

# Feasibility Report for Establishing and Operating Large Scale Sugarcane Plantation and Sugar Production Plant in Tanzania



By

**S. J. Sugar Tanzania Private Limited**

P. O. Box 1220, Dar es Salaam, Tanzania

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# 1. Introduction

## 1.1. Study Objective

This study is done with an objective of preparing a Techno-economic Feasibility Report (TEFR) for M/s. S. J. Sugar Tanzania Private Limited, of P. O. Box 1220, Dar es Salaam for a project of proposed large- scale sugar cane cultivation and Sugar manufacturing plant at Kitere, under Mtwara District Council, Tanzania.

## 1.2. Scope of work

The scope of services for the proposed TEFR for commissioning of Sugar Plantation & Production

Plant includes:

- Market assessment (current industry status, growth rate, future demand forecast).
- Development program (project configuration, construction plan).
- Utilities and off-sites.
- Land and civil works (total land area required & cost thereof, cost of building and civil works).
- Project implementation schedule.
- Project Cost (Basis, Cost of Land and Building, Cost of Plant and Machinery, Miscellaneous Fixed Assets, Technical and Engineering Consultancy Fees, Preliminary and Promotional Costs, Pre-operative expenses, Working Capital requirements, Total project cost, Means of Financing and Capital structure).
- Financial Statements - Annual Expenses, Sales Revenue, Profit and Loss Statement, Cash
- Flow Statement, Balance Sheet, Break Even Analysis, IRR, NPV, Return on Investment.
- Conclusions and recommendations.

## 1.3. Approach and methodology

### **Approach**

The overall approach comprised a combination of secondary and primary research. A multi-disciplinary team of appropriate personnel with experience in techno economic studies and market research were deployed for undertaking this assignment.

## **Methodology**

The assignment commenced with a detailed planning for the primary and secondary research.

Initially, the team interacted with the client's officials to understand the requirements of the study.

- Secondary Research

A detailed desk research was undertaken to gain a fair understanding of the Agriculture & Manufacturing Industry, its trends, market size, best practices etc. The sources from which the secondary data was collected included in-house database, internet, and various periodicals. The secondary research was used for planning the primary research for the study and identifying the data to be collected by way of Primary research.

- Primary Research

Interview guidelines were developed for the compilation of the necessary information by way of interview.

### **1.4. Data Analysis and Report Preparation**

The data obtained from the secondary and primary research has been analysed and incorporated in the report. A worksheet model has been prepared for feasibility calculations.

#### **Report Format**

The report is presented in 09 chapters.

#### **Chapter 1 Introduction**

This chapter outlines the objectives, scope, approach & methodology for the study.

#### **Chapter 2 Tanzania Economic Outlook**

This chapter discusses about the economic outlook of Tanzania and the developments that are taking place in the Country.

#### **Chapter 3 Sugar Industry Scenario in Tanzania**

This chapter talks about the growth in the Sugar industry, the trends, the composition of its development, the adjacent industries, etc.

#### **Chapter 4 Project Genesis & Manufacturing Process**

This chapter discusses about the conceptualisation of the project, the components of the manufacturing plant and the process of manufacturing Stainless Steel.

#### Chapter 5 Brief Technical Feasibility Assessment

The chapter contains a brief assessment of Soil Investigation Survey, Water Availability Survey and Market Survey.

#### Chapter 6 Profile of the Company

The chapter contains a brief profile of the company, its promoters and what does it intend to execute as a Project.

#### Chapter 7 Project Cost and Means of Finance

The chapter presents the elements of the project cost and discusses the means of financing for the project.

#### Chapter 8 Financial Projections

Financial statements including projected income statement, projected cash flow statement and projected balance sheet for the first 05 years of operation and financial indicators such as IRR and payback period are given in this chapter.

The Return on Investment on annual basis for the project has also been calculated.

#### Chapter 9 Conclusions and Recommendations

The chapter discusses the conclusions derived from the study and recommendations how to go ahead.

#### Annexure

#### Limitations

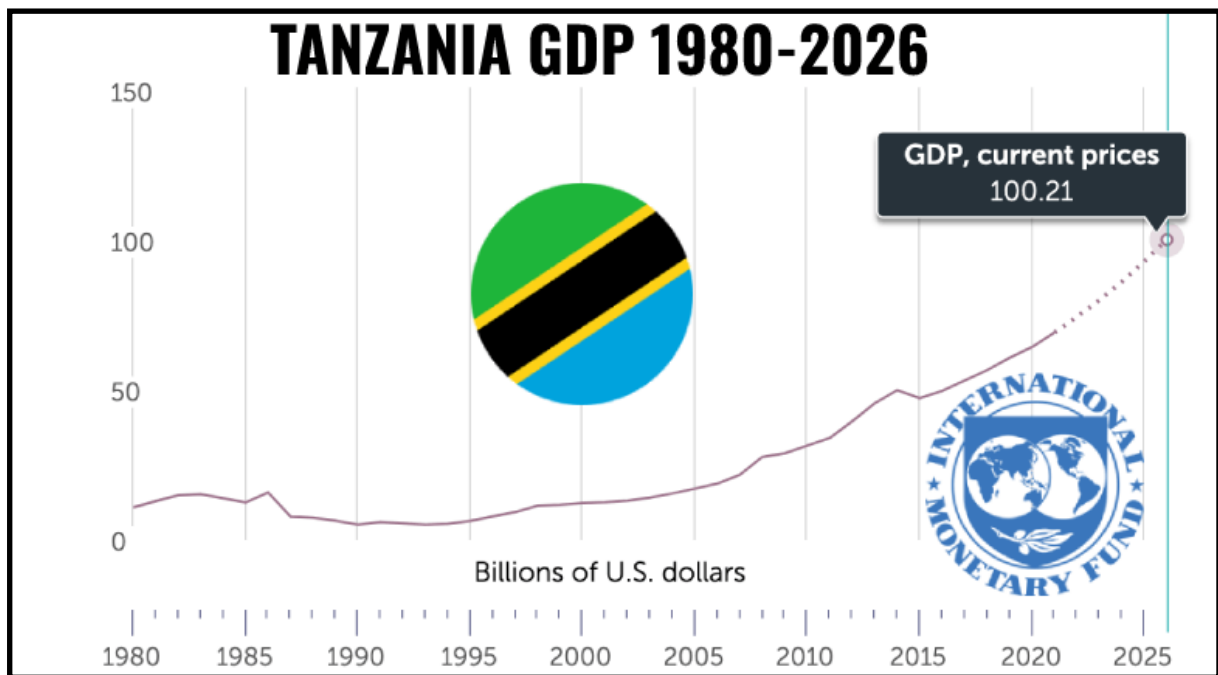
The report is prepared on the basis of best of the information provided by the various stakeholders and associations / agencies. The information in the report need not be exact and be used as evidence for any purpose.

## 2. Tanzania Economic Outlook

### 2.1. Introduction to the Economy of Tanzania

With an average real GDP growth rate of +5.5% over the decade 2012-2021, Tanzania is among the fastest-growing economies in Africa and the world. During the same period, the average global GDP growth rate was +2.3% and the GDP growth rate in Sub-Saharan Africa was +2.7%. The Tanzanian economy even maintained a positive economic growth in 2020 of +2% while most of the economies were in a recession due to the impact of the Covid-19 pandemic. However, Tanzania's GDP growth rate has been slowing down in recent years, from a peak of 7.9% in 2011. In April 2021, Tanzania's new president Samia Suluhu Hassan gave her first speech to the parliament, mentioning the priorities of the Sixth Phase Government in the next five years to reach a GDP growth rate of at least 8% yearly.

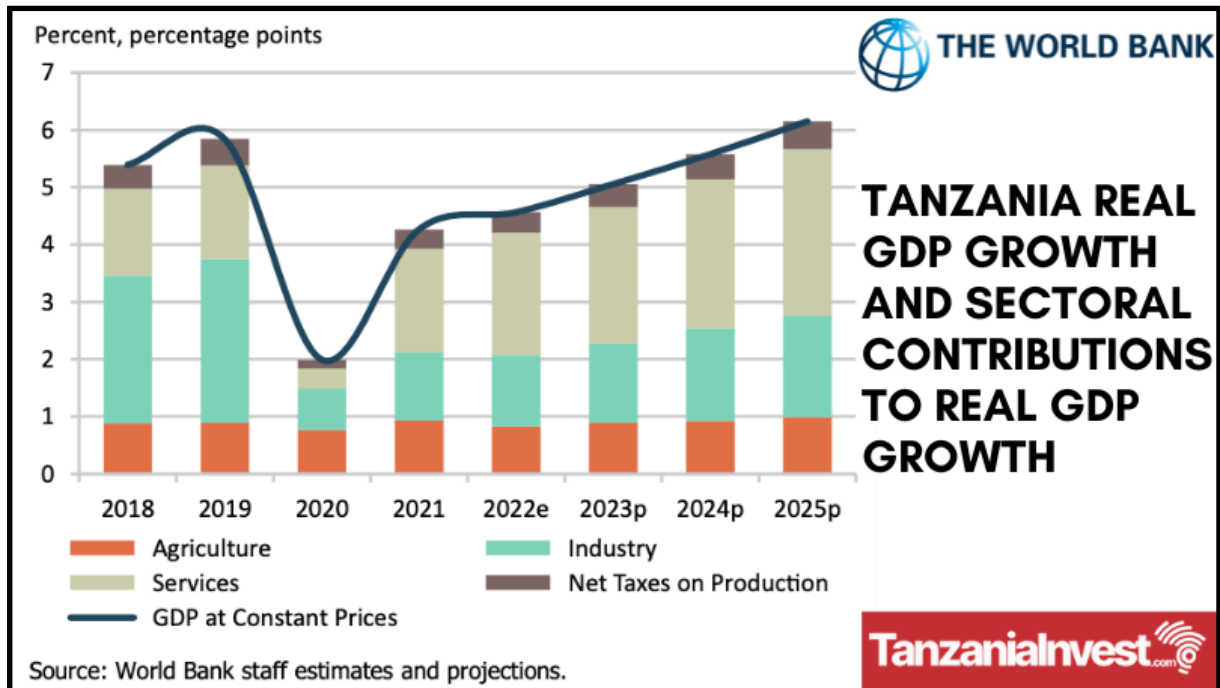
### 2.2. The Tanzanian Economy in 2022 and 2023



According to the World Bank (WB), the GDP of Tanzania expanded by 4.6% in 2022, up from 4.3% in 2021. The value of Tanzania's GDP at current prices reached USD 75.5 billion in 2022. The GDP per capita rose by 1.4% in 2022 and the international poverty rate dropped marginally by 0.3% points. Led by the services and industry sectors, the recovery remained broad-based as all subsectors surpassed their pre-pandemic production levels by Q3 2022. This is consistent with high-frequency indicators including cement production, electricity generation, and tourist arrivals, all of which grew substantially in 2022. The WB projects Tanzania's GDP growth to reach 5.1% in 2023—about 2.2% per capita—as investment

increases and external terms of trade improve. However, Tanzania is only projected to reach its potential growth rate of 6% in 2025. Similarly, according to the International Monetary Fund (IMF), the real GDP growth of Tanzania in 2022 was 4.7% in 2022, and it is projected to grow by 5.2% and 6.2% in 2023 and 2024 respectively. In its Africa’s Macroeconomic Performance and Outlook – January 2023, the African Development Bank (AfDB) estimates that the GDP of Tanzania will grow by +5.1% in 2023, and by +6.1% in 2024.

### 2.3. Tanzania Key Economic Sectors

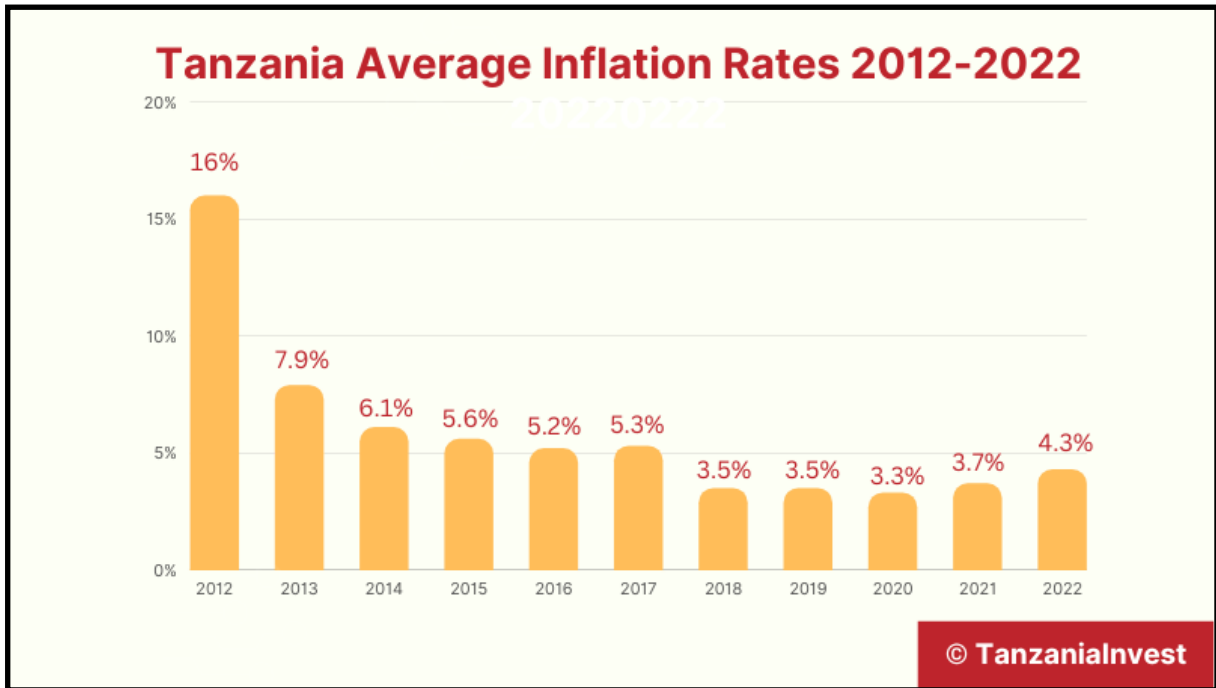


According to the data from the Bank of Tanzania, in 2021 Agriculture (agriculture, forestry, and fishing) accounted for 27% of the country’s GDP, Industry and Construction for 31%, and Services for 42%. The main sectors of the Tanzanian economy in terms of their contribution to the GDP are Construction which accounts for 16%, Crops (14%), Manufacturing (9%), Wholesale and retail trade; repairs (9%), Transport (8%), Livestock (8%), and Mining and Quarrying (5%). However, in the quarter ending September 2022, Mining and Quarrying reached 9.8% of the country’s GDP. Another major sector of Tanzania’s economy is tourism whose contribution to GDP fell from 10.6% in 2019 to 5.3% in 2020 due to the impact of the Covid-19 pandemic and climbed to 5.7% in 2021.

### 2.4. Tanzania Inflation

In 2022 (January to December) the average annual headline inflation in Tanzania was 4.3%. In 2021 it was 3.7% and 3.3% in 2020. In March 2023, the annual inflation rate reached 4.7%,

which remained within the range set in the 3rd Tanzania Five-Year Development Plan (FYDP III) between 3.0% and 5.0% over the medium term.



## 2.5. Tanzania Exchange Rates

On 26th April 2023, the average market exchange rates (source bot.go.tz) for the Tanzanian shilling (TZS) against major currencies provided were: USD/TZS 2313.3707, GBP/TZS 2876.4486 EUR/TZS 2549.7983, CNY/TZS 334.2296. A year earlier, on 26th April 2022, the average market exchange rates (source bot.go.tz) for the Tanzanian shilling (TZS) against major currencies provided were: USD/TZS 2298.7733, GBP/TZS 2932.3175 EUR/TZS 2468.1941. In its Monthly Economic Review of March 2023, the Bank of Tanzania (BOT) explains that the shilling remained stable against currencies of major trading partners, trading at an average rate of TZS 2,321.13 per USD, compared with TZS 2,320.64 per USD in the preceding month. On an annual basis, the shilling depreciated by 0.5% from TZS 2,309.61 per USD which was recorded in February 2022.

## 2.6. Tanzania Balance of Trade

The current account of Tanzania recorded a deficit of USD 5,294.5 million in the year ending February 2023 compared with a deficit of USD 2,744.3 million recorded in the corresponding period in 2022, on the account of the challenges endured by high inflation coupled with effects of the war in Ukraine. The overall balance of payments also had a deficit balance of USD 1,294.2 million compared with a surplus of USD 801.9 million in the year to February 2022. Exports of goods and services increased to USD 12,383.1 million in the year ending

February 2023 from USD 10,202.1 million in the corresponding period in 2022, mostly driven by non-traditional exports (particularly minerals and manufactured goods), and services receipts, mainly tourism. A notable increase was registered in the exports of minerals, particularly gold, coal, and diamonds. Gold exports registered an annual increase of 7% to USD 2,859.6 million. Exports of diamonds were USD 66.9 million, higher than USD 9.6 million in the year to February 2022. Coal exports grew significantly to USD 228.6 million from USD 23.2 million. Likewise, the export of manufactured goods increased by 19.9% to USD 1,490.2 million, largely driven by fertilizer, iron and steel, and cement.

### **2.7. Tanzania National Debt**

Tanzania's national debt stock, comprising the public and private sectors, was USD 40,738 million at the end of February 2023. Out of the debt stock, 71% was external debt. Multilateral institutions continued to account for the largest share of the debt stock, at 47.2%, followed by commercial creditors. The largest portion of the disbursed outstanding debt was in the hands of transport and telecommunication activities, followed by social welfare and education, and energy and mining activities. The structure of external debt by currency remained unchanged, where USD continued to dominate (68.9%), followed by the Euro.

### **2.8. Tanzania Foreign Direct Investment (FDI)**

According to the World Investment Report of 2022 published by the United Nations Conference on Trade and Development (UNCTAD), foreign direct investment (FDI) to Tanzania rose by 35% to USD 922 million in 2021 from USD 695 million in 2020. According to the Monthly Investment Bulletin-March 2023 released by the Tanzania Investment Center (TIC), the top five leading sources of FDI to Tanzania are China, the USA, Mauritius, Spain, and India.

Sources: African Development Bank (AfDB), Bank of Tanzania (BoT), Foreign Service Institute of the US Department of State, International Monetary Fund (IMF), Tanzania Investment Centre (TIC), Tanzania National Bureau of Statistics, World Bank (WB).

## 3. Sugar Industry Scenario in Tanzania

### 3.1. Brief of Agriculture Sector

Agriculture remains one of the most important sectors of Tanzania's economy, responsible for approximately 25% of GDP and 85% of exports. It is estimated that agriculture is the main economic activity for 70% of Tanzanian households and 75% of all Tanzanian jobs are within the agricultural sector, with up to 80% of all agricultural produce being produced by smallholder farmers. As such, robust and inclusive growth in the agriculture sector is critical for Tanzania to achieve economic transformation and poverty reduction, with the sector's benefits able to reach the lowest income and most vulnerable groups in rural areas.

### 3.2. Agriculture political economy

Since Agriculture remains the core of Tanzania's economy, the government's new transformation agenda aims to unlock agricultural growth of 10% per annum by 2030. This '30/10' agenda is backed by proposals for:

- A new agricultural development fund to subsidize agricultural inputs when prices rise;
- Reduction of loan interest rates for agricultural borrowers to single figures;
- Investments into agricultural research (focused on seed quality in maize, sorghum, wheat, tobacco, rice and round potatoes) and better market access to quality inputs;
- Reform of the irrigation commission to ensure every district is covered;
- Boosting arable land with irrigation from 2% to 50% (600k to 10m hectares);
- Creation of land banks to attract more commercial farming investors;
- Increase in the number of agricultural extension officers from 8,000 to 21,000
- Major VAT exemptions for domestic fertilizer manufacturers, imported refrigerated trucks, yoghurt processing plants and domestically produced edible oil.
- Creation of a common use facility for packing, sorting and grading of horticultural products;
- Improved government capacity to promote Tanzanian produce in regional export markets;
- Efforts to protect domestic production in key value chains from unfair/exploitative foreign competition and/or untaxed imports.

To achieve this ambitious agenda, budget allocations and actual agricultural spending needs to be significantly increased. Furthermore, the government's agricultural policy agenda should provide a conducive environment for the private sector in key value chains.

Tanzania needs to urgently adopt digitized agricultural technologies at the same pace as its peers, given that Tanzania has relatively competitive connectivity infrastructure and high mobile and mobile money penetration rates. Interviewees however cited three major bottlenecks:

1. Very low ability and willingness to pay for agri-tech solutions outside of the small commercial agriculture sector;
2. The presence of more fundamental priorities such as the need to invest in enabling infrastructure and
3. Mistrust over tech-enabled new business models.

### **3.3. Sugar Industry in Tanzania**

Tanzania's sugar annual demand is estimated at 710,000 tonnes in 2019 versus a local production of 439,100 tonnes in the same year. Sugarcane farming and processing in Tanzania is very limited and cannot meet the national demand and the gap is filled with sugar imports. Nonetheless, since the privatization of Tanzania's sugar estates in the 1990s, sugar production has steadily increased. Over the past five years, Tanzania's sugar production increased by 74%, from 252,900 tonnes in 2015 to 439,100 tonnes in 2019.

Sugar production is concentrated mainly in 3 regions: Morogoro, Kagera, and Kilimanjaro. At present, there are 4 large sugar estates in Tanzania: the Kilombero Sugar Company with a 40% market share, the Tanganyika Planting Company (34%), Kagera Sugar (17%), and Mtibwa Sugar Estates (9%).

In April 2020, the Tanzania Investment Centre (TIC) issued a notice inviting domestic and foreign investors to develop sugarcane and sugar processing plantations using the 20,000-ha farm in Kibuye in the Kigoma region in northwestern Tanzania.

And in July 2021, the Tanzania Revenues Authority (TRA) has waived the 15% import tax on sugar for industrial use, as part of the 2021-2021 National Budget efforts to improve the business environment in the country.

In his budget speech of May 2023, Tanzania's agriculture Minister Hon. Hussein Bashe said that the production of sugar cane in the year 2023/2024 is expected to reach approximately 4,500,000 tons which will produce 465,000 tons of sugar.

### **3.4. Tanzanian sugarcane yields lower than elsewhere in East Africa**

While there is considerable potential for expansion of sugar production in Tanzania, currently sugarcane yields are lower than elsewhere in East Africa. The low yields result from a combination of factors, the most important of which is lack of irrigation. Most plantation cane is still not under irrigation and out grower cane is almost entirely rain-fed. Average yields of rain-fed sugarcane range from 40 tonnes to 80 tonnes/hectare compared to yields of 80 tonnes/hectare to 110 tonnes/hectare for irrigated cane. Furthermore, the sucrose content of Tanzanian sugar is generally lower than in sugar from countries such as Zambia and Mozambique due to fewer hours of sunshine.

In areas of high altitude such as Kagera (at 1,000 meters above sea level), the cane requires a growing period up to 18 months compared to 12 months at Kilombero and Mtibwa (100 meters above sea level). Efforts are being made to improve yields in these areas with new cane varieties requiring shorter growing seasons. With manual cutting as practiced in Tanzania, four to seven ratoon crops can be achieved before the cane has to be replanted. Disease-free planting cane, grown in the estate nurseries, considerably reduces the cost of replanting.

With ample scope for improvement, all sugar estates have embarked on the gradual expansion of irrigation and drainage and are introducing improved cane varieties and improving field practices. Once these improvements are fully implemented, production could increase by more than 50 percent in some areas. The potential is estimated at an additional 2 million tonnes of sugarcane and about 200,000 tonnes of raw sugar from the current four large estates and cane out growers on these estates.

### **3.5. Output variable despite large investments to upgrade Sugar Mills**

The annual production of raw sugar in Tanzania varies substantially, largely because of weather conditions, which affect cane yields as well as harvesting and transport logistics. Sugarcane needs to be processed almost immediately after harvesting, but logistics are not always properly synchronized, especially for the smaller volumes out growers have to deliver to the mills. Sometimes, out grower cane is not collected or is collected too late for processing because harvesting has to stop at the start of the rainy season, when roads become impassable and fields too sodden for cane transport. As a result, the annual nine-month cane-crushing campaign cannot always be achieved.

All mills produce sufficient bagasse (fibrous cane residue) for fuel self-sufficiency for their steam boilers to generate power for cane processing and field irrigation, and some even export power to the national grid.

### **3.6. Fluctuations in raw sugar price follow world market**

There are no official prices—producers are free to establish their own prices—but the upper limit of prices is generally importing parity (i.e. the landed cost of world market sugar plus import tariff plus internal transport costs). The estates set their own prices for raw sugar, which are generally close to import parity, so market prices generally reflect the cost of importing from the world market.

Stakeholders, including sugar mills, sugar traders and importers, the Sugar Board of Tanzania (SBT), and the Sugar Producers Association (Technical Advisory Committee), meet when opportune to share data on sugar production and consumption. Based on the outcome of these meetings and on political considerations, the SBT (which is part of the Ministry of Agriculture) determines import quotas.

Transport costs are another factor influencing sugar prices. Rabobank estimates that transport of goods in Tanzania costs about USD 0.15 per tonne/kilometre. A sugar estate such as Kagera is therefore focusing on supplying the region around the mill. Transporting sugar from Dar es Salaam to Rwanda costs an additional USD 180/tonne, which is a further incentive for the industry to supply nearby markets in Tanzania and for branding products to create added value.

The sugar market in Tanzania is subject to price volatility, which can prove favourable to either consumers or producers. When world market prices are low, cheap imports lead to market oversupply, thereby keeping prices low for consumers.

### **3.7. Demand outstrips supply and imports harm sugar mills' cash flow.**

The domestic sugar market is growing as the population is increasing by about 3 percent annually and annual economic growth is around 6 percent. Increasing affluence is also leading to an increase in per capita sugar consumption.

Domestic sugar consumption is likely to increase at a rate of 20,000 tonnes annually and progressively. At the current rate of sugar production increases, it is doubtful whether domestic production can keep up with demand, especially as a greenfield operation can take five to six years to reach production capacity even under the most optimistic scenarios.

Tanzania is therefore likely to be dependent on sugar imports for the foreseeable future.

### **3.8. Conclusion**

At the current rate of sugarcane production and expansion, Tanzania will remain a sugar deficit country. Nevertheless, there are indications that improvements are being made albeit slowly.

With the introduction of widespread irrigation, improved varieties and cultivation practices, the existing sugar estates have the potential to raise their combined production by as much as 200,000 tonnes of sugar annually. However, to become a sugar exporter, improvements need to be accelerated.

There is potential for foreign investment, but much more needs to be done to stimulate foreign investment in the sugar industry, as cane growing offers the additional spin-off of smallholder production. To attract major investment, the government will need to establish an enabling environment and clear regulations for investment with regard to social and environmental responsibilities.

## 4. Project Genesis and Manufacturing Process

### 4.1. Introduction

S. J. Sugar Tanzania Private Limited (formally known as S. J. Sugar Distillery and Power Private Limited) was incorporated pursuant to The Companies Act of 2002 in the United Republic of Tanzania. After detailed study, promoters of S. J. Sugars understood that there was a huge potential in investing in Sugarcane farming and Sugar manufacturing in Tanzania.

S. J. Sugar is in the process of starting new sugar manufacturing plant and a Power Generation facility in Tanzania. Additionally, Tanzania contains a massive client base, therefore makes it quite good place of international sugar market within the event of surplus or deficit state of affairs, sometime its smart potential and prospects. Sharing makes success sweeter we believe in being an accountable and caring company citizen.

The company not solely contributes to the nations self-sufficiency in power and sugar production, however, additionally shares its success with society at giant.

By providing employment to rural folks and sharing within the economic development of farmers and their families, we have provided a serious impetus to the expansion and development of the agricultural areas of Tanzania. It assists farmers within the areas of sowing, manure, and improved cane varieties through an intensive cane development program. Widening the scope of ancient farmer-factory relationship, we have been concerned in providing crop data, fashionable cultivation techniques, improved type of seeds, higher inputs for transportation and irrigation and social welfare activities for the agricultural community close to the factories.

Caring for and preserving the atmosphere has been a prime priority. We've got undertaken the task of intensive plantation in and round the factory complexes at numerous locations and to date the exercise has been fairly successful. The native population is additionally inspired to undertake plantation drives.

We encourage use of renewable fuels that not solely save national resources however are eco-friendly. The company also has committed to make a large investment in Power Generation Plant that will be operational from 2027-28.

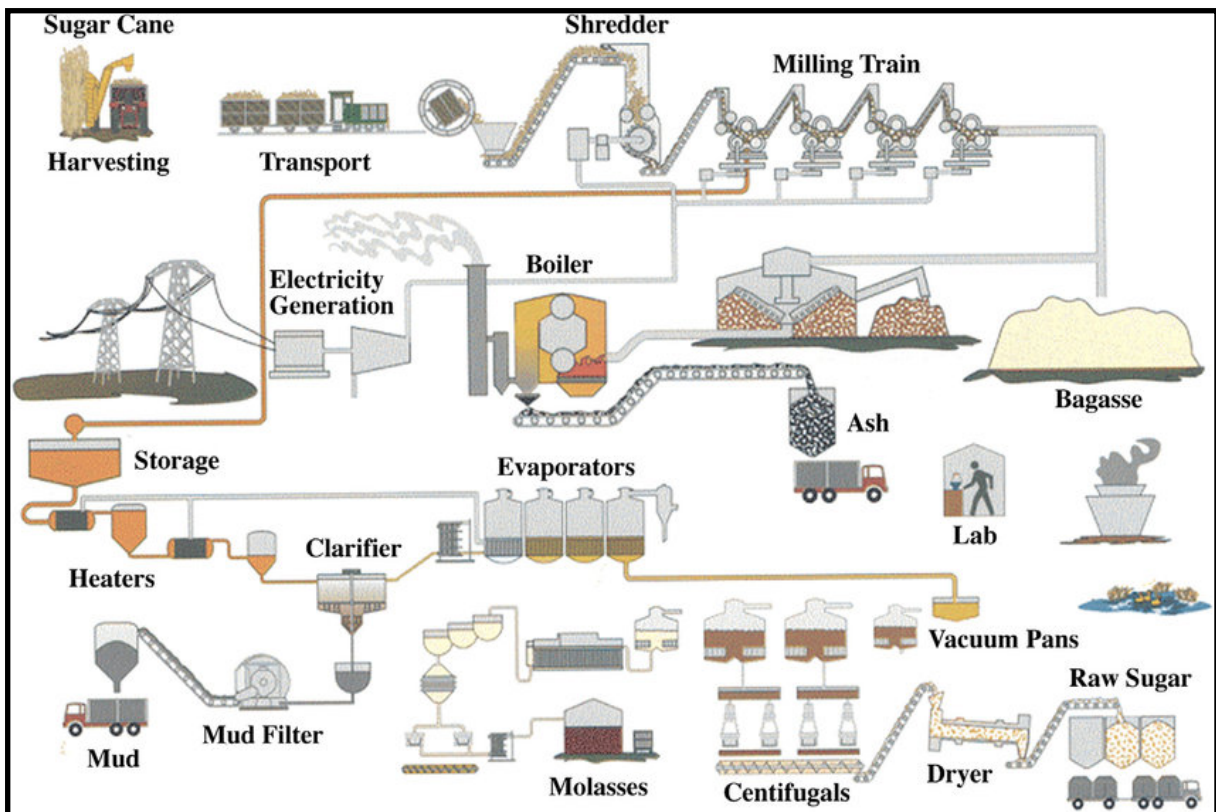
The decision of investing in Sugarcane Farming and Sugar Production was made due to the following reasons.

- The need for and shortage of sugar in Tanzania.

- The need for shortage of Power Supply in Tanzania.
- The promising growth of agriculture in Africa and vast opportunities in the agricultural industry. Various studies have shown that the future of the African economy depends on the ability of the African continent to feed the world.
- Thus, investing in agriculture is the way to economic empowerment. The pressing economic needs of the investors to make extra income.

#### 4.2. Sugar Manufacturing Process

The following is a diagrammatic representation of Sugar manufacturing:



There are several steps in producing raw sugar from cane:

- Cane receiving and unloading (receive the cane at the factory and unload it from the transport vehicles)
- Cane preparation (cutting and shredding cane to prepare it for juice extraction)
- Juice extraction (two technologies are in common use; milling or diffusion)
- Juice clarification (remove suspended solids from the juice, typically mud, waxes, fibers)
- Juice evaporation (to concentrate the juice to a thick syrup of about 65°brix)

- Syrup clarification (remove suspended solids from the syrup, typically colloid size of mud, waxes, fibers, etc.)
- Crystallization
- Centrifugation (Separation of the sugar crystals from the mother liquor, done by centrifugal machines)
- Sugar drying
- Packaging and delivery

These processing steps will produce a brown or raw sugar. Mill white sugar also known as plantation white sugar can be produced by introducing some form of colour removal process (often sulphitation) between the juice clarification and the juice evaporation stages mentioned above. The raw sugar produced is often refined to produce white sugar. This sugar refining can be done either at a completely separate factory or at a back-end refinery which is attached to the raw sugar factory.

### **Juice Extraction**

There are two processes for extracting juice from cane:

- Milling, and
- Diffusion.

#### **4.3. Milling**

Juice extraction by milling is the process of squeezing the juice from the cane under a set mills using high pressure between heavy iron rollers. Those mills can have from 3 up to 6 rolls; every set of mills is called a tandem mill or mill train. To improve the milling extraction efficiency, imbibition water is added at each mill. Hot water is poured over the cane just before it enters the last mill in the milling train and is recirculated up to reach the first mill. The juice squeezed from this cane is low in sugar concentration and is pumped to the preceding mill and poured onto the cane just before it enters the rollers, the juice from this mill is the same way pumped back up the milling train. Mixed juice (that is to say cane juice mixed with the water introduced at the last mill) is withdrawn from the first and second mills and is sent for further processing. Milling trains typically have four, five or six mills in the tandem. To improve the milling extraction performance before the cane reaches the first mill, knife and shredder preparation equipment is normally used.

#### **4.4. Diffusion**

Sugarcane diffusion is the process of extracting the sucrose from the cane with the use of imbibition but without the squeezing by mills. Shredded cane is introduced into the diffuser at the feed end, Hot water is poured over the shredded cane just before the discharge end of the diffuser. The hot water percolates through the bed of cane and removes sucrose from the cane. This dilute juice is then collected in a compartment under the bed of cane and is pumped to a point a little closer to the feed end of the diffuser and this dilute juice is allowed to percolate through the bed of cane. At this point the concentration of sucrose in the cane is higher than the concentration of sucrose in the dilute juice just mentioned and so sucrose diffuses from the cane to the juice, this now slightly richer juice is pumped back up the diffuser and the process is repeated, typically, 12 to 15 times (compared with the four to six times for the milling process)

#### **4.5. Juice clarification**

Sugar cane juice has a pH of about 4.0 to 4.5 which is quite acidic. Calcium hydroxide, also known as milk of lime or limewater, is added to the cane juice to adjust its pH to 7. The lime helps to prevent sucrose's decay into glucose and fructose. The limed juice is then heated to a temperature above its boiling point. The superheated limed juice is then allowed to flash to its saturation temperature: this process precipitates impurities which get held up in the calcium carbonate crystals. The flashed juice is then transferred to a clarification tank which allows the suspended solids to settle. The supernatant, known as clear juice is drawn off of the clarifier and sent to the evaporators.

#### **4.6. Juice evaporating**

The clarified juice is concentrated in a multiple-effect evaporator to make a syrup of about 50 percent sucrose by weight.

#### **4.7. Crystallization and centrifuging**

This syru is further concentrated under vacuum in a vacuum boiling pan[a] until it becomes supersaturated, finely ground sugar crystals suspended in alcohol are introduced into the vacuum pan as seed crystals around which sucrose is deposited and these crystals then grow in size until they are ready to be discharged (typically about 1 millimetre (0.039 in))

A number of boiling schemes are possible, the most commonly used boiling scheme is the three- boiling scheme. This method boils the sugar liquors in three stages, called A-, B- and C-.

A batch type sugar centrifuge separates the sugar crystals from the mother liquor. These centrifuges have a capacity of up to 2,200 kilograms (4,900 lb) per cycle. The sugar from the centrifuges is dried and cooled and then stored in a silo or directly packed into bags for shipment.

The mother liquor from the first crystallization step (A-product) is again crystallized in vacuum pans and then passed through continuous sugar centrifuges. The mother-liquor is again crystallized in vacuum pans. Due to the low purity the evapo-crystallization alone is not sufficient to exhaust molasses, and so the so-called massecuite (French for “boiled mass”) is passed through cooling crystallizers until a temperature of approx. 45 °C (113 °F) is reached. Then the massecuite is re-heated to reduce its viscosity and then purged in the C-produced centrifugal. The run-off from the C-centrifugal is called molasses.

The spun-off sugar from the B-product and C-product centrifuges is re-melted, filtered, and added to the syrup coming from the evaporator station.

### **Back-end refineries**

Some cane sugar mills have so-called back-end refineries. In back-end refineries, raw sugar produced in the mill is converted to refined sugar with a higher purity for local consumption, export, or bottling companies. Wastage is used for heat generation in the sugar mills.

### **Energy in the sugar mill**

The remaining fibrous solids, called bagasse, are burned for fuel in the mill's steam boilers. These boilers produce high-pressure steam, which is passed through a turbine to generate electrical energy (cogeneration). The exhaust steam from the turbine is passed through the multiple effect evaporator station and used to heat vacuum pans in the crystallization stage as well as for other heating purposes in the sugar mill.

Bagasse makes a sugar mill more than energy self-sufficient; surplus bagasse goes in animal feed, in paper manufacture, or to generate electricity for sale.

## 5. Brief Technical Feasibility Assessment

### 5.1. Hydrological Survey

It is understood that S. J. Sugar Tanzania Private Limited will not depend on monsoon for water requirement. However, they have plans to conserve the natural flowing water, store the water in huge water ponds and utilize it for their annual requirement. Hence there does not arise any requirement of Hydrological Survey.

However, the company has requested the meteorological department in Mtwara District to provide them the detailed meteorological information for the district and specifically for Kitere & area around the allocated farmland.

### 5.2. Soil Investigation Survey

In early 2020, S. J. Sugars appointed Tanzania Agriculture Research Institute (TARI) to conduct Soil Investigation of the allocated land at Kitere, Mtwara.

TARI conducted the Diagnostic Investigation of Soil for commercial production of Sugarcane in Kitere Plains, Mtwara District Council, Tanzania and presented their report to S. J. Sugars in April 2020. Following was the conclusion based on their findings:

Generally, the soils have high potential for commercial production of sugarcane crop especially the soils in the plain topography along the Lake Kitere, and along the far plains from Lake Kitere with the soil types Vertisols and Luvisols except the Cambisols, Arenosols and Planosols soil types. Though there are some constraints, but they are manageable through the use of appropriate technologies.

This is just a diagnostic investigation to guide the process of land acquisition for the intended investment. For the investment, detailed soils survey and land evaluation is prerequisite to provide adequate information to guide investment implementation including: the choice of proper farm implements, land preparation, type and rates of fertilizers to be used, use of proper ameliorants, irrigation techniques, areas for factory and settlements. In general terms, to ensure sustainable use of soils and land resources to maintain optimal yields as targeted.

Therefore client/investor is advised to start acquisition processes of the proposed land for cultivation of the intended crop commodity.

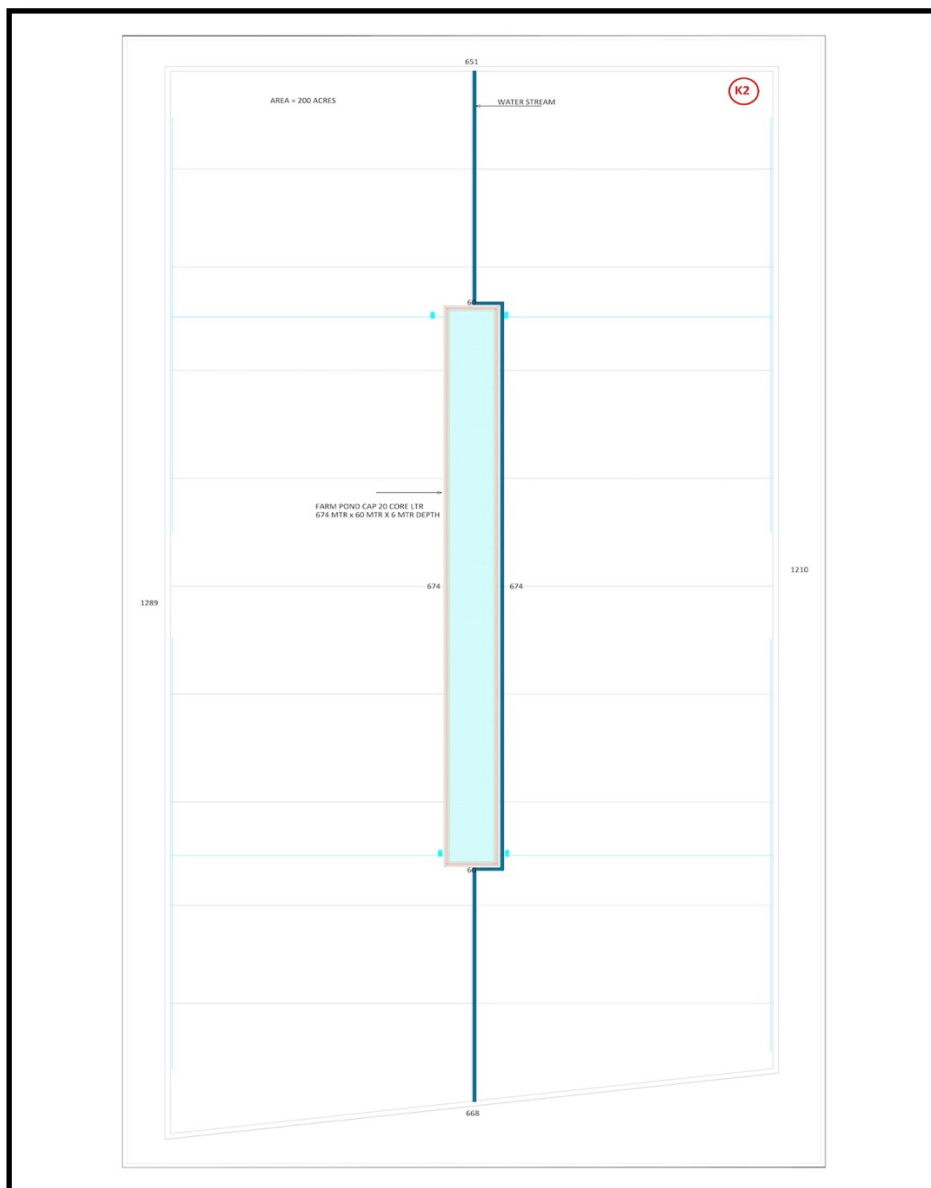
The complete TARI report is enclosed with the application documents for further information.

### 5.3. Water Availability Survey

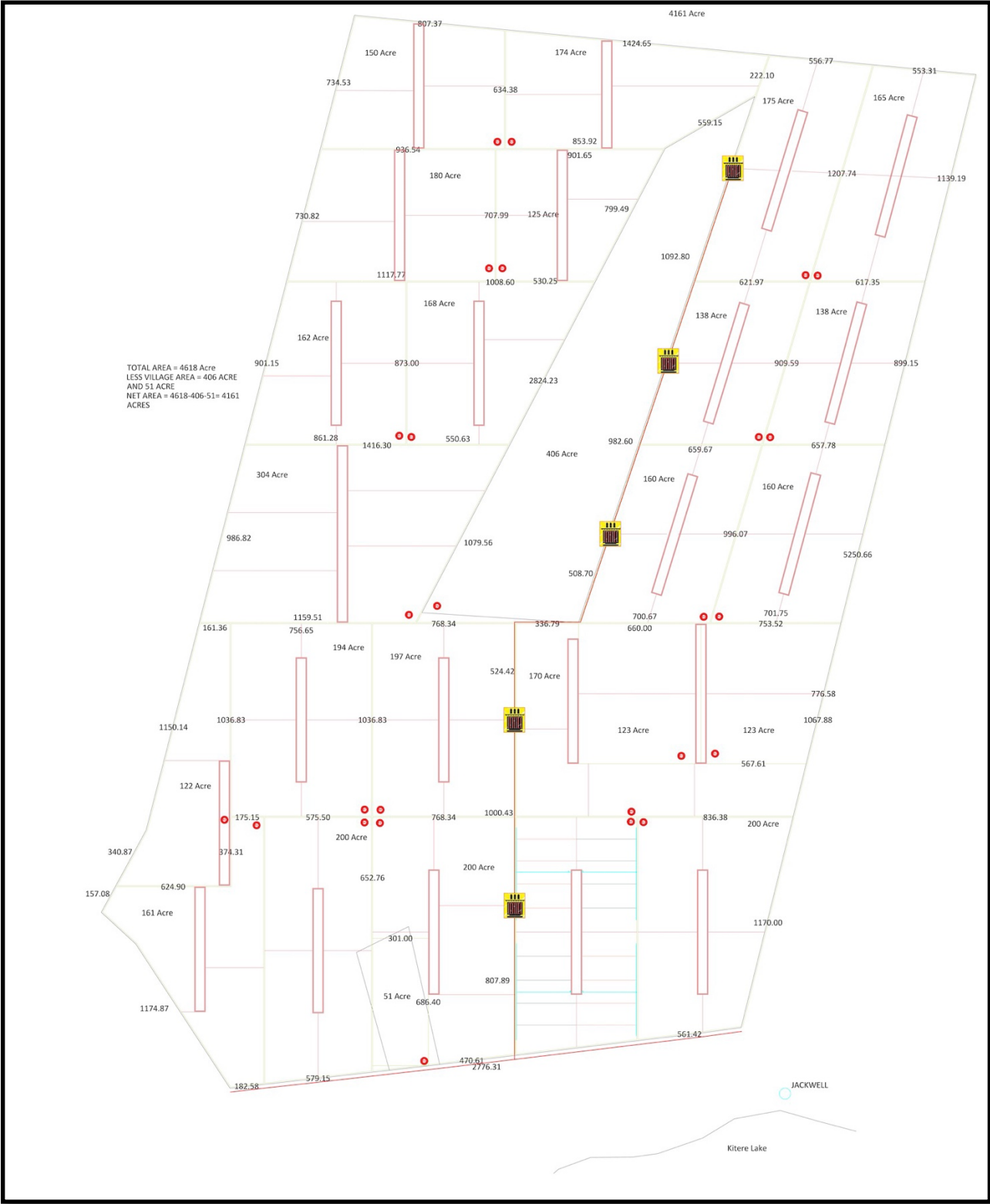
At present S. J. Sugar has obtained permission to use water from Kitere Lake till the end of December 2023.

The management of S. J. Sugar has also proposed to dredge and deepen the Kitere Lake and take responsibility to conduct regular maintenance of the Lake. In exchange of which S. J. Sugar requests for the permission for long term use of the Kitere Lake water.

In due course the management has also developed a plan to harvest natural flowing and rainwater in different artificial water ponds. Following is the basic design of one of the many water ponds that the project will have:



Following is the layout of water ponds in the land that is presently allocated to S. J. Sugar Tanzania Private Limited:



#### 5.4. Water Requirement & Availability

The company's technical team has worked out a detailed water requirement and availability for the 4161 acres of farmland that has already been allotted to them. Following is the chart detailing the estimates made by the technical team:

Water Requirement & Availability			
SR. #	Particulars	Value	Units
1	Total Area	4,161	Acres
2	Number of Farm Ponds	23	Nos
3	Area per Farm Pond	10	Acres
4	Total Farm pond Area	230	Acres
5	Area under Road	60	Acres
6	Area unsuitable for cultivation	971	Acres
7	Net Cultivated Area	2,900	Acres
8	Crop	Sugarcane	
9	Area Under Sugarcane	2,900	Acres
10	Water requirement per Acre for Sugarcane is 5.90 mm/day as per soil condition and pan evaporation.	$4047 \times 5.90 / 1000$ $= 23.877$	CUM.
	Say	23,877	LTR.
11	Water requirement per Acre per Day will be 50% of total by using Drip Irrigation.	11,939	LTR.
12	Water not required in days of Rainy season, from January to May (around 150 days).	150	Days.
13	Water not required in month of June due to soil moisture condition.	30	Days.
14	Water not required one month before harvesting of Sugarcane.	30	Days.
15	Actual days of irrigation per year is (365- 150-30-30 = 155).	155	Days.
16	Water requirement per Acre per Year will be (11938.5*155 = 1850468) Litre.	1,850,468	LTR.
17	Total water requirement for our sugarcane area of 2900 acres will be	5,366,357,200	LTR.
	FARM POND DETAILS		
18	Farm Pond Length.	674	MTR.
19	Farm Pond Width.	60	MTR.
20	Farm Pond Depth (Excavation 4 Mtr and Raised bund 4 Mtr: Total depth 8 Mtr.)	8	MTR.
21	Capacity of Farm Pond in Cubic Meter is 674 x 60 x 7 (Water depth will be 7 mtr.)	283,080	CUM.

Water Requirement & Availability			
SR. #	Particulars	Value	Units
22	Number of Farm Ponds. (shown in attached Drawing).	23	Nos.
23	Total water capacity of Farm Ponds in CUM.(23 x 283080 = 6510840).	6,510,840	CUM.
24	Total water capacity of Farm Ponds in Litre.	6,510,840,000	LTR.
25	Balance water after Sugarcane Irrigation will be. (6510840000 - 5366357200 = 1144482800) ltr.	1,144,482,800	LTR.

In summary:

Total Sugarcane Area is 2900 Acres, Total water requirement for this will be 5366357200 liter per year, total number of farm ponds are 23 nos. and total capacity of farm ponds is 6510840000 Liter. Hence Project is technically feasible.

### 5.5. Market Survey

As detailed in an earlier section, the demand of Sugar out ways the local production of Sugar in Tanzania. Hence, Tanzania is presently an importer of Sugar.

Tanzania's sugar annual demand is estimated at 710,000 tonnes in 2019 versus a local production of 439,100 tonnes in the same year. Sugarcane farming and processing in Tanzania is very limited and cannot meet the national demand and the gap is filled with sugar imports. Nonetheless, since the privatization of Tanzania's sugar estates in the 1990s, sugar production has steadily increased. Over the past five years, Tanzania's sugar production increased by 74%, from 252,900 tonnes in 2015 to 439,100 tonnes in 2019.

In his budget speech of May 2023, Tanzania's agriculture Minister Hon. Hussein Bashe said that the production of sugar cane in the year 2023/2024 is expected to reach approximately 4,500,000 tons which will produce 465,000 tons of sugar.

From the present national data and available statistics, it is apparent that the consumption of Sugar in Tanzania is much higher than local productions and hence S. J. Sugars are confident of their success in the Tanzanian market.

## 6. Profile of the Company

### 6.1. Incorporation

The company S. J. Sugar Tanzania Private Limited was incorporated on 14 April 2019 as private limited liability company under the Companies Act, 2002 of the Laws of Tanzania. It has been incorporated with an objective to establish itself as leading investors in Sugar industry and serve the community by providing best quality Sugar as applicable in different industries as well as for consumption.

This company is a part of the S. J. Group of companies, based in India. S. J. group is already an established name in India in various industry sectors.

With incorporation of S. J. Sugar Tanzania Private Limited, the promoters intend to bring in a foreign direct investment in Tanzania to the tune of USD 26.1 million. The proposed Sugar plant is supposed to have a capacity of producing 15,000 MT of sugar per annum.

### 6.2. Ownership

The company S. J. Sugar Tanzania Private Limited has the following shareholders:

Name	Number of Shares	Shareholding %
1. S. J. Shipyard Private Limited	349	99.7%
2. Soham Vaidya	001	00.3%

The shareholders will be actively involved in the management of the farm by Providing direction, marketing and ensuring that the vision is realized.

### 6.3. The Company's Mission

At S J Sugar we have striven to appreciate a company atmosphere of collaborative effort and have worked towards continuous improvement in each sphere of our activity. In our quest for excellence we have given special thought to our social obligations, whether or not its caring for the agricultural hinterland or the atmosphere we have a tendency to live in. a big and endearing feat for the cluster is that a number of its workers are a vicinity of the S J Sugar family Projections of the sugarcane primarily based trade in Tanzania are exceptionally promising and S J Sugar is completely ready to suppose beyond the cube:

- To supply energy alternatives to an energy-starved country through co-generation and ethanol.
- To worth add on our product portfolio to maximize the potential of the agro trade in Tanzania.

- To encourage creativity and resourcefulness, and target continuous R&D.
- To optimize the investments with a nonstop improvement in monetary performance.
- To diversify and shield the bottom-line throughout trade downturn.
- To achieve the best level of accountability, company governance.

To produce and market the best quality of sugar trade connected product and services and constantly evolve to develop a brand that evokes trust and quality. We tend to will achieve this by displaying the best level of business integrity, hiring the simplest individuals, providing quality client care and service". In a country where agriculture is that the predominant activity, sugarcane processing units wield an amazing impact on the realm of their location.

We have a tendency to still play our role with absolute commitment and watch with fascination and pride as even the foremost backward areas where our units are located, slowly rework into a beehive of activity, touching the lives of thousands of individuals, currently a district of the ever increasing " S J Sugar. " family. Starting a sugar manufacturing/refinery mission may be a reflection of the aspirations of key. The world encompasses a vision for achieving high economic growth, minimizing risks, enhancing farmer mille relationships, meeting growing domestic demand and contributing to the nation's food and energy wants.

#### **6.4. Location**

The registered office of the company is located at House 2, Block B, Plot # 8, Olympio Road, Upanga, Dar es Salaam, Tanzania.

The management of the company has already indicated in their communications with TIC, to acquire farmland of total of 10,000 Acres in Kitere Area that falls under Mtwara Municipal Council. Out of the requested land of 10,000 Acres, the company & TIC have already drawn a lease agreement for 5251 acres of land at Kitere Village. The remaining 4800 Acres is under consideration of TIC.

The land is strategically located with easy road excess and is very fertile.

#### **6.5. Directors**

Typical of a company incorporated under the Companies Act 2002, S. J. Sugar Tanzania Private Limited is managed by a board of directors. This comprises of 2 directors whose details are as follows: -

Name	Designation	Nationality
1. Mrs. Meera H. Ghadigaonkar	Managing Director	Indian
2. Mr. Tushar S. Gosavi	Director	Indian

Both the directors individually have a wide experience in various industry. Undoubtedly they are equipped with every skill, capacity, experience and knowledge to make this one of the most successful FDI in Tanzania.

#### **6.6. Day to day management**

The directors have handled such projects earlier and hence, required management expertise is available in-house with the promoters of the company itself. Further, the company has an easy access to necessary qualified professional executives who have detail knowledge of such projects especially as the promoters have already done a similar project in India. Whenever required the Company shall utilize the services of an outside expert. The main thrust is on quality of the Sugar and no compromise thereon will be entertained.

#### **6.7. Employment**

Our objective is to run a business by studying the industry, market trends, marketing strategies, and hiring committed, qualified, and self-driven employees who see the need of working tirelessly to ensure growth of the company. The company will offer training or pay for training of its staff to ensure that they are well equipped with the industry needs. Investors will also play a key role in running and providing leadership and marketing strategies that will enable the success of the business.

We believe in smart investment by devising workable strategies and methodologies for a workable business model.

We like to inform you that S J Sugar creates direct – indirect 2000 + Employment opportunities for Tanzanian Citizen.

The details of the requirement of the manpower are mentioned in the annexure at the end of the report. Approximately total staffs of 400 personnel will get a permanent employment, out of which about 20 (twenty) personnel with expert skills will have to be expatriates.

Moreover, there shall be another thousands of citizens that shall be employed during the commissioning of the project. The manufacturing unit will be broadly categorized into four departments namely production, finance, administration and technical services (repairs, maintenance and quality control).

## **6.8. Business Model**

S J Sugar is a Big privately owned company with a vision of growing into a big and competitive leading commercial Sugarcane and sunflower farming and sugar and edible oil production company in the industry both in Tanzania at large.

The company is committed to hiring qualified staff or self-driven staff committed to learning and understanding the industry so as to minimize costs by being able to understand the challenges of the industry. Our workforce is invaluable and is what will enable us to prosper in this business. In order to motivate our best performing employees will be given commissions and bonuses in order to increase their work morale. A profit sharing system will be devised for senior and high performing employees.

## **6.9. The Business definition**

We are in manufacturing business that is sugar & sunflower edible oil manufacture and sell in domestic or global market. Sugar manufacturing is one of the beneficial industries where we can sell by-products as a raw material of other industry.

It is branch of the food-processing trade comprising specialized enterprises that manufacture white granulated sugar from sugar beets and refined sugar from granulated sugar.

Sugarcane is that the principal raw material employed in sugar processing in tropical and subtropical countries, output of the sugar trade is incredibly vital within the commodity turnover.

Sugar is directly consumed by the general public and is employed in several branches of the food-processing trade.

The production of sugar from sugarcane was known in antiquity. The refinery processed imported raw cane sugar.

Product and quality maintain:

- Sugar – 350 MT per day
- Power Generation Capacity: 15 MW per hour

## **6.10. Details about other products**

### **Sugar**

With the idea that the Tanzania shopper nowadays is as quality and health aware as the other shopper nowadays the planet over, our Sugar Manufacture created an initiative to provide a sugar corresponding to the high standards of the western countries. We have

launched into the project which underneath the aegis of the Sugar Technology Mission to create sugar that may pure and healthier.

Capacity of production Crushing capacity is the 3500 MT sugarcane per day we produce 350 MT sugar per day.

We have good market in Tanzania, our project location is Mtwara and nearby region there is no any Sugar factory. So business competition we can easy to supply.

### **Power Generation**

POWER COGENERATION CAPACITY: 15MW per hour BAGASSE, the residual fiber of sugarcane once crushing and extraction, may be a valuable by- product generated throughout the sugar producing method. Its high calorific price and is thus used to come up with steam and thereby electricity, that may be a standard thermal various and eliminates emission of inexperienced house gases. Our company intends to start the Eco-friendly cogeneration at least one in every of its units, with an occasional project outlay as compared to traditional power plants.

Out of 15 MW power generation we will utilize 4 MW for our own consumption and remaining 11 MW electricity per hour we will sell to the National Power Greed.

## 7. Cost of Project & Means of Finance

### 7.1. Cost of Project

The development cost of the entire project has been estimated to be around US\$ 26,993,000/-. The major factors contributing towards the cost of the project are the cost of Plant & Machinery for Sugar Plant and Power Generation Plant. The capital cost of the leased land, land clearing & civil construction is estimated to be US\$ 1,455,000/- and the cost of Plant & Machinery for Sugar Plant and Power Generation Plant is estimated to be about US\$ 21,250,000/-. The table below indicates the details of cost of project:

Cost of Project				
				Units: USD
No.	Description	Unit Price	No. of Units	Total
<b>A</b>	<b>Land &amp; Civil Construction</b>			
	Farm Land Acquisition Cost	50	10,000	500,000
	Farm Land Clearing Cost	72	7,500	540,000
	Sheds and Warehousing	415,000	1	415,000
<b>B</b>	<b>Agriculture Equipment &amp; Other Machinery</b>			
1	Power Generation Unit	6,250,000	1	6,250,000
2	Sugar Production Mill of 100 MT per Day	15,000,000	1	15,000,000
3	Drip Irrigation Facility Equipment & Installation	2,410,000	1	2,410,000
4	Harvester Machines	220,000	1	220,000
5	Irrigation Mobilization	75,000	1	75,000
6	Other Plant & Machinery	210,000	1	210,000
<b>C</b>	<b>Pre-operative Expenses</b>	604,185	1	604,000
<b>D</b>	<b>Contingencies</b>	768,600	1	769,000
	<b>TOTAL COST OF PROJECT</b>			<b>26,993,000</b>

It has been conveyed to us that the promoters have already organised for the necessary funds for the project.

Considering the size of this project, and also keeping in mind the 36 months of implementation period (which is detailed in the previous chapter), the contingencies are considered at just about USD 769,000/-. The same along with the pre-operative expenses will be apportioned to all assets on completion of the Project.

The Initial Working Capital has been estimated at US\$ 162,300/- in the first year of operations and the components thereof are assumed as explained in this paragraph. Stock of raw materials & other consumables has been considered at 45 days and Debtors at 35 days. On the other hand, 60 days credit has been considered from creditors and 30 days for other current liabilities.

## 7.2. Means of Finance

It is planned to finance the project through shareholders equity, long term foreign loan as well as a long-term local loan. The funding plan is summarized as follows:

Source of Funds / Financed By		
Units: USD		
No.	Particulars	Amount
1	Contribution by Shareholders as Equity	145,000
2	Long Term <b>Foreign</b> Loan from Institutions / Individuals	625,000
3	Long Term <b>Local</b> Loan fromm Institution / Individuals	26,223,000
	<b>TOTAL FINANCING</b>	<b>26,993,000</b>

## 8. Financial Projections

Details of financial projections are attached as appendices to this report. However, in brief the annexed project financials show that the project will be one with a full proof financing scheme. The financing is so prudently designed that the smooth cash flow position is guaranteed throughout the gestation period.

### 8.1. Assumptions

For the purpose of calculations and projections, the following assumptions were made:

Assumption for Calculation of Projected Financial Statements			
No.	Description	Units	Value / Amount
1	Exchange Rate 1 USD =	TZS	2,350.00
2	Exchange Rate 1 INR =	TZS	29.00
3	Sugarcane Crushing Capacity in MT per Day	MT	1,000.00
4	Sugar Manufacturing Capacity in MT per Day	MT	100.00
5	Number of days of Sugar manufacturing operation per year	Days	150.00
6	Number of days of Power Generation operation per year	Days	210.00
7	Selling Price of Sugar in USD per Ton	USD	717.00
8	Selling Price of Electricity in USD per Unit	USD	0.10
9	Annual increase in Selling Price of Sugar		10.00%
10	Annual increase in Selling Price of Electricity		5.00%
11	Interest Rate on Long Term Foreign Loan		14.00%
12	Interest Rate on Long Term Local Loan		9.00%
<b>The interest on the Term Loans will be deferred and be paid starting 2026-2027</b>			
13	Power Generation Capacity in Units/Day		240,000.00
1	Contingencies as % of total cost		3.00%
2	Commission Expenses as % of Turnover		
3	Annual increase in Administrative Expenses		3.50%
4	Annual increase in Salaries & Wages of employed staff		7.50%
5	Capacity Utilisation of Sugar Plant		
	2025-26	%	25%
	2026-27	%	52%
	2027-28	%	60%
	2028-29	%	70%

Assumption for Calculation of Projected Financial Statements			
No.	Description	Units	Value / Amount
6	No. of Days of Debtors / Creditors for Working Capital Requirement		
	Stock of Consumables	Days	45.00
	Sundry Debtors	Days	35.00
	Other Payables	Days	60.00
	Sundry Creditors	Days	30.00

## 8.2. Financial Indicators

The income of the company would heavily depend on the marketing and promotional skills of the management and quality of the products of the company. However, looking at the fact that the promoters of the company have deep pockets, rich experience in the industry, the demand supply gap for Sugar in Tanzania, the success of the project is evident.

On the basis as mentioned above, the income for the company has been worked out as following:

- While about 1,200 acres land is already cleared, it has been estimated that another 3,000 acres land will be cleared in 2023-24 and 4,500 acres will be cleared in 2024-25 (subject to allocation of the additional farmland by TIC).
- S. J. Sugars Tanzania proposes to start with 25% capacity utilization in 2025-26 and gradually increase to 70% in 2028-29. Hence approximately 3,750 MT of sugar will be produced in 2025-26 and the sugar production is expected to increase to 10,500 MT by 2028-29.
- Considering a conservative price of USD 717/- per MT, the company is expected to make a revenue of USD 2,688,000/- in it's first year of operations (2025-26) and raise that revenue to USD 8,281,000/- by 2028-29.
- A huge amount of biomass will be available from clearing of the farmland. This huge quantity of biomass will be used as the raw material for Power generation in second year. Approximately 50 million units of power will be generated.
- The company has planned to install the Power Generation Unit in 2026-27 and the Unit shall be operational in 2027-28.
- The company is expected to generate annual revenue from sale of Power to the tune of USD 5,556,000/- in 2027-28.
- For the sake of calculations, the effect of inflation is not considered.

### **8.3. Projected profit and loss statement**

Based on above assumptions & forecasts, S. J. Sugar Tanzania Private Limited will realize a total turnover of about US\$ 36.1 million from the first four years of operations. The company will start generating a profit before tax of US\$ 3,192,000/- at the end of the third year of operation rising steadily over the years as the turnover increases and as other revenue streams keep generating additional revenue. Profits generated by the project will assure sustainable dividends after 2028-29.

### **8.4. Projected cash flow**

Cash flow projections indicate that S. J. Sugar Tanzania Private Limited will be able to repay the foreign loan from in the third year of operations, will be able to repay the local loan with in seven years starting 2027-2028 and meet all other financial commitments as scheduled. Though there is requirement of large stock of raw materials, the company will not have to avail any overdraft facility because of the excellent cash inflow projections. Cash flow projections confirm further that the proposed project is highly commercially attractive.

### **8.5. Projected balance sheets**

The liabilities of the company will be covered adequately by net fixed assets over the period under review. Similarly, the contribution of the operations of the project to the company's net worth will reach about US \$ 14.35 million over the period under review.

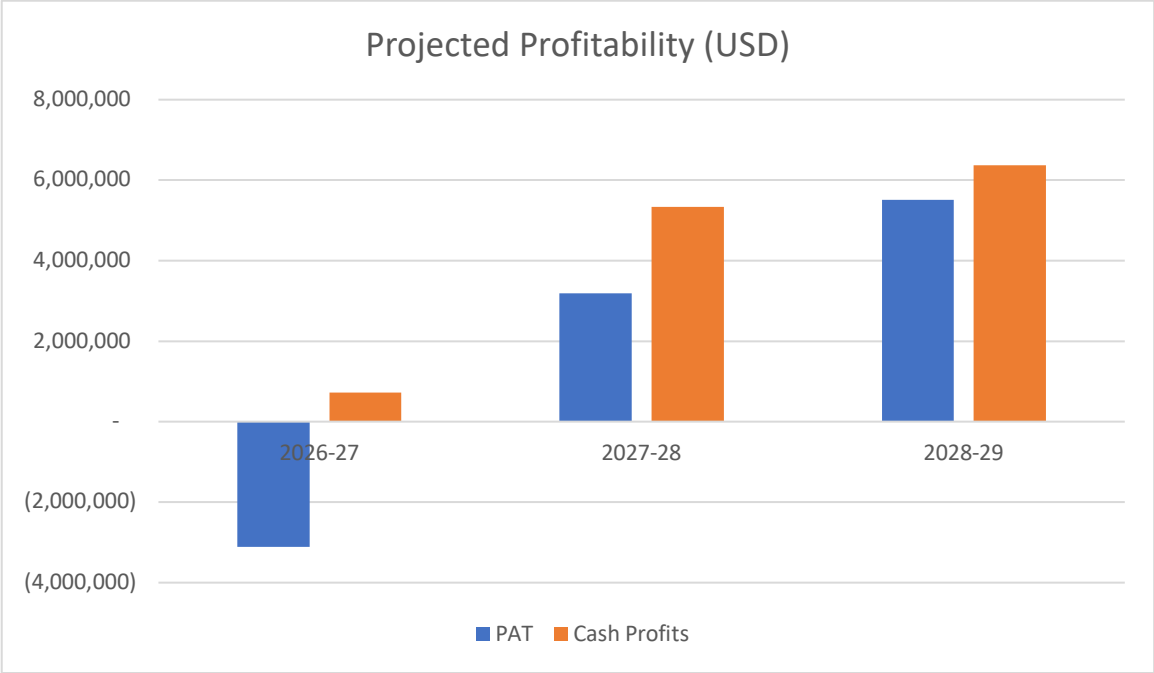
### **8.6. Financial and indicators**

Based on the conservative assumptions outlined above, the project will yield an internal rate of return of about 11.03%. As a key factor in projected viability assessment, the rate of return is considered attractive.

The detailed calculations of the projected financials are given in the annexure. The Net Present Value for the project comes out to be US\$ 437,626/-. Pay Back Period for the project is estimated to be just above 7.04 years.

It must be noticed that the average Return on Investment for the four years is more than 16.44% which is a very good sign for the investors.

The chart below indicated the summary of the projected profits of the company from the third year of the operations:



## 9. Conclusion and Recommendations

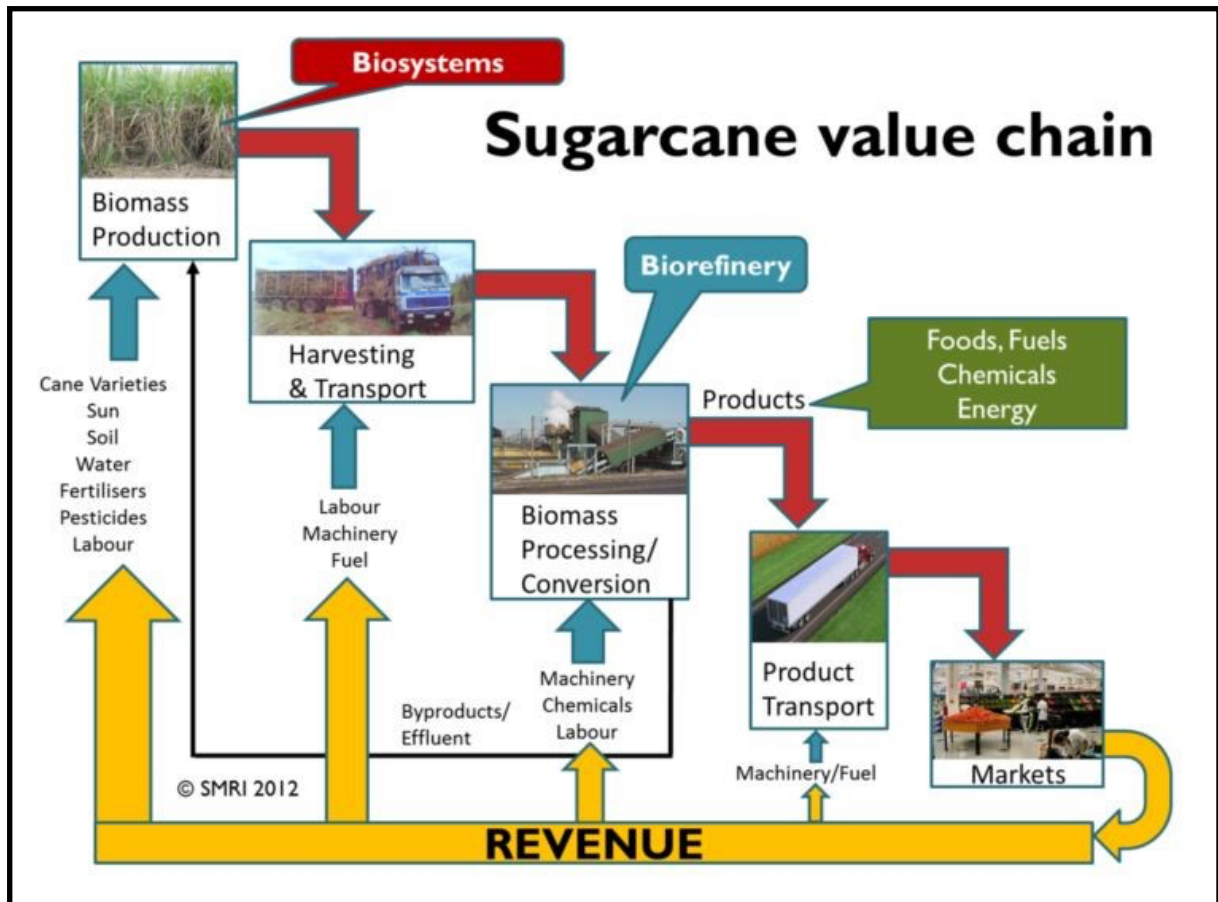
### 9.1. Conclusions

As can be seen from foregoing analysis, the project is feasible and offers opportunities for different classes of investors with differing appetite for risk.

The emerging middle-income class, growing economies, emerging democratic practices and population growth all contribute to the demand for sugar which is already in dire shortage.

The project will also play a significant role in boosting the economic development in Tanzania and hence seek all the support from the authorities in Tanzania. Following are a few developmental values to the country arising from this integrated project: -

- An additional quantity of 15,000 MT of Sugar production by implementation of the project will give a tremendous boost to the agriculture and agro-processing sector directly and to a certain extent to GDP growth.
- The project will open up employment opportunities and is expected to offer about 500 jobs directly & indirectly; besides a large number of jobs in downstream industries.
- Industrial economists estimate that every ton of sugar produced generates six additional jobs. On this basis, an additional 90,000 jobs are expected to be created in the downstream activities, viz., Transportation, Fertilizer, Traders, Farmers etc. to mention of few.
- Besides Sugar, the Tanzanian industry will also benefit from Power Generation. This will encourage small entrepreneur artisans to open small adjacent industry businesses which will help increase the cadre of self-employment.
- Government will also earn revenue in terms of various levies on the Company associated with the operation of the business. Further as indicated in the financial projections the total contribution for three years by way of corporate-tax will be to the tune of about US\$ 2.6 million.
- Last but not least, the whole investment will be considered to be a national property and will therefore add to the national wealth.
- The diagram below indicates the Sugarcane Value Chain and thereby the beneficiaries of is across different sectors in Tanzania.



## 9.2. Recommendations

Since the project is technically feasible, financially and economically viable, socially and from nation's point of view desirable a fast implementation thereof is recommended. It is important that there are no cost overruns so as to enable the realization of the benefits as outlined above.

The intelligent phasing of the construction & implementation would limit the real risks.

It may be mentioned here that total investment of US\$ 26.993 million will play a significant part in boosting the local economy. Considering all relevant factors it is being recommended that the grant of 0% import duty & VAT deferrals on capital goods and deemed capital goods is granted to this project not only to make the project viable but also to catalyse other development benefits that may accrue to the country on acceptance of this project.

## Annexures – Projected Financial Statements

- Assumption for Calculation of Projected Financial Statements
- Cost of Project & Means of Finance
- Projected Sales from Sugar Manufacturing Business
- Projected Sales from Power Generation Business
- Projected Direct Expenses for Sugar Manufacturing & Power Generation
- Projected Administrative Expenses Projected Salaries and Wages for Amnistrative Staff
- Projected Profit & Loss Statement
- Projected Cash Flow Statement
- Projected Balance Sheet
- Projected Working Capital Requirement
- Projected Schedule for Availing & Repayment of Long Term Foreign Loan
- Projected Schedule for Availing & Repayment of Long Term local Loan
- Projected Schedule for Availing & Repayment of Unsecured Loan for Operational Expenses
- Projected Schedule for Assets and Depreciation Thereof

<b>Assumption for Calculation of Projected Financial Statements</b>			
<b>No.</b>	<b>Description</b>	<b>Units</b>	<b>Value / Amount</b>
1	Exchange Rate 1 USD =	TZS	2,350.00
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3	Sugarcane Crushing Capacity in MT per Day	MT	1,000.00
4	Sugar Manufacturing Capacity in MT per Day	MT	100.00
5	Number of days of Sugar manufacturing operation per year	Days	150.00
6	Number of days of Power Generation operation per year	Days	210.00
7	Selling Price of Sugar in USD per Ton	USD	717.00
8	Selling Price of Electricity in USD per Unit	USD	0.10
9	Annual increase in Selling Price of Sugar		10.00%
10	Annual increase in Selling Price of Electricity		5.00%
11	Interest Rate on Long Term Foreign Loan		14.00%
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3	Annual increase in Administrative Expenses		3.50%
4	Annual increase in Salaries & Wages of employed staff		7.50%
5	Capacity Utilisation of Sugar Plant		
	2025-26	%	25%
	2026-27	%	52%
	2027-28	%	60%

<b>Assumption for Calculation of Projected Financial Statements</b>			
<b>No.</b>	<b>Description</b>	<b>Units</b>	<b>Value / Amount</b>
	2028-29	%	70%
6	No. of Days of Debtors / Creditors for Working Capital Requirement		
	Stock of Consumables	Days	45.00
	Sundry Debtors	Days	35.00
	Other Payables	Days	60.00
	Sundry Creditors	Days	30.00

<b>Cost of Project</b>				
				Units: USD
No.	Description	Unit Price	No. of Units	Total
<b>A</b>	<b>Land &amp; Civil Construction</b>			
	Farm Land Acquisition Cost	50	10,000	500,000
	Farm Land Clearing Cost	72	7,500	540,000
	Sheds and Warehousing	415,000	1	415,000
<b>B</b>	<b>Agriculture Equipment &amp; Other Machinery</b>			
1	Power Generation Unit	6,250,000	1	6,250,000
2	Sugar Production Mill of 100 MT per Day	15,000,000	1	15,000,000
3	Drip Irrigation Facility Equipment & Installation	2,410,000	1	2,410,000
4	Harvester Machines	220,000	1	220,000
5	Irrigation Mobilization	75,000	1	75,000
6	Other Plant & Machinery	210,000	1	210,000
<b>C</b>	<b>Pre-operative Expenses</b>	604,185	1	604,000
<b>D</b>	<b>Contingencies</b>	768,600	1	769,000
<b>TOTAL COST OF PROJECT</b>				<b>26,993,000</b>

<b>Source of Funds / Financed By</b>		
		Units: USD
No.	Particulars	Amount
1	Contribution by Shareholders as Equity	145,000
2	Long Term <b>Foreign</b> Loan from Institutions / Individuals	625,000
3	Long Term <b>Local</b> Loan from Institution / Individuals	26,223,000
<b>TOTAL FINANCING</b>		<b>26,993,000</b>

<b>Projected Sales from Sugar Manufacturing Business</b>							
							<b>Units: USD</b>
<b>No.</b>	<b>Particulars</b>	<b>2023-24</b>	<b>2024-25</b>	<b>2025-26</b>	<b>2026-27</b>	<b>2027-28</b>	<b>2028-29</b>
1	Sugarcane Crushing Capacity in MT per Day	1,000	1,000	1,000	1,000	1,000	1,000
2	Sugar Manufacturing Capacity in MT per Day	100	100	100	100	100	100
3	Capacity Utilization of Sugar Manufacturing Mill	0.00%	0.00%	25.00%	52.00%	60.00%	70.00%
4	Sugar Production in MT per Day	-	-	25	52	60	70
5	Number of days of Operation in Year	-	-	150	150	150	150
6	Sugar Production in MT per Year	-	-	3,750	7,800	9,000	10,500
7	Selling Price of Sugar in USD / MT	-	-	717	789	789	789
	<b>Total Annual Projected Sales from Sugar</b>	<b>-</b>	<b>-</b>	<b>2,688,750</b>	<b>6,151,860</b>	<b>7,098,300</b>	<b>8,281,350</b>

<b>Projected Sales from Power Generation Business</b>							
							<b>Units: USD</b>
<b>No.</b>	<b>Particulars</b>	<b>2023-24</b>	<b>2024-25</b>	<b>2025-26</b>	<b>2026-27</b>	<b>2027-28</b>	<b>2028-29</b>
1	Power Generation Capacity in Units/Day	240,000	240,000	240,000	240,000	240,000	240,000
2	Number of Days of Operations in Year	-	-	-	-	210	210
3	Annual Power Generation in Units	-	-	-	-	50,400,000	50,400,000
4	Selling Price of Electricity in USD/Unit	-	-	0.100	0.105	0.110	0.116
	<b>Total Annual Projected Sales from Transportation</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5,556,600</b>	<b>5,834,430</b>

Projected Direct Expenses for Sugar Manufacturing & Power Generation							
							Units: USD
No.	Particulars	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
<b>1</b>	<b>Direct Expenses</b>						
	Area of Farm Land Cleared in Acres	3,000	4,500	-	-	-	-
	Cost of Clearing Farm Land in USD/Acre	72	72	-	-	-	-
	<b>Annual Cost of Clearing Farm Land</b>	<b>216,000</b>	<b>324,000</b>	-	-	-	-
<b>2</b>	<b>Sugarcane Nursery Development Costs</b>						
	Area allocated for Sugarcane Nursery in Acres	200	-	-	-	-	-
	Number of Bags of Seeds Required per Acre	2	-	-	-	-	-
	Number of Sugarcane Seeds Bags required	400	-	-	-	-	-
	Cost of Sugarcane Bags in USD	36	-	-	-	-	-
	Total cost of Sugarcane Seeds	14,400	-	-	-	-	-
	Cost of Fertilizer required in USD per Acre	22	-	-	-	-	-
	Total cost of Fertilizers for Nursery	4,304	-	-	-	-	-
	Cost of Labour required in USD / Acre	30	-	-	-	-	-
	Total Cost of Labour for Nursery	6,000	-	-	-	-	-
	Maintenance Expenses in USD / Acre	72	-	-	-	-	-
	Total Maintenance Expenses for Nursery	14,400	-	-	-	-	-
	<b>Total Sugarcane Nursery Expenses</b>	<b>39,104</b>	-	-	-	-	-
<b>3</b>	<b>Electricity Generation Expenses</b>						
	Power Generation Capacity in Units/Day	240,000	240,000	240,000	240,000	240,000	240,000
	Number of Days of Operations in Year	-	-	-	-	210	210
	Annual Power Generation in Units	-	-	-	-	50,400,000	50,400,000
	Cost of Power Generation per Unit	-	-	0.022	0.023	0.023	0.023
	<b>Total cost of Electricity Generation</b>	-	-	-	-	<b>1,137,780</b>	<b>1,137,780</b>
<b>4</b>	<b>Sugar Production Expenses</b>						

Projected Direct Expenses for Sugar Manufacturing & Power Generation							
							Units: USD
No.	Particulars	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
	Sugarcane Crushing Capacity in MT per Day	1,000	1,000	1,000	1,000	1,000	1,000
	Number of days of Operation in Year	-	-	150	150	150	150
	Capacity Utilization of Sugar Manufacturing Mill	0.00%	0.00%	25.00%	52.00%	60.00%	70.00%
	Sugarcane Crushed in MT per Annum	-	-	37,500	78,000	90,000	105,000
	Cost of Crushing Sugarcane in USD / MT	-	-	2.15	2.26	2.37	2.49
	<b>Annual Sugarcane Crushing Cost</b>	-	-	<b>80,625</b>	<b>176,085</b>	<b>213,334</b>	<b>261,334</b>
<b>5</b>	<b>Direct Labour Expenses</b>						
	Nuber of Casual Labours required per Day	-	-	360	360	360	360
	Number of working Months in Year	-	-	5	5	5	5
	Average Salary per Labour per Month	-	-	145	152	160	168
	<b>Annual Direct Labour Expenses</b>	-	-	<b>261,000</b>	<b>274,050</b>	<b>287,753</b>	<b>302,140</b>
	<b>NSSF, PAYE, SDL, WCF &amp; Other Employee Expenses</b>	-	-	<b>130,500</b>	<b>137,025</b>	<b>143,876</b>	<b>151,070</b>
	Transport Cost of Sugarcane in USD/MT	7.17	7.17	7.53	7.90	8.30	8.72
	<b>Annual Direct Transport Expenses</b>	-	-	<b>282,319</b>	<b>616,584</b>	<b>747,015</b>	<b>915,094</b>
	Repairs and Maintenance Expenses in USD/Day	-	-	1,100	1,139	1,178	1,220
	<b>Annual Repairs and Maintenance Expenses</b>	-	-	<b>165,000</b>	<b>170,775</b>	<b>176,752</b>	<b>182,938</b>
<b>6</b>	<b>Total Annual Direct Production Cost for Sugar &amp; Power in USD</b>	<b>255,104</b>	<b>324,000</b>	<b>919,444</b>	<b>1,374,519</b>	<b>2,706,510</b>	<b>2,950,356</b>

Projected Administrative Expenses							
							Units: USD
No.	Particulars	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
<b>A</b>	<b>Adminstritative Expenses</b>						
1	Accomodation and Traveling Expenses	5,000	5,175	45,000	46,575	48,205	49,892
2	Advertising	3,915	4,052	4,200	4,347	4,499	4,657
3	Audit Fee	5,500	5,693	5,892	6,098	6,311	6,532
4	General Expenses	-	-	20,000	20,700	21,425	22,174
5	Immigration Exp	1,000	1,035	1,000	1,035	1,071	1,109
6	Insurance Premium	1,500	1,553	40,000	60,000	75,000	77,625
7	ICT, Internet & Telecom Services	-	-	12,000	12,420	12,855	13,305
8	Legal Expenses	3,500	3,623	15,000	15,525	16,068	16,631
9	Loading & Offloading Fee	5,000	5,175	5,000	5,175	5,356	5,544
10	Motor Vehicle Fuel Exp	8,500	8,798	8,500	8,798	9,105	9,424
11	Office Expenses	-	-	26,000	26,910	27,852	28,827
12	Permission & Subscription & CSR	-	-	7,500	7,763	8,034	8,315
13	Permits & Visa	3,600	3,726	3,600	3,726	3,856	3,991
14	Printing & Stationary & Courier	-	-	5,500	5,693	5,892	6,098
15	Rent Expenses	24,000	24,840	30,000	31,050	32,137	33,262
16	Security, Parking & Waiting Chgs	-	-	22,000	22,770	23,567	24,392
17	Vehicle Hire	-	-	36,000	37,260	38,564	39,914
18	Weight and Measure	-	-	12,000	12,420	12,855	13,305
19	Other Misc Expenses	-	-	25,000	25,875	26,781	27,718
	<b>Total Annual Administrative Expenses</b>	<b>61,515</b>	<b>63,668</b>	<b>324,192</b>	<b>354,138</b>	<b>379,433</b>	<b>392,713</b>

<b>Projected Salaries and Wages for Amministrative Staff</b>							
Units: USD							
No.	Salaries & Staff Details	Annual Salary of the Employee					
		2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	General Manager	48,000	51,600	55,470	59,630	64,103	68,910
	Number of Staff	1	1	1	1	1	1
2	Accountant	30,000	32,250	34,669	37,269	40,064	43,069
	Number of Staff	-	-	1	1	1	1
3	Executive Assistant	12,000	12,900	13,868	14,908	16,026	17,228
	Number of Staff	-	-	1	1	1	1
4	Driver	1,800	1,935	2,080	2,236	2,404	2,584
	Number of Staff	1	1	1	1	1	1
5	Administration Officer Asst	40,340	43,366	46,618	50,115	53,873	57,914
	Number of Staff	-	-	1	1	1	1
	<b>Total Annual Salaries &amp; Wages for Administrative Staff</b>	<b>49,800</b>	<b>53,535</b>	<b>152,705</b>	<b>164,158</b>	<b>176,469</b>	<b>189,705</b>
	<b>NSSF, PAYE, SDL, NHIF, WCF &amp; Other Staff Related Statutory Payments</b>	<b>24,900</b>	<b>26,768</b>	<b>76,352</b>	<b>82,079</b>	<b>88,235</b>	<b>94,852</b>

Projected Profit & Loss Statement							
Units: USD							
No.	Particulars	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	Total annual sales from Sugar Production	-	-	2,688,750	6,151,860	7,098,300	8,281,350
2	Total annual sales from Power Generation	-	-	-	-	5,556,600	5,834,430
3	Other Income	-	-	111,000	122,100	134,310	147,741
	<b>Total Annual Sales</b>	-	-	<b>2,799,750</b>	<b>6,273,960</b>	<b>12,789,210</b>	<b>14,263,521</b>
	<b>Direct Production Related Expenses</b>						
4	Total annual cost for production of Sugar & Power Generation	255,104	324,000	919,444	1,374,519	2,706,510	2,950,356
	<b>Total Direct Expenses</b>	<b>255,104</b>	<b>324,000</b>	<b>919,444</b>	<b>1,374,519</b>	<b>2,706,510</b>	<b>2,950,356</b>
	<b>Gross Profit</b>	<b>(255,104)</b>	<b>(324,000)</b>	<b>1,880,306</b>	<b>4,899,441</b>	<b>10,082,700</b>	<b>11,313,165</b>
	<b>Other Operating Costs</b>						
6	Administrative Expenses	61,515	63,668	324,192	354,138	379,433	392,713
7	Interest On Long Term Foreign Loan	-	-	-	166,065	78,565	78,565
8	Interest On Long Term Local Loan	-	-	-	3,388,534	3,042,034	2,506,534
9	Bank Charges	12,000	13,320	14,785	16,412	18,217	20,221
10	Other Salaries & Wages	49,800	53,535	152,705	164,158	176,469	189,705
11	NSSF,PAYE, SDL, NHIF, WCF & Other Staff Related Statutory Payments	24,900	26,768	76,352	82,079	88,235	94,852
12	Depreciation on Other Assets	25,000	2,394,634	3,203,442	3,846,328	3,106,970	2,512,247
	<b>Total Operating Expenses</b>	<b>173,215</b>	<b>2,551,925</b>	<b>3,771,476</b>	<b>8,017,713</b>	<b>6,889,922</b>	<b>5,794,836</b>
13	Operating Profits Before Tax	(428,319)	(2,875,925)	(1,891,170)	(3,118,272)	3,192,778	5,518,329
14	Corporate Tax @ 30%	-	-	-	-	957,833	1,655,499
<b>15</b>	<b>Operating Profits After Tax</b>	<b>(428,319)</b>	<b>(2,875,925)</b>	<b>(1,891,170)</b>	<b>(3,118,272)</b>	<b>2,234,944</b>	<b>3,862,830</b>
	Proposed Dividends	-	-	-	-	-	-
<b>16</b>	<b>Cumulative Net Profit / (Loss) CF to BS</b>	<b>(428,319)</b>	<b>(3,304,244)</b>	<b>(5,195,414)</b>	<b>(8,313,686)</b>	<b>(6,078,742)</b>	<b>(2,215,912)</b>
<b>17</b>	<b>Net Cash Profits After Dividend &amp; Cash</b>	<b>(403,319)</b>	<b>(481,290)</b>	<b>1,312,272</b>	<b>728,056</b>	<b>5,341,914</b>	<b>6,375,077</b>

Projected Balance Sheet							
							Units: USD
No.	Particulars	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
<b>1</b>	<b>Non-Current Assets (Net Value)</b>						
	Land & Building	475,000	940,371	893,353	848,685	806,251	765,938
	Plant & Machinery for Sugar Manufacturing	-	7,763,990	11,211,192	8,968,954	7,175,163	5,740,130
	Plant & Machinery for Power Generation	-	-	-	5,000,000	4,000,000	3,200,000
	Other Plant & Machinery	-	2,829,004	2,475,379	2,165,956	1,895,212	1,658,310
	<b>Total Non-Current Assets</b>	<b>475,000</b>	<b>11,533,366</b>	<b>14,579,924</b>	<b>16,983,595</b>	<b>13,876,626</b>	<b>11,364,379</b>
<b>2</b>	<b>Current Assets</b>						
	Stocks & Inventory of Consumables	-	-	-	-	-	-
	Sundry Debtors	-	-	268,469	601,613	1,226,363	1,367,735
	Cash & Bank Balances	270,915	215,637	805,363	1,232,301	1,490,004	1,792,624
	<b>Total Current Assets</b>	<b>270,915</b>	<b>215,637</b>	<b>1,073,832</b>	<b>1,833,914</b>	<b>2,716,367</b>	<b>3,160,359</b>
	<b>Current Liabilities</b>						
	Salaries & Wages Payable	4,093	4,400	34,003	36,017	38,155	40,426
	Sundry Creditors	-	-	36,766	64,714	75,926	90,249
	Other Payables / Liabilities	5,490	5,846	35,400	37,463	39,652	41,975
	<b>Total Current Liabilities</b>	<b>9,584</b>	<b>10,246</b>	<b>106,169</b>	<b>138,195</b>	<b>153,733</b>	<b>172,650</b>
	Net Current Assets	261,331	205,391	967,663	1,695,719	2,562,633	2,987,709
<b>3</b>	<b>TOTAL ASSETS</b>	<b>736,331</b>	<b>11,738,756</b>	<b>15,547,586</b>	<b>18,679,314</b>	<b>16,439,259</b>	<b>14,352,088</b>
	<b>Liabilities</b>						
	Ordinary Equity Share Capital	145,000	145,000	145,000	145,000	145,000	145,000
	Retained Earnings / Reserves	(428,319)	(3,304,244)	(5,195,414)	(8,313,686)	(6,078,742)	(2,215,912)

Projected Balance Sheet							
							Units: USD
No.	Particulars	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
	Long Term <b>Foreign</b> Loan from Institutions / Individuals	433,531	625,000	625,000	625,000	-	-
	Long Term <b>Local</b> Loan from Institution / Individuals	586,119	13,723,000	19,973,000	26,223,000	22,373,000	16,423,000
	Unsecured Loan from Directors for Operational Expenses	-	550,000	-	-	-	-
<b>4</b>	<b>TOTAL LIABILITIES</b>	<b>736,331</b>	<b>11,738,756</b>	<b>15,547,586</b>	<b>18,679,314</b>	<b>16,439,258</b>	<b>14,352,088</b>

Projected Cash Flow Statement							
							Units: USD
No.	Particulars	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
<b>1</b>	<b>Cash Inflow</b>						
	Ordinary Equity Capital	145,000	-	-	-	-	-
	Long Term <b>Foreign</b> Loan from Institutions / Individuals	433,531	191,469	-	-	-	-
	Long Term <b>Local</b> Loan from Institution / Individuals	586,119	13,136,881	6,250,000	6,250,000	-	-
	Unsecured Loan for Pre-Operational Expenses	-	550,000	-	-	-	-
	Cash Profits from Operations	(403,319)	(481,290)	1,312,272	728,056	5,341,914	6,375,077
<b>2</b>	<b>Total Inflow for the period</b>	<b>761,331</b>	<b>13,397,060</b>	<b>7,562,272</b>	<b>6,978,056</b>	<b>5,341,914</b>	<b>6,375,077</b>
	<b>Cash Outflow</b>						
	Site Development, Land & Building	500,000	514,864	-	-	-	-
	Plant & Machinery for Sugar Production Mill	-	9,704,988	6,250,000	-	-	-
	Plant & Machinery for Power Generation Unit	-	-	-	6,250,000	-	-
	Other Plant & Machinery	-	3,233,147	-	-	-	-
	Change in Working Capital Requirement	(9,584)	(663)	172,546	301,118	609,211	122,456
	Repayment of Long Term Foreign Loan from Institutions / Individuals	-	-	-	-	625,000	-
	Repayment of Long Term Local Loan from Institution / Individuals	-	-	-	-	3,850,000	5,950,000
	Repayment of Unsecured Loan for Pre-Operational Expenses	-	-	550,000	-	-	-
<b>3</b>	<b>Total Outflow for the Period</b>	<b>490,416</b>	<b>13,452,337</b>	<b>6,972,546</b>	<b>6,551,118</b>	<b>5,084,211</b>	<b>6,072,456</b>
<b>4</b>	<b>Surplus / (Deficit)</b>	<b>270,915</b>	<b>(55,278)</b>	<b>589,726</b>	<b>426,938</b>	<b>257,703</b>	<b>302,621</b>
<b>5</b>	Opening Cash Balance	-	270,915	215,637	805,363	1,232,301	1,490,004
<b>6</b>	Closing Cash Balance	270,915	215,637	805,363	1,232,301	1,490,004	1,792,624
	Cash Balance as per Balance Sheet	270,915	215,637	805,363	1,232,301	1,490,004	1,792,624

Projected Working Capital Requirement								
								Units: USD
No.	Particulars	No. of Days	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
<b>1</b>	<b>Current Assets</b>							
	Stock of Consumables	45	-	-	-	-	-	-
	Sundry Debtors	35	-	-	268,469	601,613	1,226,363	1,367,735
	<b>Sub-total</b>		-	-	<b>268,469</b>	<b>601,613</b>	<b>1,226,363</b>	<b>1,367,735</b>
<b>2</b>	<b>Current Liabilities</b>							
	Salaries & Wages Payable	30	4,093	4,400	34,003	36,017	38,155	40,426
	Sundry Creditors	30	-	-	36,766	64,714	75,926	90,249
	Other Payables / Liabilities	60	5,490	5,846	35,400	37,463	39,652	41,975
	<b>Sub-total</b>		<b>9,584</b>	<b>10,246</b>	<b>106,169</b>	<b>138,195</b>	<b>153,733</b>	<b>172,650</b>
<b>3</b>	<b>Net Working Capital Requirement</b>		<b>(9,584)</b>	<b>(10,246)</b>	<b>162,300</b>	<b>463,418</b>	<b>1,072,629</b>	<b>1,195,085</b>

<b>Projected Schedule for Availing &amp; Repayment of Long Term Foreign Loan</b>							
Units: USD							
No.	Particulars	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	Opening Balance	-	433,531	625,000	625,000	625,000	-
2	Term Loan Availed during the year	433,531	191,469	-	-	-	-
3	Repayment of Term Loan in the year	-	-	-	-	625,000	-
4	Closing Balance	433,531	625,000	625,000	625,000	-	-
5	<b>Interest on Term Loan</b>	<b>60,694</b>	<b>87,500</b>	<b>87,500</b>	<b>87,500</b>	-	-
6	<b>Deferred Interest Payments</b>	-	-	-	<b>166,065</b>	<b>78,565</b>	<b>78,565</b>
7	<b>Bank Charges</b>	<b>6,000</b>	<b>6,660</b>	<b>7,393</b>	<b>8,206</b>	<b>9,108</b>	<b>10,110</b>

<b>Projected Schedule for Availing &amp; Repayment of Long Term local Loan</b>							
Units: USD							
No.	Particulars	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	Opening Balance	-	586,119	13,723,000	19,973,000	26,223,000	22,373,000
2	Term Loan Availed during the year	586,119	13,136,881	6,250,000	6,250,000	-	-
3	Repayment of Term Loan in the year	-	-	-	-	3,850,000	5,950,000
4	Closing Balance	586,119	13,723,000	19,973,000	26,223,000	22,373,000	16,423,000
5	<b>Interest on Term Loan</b>	<b>52,751</b>	<b>1,235,070</b>	<b>1,797,570</b>	<b>2,360,070</b>	<b>2,013,570</b>	<b>1,478,070</b>
6	<b>Deferred Interest Payments</b>	-	-	-	<b>3,388,534</b>	<b>3,042,034</b>	<b>2,506,534</b>
7	<b>Bank Charges</b>	<b>6,000</b>	<b>6,660</b>	<b>7,393</b>	<b>8,206</b>	<b>9,108</b>	<b>10,110</b>

<b>Projected Schedule for Availing &amp; Repayment of Unsecured Loan for Operational Expenses</b>							
Units: USD							
No.	Particulars	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	Opening Balance	-	-	550,000	-	-	-
2	Unsecured Loan Availed during the year	-	550,000	-	-	-	-
3	Repayment of Unsecured Loan in the year	-	-	550,000	-	-	-
4	Closing Balance	-	550,000	-	-	-	-
5	<b>Interest on Term Loan</b>	-	-	-	-	-	-

<b>Projected Schedule for Assets and Depreciation Thereof</b>								
Units: USD								
No.	Asset categories	Particulars	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	<b>Land &amp; Building</b>	Value as of beginning of the year	-	475,000	940,371	893,353	848,685	806,251
		Purchase / Sale of Assets	500,000	415,000	-	-	-	-
		Allocation of Contingencies	-	99,864	-	-	-	-
		Value at year end	500,000	989,864	940,371	893,353	848,685	806,251
		Depreciation Rate (%)	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
		<b>Depreciation for the Year</b>	<b>25,000</b>	<b>49,493</b>	<b>47,019</b>	<b>44,668</b>	<b>42,434</b>	<b>40,313</b>
		<b>Asset Value after Depreciation</b>	<b>475,000</b>	<b>940,371</b>	<b>893,353</b>	<b>848,685</b>	<b>806,251</b>	<b>765,938</b>
2	<b>Plant &amp; Machinery for Sugar Manufacturing Mill</b>	Value as of beginning of the year	-	-	7,763,990	11,211,192	8,968,954	7,175,163
		Purchase / Sale of Assets	-	8,750,000	6,250,000	-	-	-
		Allocation of Contingencies	-	954,988	-	-	-	-

Projected Schedule for Assets and Depreciation Thereof								
								Units: USD
No.	Asset categories	Particulars	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
		Value at year end	-	9,704,988	14,013,990	11,211,192	8,968,954	7,175,163
		Depreciation Rate (%)	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
		<b>Depreciation for the Year</b>	-	<b>1,940,998</b>	<b>2,802,798</b>	<b>2,242,238</b>	<b>1,793,791</b>	<b>1,435,033</b>
		<b>Asset Value after Depreciation</b>	-	<b>7,763,990</b>	<b>11,211,192</b>	<b>8,968,954</b>	<b>7,175,163</b>	<b>5,740,130</b>
2	Plant & Machinery for Power Generation Unit	Value as of beginning of the year	-	-	-	-	5,000,000	4,000,000
		Purchase / Sale of Assets	-	-	-	6,250,000	-	-
		Allocation of Contingencies	-	-	-	-	-	-
		Value at year end	-	-	-	6,250,000	5,000,000	4,000,000
		Depreciation Rate (%)	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
		<b>Depreciation for the Year</b>	-	-	-	<b>1,250,000</b>	<b>1,000,000</b>	<b>800,000</b>
		<b>Asset Value after Depreciation</b>	-	-	-	<b>5,000,000</b>	<b>4,000,000</b>	<b>3,200,000</b>
3	Other Plant & Machinery	Value as of beginning of the year	-	-	2,829,004	2,475,379	2,165,956	1,895,212
		Purchase / Sale of Assets	-	2,915,000	-	-	-	-
		Allocation of Contingencies	-	318,147	-	-	-	-
		Value at year end	-	3,233,147	2,829,004	2,475,379	2,165,956	1,895,212
		Depreciation Rate (%)	12.50%	12.50%	12.50%	12.50%	12.50%	12.50%
		<b>Depreciation for the Year</b>	-	<b>404,143</b>	<b>353,626</b>	<b>309,422</b>	<b>270,745</b>	<b>236,901</b>
		<b>Asset Value after Depreciation</b>	-	<b>2,829,004</b>	<b>2,475,379</b>	<b>2,165,956</b>	<b>1,895,212</b>	<b>1,658,310</b>

CALCULATION OF FINANCIAL INDICATORS				
<u>Projected Internal Rate of Return (IRR) &amp; Net Present Value (NPV)</u>				
Particulars	2025-26	2026-27	2027-28	2028-29
Capital Outflow/Investment	(16,969,853)	(6,250,000)	-	-
Cash Profits - CPBDIT	1,312,272	728,056	5,341,914	6,375,077
Increase in Current Assets	172,546	301,118	609,211	122,456
Residual value current assets after 6 yrs	-	-	-	3,160,359
Residual value fixed assets after 6 yrs	-	-	-	11,364,379
<b>Total</b>	<b>(15,485,034)</b>	<b>(5,220,826)</b>	<b>5,951,125</b>	<b>21,022,270</b>

IRR =	11.03%
NPV =	437,626 @ 10%

<u>Projected Pay Back Period</u>				
Particulars	2025-26	2026-27	2027-28	2028-29
Operating Cash Profit After Tax	1,312,272	728,056	5,341,914	6,375,077
Interest on Long Term Loan	-	3,554,598	3,120,598	2,585,098
Gross Operating Profit	1,312,272	4,282,654	8,462,512	8,960,175
<b>Cumulative Gross Operating Surplus</b>	<b>1,312,272</b>	<b>5,594,927</b>	<b>14,057,439</b>	<b>23,017,614</b>

Net CoP (US\$) =	26,993,000	Pay Back Period (Yrs) =	7.04
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<b>Projected Break Even Analysis</b>				
<b>Particulars</b>	<b>2025-26</b>	<b>2026-27</b>	<b>2027-28</b>	<b>2028-29</b>
<b>Revenue</b>				
Total Revenue	2,799,750	6,273,960	12,789,210	14,263,521
<b>Variable Cost</b>				
	919,444	1,374,519	2,706,510	2,950,356
<b>Fixed Cost</b>				
Operating Costs	568,034	616,786	662,354	697,491
Interest on Long Term Loans	-	3,554,598	3,120,598	2,585,098
<b>Sub-Total</b>	<b>568,034</b>	<b>4,171,385</b>	<b>3,782,953</b>	<b>3,282,590</b>
<b>Break Even Revenue (Rent)</b>	<b>568,034</b>	<b>4,171,385</b>	<b>3,782,953</b>	<b>3,282,590</b>
<b>Margin of Safety</b>	<b>2,231,716</b>	<b>2,102,575</b>	<b>9,006,257</b>	<b>10,980,931</b>

<b>Return on Investment (ROI) per year</b>				
<b>Particulars</b>	<b>2025-26</b>	<b>2026-27</b>	<b>2027-28</b>	<b>2028-29</b>
ROI before Tax	0.00%	0.00%	11.83%	20.44%
ROI after Tax	0.00%	0.00%	3.55%	14.31%

<b>Particulars</b>	<b>Average</b>
ROI before Tax	<b>16.14%</b>
ROI after Tax	<b>8.93%</b>

<b>Projected Debt Service Coverage Ratio</b>				
				<b>USD</b>
<b>Particulars</b>	<b>2025-26</b>	<b>2026-27</b>	<b>2027-28</b>	<b>2028-29</b>
Profit After Tax	(1,891,170)	(3,118,272)	2,234,944	3,862,830
Add: Depreciation	3,203,442	3,846,328	3,106,970	2,512,247
Interest on Term Loan	-	3,554,598	3,120,598	2,585,098
<b>Sub Total</b>	<b>1,312,272</b>	<b>4,282,654</b>	<b>8,462,512</b>	<b>8,960,175</b>
Interest on Term Loan	-	3,554,598	3,120,598	2,585,098
Installments of Term Loan	550,000	-	4,475,000	5,950,000
<b>Sub Total</b>	<b>550,000</b>	<b>3,554,598</b>	<b>7,595,598</b>	<b>8,535,098</b>
<b>DSCR</b>	<b>2.386</b>	<b>1.205</b>	<b>1.114</b>	<b>1.050</b>
<b>Average DSCR</b>	<b>1.439</b>			