Development Plan
EBIT	-	Earnings Before Interest and Taxes
EIA	-	Environmental Impact Assessment
EMD	-	Energy and Mineral Development
EBITDA	-	Earnings Before Interest,Taxes, Depreciation, and Amortization
EL	-	Exploration Licence
FY	-	Financial Year
GATS	-	General Agreement on Trade in Services
GoU	-	Government of Uganda
GL	-	Goldsmith Licence
GDP	-	Gross Domestic Product
HDI	-	Human Development Index
ICSID	-	International Centre for Settlement of Investment Disputes
IPO	-	Initial Public Offering
IRR	-	Internal Rate of Return
KCCL	-	Kasese Cobalt Company Limited
LME	-	London Metal Exchange
LL	-	Location Licence
MEMD	-	Ministry of Energy and Mineral Development
ML	-	Mining Lease
MDL	-	Mineral Dealers Licence
MIGA	-	Multilateral Investment Guarantee Agency
NDP III	-	National Development Plan III
NPV	-	Net Present value
NEMA	-	National Environment Management Authority
OPIC	-	Overseas Private Investment Corporation

PL	-	Prospecting Licence
PGMs	-	Platinum Group of Metals
RL	-	Retention Licence
REEs	-	Rare Earth Elements
SEA	-	Strategic Environmental Assessment
SIA	-	Social Impact Assessment
SDP	-	Strategic Development Plan
SMEs	-	Small Medium Enterprises
TRIMS	-	Trade-Related Investment Measures
TRIPS	-	Trade-Related Aspects of Intellectual Property Rights
UIA	-	Uganda Investment Authority
UGX	-	Uganda Shillings
UN	-	United Nations
USD	-	United States Dollar

01

Executive summary

Executive summary

The primary mineral reserves within the Rwenzori Region include Cobalt, Copper, Limestone, Rare Earth metals, and deposits of Salt along Lake Katwe. These metals present an opportunity for value addition and development consistent with the mandate of the Ministry of Energy and Mineral Development (MEMD), through the Directorate of Geological Survey and Mines. The value addition and development is done by monitoring and enforcing regulation in all mining activities and also undertaking collection, collating, processing, analysis, archiving and dissemination of geo data to establish the mineral potential.

It is on this basis that the Uganda Investment Authority together with United Nations Resident Cordinator's Office have led the development of the Investment Profile for the Minerals and Extractives Sector. The Investment profile will inform potential investors of the available sustainable investment opportunities in order to fully exploit the region's potential and promote socio-economic transformation. This is in support of the Country's strategy of implementing private sector-led economic interventions, addressing unemployment and paving the way for Local Governments to generate their own revenue in order to deliver decentralized services to the people within the region.

This Investment Profile draws on extensive literature review as well as qualitative interviews with key informants within the region to describe the investment opportunities in minerals and extractives within the Rwenzori region. The three investment opportunities identified as part of the detailed consultation processes within the regions coupled with the review of the secondary data are:

1. Establishment of a Salt Processing Factory;
2. Limestone Mining, and;
3. Redevelopment of Copper and Cobalt Mines.

For each of the investment opportunities identified above, financial models developed as part of this profile showing the cashflows, rate of return for investments, break-even and sensitivity analysis, and the internal rate of return for an investor looking to invest in infrastructure in the region. The returns derived from the finance analysis are considered acceptable to attract both local and foreign investors into the region. Moreover, additional government incentives will be important to accelerate foreign direct investments within this sector.

The profile also details some of the environmental and social considerations, policy, legal and institutional framework that needs to be taken into account. The profile also provides details on the enabling environment and market across the different investment ventures.

Introduction

Introduction

2.1 Background to the assignment

The Rwenzori region is a border region with the Democratic Republic of Congo found in mid-Western Uganda and it is comprised of eight districts, namely, Kabarole, Kasese, Bundibugyo, Ntoroko, Kyenjojo, Kyegegwa, Bunyangabu, Kamwenge and Fort portal municipality. It has a population growth rate of 3% with approximately three million people and over 320,000 households. The Rwenzori region is endowed with diversified riches in natural resources (fertile land, minerals, forestry, wildlife, and energy) as well as being contiguous to 5 countries of the Great Lakes region (Democratic Republic of Congo, Rwanda, Burundi, Tanzania and Zambia), providing significant potential for development, regional cooperation and economic integration. This potential remains under-exploited due to several factors including, inter alia, poor physical and economic infrastructure, persistent insecurity exacerbated by the presence of armed groups and transnational organized crime, and insufficient levels of foreign and domestic private investment in the region.

Government of Uganda is eager to transform the region from conflict to an economic zone by fully exploiting the region's economic potential in order to improve the quality of life of its people. UN in Uganda seeks to support Government of Uganda to prepare evidence-informed promotional materials for investment in Rwenzori region. It is envisaged that this will contribute to the attraction of sustainable investments to exploit the region's potential and promote socio-economic transformation in the region in support of the Country's strategy of implementing private sector-led economic interventions to tackle unemployment and pave the way for Local Governments to generate their own revenue in order to deliver decentralized services to the people.

2.2 Objectives and scope

The overall objective of the assignment is to generate evidence-informed and well-packaged investment profiles/bankable investment projects (including short videos) that will attract the interest of foreign and local private sector investors and stimulate private investment in Rwenzori region. The assignment will focus on five areas; agriculture (including agro- industrialization and farming); extractives and mineral beneficiation; tourism; regional trade and services; infrastructure (including energy) development, and; human capital (education and Health) development.

The specific objectives will include, inter alia, the following;

- To document the socio-economic characteristics of the region, including Government/Local Government investments such as infrastructure;
- To document investment opportunities and the level of investment that would be required for successful business at each level and return on investment, including capital investment requirements, source and supply of equipment and raw materials, demand and market analysis, and breakeven analysis, by sector;
- Detailed financial models outlining the cash flows, profit and loss and balance sheet for at least five years with internal rate of return, return on investment and all indicators given for each project;
- To carry out an actor mapping, including on-going and planned major investments (both public and private), bearing in mind their linkage to potential investments;
- To document the enabling environment and incentives (political, legal, institutional, Economic, social);
- To document the necessary policy, legal and institutional support services that Government will need to put in place to fully exploit the potential;

- To document major strengths, weaknesses, opportunities and threats for each of the proposed projects and risk mitigation strategies;
- To carry out a sensitivity analysis on business case scenario (worst, normal and best-case) with respect to changes in macroeconomic variables/ environment;
- To document the available financing options for the projects and the costs for such financing;
- To document the human resource options, including whether or not there is local expertise to supervise and manage the identified projects.

To propose tools to be used to monitor the returns on each investment project and suggestions on the most appropriate tools with reasons fully explained.

2.3 Methodology and approach

The approach was tailored to ensure appropriate coverage of scope of work outlined in the Terms of Reference and comprised in the three phases below:

- Inception/planning phase mainly characterised by understanding the business environment, and documentary review;
- Execution and fieldwork characterised by detailed financial modelling and environmental and stakeholder analysis, and;
- Reporting involving summarisation and compilation of the report.

The approach was consultative in nature to complement the document review and data analytics. Extensive field visits were conducted with various district leaders and investors within the Rwenzori region.

The inception phase involved working closely with the Uganda Investment Authority (UIA), agri-LED program and other pro-poor projects currently being implemented in the region.

The development of the investment profile for minerals and extractives began, including detailed finance models to support the investment profiles.

2.4 Report format

The report is structured as follows:

Section 1: Executive Summary

Section 2: Introduction and Background to the Assignment

Section 3: Social and Economic Characteristics

Section 4: Situational Analysis

Section 5: Investment Memoranda

Section 6: Minerals and Extractives Sector in Rwenzori Region

Section 7: Stakeholder Mapping

Section 8: Policy, Legal and Institutional Framework

Section 9: Financing Options

Section 10: Personnel Planning

Section 11: Social, Economic and Environmental Sus-tainability

Section 12: Pre- and post-investment Support **Section 13:** Risk Assessment

Section 14: Appendices

The report also includes appendices to provide more information on the content.

Social and economic characteristics

Social and economic characteristics

3.1 Social factors

Population growth

Rwenzori is a border region with the Democratic Republic of Congo found in mid-Western Uganda. The region is comprised of eight districts namely; Kabarole, Kasese, Bundibugyo, Ntoroko, Kyenjojo, Kyegegwa, Bunyangabu, Kamwenge and Fort Portal Municipality.

The region has a population of approximately 3 million people and the population is expected to grow at a rate of approximately 3%. The high population growth rate in the region is also potential for a large emerging consumer market and human resource that if leveraged can provide significant growth opportunities.[1]

Table 2.1: Population Projections for 2019 for each district within the region

Rwenzori Region	Census Population year	Mid-year Population Projections		
District	**2014**	**2017**	**2018**	**2019**
Bundibugyo	224,387	243,000	249,900	256,800
Kabarole	298,989	317,500	324,300	331,100
Kasese	694,987	741,600	758,900	776,100
Kamwenge	414,454	460,200	477,700	495,400
Kyenjojo	422,204	469,900	488,000	506,500
Kyegegwa	281,637	350,500	378,600	408,700
Ntoroko	67,005	71,300	72,900	74,500
Bunyangabu	170,247	182,000	186,400	190,700
Total	**2,573,910.00**	**2,836,000.00**	**2,936,700.00**	**3,039,800.00**

Source: Uganda Bureau of Statistics 2019 Statistical Abstract

Age distribution

Approximately 51.3 % of the region's population are individuals aged between 14-64 years. [2] Age is an important factor as it determines the various needs and demands of the population.

Ethnicity

The Rwenzori region is multiethnic and comprises of the Bakiga, Basongora, Bafumbira, indigenous Batooro, Batagwenda, Banyarwanda, Bakonzo, Bamba, Banyabindi.[3]

[1] Uganda Bureau of Statistics 2019 Statistical Abstract page 188
[2] 2016/2017 Uganda National Household Survey page 12
3 Environment & Development Series 15 Third World Network page 5

Education

The net enrollment ratio for Primary Schools in the region for the period 2016/17 was 73.4%, the net enrollment ratio for Secondary Schools was 23.8%. There are about 67.8% people aged 18 years and above who are literate within the region.[4] The region also has two universities namely Mountains of the Moon and Uganda Pentecostal University as well as a number of learning centres for other leading universities. Education is vital for ensuring a full and productive life to all individuals and to the realization of sustainable development.

3.2 Economic factors

Land use

In Rwenzori region, there are varied forms of land use namely: cash crop farming, subsistence crop farming and cattle rearing. In regard to cash crop farming all the districts within the region grow Robusta Coffee with the exception of Ntoroko and Bundibugyo, which grow Arabica Coffee, Bundibugyo grows Cocoa, Kyenjonjo and Kabarole-Tea, Kasese grows cotton and coffee. The Basongora of Kasese and Batuku of Ntoroko and Bundibugyo are mainly cattle keepers. These are economically viable undertakings that can be developed through agro-industrialisation as well as promote trade for both local and external markets.[5]

Natural resources

Rwenzori region has a variety of natural resources such as fertile volcanic soils, ample and reliable rainfall, water bodies, rich forest cover, mineral deposits ranging from copper and cobalt in Kasese, limestone in Kamwenge and Oil deposits in the Albertine region around Lake Albert. The discovery of oil and drilling has potential to stimulate infrastructure development and increase business volume in the region. The region also has huge tourism potential with some of the leading tourist destinations such as Queen Elizabeth, Mountain Rwenzori and various other national parks. The Rwenzori region is contiguous to five countries of the Great Lakes Region (Democratic Republic of Congo, Rwanda, Burundi, Tanzania and Zambia), providing significant potential for development, regional cooperation and intergration.[6]

Existing infrastructure

Electricity/Power generation potential

The region has great potential of developing electricity (power) given that Kasese district is the second largest supplier of hydro electric energy in Uganda after river Nile in Jinja with five hydroelectric power plants on rivers Mubuku, Nyamwamba, Nyamughasani and Lhubiriha with a combined production capacity of at least 30 megawatts, as well as the Mpanga Power Station, the 18 megawatts (24,000 hp) mini hydroelectric power project. The production of hydroelectricity within the region has the potential to spur sustainable economic development as well as increasing supply of electricity for agro-processing, industrialization and other development programs.[7]

Road network

The region can be accessed through the various districts by road for instance Kamwenge District can be accessed from Kampala via Masaka-Nyakahita-Kazo-Ibanda-Fortportal Road or via Mityana-Mubende-Kyenjonjo-Rwamanja Refugee Settlement. The region can also be accessed through use of helicopters. The railway line through Kamwenge district is no longer functional but under consideration in Uganda Vision 2040. Water transport can be introduced on Lake George connecting to Rubirizi and Kasese districts. [8]

[4] 2016/2017 Uganda National Household Survey pages 31- 35
[5] Contextual Analysis of conflicts in the Rwenzori Region report page 19
[6] Joint MFS II Evaluation; Civil Society Strengthening page 2
[7] 2015/16-2019/2020 Kasese District Development Plan page 48
[8] 2015/16-2019/2020 Kamwenge District Development Plan page 24

Situational analysis

Situational analysis

The following are the performance gaps, risks, and challenges for the mineral exploration, development, production, and value addition sub-sector:

(a) Inadequate establishment of the country's mineral wealth

Government has completed geological, geophysical, and geochemical mapping for 80% of Uganda. There is need, however, to reach 100% geological, geophysical, and geochemical mapping of Uganda. There is thus a need to complete the remaining 20% mapping and surveying of the country. The quantification of mineral reserves and mapping of base metals, special metals precious metals carbonetites, carbonates pegmatite minerals and industrial minerals are also incomplete.

(b) Infrastructural challenges

Infrastructure such as electricity, rail, water and roads in mining areas are under-developed. In turn this makes the development costs high for the private mineral investors. It is vital that while the government invests in infrastructure development, such investments should be planned to extend or networked to pass through mineral rich areas in order to encourage and attract investors to such areas.

(c) Land tenure system

The current land tenure system makes it difficult for the investors to acquire ownership to the mineral prospective lands. In some parts of the country, land is owned communally and this hampers the development of the mining industry. One of the difficult issues confronting the mining sector has to do with the payment of compensation for land acquired for mining activities. Presently, there is no policy on compensation processes for crops, property and land in mining areas. In some cases, the determination of what represents fair, adequate and prompt compensation packages become a thorny issue, as there are no clear-cut determinants. A direct effect of this vacuum is the perception that mining companies exploit their host communities by not paying appropriate compensation for their crops and structures.

(d) Mineral resources value addition

The mineral obtained by mining is referred to as a raw material. The physical changes such as reducing the size, milling and concentrating brought about without altering the chemical nature is referred to as upgrading/smelting the minerals to finished products. The price of the basic mineral could be increased by subjecting it to a value addition process. It is possible to gain many advantages by value addition to minerals.

(e) Shortage of mineral data management infrastructure

The country lacks data recovery master plan in case of any disaster. The mineral data management infrastructure is meant to put up mechanisms and systems to ensure that mineral wealth data and information is safe and available at all times for sustainable planning and development

(f) Limited human resource development

The mining sector in Uganda is characterised by acute shortage of skilled personnel and retention of skilled labour. In addition, the sector is faced with a challenge of a high proportion of smallscale artisanal miners who use indigenous and poor mining techniques. It is already apparent that training and retaining high-skilled labour is critical to increasing the productivity of the mining sector. High employment turnover is a result of low remuneration.

(g) Compliance with environmental standards and requirements

Mining activities are regulated to comply with environmental management standards and requirements during mining, minerals processing, disposal of mining wastes, handling and disposals of chemical, pollution control and environmental restoration of mined areas. This is a big challenge due to remoteness and the isolated nature of mining activities that renders enforcement of environmental regulations or monitoring compliance cumbersome.

(h) Smallscale and informal mining

Smallscale and informal mining in areas such as Mubende and Karamoja region, where extensive and easy-to-exploit gold deposits exist, offers challenges such as large settlements which are neither controlled nor regulated and often may lead to loss of revenue to the government. It also leads to poor management of mining rights, which tend to overlap with indigenous land rights, along with environmental pollution, emerging social conflicts and the onset of many other illegal activities. It is vital that this complex challenge is adequately assessed and solutions identified which enable linking these small-scale miners into the mining value chain.

Investment memoranda

Investment memoranda

There are a number of mineral resources in Rwenzori region including: Copper in Kilembe mines which is being revived by the government, Cobalt in Kasese with the Kasese Cobalt Company Limited (KCCL) company, Cement at Hima where a second line has been constructed, Limestone (Muhokya), Salt (Katwe Kabatooro), Hoima area stream sediment survey (gold potential) etc. These can further be explored to benefit the people of the region and the country at large.

5.1 Establish salt factory

Uganda imported Shs94.7b ($25m) worth of salt for the year ending December 2019. However, Uganda could also export some of the salt it is producing to Rwanda, South Sudan, DR Congo and Burundi. About 90 per cent of the salt consumed in Uganda is imported, mainly from Kenya. This has mainly resulted from the collapse of Lake Katwe Salt Factory for over three decades now with much of the salt at Lake Katwe mined by artisan miners.

Salt deposits and organization of the sector

Salt deposits are located in Western Uganda at Lake Katwe and Lake Kasenyi in discreet, degazetted areas within Queen Elizabeth National Park in Kasese District, and at Kibiro in Hoima District. Salt comes in the form of a mixture of sodium and potassium chlorides, calcium sulphate and sodium bicarbonates, each of which has different applications. In the salt lakes, groundwater inflows through and dissolves salt within an underlying salt deposit (at a depth of ca. 40m) bringing salt-bearing brine to the surface. In Hoima, salt is leached and then re-precipitated from highly saline soils.

All current production is at an Artisanal and Small-Scale Miners (ASM) level. At Lake Katwe, previous attempts to set-up an industrial plant to produce iodized table salt for human consumption (sodium chloride) failed due to technical design errors, although larger investors are currently seeking the mineral rights for the area.

Location	Reserves	Status
Kibiro in Hoima District; Katwe and Kasenyi in Kasese District	22 Million tonnes of trona at Katwe and Kasenyi, Kasese District	• Mined for animal and human consumption locally. • Industrial production opportunities available

The key products include:

- Grade1 — human consumption (table salt);
- Grade 2 — animal consumption; Grade 3-Rock salt (food softening, salt licks for animals);
- Iodized table salt, potassium chloride and sodium bicarbonate;
- De-icing product, chemicals industry, particularly in the manufacture of chlor-alkalis and plastics.

Demand for salt

The demand for salt is as estimated in the table below

Year	Population	Estimated demand in Tonnes
2020	45,741,007	166,955
2025	52,294,282	190,874
2030	59,437,928	216,948

Financial analysis

The table below shows the key performance ratios:

	Year 1	Year 2	Year 3	Year 4	Year 5
Net profit ratio	5%	10%	15%	17%	19%
Return on capital employed	4%	14%	29%	30%	30%
Leverage ratio	137%	76%	31%	10%	0%
Free cash flows to firm (USD'000)	37	637	2,034	2,464	3,083
Free cash flows to equity(USD'000)	191	1,176	2,535	2,926	3,506
Project IRR	65%				
Equity IRR	75%				
NPV (USD'000)	17,578				
Payback period (years)	2				
EBITDA margin	23%	23%	27%	28%	29%
Gross margin	55%	56%	57%	58%	59%
DSCR	0.18	0.55	1.68	4.17	62.41
Interest coverage	2	5	13	25	62
Asset turnover	1.58	3.39	6.45	9.24	13.53
Debt/EBITDA multiple	3.32	1.31	0.46	0.18	-

5.2 Limestone mining

According to Globe Newswire, the global Limestone market is valued at USD63,270 million in 2020 and is expected to reach USD81,270 million by the end of 2026, growing at a CAGR of 3.6% during 2021-2026.

Uganda's construction industry is growing at 6%/ p.a. and, alongside this, demand for a broad range of "building minerals" is increasing. In addition, the purchasing power of the country's burgeoning population is increasing and the government of Uganda's significant budget to road and energy infrastructure (including hydroelectric power plants) are expected to increase the demand on construction materials.

Lime stones reserves in the Rwenzori region

The table below shows the limestone deposits.

	Location	Reserves
Limestone/ Marble	Muhokya in Kasese District and Dura in Kamwenge District, and Hima in Kasese District.	• 14.5 million tonnes at Hima, Kasese; and • 11.6 million tonnes at Dura, Kamwenge

Organisation of the sector

Businesses have been divided according to two categories – medium and large-scale businesses, and (ASM) businesses.

Under the ASM, the main stakeholders at the sites are landowners and site owners, site managers, mine and lime production plant workers and in some cases supervisors. Limestone quarries typically, although not always, operate separately from the lime production plants, in which case limestone is purchased from quarry site owners. Both sites reported to holding licenses to mine, under the names of various different landowners.

Competitive landscape

The limestone market is partially-fragmented. In terms of market share, few of the major players currently dominate the market. Key players in the limestone market include Hima Cement, Kampala Cement.

End user industries

The end user industries include Paper and Pulp, Water Treatment, Agriculture, Plastics, Building and Construction, Steel Manufacturing and Other Industries (including Energy).

Ratio analysis

The table below shows the key ratios if an investor invested in a plant with a capacity of 50,000m^3

	Year 1	Year 2	Year 3	Year 4	Year 5
Net profit ratio	-2%	-1%	2%	5%	8%
Return on capital employed	-1%	0%	2%	5%	9%
Leverage ratio	153%	116%	75%	35%	0%
Free cash flows to firm (USD'000)	59	183	240	208	222
Free cash flows to equity (USD'000)	127	421	461	412	409
Project IRR	12%				
Equity IRR	25%				
NPV (USD'000)	2,385				
Payback period (years)	8				
EBITDA margin	35%	35%	36%	36%	36%
Gross margin	54%	54%	54%	54%	54%
DSCR	0.08	0.11	0.18	0.38	4.96
Interest coverage	1	1	1	2	5
Asset turnover	0.68	0.83	1.05	1.41	2.08
Debt/EBITDA multiple	3.67	2.67	1.73	0.84	-

5.3 Redevelopment of copper and cobalt mines

Global demand for copper metal (produced from refined copper and recycled scrap) is projected to advance 4.2 percent per year through 2019 to 36.0 million metric tons, valued at $261 billion. Robust gains in building construction expenditures are expected to boost the use of copper wire, tube, and other mill products in applications such as building wire and plumbing. Increased infrastructure investment, particularly in developing countries, will further benefit copper suppliers as updates to national power grids drive the production of wire and cable. In addition, advances in global manufacturing output are expected to bolster the use of copper metal in transportation equipment, industrial machinery, domestic appliances, and other durable goods.

World copper prices

The London Metal Exchange (LME) Copper Official prices, US$ per tonne are as shown in the table below;

Contract	Bid (US$ / Tonne)	Offer (US$ / Tonne)
Cash	6,342.50	6342.50
3-months	6,334.00	6334.00
Dec 21	6,352.50	6352.50
Dec 22	6,370.50	6370.50

Copper and cobalt in the Rwenzori region are found in Kasese district in the Kilembe mines.

Mineral	Reserves	Status
Copper	6 million tonnes measured and indicated Copper, Cobalt, Lead, Zinc resources in Kilembe, PGMs occur in all regions of Uganda.	The Government is also fast-tracking the functionalization and redevelopment of Copper mines in Kilembe, Kasese District. Government signed concession agreement with a Chinese company Tibet Hima to develop the copper resources at Kilembe mines.
Cobalt	5.5 Million Tones with grade of 0.17 of cobalt	Kasese Cobalt Company Limited has been processing cobalt stockpile, which is nearly exhausted.

06

Minerals and extractives sector in Rwenzori region

Minerals and extractives sector in Rwenzori region

6.1 Minerals overview

The primary mineral reserves within the Rwenzori region include Cobalt, Copper, Limestone, Rare Earth metals, and deposits of Salt along Lake Katwe. These metals present an opportunity for value addition and development consistent with the mandate of the Ministry of Energy and Mineral Development (MEMD), through the Directorate of Geological Survey and Mines. The value addition and development is done by monitoring and enforcing regulation in all mining activities and also undertaking collection, collating, processing, analysis, archiving and dissemination of geo-data to establish the mineral potential.

The overall contribution of minerals to Gross Domestic Product (GDP) growth increased from **0.3%** in Financial Year (FY) 2012/13 to **0.6%** in FY2017/18 which has also seen the value of mineral production increase from **UGX 159.3Bn** in 2013 to **UGX 179.7 Bn** in 2017. The mineral deposits within the Rwenzori region have potential to lead to economic growth and transformation, and contribute to GDP. In addition, the sub-sector can create employment since it employs about 26.5% of Uganda's population directly or indirectly.

This policy brief explores and assesses the effectiveness of what has been done to benefit from the mineral sub-sector, and what more needs to be done to exploit the mineral potential.

At national level, the government's strategic direction has been to provide a favourable business climate in Uganda for over two decades now. This has attracted many mining companies that have been licensed in the mining sector. Over the last ten years the sector has been growing positively with growth rates peaking **19.4%** in FY 2006/07. In FY 2009/2010, the sector grew by **12.8%.** In the FY 2012/13 mineral production in commodities limestone, pozzolana, gold, vermiculite, cobalt, wolfram, aggregates, kaolin, and iron ore generated **UGX. 207.9 billion**. Mineral Exports revenue worth **UGX 69.9 billion** was generated from mineral exports of cobalt, copper, gold, iron ore, manganese ore, quartz, silver, tin, tungsten and vermiculite.

The key minerals include Uranium, Gold, Iron ore, Limestone, Marble, Copper, Cobalt and Phosphates (Apatite and francolite). Others include Tungsten, Glass Sands, Beryllium, Bismuth, Columbite-Tantalite, Lead and Zinc ores, Lithium, Tin, Iron ores, Platinum, Uranium, Rare Earth metals, Vermiculite, Kaolin, Bentonite, Diatomite, Gypsum, Salts, Feldspar, Quartz, Pozzolana, Dimension Stones and Gemstones. The NDP III earmarked six key minerals for exploitation; Iron ore, Limestone/Marble, Copper/Cobalt, Phosphates, Uranium and dimension stones. The table below shows the potential mineral sector for investment.

Mineral sector	Coverage and reserves
Precious metals	Gold, silver, platinum occur in all regions of Uganda
Iron ore	Over 300 million tonnes of indicated and measured iron ore (haematite) resources in South Western Uganda and over 100 million tonnes of (magnetite) have been explored in South Eastern Uganda.
Rare Earth elements (REE)	Potential exists in isolated pegmatite's in South Western Uganda, Carbonatite centres in Eastern Uganda, Aluminous clays (≈ 300mt measured and indicated resources) in Makuutu area (SE Uganda).
Base metals	4.5 million tonnes measured and indicated Copper, Cobalt, Lead, Zinc resources in Kilembe, (Platinum Group of Metals) PGMs occur in all regions of Uganda.
3Ts [Tin, Tantalite (Coltan) & Tungsten]:	In South Western and Central Uganda and Sukulu Carbonatites
Industrial minerals:	Vermiculite (Eastern Uganda), Dimension stones (Marble, Granite, Gneisses) and Glass sand occur in all regions of Uganda.
Lithium:	Spodumene, lepidolite, and amblygonite are associated with pegmatite occurring in many areas in Uganda
Graphite	About 1 billion tonnes of measured and indicated graphite resources in Orom hills, Kitgum district – needed for production of carbon cathode rod for lithium batteries.

6.2 Imports and exports of minerals

The trade deficit from Development Minerals and related products in Uganda amounted to **$82.6 million USD** in 2016, constituting **3.2%** of Uganda's total trade deficit on - **2.56 billion USD** as shown in the table below.

	Import		Export		Deficit
Mineral	**Quantity (Tonnes)**	**Value (USD)**	**Quantity (Tonnes)**	**Value (USD)**	**(USD)**
Limestone and Related Products					
Cement	1,436,316	76,590,000	356,834	61,164,000	-15,426,000
Lime	16,047	1,693,000	62	10,000	-1,683,000
Flux	40,005	345,000	1	1,000	-344,000
Salt	195,315	26,626,000	16,930	3,700,000	-22,926,000

In terms of contributions to trade deficits, salt contributes (27%) while cement (18%). Although lime currently constitutes a trade deficit, its domestic production represents an important opportunity to potentially reduce the deficit attributed to cement

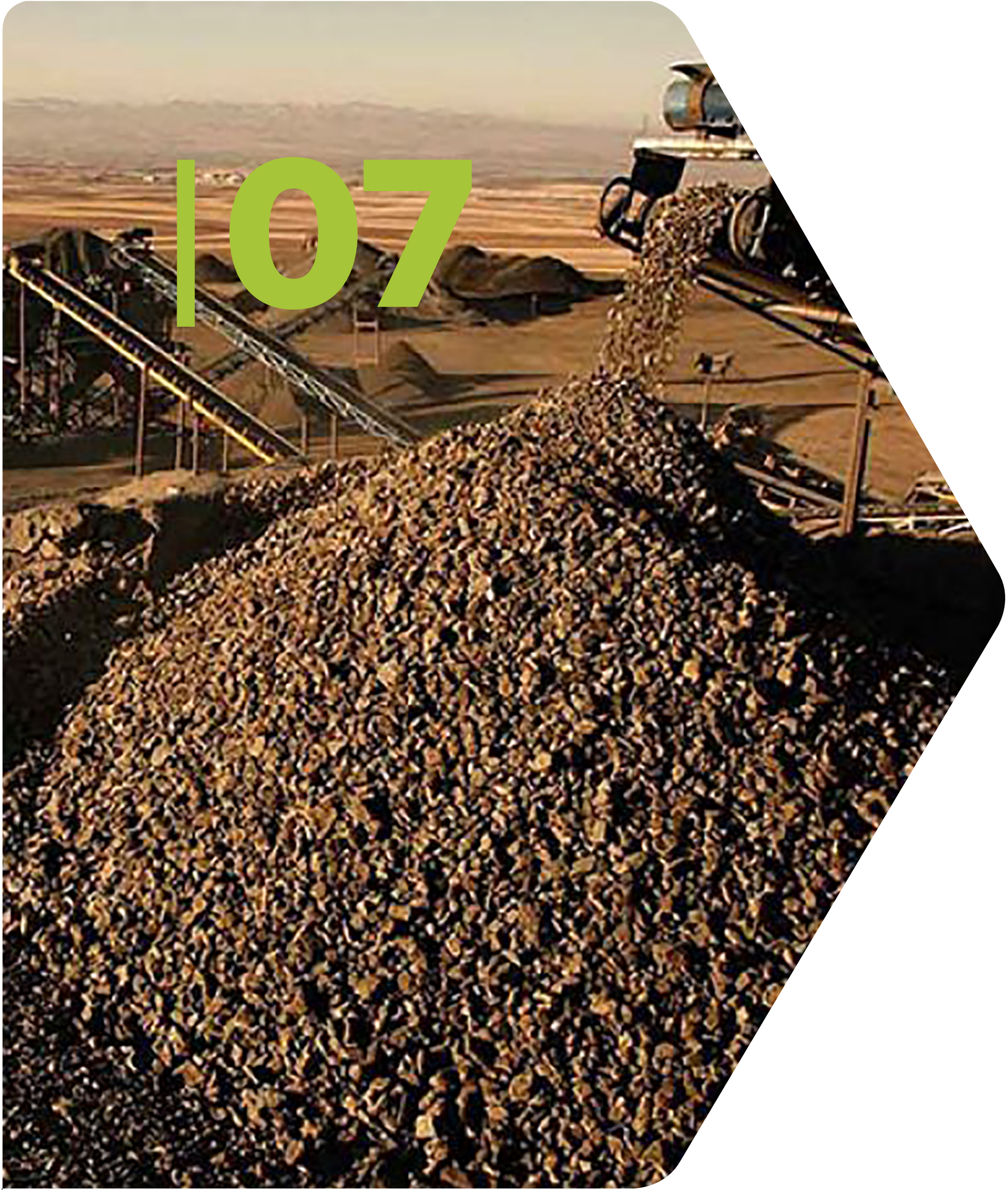
6.3 Investment incentives

The Government of Uganda offers the following investment incentives:

- Uganda Investment Authority (UIA) is under Ministry of Finance ,Planning and Economic Development put in place an Investment Code, 1991. The Code encourages private investment by streamlining procedures and guaranteeing protection of investors against appropriation;
- Foreign individuals and companies - own 100% of a business in Uganda (Mining companies inclusive);
- Taxation; import taxes such as customs duty for all mining equipment is zero-rated;
- Mineral Certification Mechanism; Uganda is in process to certify tin, tungsten and columbite-tantalite (3Ts) and gold minerals in compliance with the Great Lakes initiative. Certification is aimed at eradicating regional conflicts and maximizing 3Ts prices;
- 100% repatriation of capital, capital gains, dividends and profits are allowed;
- Free land can be provided within the protected areas (Concession is subject to franchise fees);
- Foreign investor security is guaranteed under the Constitution and the Investment Code 1991;
- Uganda is a signatory to the Multilateral Investment Guarantee Agency (MIGA), the Overseas Private Investment Corporation (OPIC) of the US, and the Convention on the Recognition and Enforcement of Foreign Arbitral Award (CREFAA), the International Centre for Settlement of Investment Disputes (ICSID), the Trade Related Investment Measures (TRIMS), the General Agreement on Trade in Services (GATS), and the Trade Related Aspects of Intellectual Property Rights (TRIPS);
- First Arrival Privileges in the form of duty exemptions for personal effects and motor vehicles to all investors and expatriates arriving in Uganda;
- Stamp duty exemption and exemption of withholding tax on interest on external loans;
- Foreigner, local and overseas investors can open foreign exchange accounts;
- Helicopter-chartered flight services are allowed anywhere in Uganda;
- Work visas are granted to foreign technical (not available in Uganda) and managerial personnel for the purpose of transferring skills and know-how. The work visas can be issued for a period up to 5 years. The representative of the Immigration Department in the Ministry of Internal Affairs is a member of the team that issues work visas

Source: Ugandan Investment Authority, 2012

07



Stakeholder mapping

Stakeholder mapping

7.1 Stakeholders

The mineral sector in Uganda is mainly public sector-led and private sector-driven. The public sector includes:

- The District Local Administration Authorities are responsible for receiving and forwarding applications for various mineral rights, arbitrating in compensation, resolution of disputes and granting of licences, for those minerals not administered under the Mining Act and goldsmith licences;
- The National Environment Management Authority (NEMA), which is responsible for environmental quality and management e.g., through approving environmental impact assessments and environmental monitoring reports for mining projects, controlling /monitoring pollution, hazardous wastes, waste disposal, in co-ordination with mineral agencies;
- Ministry of Water and Environment, which is responsible for water use, water quality, discharge of effluents and waste disposal;
- Ministry of Gender, Labour and Social Development, which is responsible for Labour, Occupational Health and Safety, including handling of chemicals and hazardous wastes;
- The Uganda Chamber of Mines, an umbrella association for all stakeholders in the mineral sector.

7.2 Policy documents

The Rwenzori region Extractives and Mining Sector investment profile should be closely aligned with the national priorities and the country's strategic direction. Therefore, the profile has been designed to ensure alignment with the following key strategic and policy documents:

- Vision 2040;
- United Nations Sustainable Development Goals;
- National Development Plan III;
- Sector Development Plan;
- Operation Wealth Creation;
- District Local Government Development Plans 2015/16 – 2019/20.

08

Policy, legal and institutional framework

Policy, legal and institutional framework

The legal and institutional framework consists of the following:

8.1 The legal and policy framework

The legal and policy framework regulating the mining sector in Uganda consists of the following;

- Constitution of the Republic of Uganda;
- Mining and Mineral Policy (2018);
- The Mining Act (2003), and;
- The Mining Regulations (2004).

There are also other laws that have an impact on the mining sector, such as:

- The National Environment Act;
- The Income Tax Act, and;
- The Land Act.

8.2 Permits and licences

The table below shows the different permits and licences.

Licence	Purpose	Period	Remarks
Prospecting licence (PL)	To prospect for minerals around the country.	1 year	Not renewable.
Exploration licence (EL)	To explore for minerals in an area not more than 500 Km2.	3 year	Renewable two terms of 2 years each and half area relinquished on each renewal.
Retention licence (RL)	Granted to the holder of an EL after establishing mineral deposit with feasibility study and cannot be exploited due to economic or other reasons.	3 year	Renewable once for 2 years.
Mining lease (ML)	For mining operations	21 years	Should not exceed area of Exploration Licence and is renewable for 15 years or until exhaustion of ore.
Location licence (LL)	For mining operations of a smaller investment where expenditure to achieve production will not exceed 50 currency points (1cp = UGX 20,000 ≈ US$ 7.	2 years	Granted to citizens of Uganda or in case of corporate, citizen of Uganda holds ≥50% of ownership. Renewable for terms of 2 years each.

Licence	Purpose	Period	Remarks
Mineral dealers licence (MDL)	For internal mineral trade or export	2 years	Expires on 31st December in the year in which the licence is granted.
Goldsmith licence (GL)	For manufacturing of articles from any precious mineral or from any substance containing any precious mineral.	1 year	Expires on 31st December in the year in which the licence is granted
Permits			
Export permit	For exporting minerals from Uganda to other countries	Granted per consignment	• Valid MDL or a mineral right. • Import Permit for minerals from out of Uganda or Proof of royalty payment for minerals from Uganda.
Import permit	Importing minerals into Uganda from other countries	Granted per consignment	Valid MDL for the right group of minerals • Export Permit and certificate of origin from originating country • Payment of import permit fees
Movement permit	Movement of minerals between 6 o'clock at night and 7 o'clock in morning	Granted per consignment	• Valid MDL or a Mineral Right (Licence) • Proof of royalty payment

8.3 Royalties

The royalties payable are as follows:

- 5% of gross value for gold and base metals;
- 10% of gross value for precious stones;
- 10,000/= per ton for phosphates, vermiculite, limestone, kaolin, chalk, gypsum;
- 5,000/= per ton for, marble, granite, sandstone, quartz, coal or peat and other dimension stones;
- 1,000/= per ton for pozzolanic materials;
- 500/= per ton for salt;
- All mineral rights are granted and revoked by the Commissioner, Department of Geological Survey and Mines (DGSM);
- Any person aggrieved by the decision of the Commissioner can appeal to the Minister for an Administrative Review;
- Decisions of the Minister may be subjected to judicial review in the High Court;
- In case any party is not satisfied with Uganda's courts of law, they can go to international arbitration;
- Environment: The Mineral Right (Licence) holder is required to comply with National Environmental Management Act;
- Royalties on gross value is charged as follows: Precious stones (5%); precious and base metals (5%); Industrial minerals — quantity based;
- Revenues from royalty are shared by: Government (80%); Local Governments (17%); and Land Owner (3%);
- Compensation: Any disturbance of surface rights of the land owner has to be adequately and fairly compensated.

09

Financing options

Financing options

There are various financing options for both local and foreign investors for the Extractive and Mining beneficiation projects in Uganda. These include debt, equity or mezzanine (a combination of both debt and equity), grants. The following subsections analyse each of the options in the context of the Ugandan extractives and mining sector.

9.1 Debt

In order to ensure that the Energy and Mineral Development Strategic Development Plan (EMD SDP) is realized, there is a need to explore new modes of financing the identified government and private sector projects. Previous energy projects have been spearheaded by the state and a decision to use public or concessional funds to support the sector represents a commitment of scarce resources to fund developments. Given the large number of programs identified in the SDP and associated development projects, this would require innovative mechanisms to fund these projects by both the public and private sector. This is the backdrop of the undeveloped financial markets, which could provide new financial instruments as avenues to finance the sector. The challenge is to choose the appropriate financial instruments to support by maximizing the use of instruments that would deliver the greatest amount of private funding for the smallest amount of public funds and thereby achieving greatest leverage.

There are various forms of financing instruments, which can be applied to support the sector. These instruments are broadly grouped into the following categories: (i) instruments used to overcome financing barriers, (ii) instruments used to address specific risks, (iii) instruments that simultaneously address financial markets that lack sophistication to offer risk management. Consideration of the financing options would require that the EMD sector makes a deliberate effort to have bankable projects for both the private and public uptake. The combination of financing options described below can be applied for the government, private sector or Public Private Partnership arrangements. The financing options for the programmes identified are specified and described below:

Bank	Ownership	Total Assets in USD Millions	Market Share	Number of Branches
Stanbic Bank	Foreign	2,105 Millions	20.56	78
Standard Chartered Bank	Foreign	840 Millions	12.12	9
Centenary Bank	Local	950 Millions	10.37	63
DFCU	Foreign	939 Millions	7.72	62
Others	Several	2,066 Millions	49.23	334

9.2 Grants and long-term loan financing

One form of financing shall be derived from grants provided through the budget. In most cases these grants shall be provided through donors including the multilateral agencies and bilateral donors. Grants shall fund part of the development costs of project, generally in an effort to reduce the ultimate financial cost in order to increase their competitiveness, capacity building, and to reduce ultimate customer prices, especially for projects that are sometimes considered economically- unviable but of social importance. This source of financing shall still be critical especially for very large projects which are considered not to be economically-viable but with high social returns. In addition, there are projects where government has to play a leading role before they become attractive to the private sector. This is particularly the case for the extractive industry projects. Among the programs objectives that could benefit from this form of financing are acquisition of geo-scientific data for minerals and petroleum.

9.3 Sovereign bonds

Uganda has sustained a stable macroeconomic environment for the past 15 years with growth averaging 7-8 percent. As a result, the rating of Uganda by various rating agencies is currently at B by Standard and Poors and B by Fitch ratings agency. Based on this, the large projects, which have been identified in the EMD SDP can be financed by issuance of sovereign bonds through international capital markets. These could particularly be tailored to, for example, the large hydropower dams, thermal power and nuclear energy Development.

9.4 Establishment of a pool of funds

A Fund could be established among other reasons to provide a stable and unified source of venture capital for the energy and mineral development sector. This fund can be capitalized initially by government, institutional investors and international financial institutions. It is proposed that Uganda considers establishing a pool of funds but adapt it to the local context with improved governance and management principles and practices. The pool of funds enables the government to have a stable and unified source of venture capital, which can be targeted to the entire sector expected to grow at a high rate and generate employment.

Once the government initiates the fund through providing the necessary initial resources, including financial and human resources, it should market it to other potential investors including pension funds and other institutions including international organizations. The government in collaboration with the Capital Markets Authority (CMA) would make a decision on the initial amount of financing required based on a well-structured study of the sector.

9.5 Private venture capital financing

This type of capital financing is generally targeted at new technologies and companies with a high growth potential. It is also most suitable for start-up companies which do not have any track record of operation. In this case the financiers look to make their returns by exiting the development, typically through an Initial Public Offering (IPO) on the stock market or sale to a larger company interested in acquiring the business's technology. Therefore, this financing option would require a well-functioning stock market, which already exists in Uganda and can be used as a vehicle for exit by venture capitalists.

The nature of the mining industry usually entails small companies that are considered to be start-ups with lack of sufficient collateral for them to borrow for their green-field projects. Another challenge is that the venture capital market in Uganda is at the infant stage. While this is a challenge, there are already existing venture capital funds within the East African region, which are particularly targeting SMEs of which these could include the extractive industry. The SMEs in the extractive industry based in Uganda can initially benefit from these funds if information is availed to them regarding the requirements of these funds. In addition, an effort could be made to market some of SMEs in the sector to the fund managers in the region. The government and other institutional investors could also allocate direct resources to this development fund.

9.6 Asset-backed securities

There is need to establish more financing instruments for the extractive industry. One of the options includes use of Asset-backed securities. Asset-backed securities are bonds or similar instruments, which are backed by the cash flows generated by a project or projects (rather than being corporate bonds backed by the assets of a company as a whole). These cash flows form the basis and security for repayment. The process of raising finance in this way, secured against future cash flows, is frequently termed as securitization. Asset-backed securities are generally used for refinancing projects that are generating positive cash flows, although they can also be issued in the form of project bonds ahead of construction. Such refinancing offers a potential way to free up public funds that have been committed for development, thereby allowing these funds to be redeployed to support new projects. Use of the Asset-backed securities could be applied to a group of small miners who can collectively associate to benefit from such instruments. This would require such miners to be operating formally, with registered companies, books of accounts and clear organization structures and governance principles. The role of government is to ensure that such securities are developed through capital markets development. Given the level of risk associated with green-field projects in the energy, mineral and petroleum sub-sectors, there is a need for the government to create a credit enhancement scheme in order to assure the investors in the sectors.

10

Personnel planning

Personnel planning

10.1 Skills level

The skills level in Rwenzori region is analysed in the context of Uganda's Human Development Index. Uganda's HDI value for 2018 is 0.528 — which put the country in the low human development category— positioning it at 159 out of 189 countries and territories.[9] By extension, the level of availability of skilled manpower in the Rwenzori region is low since majority of the population does not possess the skillsets needed to manage and operate complex Extractives and Mineral Beneficiation projects.

Management roles requiring specialised skills could be obtained from elsewhere and deployed in the region.

The current human resources in the Directorate of Geological Survey and Mines need to be retooled, trained with new and advanced skills and capitalized to be able to explore, evaluate and develop the mineral potential of Uganda and to license, monitor and enforce compliance effectively. The current size of manpower is unable to cope with the rapidly-expanding mineral industry especially after identification of new opportunities by airborne geophysical surveys and surface mapping. The government plans to:

(i) Finalize the ongoing re-structuring of the Ministry and expand manpower;

(ii) Recruit and train young professionals, and;

(iii) Reform and harmonize the incentive structure for the staff working on geological survey and mines.

[9] Briefing note for countries on the 2019 Human Development Report for UNDP

11

Social, economic and environmental sustainability

Social, economic and environmental sustainability

Sustainable Development Goals and 2030 Agenda

In 2015, the United Nations (UN) approved the 2030 Agenda for Sustainable Development, which set in motion the Sustainable Development Goals (SDGs).The 17 goals are designed to take a holistic approach to address the social, economic and environmental aspects of sustainable development. Investment in Uganda's Extractives and Mineral Beneficiation sector is one of the gateways through which the SDGs will be attianed. Establishment of a salt factory, redevelopment of Limestone and Cobalt mines helps to achieve the SDGs to increase the quality of life of the population within the region.

Achieving the social goal of reduced social inequality — especially gender inequality — is dependent on improving access to economic resources such as land, natural resources, financial services and technology for women and marginalised groups. Investors should focus on emancipating these groups to improve access to markets, reduce regional inequalities, and also achieve sustained incomes. Environmental goals including climate action, sustainable production and consumption as well as management and preservation of natural resources and biodiversity are intergral to investment in the Extractives and Mineral Beneficiation sector.

> Establishment of a **Salt factory,** Redevelopment of **Limestone and Cobalt mines** helps to achieve the SDGs to increase the quality of life of the population within the region.

11.1 Social sustainability

The extractives and mineral beneficiation sector investment profile has generated various opportunities. These proposed projects focus on the concept of social accountability with emphasis on promoting the betterment of the lives of people within the Rwenzori Region. This has broadly focused on issues like environmental law, human rights, and public involvement and participation in all projects that are proposed. Putting an emphasis on social sustainability in implementing the proposed projects should strengthen other spheres of sustainability. The following text discusses the concept of social accountability as it relates to the respective opportunities that have been identified.

Government recognises the role of Civil Society Organisations (CSOs) in advocacy, mobilisation and dialogue with the communities and expect them to help "get the voices of the communities in the project affected areas into the designing, monitoring and implementation of the projects. Most importantly, however, these organisations are expected to contribute to ensuring that project operations are carried out in accordance with good governance principles of transparency and accountability.

11.2 Economic sustainability

Economic sustainability is a critical pillar in developing the Infrastructure and Services Sector Investment Profiles. The proposed projects were made with the understanding that they are the most equitable and fiscally s ound projects c onsidering all other aspects of sustainability especially betterment of society with long-term benefits within the R wenzori region. The following was proposed: a blend of good business practices with social and environmental aspects of sustainability to ensure positive results through large-scale employment, education and betterment of communities.

The inherent complexity of Extractives and Mineral Beneficiation also requires that its development be accompanied by efficient planning and management processes that are based on the fundamental principles of sustainability. Discrepancies between national government structures and local government perspectives often create a space for the dominance of local, private interests rather than on strategies that lead to socially fair development which takes into account the needs of local residents. To address the challenge, effective management, frequent institutional, economic and social changes were added, which make cooperation and governance

difficult in environment of shifting governance modes. These shifts are a recent focus of the Extractives and Mineral Beneficiation governance, along with some key concerns related to mobility.

Economic Sustainability of the Extractives and Mineral Beneficiation projects will involve an increasingly-networked set of inter-relationships between actors in the public, private and third sectors, and should bring together mining and host communities, businesses and the traditional institutions of the state with an interest in infrastructure and services, in order to achieve the sustainable management of infrastructure within and between destinations.

11.3 Environmental sustainability

Mining activities are regulated to comply with environmental management standards and requirements during mining, minerals processing, disposal of mining wastes, handling and disposals of chemical, pollution control and environmental restoration of mined areas. This is a big challenge due to remoteness and isolated nature of mining activities that renders enforcement of environmental regulations or monitoring compliance cumbersome.

Environmental management in Uganda is aimed at achieving national objectives and directive principles of state policy, that promote sustainable development and public awareness of the need to manage land, air, and water resources in a balanced and sustainable manner for the present and future generations as enshrined in The 1995 Constitution of the Republic of Uganda (as amended).

The vision 2040 and Uganda's Third National Development Plan (NDP III) is to transform Uganda to a middle-income economy. However, long-term sustainable growth, employment and prosperity cannot be achieved without sustainable utilization of the environment and natural resources including biomass energy. NDP III also highlights challenges of poor compliance with environmental policies, laws and regulations to address degradation of environment and natural resources and weak policy and legal framework for mainstreaming of climate change into development plans at all levels. The National State of Environment Report (2008) highlighted that biomass energy constitutes over 90% of national energy sources but the biomass sub sector has not benefited from research, development funding and technology transfer. Almost all the basic needs of cooking and water heating in rural and most urban households, institutions and commerce are derived from wood, with the annual consumption of wood in the country estimated to be about 25 million tons (or about 1.1 tons per capita), out of which about 4 million tons is consumed as charcoal. The contribution of firewood and charcoal to Uganda's GDP is estimated to be UGX120 billion and 67 billion respectively.

The National Climate Change (NCC) complements and reinforces the above policies in addressing climate change by promoting the utilization and supply of clean diversified sources of energy. The production and use of energy impact the environment and global climate in varying degrees. The exploitation of biomass for energy purposes results in deforestation, while the use of fossil-based fuels contributes to climate change. The use of inferior cooking equipment also has a negative health impact. The production, transportation of crude oil, flaring of natural gas associated with petroleum production and the production of petroleum products have associated environmental risks. The strategic goal of the interventions is to ensure that energy is produced, supplied and used in an environmentally-sustainable manner. This will focus on the conduct of Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) Studies and Social Impact Assessment (SIA) Studies of all energy projects, with associated adaptation and mitigation plans for environment and climate change.

The activities in the Energy and Mineral Development Sector have a profound effect on the climate and the health of the people. This is in the form of poor working environment and health conditions in the production and utilisation of energy; and the perceptible global warming conditions. The strategic activities will involve the following:

- Producing and using environmentally-friendly energy forms
- Deploying mechanisms to limit the emission of environmentally-undesirable substances;
- Using fiscal and financial incentives to promote the production and use of environmentally-friendly energy forms.

Interventions to be pursued to achieve the environmental goals in the Energy and Mineral Development Sector goals and as stipulated by NEMA and the local authorities.

Support pre-/post-investment

Support pre-/post-investment

12.1 Pre-investment

The support needed pre- and post- investment for the Extractives and Mining Sector include the following:

Community sensitisation

The community will need to be sensitised about the projects objectives, impact on the community lives to improve on the success of the projects.

Advocacy and lobbying

Advocacy and Lobbying support is important to ensure mining-related policies and procedures that promote economic development and empowerment within the Rwenzori region. This will ensure an increase in investor confidence, ease importation and handle tax-related issues for the investor.

Taxation

One of the critical aspects of investment in the Rwenzori region are aspects of taxation of imports, exports, and licencing. There are tax waivers for investors within the region that can be utilised for investment.

12.2 Post-investment

In addition to the pre-investment factors where support will be needed, establishment of a mechanism to track performance through a Monitoring and Evaluation System is crucial. This will help monitor returns in a timely manner.

13

Risk assessment

Risk assessment

The table below summarizes the risk identification, quantification and management strategies for the agricultural sector.

Types of risk	Risk consideration	Possible scenario	Likeliness (High, Med, Low)	Impact level (fatal, manageable)	Mitigating action taken by the firm NOW	Recommended actions	Priority (High, Med, Low)
Inadequate establishment of the country's mineral wealth	Quantification of mineral reserves	Inadequate assessment	Medium	Manageable		The quantification of mineral reserves and mapping of base metals by the government.	
Infrastructural Challenges	High Development costs	Slow exploitation of the minerals	Medium	Manageable		Government invests in infrastructure developed by networking mineral rich areas onto grids.	
Land tenure system	Acquiring of ownership to the mineral prospective lands.	High compensation packages	High	Manageable		The government should develop an effective communication strategy and guidelines regarding land acquisition for mining activities	Med
Small scale and Informal Mining	Poor management of mining rights	Loss of revenue	Med	Manageable	Linking these small-scale miners into the mining value chain.	Strengthen regulatory legal and framework for environmental sustainability and formalization of ASM into the mainstream mineral value chain and the economy. These artisans can also be organized into groups, empowered and provided with licenses to operate.	High

Types of risk	Risk consideration	Possible scenario	Likeliness (High, Med, Low)	Impact level (fatal, manageable)	Mitigating action taken by the Firm NOW	Recommended actions	Priority (High, Med, Low)
Shortage of mineral data management infrastructure	Inadequate Data management	Data disorder and impact on quality and availability			Government should set up a centralized data management system.	Create and regularly update the data management system	
Market and Price Risk	Price fluctuations	Loss of revenue	Med	Manageable	Sale-only final products	Value addition Raise awareness of on price risk exposure	High
Limited Human Resource Development	Shortage of skilled personnel	Poor mining techniques	High	Fatal	Training and retaining high skilled labour	Competitive remuneration Importation of key staff from abroad.	High
Biological and Environmental risk	Land degradation	Crop losses Low crop yields	High	Fatal	Strong regulation	Regulation and monitoring to comply with environmental management standards and requirements during mining, minerals processing, disposal of mining wastes, handling and disposals of chemical, pollution control and environmental restoration of mined areas.	High

14 Appendices

Appendices

14.1 Salt processing – financial statement

The financial statements include the statement of comprehensive income, statement of financial position and the statement of cashflows based on the Base Case/Average Case scenario and an equal split between debt and equity for a five-year period of business operation. During the modelling process, we have modelled various scenarios as part of the sensitivity analysis.

Statement of comprehensive income

	Year 1	Year 2	Year 3	Year 4	Year 5
	USD'000	USD'000	USD'000	USD'000	USD'000
Iodized salt	2,053,125	3,853,305	6,246,822	7,436,946	8,711,685
	2,053,125	3,853,305	6,246,822	7,436,946	8,711,685
Directs costs					
Raw salt per tonne	657,000	1,208,880	1,921,360	2,242,560	2,575,440
Processing cost per tonne	123,188	226,665	360,255	420,480	482,895
Transport	82,125	151,110	240,170	280,320	321,930
Packing material	57,488	105,777	168,119	196,224	225,351
	919,800	1,692,432	2,689,904	3,139,584	3,605,616
Gross profit	1,133,325	2,160,873	3,556,918	4,297,362	5,106,069
Administrative expenses					
Salaries and wages	141,000	287,640	293,393	299,261	305,246
Electricity	410,461	770,353	1,248,865	1,486,794	1,741,640
Water	14,783	27,200	43,231	50,458	57,947
Marketing expenses	102,656	192,665	312,341	371,847	435,584
Total overheads	668,900	1,277,858	1,897,829	2,208,360	2,540,417
EBITDA	464,426	883,015	1,659,089	2,089,002	2,565,651
Depreciation	164,743	164,743	164,743	160,743	158,743
Amortisation of pre-operating	2,400	2,400	2,400	2,400	2,400
EBIT	297,282	715,872	1,491,945	1,925,859	2,404,508
Finance costs					
Loan interest	154,100	154,100	115,575	77,050	38,525
	154,100	154,100	115,575	77,050	38,525
Operating profit	143,182	561,772	1,376,371	1,848,809	2,365,983
Corporation tax	42,955	168,532	412,911	554,643	709,795
Profit after tax	100,228	393,241	963,459	1,294,166	1,656,188

Projected statement of financial position

The table below is the projected statement of affairs.

	Year 1	Year 2	Year 3	Year 4	Year 5
	USD'000	USD'000	USD'000	USD'000	USD'000
Assets					
Property plant and equipment	1,292,807	1,128,064	963,321	802,577	643,834
Pre-operating expenses	9,600	7,200	4,800	2,400	-
	1,302,407	1,135,264	968,121	804,977	643,834
Current assets					
Inventories	337,500	633,420	513,437	611,256	716,029
Accounts receivable	168,750	316,710	513,437	611,256	716,029
Cash/overdraft	897,703	660,709	1,370,309	2,265,211	3,506,899
Net current assets	1,403,953	1,610,839	2,397,183	3,487,723	4,938,956
Total assets	2,706,360	2,746,102	3,365,304	4,292,700	5,582,791
Share capital	1,027,333	1,027,333	1,027,333	1,027,333	1,027,333
Revenue reserves	100,228	493,468	1,456,928	2,751,094	4,407,282
	1,127,560	1,520,801	2,484,260	3,778,427	5,434,615
Long-term debt	1,540,999	1,155,749	770,500	385,250	-
	1,540,999	1,155,749	770,500	385,250	-
Current liabilities					
Trade and other payables	37,800	69,552	110,544	129,024	148,176
	37,800	69,552	110,544	129,024	148,176
Total liabilities	1,578,799	1,225,301	881,044	514,274	148,176
Total Equity and liabilities	2,706,360	2,746,102	3,365,304	4,292,700	5,582,791

Projected – cash flow statement

The table below is the projected cash flow.

	Year 1	Year 2	Year 3	Year 4	Year 5
	USD'000	USD'000	USD'000	USD'000	USD'000
Net cash inflow from operating activities:					
Profit before tax	143,182	561,772	1,376,371	1,848,809	2,365,983
Adjustment for items not involving movt in cash					
Depreciation	164,743	164,743	164,743	160,743	158,743
Amortisation	2,400	2,400	2,400	2,400	2,400
Interest expense	154,100	154,100	115,575	77,050	38,525
Net operating profit before changes in working capital:	464,426	883,015	1,659,089	2,089,002	2,565,651
Changes in: stock	(337,500)	(295,920)	119,983	(97,818)	(104,773)
Debtors	(168,750)	(147,960)	(196,727)	(97,818)	(104,773)
Creditors	37,800	31,752	40,992	18,480	19,152
	(468,450)	(412,128)	(35,753)	(177,157)	(190,394)
(a) Net cash flow from operating activities	(4,025)	470,887	1,623,336	1,911,845	2,375,257
Tax paid	(42,955)	(168,532)	(412,911)	(554,643)	(709,795)
Cash flow from investing activities:					
Purchase of assets	(1,457,550)	-	-	-	-
Pre-operating expenses	(12,000)				
(b) Net Cash flow from investing activities	(1,469,550)	-	-	-	-
(c) Cash Flow from Financing activities:					
Share capital	1,027,333				
Loan receipt	1,540,999				
Loan repayment	-	(385,250)	(385,250)	(385,250)	(385,250)
Payment of Interest charges - Loan 1	(154,100)	(154,100)	(115,575)	(77,050)	(38,525)
	2,414,232	(539,350)	(500,825)	(462,300)	(423,775)
Net Increase/(decrease) in cash and cash equivalents (a+b+c)	897,703	(236,994)	709,600	894,903	1,241,687
Cash and cash equivalent at the beginning of the year	-	897,703	660,709	1,370,309	2,265,211
Cash and cash equivalent at the end of the period	897,703	660,709	1,370,309	2,265,211	3,506,899

14.2 Limestone factory – financial statement

The financial statements include the statement of comprehensive income, statement of financial position and the statement of cashflows based on the Base Case/Average Case scenario and an equal split between debt and equity for a five-year period of business operation. During the modelling process, we have modelled various scenarios as part of the sensitivity analysis.

Statement of comprehensive income

The table below is the projected income statement.

	Year 1	Year 2	Year 3	Year 4	Year 5
	USD	USD	USD	USD	USD
Lime	531,000	541,620	552,452	563,501	574,771
	531,000	541,620	552,452	563,501	574,771
Directs costs					
Salaries	37,312	38,058	38,819	39,595	40,387
Tailing	98,093	100,055	102,056	104,098	106,179
Secondary crumbling	87,863	89,620	91,412	93,241	95,106
Uploading	22,267	22,712	23,166	23,629	24,102
Drilling — blasting	86,057	87,779	89,534	91,325	93,151
Crumbling and separation	81,845	83,482	85,151	86,854	88,591
Transportation	55,366	56,473	57,602	58,754	59,930
	245,534	250,445	255,454	260,563	265,774
Gross profit	285,466	291,175	296,998	302,938	308,997
Other expenses					
Royalties	100,000	100,000	100,000	100,000	100,000
Total overheads	100,000	100,000	100,000	100,000	100,000
EBITDA	185,466	191,175	196,998	202,938	208,997
Depreciation	121,720	121,720	121,720	119,720	118,720
Amortisation of pre operating	5,900	5,900	5,900	5,900	5,900
EBIT	57,846	63,555	69,378	77,318	84,377
Finance costs					
Loan interest	68,016	68,016	51,012	34,008	17,004
	68,016	68,016	51,012	34,008	17,004
Operating profit	(10,171)	(4,461)	18,366	43,310	67,373
Corporation tax	-	-	5,510	12,993	20,212
Profit after tax	(10,171)	(4,461)	12,856	30,317	47,161

Projected statement of financial position

The table below is the projected statement of financial position.

	Year 1	Year 2	Year 3	Year 4	Year 5
	USD	USD	USD	USD	USD
Assets					
Property plant and equipment	758,040	636,320	514,600	394,880	276,160
Pre-operating expenses	23,600	17,700	11,800	5,900	-
	781,640	654,020	526,400	400,780	276,160
Current assets					
Inventories	87,288	89,033	45,407	46,315	47,241
Accounts receivable	43,644	44,517	45,407	46,315	47,241
Cash/overdraft	220,955	171,655	185,033	169,322	169,424
Net current assets	351,886	305,205	275,847	261,953	263,907
Total assets	1,133,526	959,225	802,247	662,733	540,067
Share capital	453,443	453,443	453,443	453,443	453,443
Revenue reserves	(10,171)	(14,632)	(1,776)	28,541	75,702
	443,272	438,810	451,667	481,984	529,145
Long-term debt	680,164	510,123	340,082	170,041	-
	680,164	510,123	340,082	170,041	-
Current liabilities					
Trade and other payables	10,090	10,292	10,498	10,708	10,922
	10,090	10,292	10,498	10,708	10,922
Total liabilities	690,254	520,415	350,580	180,749	10,922
Total Equity and liabilities	1,133,526	959,225	802,247	662,733	540,067

Projected statement of cash flows

The table below is the projected cash flow statements.

	Year 1 USD	Year 2 USD	Year 3 USD	Year 4 USD	Year 5 USD
Net cash inflow from operating activities:					
Profit before tax	(10,171)	(4,461)	18,366	43,310	67,373
Adjustment for items not involving movt in cash					
Depreciation	121,720	121,720	121,720	119,720	118,720
Amortisation	5,900	5,900	5,900	5,900	5,900
Interest expense	68,016	68,016	51,012	34,008	17,004
Net Operating profit before changes in working capital:	185,466	191,175	196,998	202,938	208,997
Changes in: Stock	(87,288)	(1,746)	43,626	(908)	(926)
Debtors	(43,644)	(873)	(890)	(908)	(926)
Creditors	10,090	202	206	210	214
	(120,841)	(2,417)	42,942	(1,606)	(1,638)
(a) Net Cash Flow from operating activities	64,625	188,758	239,940	201,332	207,359
Tax paid	-	-	(5,510)	(12,993)	(20,212)
Cash flow from investing activities:					
Purchase of assets	(879,760)	-	-	-	-
Pre-operating expenses	(29,500)				
(b) Net Cash flow from investing activities	(909,260)	-	-	-	-
(c) Cash Flow from Financing activities:					
Share capital	453,443				
Loan receipt	680,164				
Loan repayment	-	(170,041)	(170,041)	(170,041)	(170,041)
Interest charges	(68,016)	(68,016)	(51,012)	(34,008)	(17,004)
	1,065,590	(238,057)	(221,053)	(204,049)	(187,045)
Net Increase/(decrease) in cash and cash equivalents (a+b+c)	220,955	(49,299)	13,377	(15,710)	102
Cash and cash equivalent at the beginning of the year	-	220,955	171,655	185,033	169,322
Cash and cash equivalent at the end of the period	220,955	171,655	185,033	169,322	169,424

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SUSTAINABLE DEVELOPMENT GOALS