ICE MANUFACTURING PROJECT

BUSINESS PLAN OF ICE MANUFACTURING PROJECT

TANZANIA FUTURE GROUP COMPANIES LIMITED

DAR ES SALAAM, TANZANIA

May, 2024

CERTIFICATION STATEMENT

I……Amin abdullah sorouji……..., On behalf of Tanzania Future Group of Companies Limited, hereby I certify that the attached business plan for Tanzania Future Group of Companies Limited is true and accurate representation of our business objectives, strategies and financial projections. I affirm that the information presented in this business plan is based on careful research, analysis and our best knowledge at the time of its creation.

I further certify that this business plan has been prepared in accordance with ethical guidelines and industry best practices. The financial projections included in this plan are based on research and reasonable assumptions which reflect our diligent efforts to assess market condition, competition and potential risks.

With confidence I acknowledge that the success of our business ultimately depends on various factors, including market dynamics, regulatory changes and unforeseen circumstances. I understand that the actual results achieved may differ from the projections outlined in this plan due to those factors.

I hereby affix my signature and the date below, certifying the authenticity and accuracy of this business plan.

Signature……

Name……Amin abdullah sorouji……

Date……22/05/2024……

ACRONYMS

USD:	United States Dollar
TIC:	Tanzania Investment Centre
GDP:	Gross Domestic Product
OTC:	Over the counter
US:	United States
IRR:	Internal Rate of Return
ROI:	Return on Investment
R&D:	Research and Development
CBD:	Central Business District

MEASUREMENTS

1 ounce=	28.35 grams
1kilogram=	1000 grams
1 ton=	1000 kilograms

CURRENCY EXCHANGE

1 USD= TZS 2600.76

(Based on 19 May 2024, BOT Exchange Rates)

TABLES AND FIGURES

TABLES

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EXECUTIVE SUMMARY

TANZANIA FUTURE GROUP OF COMPANIES LITED would be involved in manufacturing of ice for commercial purposes in Dar Es Salaam, Tanzania. Ice is used widely in food, beverage, pharmaceuticals, plastics, bolts, and cement, rubber and fertilizers industries. Hygienic ice is commercially widely used in places where ice is needed, such as hotels, bars, restaurants, convenience stores, and cold drink shops/points or centres

Tanzania economy depends on agriculture which accounts for approximately 28 percent of Tanzania's GDP and provides employment the majority of the country's population (FAO). The horticulture, Fish and Meat industries has been suffering from massive postharvest losses due to lack of preservation infrastructures especially cooling facilities. Producing hygienic ice is alternative best and cheapest way of preserving these produce. Increasing demand of fresh foods and drinks in most consumers calls more use cooling facilities to keep the foods and drinks fresh. Therefore demand of ice is huge in Tanzania especially in food and beverage supply chain. Lack of conventional refrigeration infrastructures particularly for vegetables, fruits, fish, milk, meat and drinks (fresh fruit juice and processed and other drinks served cold in most areas in Tanzania makes ice to remain the only best alternative choice

The proposed project intends venture into ice manufacturing for industrial and commercial purposes. The company will hygienic ice to be used in for foods such as vegetables, fruits, fish, milk and meat and drinks (fresh fruit juice and processed and other drinks served cold. The company target industries and businesses dealing in vegetable, fruits, fish, meat and drinks such as hotels, restaurants, bars, banquet halls, fast food shops, chain stores, drink shops, and any other places where need cube ice to meet every customers' needs

Results of this financial analysis indicate that this cattle project, will be a profitable financial investment. The results of this financial feasibility indicate that the project is capable of generating following results

Summary of financial analysis

- *Internal Rate of Return : 16.282%*
- *Return On Investment: 64.23%*
- *Annualized ROI: 10.43%*
- *Payback Period: 3.706 years*
- *Discounted Payback period (18%): 5.230 years*
- *Cash Flow Return Rate:16.282%*
- *Investment gain in 5 years: USD 521,255/=*

Following are the key assumptions/considerations for the investment which were used in this business plan and which form basis of projected returns from the project

- Total project outlay is estimated at USD 811,600 /= (including fixed cost and working capital requirements), financed by shareholders and financial institutions
- In the year 1, the projected ice production will be 2500 tons which is expected to increase to 6000 tons in the fifth year of operation

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CHAPTER ONE

ABOUT TANZANIA FUTURE COMPANIES LIMITED

Legal Formation

Tanzania Future Group of Companies Limited is a Tanzanian company incorporated in Tanzania and provided with a certificate of incorporation under the provision of section 15 of the companies Act 2002 and has been issued a certificate of Incorporation by BRELA under number 172478166. The company's establishment objectives are to carry out the manufacturing of ice blocks, soft drinks, production of mineral water, and other bottled water

Capital

Tanzania Future Group of Companies Limited's issued share capital is Tanzanian Shillings 100,000,000 million .The issued capital is 100,000,000 divided into 1000 shares with a nominal value of 100,000 Tanzanian Shillings per share.

Ownership/Directors/Shareholders/ Shareholdings

Tanzania Future Group Companies LTD is owned by Hussein Abdukadir Hussein, Mohammad Srouji, Gamal Murgos Murad Georgi and Murad Morgosi Murad Georgi. Their names nd shares have been tabulated below;

S/N	Name	Number of Shares	Percentage
1	HUSSEIN ABDULKADIR HUSSEIN	300	30
2	MOHAMAD SROUJI	300	30
3	GAMAL MURGOS MURAD GEORGI	150	15
4	MURAD MORGOS MURAD GORGI	150	15
Total		900	90

CHAPTER TWO

PROJECT LOCATION

Plant Location

The proposed ideal location for the plant is Dar Es Salaam region, in East Coast of Tanzania. The area is one of the important area for industrialization in the country and well established with supply of power, water and other important infrastructures.

a) Abundance of Hydroelectric Power.

Dar Es Salaam Region is supplied with electric power from the National GRID. The region has enough power supply to run the plant. Dar Es Salam is well power supplied in the country about 63 percentage of people use electricity. Generally, Tanzania electricity use per capita is 102.57KWh. Completion of ongoing Mwalimu Nyerere HydroPower Project will increase amount power generated in the country

b) Availability of Water.

Dar Es Salaam is well connected with piped water system that will be used for some plant operations. Although the average total domestic water use per person per day (10 litres) in Dar Es Salaam is below the minimum requirement, the water available will be enough for the plant.

c) Central Business area

Dar es Salaam is the most industrialized region and the largest commercial centre in the country. Most of the residents are employed in the industrial or the commercial activities. It is endowed with economic potentials in industrial production and business transactions. It is also the gateway to and from the country which makes easier and less costly to do business all over Tanzania.

CHAPTER THREE

PROJECT OBJECTIVES

The TANZANIA FUTURE GROUP OF COMPANIES LTD plans undertake ice project manufacturing in Dar Es Salaam, Tanzania. The objectives of this project are as follows;

i. Production of ice for industrial and commercial uses. The company plans to produces hygienic ice that will be used in food and beverages industry and other industries a per client requirements

ii. Manufacturing of food preservation portable equipment that will preserve food with ice. R & D work on various equipment has been undertaken by the company. Based upon R & D work, the company will come up with portable ice equipment that will be used to preserve or cool foods and drinks. These equipment will be used by food vendors who play important role in food business Tanzania

iii. ***Expansion of ice market in various areas***: The company plans to expand the ice cube market to reach underserved people especially in the business segements where cooling is mostly needed

iv. ***Human resource development***. The company's plan is to help employees develop their abilities, skills, and knowledge. This is to ensure the effectiveness and advancement of individual employees, collective departments, and the company itself.

v. ***Corporate Social Responsibility.*** The company will carry out various social responsibility programs in the community in the project areas. This will include engaging in charity work, reducing the carbon foot print, purchasing fair trade products, improving labour policies, investing in environmentally friendly businesses and getting involved in volunteer works

vi. ***Job creation.*** The company will employ abroad set of workers and talented individuals from plant operators, technicians, marketers to casual labors.

CHAPTER FOUR

INDUSTRY ANALYSIS

The Ice Manufacturing industry consists of companies that manufacture large blocks and small cubes of ice for industrial and commercial use. The ice trade industry has revolutionized the way that food is preserved and transported in Tanzania just as elsewhere in the world. Although it is now being supplanted by refrigeration cooling systems, it is true that ice trade is still crucial in third world countries where there is unreliable power and high cost of power generated. In Tanzania, Ice trade industry play a crucial role mainly in agriculture, dairy, fishing and beverages industries.

The country economy depends on agriculture which accounts for approximately 28 percent of Tanzania's GDP and provides employment the majority of the country's population (FAO). The horticulture, fish, milk and Meat industry has been suffering from massive postharvest losses due to lack of preservation infrastructures especially cooling facilities. Postharvest losses of fresh horticultural crops are a major challenge in Tanzania, with studies from Sokoine University of Agriculture estimating losses of fresh produce at 44-60 percent.

Because vegetables, fruits and flowers are easily perishable and only last for a few days without preservation. A cooling solution with light weight and small pieces of ice is perfect for maintaining the taste & quality at the same time. Ice is used by direct contact or mostly by mixing with cold water to apply pre-cooling process to fruits and vegetables. Pre-cooling is designed to remove the heat of the production areas after the reaping process. It will decrease metabolic processes and bacteria formation and as a result shelf-life and freshness of the products are increased.

Water and flake ice mixture wipes out the wastes, dirt and other impurities from the product and as a result the product becomes cleaner, fresh and appetizing. Pre-Cooling can be used in these products, leafy vegetables, lettuce, corn, turnip, chicory, celery, carrot, water melon, apple, orange, peaches, pineapple, grapefruit, pear and tomatoes.

It seems the ice business will continue to flourish in Tanzania for several decades to come due consumer preference to fresh foods and drinks and affordability of ice. However, setting cost-effective price will attract more consumers to continue use ice as cooling and preservation methods for their goods

Figure no: 1: Vegetables and Fruits in ice

In dairy industry, FAO reported that about 59.5 million litres of milk, approximately 16% and 25% of total dairy production, is lost annually in Tanzania being during the dry and wet seasons respectively due to spoilage and waste. It is estimated that approximately 100,000 metric tons of meat, equivalent to 15% of Tanzania's yearly production, are wasted due to postharvest losses and waste.

Ice is very important in fishing industry .For instance, postharvest fish loss done in Tanzania from 2010 to 2016 estimated to be 92 tons. The types of losses that were identified in the study area included quality losses (50%), physical losses (32%), and market losses (12%) Producing hygienic ice is alterative best and cheapest way of preserving these produce.

Figure no. 2: Fish in ice

Increasing demand of fresh foods and drinks in most consumers calls more use cooling facilities to keep the foods and drinks fresh. Therefore, demand of ice is huge in Tanzania especially in food and beverage supply chain. Lack of conventional refrigeration infrastructures particularly for vegetables, fruits, fish and meat as well as drinks (i.e fresh fruit juice and processed and other beverages served cold in most areas in Tanzania the ice remains the only best alternative choice.

CHAPTER FIVE

MARKET ANALYSIS

5.1 Market overview

Globally, the ice market size was valued at USD 2.5 billion in 2023 and is estimated to register a CAGR of 3.7% between 2024-2032. In Tanzania, the ice market value is estimated to be USD 21.4 million in 2024 according to industry analysis. The food service industry which includes restaurants, hotels, bars and cafes is a significant consumers of ice. As the food service sector expands in the country due to urbanization, changing consumers' lifestyles and increasing disposable incomes, the demand for ice rises. The demand for industrial ice producers is being driven by the growth of cold chain logistics which is being fuelled by the food and pharmaceutical industries. To preserve the nutritional value and freshness of perishable goods during storage and transit.

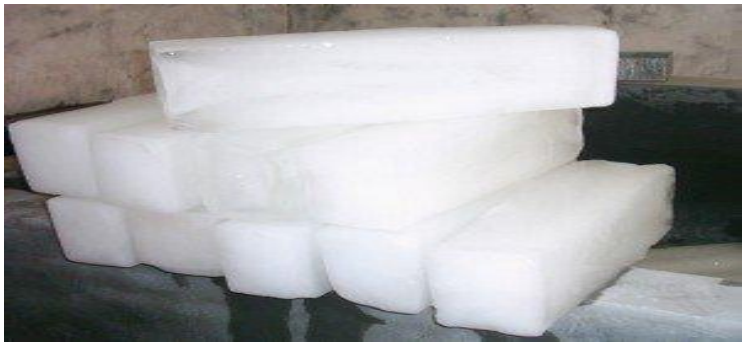

Figure no. 3: Ice cubes

5.2 Target Markets

The company will target businesses dealing in vegetables, fruits, fish, meat and drinks such as hotels, restaurants, bars, banquet halls, fast food shops, chain stores, drink shops, and any other places where need cube ice to meet every customers' needs. The company will target catering service providers, hospitals, pharmaceutical industries, service providers, cafeterias and allied service providers

5.3 Price Trends of Ice

Ice is produced in cubes of varying sizes and mass. The current whole price of one cube weighing about 5kg ranges between TZS 1000-5000. However, in retailing the size of cube matters in determining the price. Retail price ranges from TZS 2000-6000 depending on the volume if ice cube.

CHAPTER SIX

PROJECT DESCRIPTION

6.1Project Overview

The proposed project is about ice manufacturing for industrial and commercial purposes. The company will produce hygienic ice for foods such as vegetables, fruits, fish, milk and meat and drinks (fresh fruit juice and processed and other drinks served cold. The company will target industries and businesses in chains of vegetable, fruits, fish, meat, milk and drinks such as hotels, restaurants, bars, banquet halls, fast food shops, chain stores, drink shops, and any other places where need cube ice to meet every customers' needs

The proposed ideal location for the plant is Dar Es Salaam region, in East Coast of Tanzania. The area is one of the important area for industrialization in the country and well established with supply of power, water and other important infrastructures. Dar Es Salaam also is target market for the company's product as it is the central city for businesses in the country.

6.2Annual Production

The company will primarily produce ice for commercial purpose. The company will produce hygienic ice for food, beverages and pharmaceuticals. The company will also produce ice as per client requirements. The company's annual production of ice is projected to be 2500 tons in the first year of production. The company will continue increasing its production reach 6000 tons in the fifth year of operation.

6.3Employment creation

One of the core objectives of the company is to create employment to the locals. The company policy is to employ locals with emphasis on the gender equality in employment opportunities. It is expected that the company in first year of operation is going to employ 30 direct employees and 200 workers indirectly.

6.4Technology and Skills Transfer

The company policy is to make sure skills and technology used in the operations are transferred among employees .The company will make sure all the operations are run by locals and by so doing the company will enable the local employees learn the skills and technology used in the company and be able to manage and run operations after 5 years of operations.

6.5 SWOT Analysis

STRENGTH	WEAKNESS
1: Abundant water resources in country. The business area has abundant water that will be used to make ice. 2: Using local technical experts. Making of ice will use Tanzanian experts .This will reduce the cost of hiring foreign experts. 3: Position of the business. The plant will be located in Dar Es Salaam. The area has abundant water that will be used to make ice and it is the company's target market	1: Inadequate local ice making technology. The company will need to import technologies for ice making 2: Newness in industry. The company has no experience in ice manufacturing and marketing so it might take some time for the company to attract big time customers. The company will put efforts in promotions and advertising to make sure the product standout in the market.
OPPORTUNITY	**THREAT**
1: High growth of cold chain logistics particularly fish, meat, horticulture and health care 2: Increase of agricultural activities such as horticultural, farming and fishing which need ice. This indicates the demand of ice will continue to raise 3. Raising of price of ice. Although of one challenge of ice manufacturing companies is low profit margin but prices of ice in Tanzania are higher compared to other countries, therefore the company can benefit from high profit margins.	1. Electric powered refrigeration system. In other countries, refrigeration system have totally dismissed the ice trade. With improvement of electricity in Tanzania this may promote use of refrigeration system in main cold chains 2. Safety regulations. Outbreaks of food borne disease may cause the government to impose new regulations on production of ice. Change of government regulations and permit issuance may be the threat to the company 3. Over competition. Although the company plans to produce large quantity through a high technological machine which consumes low energy so as to lower production and compete both by quality and price, the company is threatened by other competition from other companies.

CHAPTER SEVEN

PROJECT FINANCIALS

7.1 **Project Costing**

The project costs will involve office and administration and factory building costs, land cost ; vehicle costs, Furniture, Fittings and equipment costs; machinery and other working costs as stipulated below;

7.1.1Total Project Investment Costs

Project Fixed Costs			
PARTICULARS	**QUANTITY**	**AMOUNT (USD)**	**Total in USD**
Land		100,000	100,000
Factory Building		25,000	25,000
Power installation		3,000	3,000
Mechanical, Civil and electrical work		6,000	6,000
Machinery		250,000	250,000
Miscellaneous Fixed Assets:			
Vehicles	2	40,000	80,000
Trucks	1	120,000	120,000
Furniture, fitting and Equipment	Lump sum	12,000	12,000
Project Working cost			215,600
TOTALINVESTMENT COST			**811,600**

7.2: Project Financing Plan

The project will be financed 96.6% in terms of loans that will obtained from Banks and 3.4 % of total investment will be financed by company's shareholders

S/N	**Source of Fund**	**Amount (USD)**	**Date of disbursement**	**Remarks**
01	Shareholders Contributions	11,600	July 2024	-
02.	Bank loans	800,000	July 2024	-
03	Others	-	-	-
	TOTAL	**811,600**		

7.3: Implementation Plan

S/N	ACTIVITIES	Time
1	Company registration , establishment, Feasibility study development of project proposal and Processing permit, licenses and other compliances	January –April 2024
2.	Obtaining Fund	July 2014
3.	Construction of factory building	August- October 2024
4	Purchase of machinery	November 2024
5	Installation of machinery and other works	December2024
6.	Other Purchases	January 2025
7.	Hiring of employees	February 2025
8	Preparation Start operation	March- June 2025
9	Start of operation	July 2025

7.4 Summary of Cost presentation and financial analysis

Fixed Cost	**USD 596,000**
Working Capital	**USD 215,600**
Total Investment	**USD 811,600**
Internal Rate of Return (IRR)	**16.282%**
Return On Investment	**64.23%**
Annualized ROI	**10.43%**
Payback Period	**3.706 years**
Discounted Payback period at 18%	**5.230 years**
Cash Flow Return Rate	**16.282%**
Investment gain in 5 years	**USD 521,255**

7.5: Financials

7.5:1 Projected Income Statement (Currency in USD)

Description	year 1	year 2	year 3	year 4	Year 5
Income					
Sales	192,307.69	240,384.62	300,481	375,600.96	469,501
Other Services	0	0	0	0	0
Total	192,307.69	240,384.62	300,480.77	375,600.96	469,501.20
Expenses					
Cost of Production					
Water cost	15,000.00	18,750.00	23,437.50	29,296.88	36,621.09
Payroll	67,800.00	68,000.00	69,000.00	70,000.00	75,000.00
Delivery Costs	82,800.00	86,750.00	92,437.50	99,296.88	111,621.09
Gross profit	109,507.69	153,634.62	208,043.27	276,304.09	357,880.11
Gross margin %	57%	64%	69%	74%	76%
Overhead expenses					
Other Cost of Production					
Electricity	15,000.00	25,000.00	25,000.00	30,000.00	30,000.00
Insurance	10,000.00	15,000.00	15,000.00	15,000.00	15,000.00
Marketing	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00
Transport	10,000.00	15,000.00	20,000.00	25,000.00	30,000.00
Miscellaneous	5,000.00	7,500.00	11,250.00	16,875.00	25,312.50
Total	45,000.00	67,500.00	76,250.00	91,875.00	105,312.50
Administrative expenses					
Administrative expenses	5,000.00	5,000.00	5,500.00	6,000.00	7,000.00
Total	5,000.00	5,000.00	5,500.00	6,000.00	7,000.00
Total overhead cost	**50,000.00**	**72,500.00**	**81,750.00**	**97,875.00**	**112,312.50**
Operating Income	59,508	140,000	158,000	189,750	217,625
Taxes (30%)	17,852.31	42,000.00	47,400.00	56,925.00	65,287.50
Net income	41,655.38	98,000.00	110,600.00	132,825.00	152,337.50

7.5.2: Projected Cash flow for 5 years (Currency in USD)

Projected Cash flow statement	**Currency: USD**						
	Description	**year 0**	**year 1**	**year 2**	**year 3**	**year 4**	**year 5**
Cash at beginning		11,600	215,600	192,308	186,692	220,548	299,680
Cash inflow	Sales	0	192,307.69	240,384.62	300,481	375,600.96	469,501
	Loan proceeds	800,000					
Total Cash available		811,600	407,908	432,692	487,173	596,149	769,181
Cash outflow	Water cost		15000	18750	23437.5	29296.875	36621.09375
	Payroll		67800	68000	69000	70000	75000
	Delivery cost		82800	86750	92437.5	99296.875	111621.0938
	Electricity		15000	25000	25000	30000	30000
	Insurance		10000	15000	15000	15000	15000
	Marketing		5000	5000	5000	5000	5000
	Transport		10000	15000	20000	25000	30000
	Miscellaneous		5000	7500	11250	16875	25312.5
	Administrative expenses		5000	5000	5500	6000	7000
	Total	**0**	**215600**	**246000**	**266625**	**296468.75**	**335554.6875**
Net Cash flow		811,600	192,308	186,692	220,548	299,680	433,627
	capital purchases	596000	0	0	0	0	0
Cash available at the end		**215,600**	**192,308**	**186,692**	**220,548**	**299,680**	**433,627**

7.5.3 Total Working Capital (Currency in USD)

Cost description	Year 1	Year 2	Year 3	Year 4	Year 5
Water cost	15000	18750	23437.5	29296.88	36621.09
Payroll	67800	68000	69000	70000	75000
Delivery cost	82800	86750	92437.5	99296.88	111621.1
Electricity	15000	25000	25000	30000	30000
Insurance	10000	15000	15000	15000	15000
Marketing	5000	5000	5000	5000	5000
Transport	10000	15000	20000	25000	30000
Miscellaneous	5000	7500	11250	16875	25312.5
Administrative expenses	5000	5000	5500	6000	7000
TOTAL	**215600**	**246000**	**266625**	**296468.8**	**335554.7**

Appendix no: 10 ton capacity ice making Machine