

JET-HTL COMPANY LIMITED

Business Plan for JET-HTL PLASTIC Pipe Manufacturing Project

June, 2023

Prepared by:

**JET-HTL COMPANY LIMITED
Consultants**

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ACRONYMS AND ABBREVIATIONS

%	Per Cent age
ACP	African Caribbean Pacific
CAPAS	Coordinated African Programme of Assistance on Services
CPA	Chartered Public Accountant
IRR	Internal Rate of Return
ITC	International Trade centre
JITAP	Joint Programme of Assistance for Africa and Least Developed Countries
KVA	Kilowatt Voltage Amperes
LDC	Least Developed Countries
Litre	Litre
M	Metre
MBA	Masters of Business Administration
NBAA	National Board of Accountants and Auditors
NAS	National Academy of Sciences
NEMC	National Environmental Management Council
OSHA	Occupational Safety and Health Agency
RTA	Regional Trade Agreement
Sq.	Square
TANESCO	Tanzania Electric Supply Company Limited
TBS	Tanzania Bureau of Standards
TFDA	Tanzania Food and drug Agency
TIS	Techno- Front International Solution Limited
TIC	Tanzania Investment Centre
TZS	Tanzania Shilling
UNCTAD	United National Conference on Trade and Development
UK	United Kingdom
VAT	Value added Tax
WTO	World Trade Organisation

EXECUTIVE SUMMARY

1. This Executive Summary outlines the proposal by Halem Construction Company Limited Chief Executive and a family business of Dar e Salaam Tanzania to undertake investment in a Manufacturing Company (JET-HTL Company Limited) in Tanzania. The objective of the document is to be submitted to the Tanzania Investment Centre for approval of registration of the investment.
2. JET-HTL Company Limited is a locally registered company incorporated in April 2023 to undertake investment in manufacturing of PLASTIC Pipeline project, JET-HTL Company Limited is principally owned by Mr. Happy Timothy Lebe holding 30 % of the shares and Mr. John Elias Ntalimbo holding 30% each. Mr. Happy Timothy Lebe is the Businessman and Mr. John Elias Ntalimbo is the Businessman
3. In order to implement this investment, JET-HTL Company Limited will utilize both shareholders' capital and a soft loan capital from Halem Construction Co Limited.
4. PLASTIC Pipes which will be manufactured at source is produced from the PE-100 raw material at the proposed plant site. Nearby community would rely on availability of clean water in addition to secured to employment.

There are number of PLASTIC Pipe manufacturing companies registered with the Tanzania Bureau of Standards (TBS) and all sell PLASTIC Pipes under different brand names. The overall the quantity of imported raw material is mainly PE 100 and is quite insignificant now than it was 10-15 years ago. The PLASTIC Pipes market is now dominated by domestic producers. Our analysis on PLASTIC Pipes demonstrates that then bulk of the domestic consumption is met from domestic production.

5. Assessment of the market indicates that there is growing demand for PLASTIC Pipes. The demand for treated water is commonly rising in the rural and urban areas where the the authorities are using only plastic pipes as the mode of transportation from Water treatment Plant/ Source to Several tanks and house as Rising Main and Distribution Network.
6. The cost of implementing the water investment project is estimated to be USD 1,146,700.00
7. The cash flow projections of the project demonstrate that there will be adequate income to repay the total investment and leave a reasonable surplus for undertaking
8. The operation of the PLASTIC Pipe production project will have impact on the economy through a number of social and economic benefits which includes generation of Government revenue, increased capacity in the PLASTIC Pipe manufacturing industry. Other benefits include employment creation in the rural setting and promotion of health among the population through welfare effects where over 200 people will benefit from the project both directly and indirectly.

9. JET-HTL Company Limited PLASTIC Pipe Manufacturing Plant will overall be managed of the Board of Directors who will delegate the day to day operations to a committed and motivated management of professionally qualified personnel. Members of the Board apart from the shareholders will include professionals appointed on merit due to their experience in their different fields and influence in the business sector. The Board members may include those who have demonstrated business/managerial capability elsewhere and also with backgrounds in commercial, engineering, processing, financial undertakings, particularly in private sector.

11. **Comments and Conclusion:**

The proposed PLASTIC Pipe manufacturing project is highly profitable with very attractive viability. The project to be built in Dodoma in a rural environment will have beneficial effects to the surrounding communities in terms of employment and improvement in their welfare through health and incomes which will enable them to accessing medical services and our company intend to help the community around our project contributing by providing clean in future especially schools and dispensaries.

JET-HTL COMPANY LIMITED

1. INTRODUCTION AND BACKGROUND:

1.1 Background:

JET-HTL Company Limited is a private registered company with several objectives, but the relevant one to this subject is to establish an industrial unit for manufacturing of Pipes and to do all such things as are incidental or conducive to the attainment of the object of the establishment and operation of such industrial unit. JET-HTL Company Limited plans to establish Pipe Manufacturing plant at in the Dodoma province for sale to the Region and surrounding regions.

1.2 Authorized Share Capital and Paid Up:

JET-HTL Company Limited is established and incorporated under the Companies Act, (2002) on the 17th April 2023 under a Certificate of Incorporation No 165085515. However, with the proposed investment in a Pipe Manufacturing project, the authorized share capital would increase to match the level of equity investment in the company. The Memorandum and Articles of Association is submitted under separate cover and a Certificate of Incorporation is presented in Annex 1.

1.3 The Shareholders and Shareholding in JET-HTL Company Limited:

TFIS has two shareholders each allotted shares as follows:

Table 1.1: List of Shareholders

S/n	Share holder	Shareholding	
		No of Shares Allotted	%
1	Eng. Happy Timothy Lebe	300	30%
2	Mr. John Elias Ntalimbo	300	30%
3	Unallocated	400	40%
	Total	1000	100

Happy Timothy Lebe and John Elias Ntalimbo possess sound education at graduate level and have good experience in undertaking private business operations.

1.5 The Project Objectives:

PLASTIC pipes are the best way for transportation of drinking water from one storage tank to other and from storage tank to the Public houses/ Offices. While buried these pipes remains free from the Rust, which also gives it a Long life. Water is also remains safe and free from the impurities.

So the transportation of Drinking water by other means may not be equally safe as equals to the Plastic pipes, Also the cost of other pipes will be very high than this, Which may increase the project cost to government tremendously. Water is considered a major carrier of water borne diseases, it is known globally that outbreak of diseases in many homes, urban congested areas; water is the main cause of disease outbreak such as cholera and typhoid, So if water is transported other means rather than Plastic pipes, it might not be safe due to its rusting properties after a time being.

The requirement of Plastic pipes for both urban and rural areas is increasing and thus want to see to it that they participate in the delivery of quality Pipeline to the projects in the region particularly the urban areas and affluent population. It is considered that water is the healthiest beverage and assures that it should reach to the consumers safely and refreshing choice.

As the water quality deteriorates on the African Continent, the demand for water supply project grows. People are aware of the dangers associated with water borne diseases and this makes more people to be concerned with the quality of water they take. Contaminated dirty water can cause Cholera, and other serious illnesses such as Guinea worm disease, Typhoid, and Dysentery. It is estimated that globally water related diseases cause more than 3.5 million deaths each year and the great proportion is in developing countries. So by considering all these effects on Human Health, the transporting of water to Houses is the safest way by Plastic pipes.

Due to water supply projects, the demand of Plastic pipes is growing and we would like to give our contribution in this field by providing the best quality of Plastic pipes and to save the people from diseases.

1.6 **The Business Plan:**

Preparation of a Business Plan is one of the first crucial steps in starting a business and helps to guide the promoter on the business and also to attract investors, banks and other interested parties such as regulatory authorities for business approval.

This report is therefore presenting a proposal by JET-HTL Company Limited to produce Plastic Pipes to cater for the domestic market.

The objective of the report is three-fold namely:

- a) To guide the promoters in the implementation of the project on issues that need to be observed for success of the investment;
- b) For Submission to Government agencies in Tanzania for relevant approvals such as approval of investment by the Tanzania Development Corporation (TDC), Environmental Impact Assessment by National Environmental Management

Council (NEMC), approval of operations by the Tanzania Bureau of Standards (TBS).

1.7 Location:

The Water project will be located in the Industrial areas of the Dodoma Province.

1.8 Tanzania Revenue Authority:

Certificates on Business License, Value Added Tax (VAT) and Tax Payer Identification Number are presented as Annexes 2.

1.9.3 Basis for Preparation of the Business Plan:

The Business Plan is set out under the following headings:

- a) Market and market analysis for Plastic pipes manufacturing;
- b) Technical aspects, Capital expenditure and Financing;
- c) Assessment of financial viability and economic benefits; and
- d) Organisation and management; and
- e) Risk analysis and Environmental Impact Assessment.

2. MARKET AND MARKET ANALYSIS FOR THE BUSINESS:

2.1 Introduction:

This section discusses the market for Plastic Pipes manufacturing in Dodoma Province and Tanzania in general. The chapter examines the production of Plastic Pipes in a nut-shell examines the market for Plastic Pipes in the whole country. It further examines the supply of Pipes, evaluates the demand and consumption of Plastic Pipes and assesses the level of competition for the JET-HTL Company Limited product. The target market for the Plastic Pipe product is identified and means of distribution to reach the target markets are discussed.

2.2 Product:

JET-HTL Company Limited will produce Plastic pipes under brand name JET-HTL Company Limited. The Products to be produced by the Company will be derived from a PE 100 raw material. The pipes to be produced and marketed by the Company is of very high. Pipes will be manufactured of different size and Pressure rating, initially will start with the following:

Table 2:1 Table of Pipe Size and PN Rating

S/N	Size of Packing	Pipe Size range	Proposed %
1	HDPE Pipes 20-110 mm PN 10-25	20-110	30
2	HDPE Pipes 125-315 mm PN 10-25	125-315	70
	Total		100

2.3 Current Production:

Currently there are many companies producing Plastic pipes registered and certified by the Tanzania Bureau of Standards (TBS) but they are very few registered manufacturing Pipes in the Dodoma.

At national level, there are Pipe manufacturing activities in a good number of Regions. But the plant in Dodoma covers the most of the market as it is like in the middle of Tanzania.

The current trend of investment in Pipes manufacturing show more regional distribution, which is an indication that pipes is intended to cater for the regions, offering the target market first. Transportation of products over long distance requires high investment in transport which many of the investors cannot afford to invest. However, our company once on fully operation including making fittings and valves will have invested in both trucks and warehouse for the purposes of keeping costing of products.

2.4 The demand for Plastic Pipes:

Man's body is 75% water and water is a naturally consumed commodity (liquid) by all classes of living human being (and animals) of all ages. Drinking water is available in different forms from the tap, from the river, spring and well. This form of availability of drinking water depends on location whether rural or urban. But for transporting of water from the source, pipes are the only mode of transportation, to ensure that people will get the same water at the source without any impurities, the plastic pipes are the best and cheapest way.

This has facilitated easy availability of clean water to users whenever they need it. In developing economies drinking water has been freely available from rivers, wells, springs, however depending on how to make the water reach at people houses, Because of that government is installing a lot of water supply projects in various region, because of which the demand of plastic pipes is increasing. This is the safest, convenient and cheapest way for the mode of transportation of water. These are easy to install, and are very durable as compare to any other pipes, which may reduce the overall cost of the project to the government.

Also for the people, mostly in rural area, it is not easy for them to buy portable drinking water everyday , and it is difficult for them to manage getting the pure water, As per Studies have been carried out by the National Academy of Sciences (NAS) of the United States of America (USA) and European Food Safety Authority (EFSA) on how much water to drink to meet hydration standards. NAS estimate adequate intakes of total water are 3.2 litres per day for men and women 2.7 litres per day. NAS report that 81% of fluid intake is from water and beverages and 19% comes from food moisture. This means on average adequate intake of water and beverages would be 3.0 litres per day for men and 2.2 litres per day for women. On the other hand, EFSA estimate adequate intake of water and beverages for men would be 3.2 litres per day for men and women 2.4 litres per day. Therefore, if one wants to meet daily hydration requirements by consuming water, whether one follows NAS or EFSA recommendations, the amount of water needed would actually be more than the traditional eight glasses of water per day. Going by these rates, water consumption is exceedingly high if all the people with desire to meet hydration requirements have access to pure water at their house directly from the source.

2.5 Target market:

For JET-HTL Company Limited to serve its market adequately, it will require to have adequate availability (production) in both quality and quantity of pipes. We will target the following market segments in marketing its plastic pipes:

a) Water Supply Projects:

This consumption segment will target the contractors. Plastic pipes for this segment of the market will be sold directly to the vendors who are installing the project for water supply, and the vendors who are interestingly doing the jobs for water meters. Vendors may also come to the plant to buy the pipes as per their requirement.

b) Retails Outlets:

JET-HTL Company Limited is also targeting to sell its plastic pipes to retail outlets also, which will help local people to buy such pipes as per their requirements for House and their commercial building pipelines. Whole sellers or agents will be identified to distribute the product. We have a vision to supply the excellent quality of pipes, so that there might not be any problem in underground works and people must remain relief free for future.

2.6 Products promotion/ visibility and display:

Plastic pipes are highly demand driven product for water supply projects, however, JET-HTL Company Limited will undertake promotion of such pipes in the market to draw the attention of the vendors. Any promotion of products must be linked to abundant availability of products in the market either in short or medium time horizon, short of this will lead to negative effects on the demand caused by irresponsible promotion for products not available in the market. In view of the planned volume of plastic pipes to be produced, We will embark on aggressive promotion of the products using all popular promotional tools such as radio, television, newspapers and outdoor advertising on bill boards. The availability of many plastic pipes in the market both local and imported, demand promotion of one's products to keep the vendors informed of the products and their qualities and specifications and brand details.

We will deploy the following activities in promoting ; namely:

- Radio and television;
- Outdoor advertising through bill boards, caps, T-shirts using products brand name.

The company will ensure that a reasonable amount of money is budgeted to cover promotion and advertising of products.

2.8 **Prices and Pricing:**

The prices and pricing of plastic pipes take into consideration the cost of production and some margin for profitability. However, the prices for the competitors will be taken into consideration particularly domestic ones.

2.9 **Identification of success factors for the market for JET-HTL Company Limited:**

We have identified many target markets which the company will aim at capturing. The target markets must be catered for with great precaution and professionalism and quality service consciousness to avoid creating disappointment on this market. A number of success factors have been identified that JET-HTL Company Limited will apply to ensure success in the marketing of its Plastic pipes and these include the following:

- High and consistent quality of the Plastic pipes;
- Attractive prices for pipes;
- On the spot deliveries meaning JET-HTL Company Limited must at all times have stocks available for standard sizes as per market requirement and the immediate deliveries when called for.
- Plastic pipes brand will be promoted both through electronic media and outdoor advertising;
- JET-HTL Company Limited will is to create strong presence of its product to the market with the quality and delivery which will lead to great success.

2.10 **Comments and Conclusion:**

The demand for Plastic Pipes in Tanzania is growing and several market areas are either not supplied or undersupplied with these pipes. The level of production of such pipes is increasing. Awareness on the importance of plastic pipes instead of other pipes which may get rusted and having low life will lead the market. Availability of good quality of pipes at affordable prices will encourage several authorities to utilise plastic pipes instead of Steel or concrete pipes.

3. CAPITAL EXPENDITURE, FINANCING AND PRODUCTION ASPECTS:

3.1 Introduction:

This section discusses the technical aspects of the plant covering civil works and workshop building, Pipe extrusion machinery and equipment and transport facilities and their costs thereof. The section also discusses the production plan of plastic pipes by the plant and the expected production over a projected period.

3.2 Land and Production Facilities:

3.2.1 Land:

The Pipe production plant will be located in the Dodoma Region, in industrial area or. And the Estimated cost of land is 10 USD per square meter and we intend to buy 10,000 square meter.

3.2.2 Plant factory buildings:

The pipe production factory building together with the storage of the extrusion machinery and equipment will occupy an area of 850 Square metres. The compressor room, Chiller Room, Shredder Room, laboratory, offices and stores will require to be 1000 square meters. The architectural building design is under preparation. Close to the Workshop, there will be a water pool built with a storage capacity of 15,000 litres. A water borehole about 50-100 metres deep depending on the survey. Balance area will be used for storage and loading of produced pipes. Toilets and change rooms will be contained within the building to avoid workers getting contaminated outside the production area.

3.2.3 Machinery and Equipment:

The complete extrusion and utility machinery and equipment for the Pipe Manufacturing plant will be imported from a manufacturer and exporter, **in China**. The machinery consists of the following: 20-110 pipe extrusion machine, 125-315 mm pipe extrusion machine, Compressor, Chiller and Shredder, Laser Jet printer and Stacker. Other equipment includes utility equipment and laboratory instruments and containers for storage and office.

3.2.3.Pipe Production Machinery and Equipment:

Pipes Production machinery and equipment comprise the following:

- a) 20-110 mm Pipe Extrusion machine for a capacity of 320 Kg/Hr;
- b) 125-315 mm Pipe Extrusion machine for a capacity of 600 Kg/Hr;
- c) Single Shaft Shredder for 300-800 Kg/Hr;
- d) Air Cooled Screw Water Chiller for a capacity of 68.5 Tr.;
- e) Air Compressor for a capacity of 3m³;
- f) Laboratory equipment and instruments.

The total cost of the equipment is US\$ 250,000 CIF Dar es Salaam equivalent to TSH 625,000,000.

3.2.3.2 Utility equipment:

The following key equipment provides utilities to the operation of the plant, namely:

a) Full Air Compressor set:

The plant will a full compressor set to comprise of Screw Type Air Compressor, capacity of 0.8 MPa; Processing Capacity of 3 m³. Other items include Air Filter for Air Compressor, Oil gas separation and Oil filter.

b) Chiller for cooling of pipes:

Air cooled screw type water chiller of 241 KW having a refrigeration capacity of 68.5 TR, with twin screw semi-hermetic compressor, with PLC Controller and with all required accessories.

c) Shredder:

This is single shaft shredder with SKD-11 types blade material and a capacity of 300-800 Kg/Hr.

f) Water Supply:

The water for cooling of pipes will come from a borehole sunk underground about 100 metres and is very close to the production workshop. There is a newly constructed concrete water tank with water holding capacity of 15,000 litres.

h) Fire Protection and Fighting Equipment:

Equipment will be acquired at a cost of TZS 10,000,000.

3.2.3.3 Transport facilities:

The Company will acquire two vehicles, one a 30-ton lorry to transport pipes to project locations and a 4Wheel drive Pickup Toyota to be used by Sales and Marketing staff. The two vehicles are estimated to cost TZS 146.66 million.

3.2.3.4 Office Furniture and Equipment:

In addition to office furniture, it will also include 2 desk top computer, printer and photocopy machine together costing about TZS 14.0 million.

3.2.3.5 Preoperational Costs:

The preoperational costs cover the professional fees and project travel costs to China and elsewhere in searching for machinery supplier. It also covers interests during construction, and a contingency allowance, together amounting to TZS 75.6 million.

3.2.4 Capital Expenditure Items:

The total capital expenditure for setting up a Pipe Production plant is estimated at USD 1,146,700 broken down as presented in the Table 3.1:

Table 3.1 Capital Expenditure for a Water Factory (USD)

	Capital Item	FOREIGN	LOCAL COST	TOTAL(USD)
1	Land, Civil Works & Building			
	Fencing and gate		30,000	30,000
	Factory and Warehouse STEEL STRUCTURE	100,000		100,000
	OFFICES, LABORATORY AND ONE HOUSE		70,200	70,200
	LAND 100 X 100M		40,000	40,000
	Water Borehole, PUMP INSTALLATION & Reservoir Tank		18,000	18,000
	Sub Total	100,000	158,200	258,200
2	Plant, Machinery and Equipment Complete with Pipe Extrusion Line with installation costs	250,000		250,000
	Generator 350 KVA		100,000	100,000
	TANESCO Power Installation with 3 Phase Transformer		50,000	50,000
	Fire system and equipment		5,000	5,000
	Sub Total	250,000	155,000	405,000
3	Transportation Equipment			
	30 Ton Lorry (one)	85,000		85,000
	4 WD Pick Up	35,000		35,000
	Sub Total	120,000		120,000
4	Office Furniture, & equipment:			
	Computer, Printer & Scanner		2,000	2,000
	Photocopy Machine		1,000	1,000
	Office Furniture		4,000	4,000
	Sub Total		7,000	7,000
5	Preoperational Expenses:			
	Professional fees & project travels		31,500	31,500
	Contingency allowance		15,000	15,000
	Sub Total		46,500	46,500
	GRAND TOTAL	470,000	366,700	8,36,700

Source: Consultant

3.4 **Implementation schedule:**

Implementation of the project will commence immediately after all registration with the TIC is done, in order for us to acquire the land for manufacturing plant and obtaining the necessary approvals from the Local Government authorities and Governments authorities at large and we have already started visiting and getting quotations from manufactures in china.

The implementation programme is presented on Figure 1:

Figure 1: Implementation Programme

No.	Years	2023																				
		April-May		June		July		August		September		October		November		December						
		Weeks	Weeks	Weeks	Weeks	Weeks	Weeks	Weeks	Weeks	Weeks	Weeks	Weeks	Weeks	Weeks	Weeks	Weeks	Weeks					
Activity																						
1	Registration Documents																					
2	Submission of Project Document																					
3	Looking for Land																					
4	Legal Documentation																					
5	TIC Approval on investment																					
6	Work on design of Pipe manufacturing workshop																					
7	Order Pipe Extrusion machines and make payment																					
8	Undertake construction of Extrusion workshop																					
9	Clear machinery and equipment from Dar Es Salaam Port																					
10	Deliver machinery to Plant Site Dodoma																					
11	Undertake recruitment of staff and operators/ give induction course																					
12	Purchase vehicles																					
13	Install machinery and equipment at site																					
14	Undertake pipe production operation																					
15	Undertake Commercial production																					
	Activity and output reports																					

TIC Certificate of Incentives

3.5 Products, Production Capacity and Capacity Utilisation:

The main objective of establishing JET-HTL Company Limited is to manufacture Plastic pipes for sale to the market and also to the surrounding districts and regions. The range of volumes of plastic pipes is limited to DN 20 to DN 315 with PN rating PN 10, PN 12.5, PN 16, PN 20, PN 25 but later will plan to produce the pipes of higher sizes and fittings.

3.5.1 Production capacity and projected production:

The plant will start with initial production of 8,00 Kg. per hour and the plant will operate on double shift of 8 hours each, which makes the production of 12,800 Kg. pipes per day, in the first year of operation and embark on third shift in the second year and thereafter and also increase the number of production lines based on the demand.

The history of the equipment where it has been installed and is operating has demonstrated great efficiency in its operation and will thus not be a bottleneck. The market for plastic pipes will be stimulated through promotion and increasing the visibility of the brand in the market place. Projected production of Plastic pipes at the different capacity levels is as follows:

Table 3.3: Projected production of water Pipes

OPERATING YEARS	1	2	3	4	5
WORKING DAYS/ANNUM	230	230	230	230	230
NO. OF SHIFTS OF 8 HOURS	2	2	3	3	3
NO. OF WORKING HOURS	16	16	24	24	24
PIPES MANUFACTURING CAPACITY KG/ HR	800	800	800	800	800
PIPES MANUFACTURING CAPACITY KG/ ANNUM	2,944,000.00	2,944,000.00	4,416,000.00	4,416,000.00	4,416,000.00

3.5.2 Quality Control Measures of Pipes Produced.

The quality of Plastic pipes at the plant starts at the raw material. At this point the the raw material will be tested in a laboratory to confirm it meets chemical and other requirements then pass through the extrusion plant then Pipes tested again. After production of pipes, the Hydrottest will be conducted as per ISO 1167 randomly. This will be to check on the strength and leakage that it meets the stated requirements.

In promoting quality control measures, all workers in the plant will be dressed in working attire e.g. wearing uniforms (blue and white), caps, gloves, boots, etc.

JET-HTL Company Limited will embark on a programme to comply with international standards spelt out under ISO -1167, 11357-6, 6964,2505, 1133, 6529-1-3 for physical and mechanical tests of the pipes and also for the quantitative and qualitative tests also. In targeting this ambition, JET-HTL Company Limited will introduce and strengthen its quality control system so as to ensure superior quality pipes is delivered to customers and institute follow up procedures on the delivered products to customers.

4.1 Projected Operating Costs:

Projected operating costs include costs directly related to pipes production that include perform for different sizes, raw material, direct labour costs. Other costs cover power, equipments running costs for pipes production, hired transport for transporting pipes to markets and fuel for power generator. Also included are fixed production costs, fixed administration costs, plant maintenance, oil, grease and spare parts, capital and financial charges on equipment and loan capital. Marketing costs covering advertisements and transportation are also covered. The financial structure shows that the project is highly capital intensive as demonstrated by high depreciation charge on the income.

4.1.2 Projected operating and Administrative overheads:

The operating and administrative overheads are projected to be USD 3,23,992 in the first year of operation and thereafter. Details of these expenses over a 5-year period are shown in the table 4.2:

Table 4.2: Projected operating and administrative costs (USD/YEAR)

Operating Period	1	2	3	4	5
Operating Years	2020	2021	2022	2023	2024
Fixed and Semi Fixed Costs					
Management salaries and wages	1,46,880.00	1,46,880.00	1,46,880.00	1,46,880.00	1,46,880.00
Insurance of vehicles 3% of cost	360.00	360.00	360.00	360.00	360.00
Insurance on plant and machinery (1% of total costs)	6,232.00	6,232.00	6,232.00	6,232.00	6,232.00
Motor vehicle repairs and maintenance	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Security expenses	3,600.00	3,600.00	3,600.00	3,600.00	3,600.00
Printing & Office stationery	1,200.00	1,200.00	1,200.00	1,200.00	1,200.00
Telephone, Fax, Internet, postage	1,200.00	1,200.00	1,200.00	1,200.00	1,200.00
Electricity	239,200.00	239,200.00	239,200.00	239,200.00	239,200.00
Fuel/oils for vehicles	12,000.00	12,000.00	12,000.00	12,000.00	12,000.00
Cleaning materials & toiletries	1,200.00	1,200.00	1,200.00	1,200.00	1,200.00
Travel expenses	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Business license & fees to regulatory authorities	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Skills and Development Levy 6% of monthly Gross Emoluments	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00
Bank charges	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Audit fees & Professional advices, e.g. Legal fees	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Miscellaneous expenses- e.g. donations	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Sub Total Fixed & Semi Fixed Costs	430,872.00	430,872.00	430,872.00	430,872.00	430,872.00

4.4 **Financial Analysis:**

4.4.1 **Basic Assumptions and Considerations in the Analysis:**

The financial analysis is evaluating the viability of the operations over the ten-year period 2020-2030. Financial projections determine the level of costs that will be required to finance the operations of TIS. Other financial projections made include income statement, cash flow and balance sheet. Discounted cash flow on the operations is also evaluated.

The following key operating assumptions have been made:

- a) The Business Plan covers the period from 5 years
- b) The capital expenditure envisaged will be undertaken within one year in 2024;
- j) Depreciation has been calculated to write off the cost of fixed assets on a straight-line method over the useful lives of the assets concerned in determining the income chargeable for tax and also for replacement of assets.

The following rates have been used:

<u>Item</u>	<u>Depreciation Rate %</u>
Civil works & buildings	6
Machinery and Equipment	12.5
Motor vehicles	25
Furniture and fittings	12.5

- j) The investment is to be approved by the Tanzania Investment Centre (TIC).

The financial ratios depict health business operations, which will lead to profitable business.

a) **Debt Service Coverage Ratio:**

The company will build significant debt servicing capacity for both long and short term liabilities throughout the project period.

The most significant debt service commitments occur in year 2024 when the first principal repayment will be made. The company will be able to meet all its financial obligations as they mature. The ratio is 5.89 times in 2023 and increases to 10.19 times in 2028.

b) **The Return on Equity:**

The average annual return on equity is 2.03 times and the revenue generation is good and the profitability is also high. The high rate of return on equity is attributed to growing business in the company resulting in high profits being realised.

4.4.8 **Pay Back Period:**

The Payback Period is estimated to be 6 year and two months. This means the operations will recover the initial investment within 72 months.

4.4.9 **Comments and Conclusions:**

The operations of JET-HTL Company Limited are profitable and the liquidity is sound throughout the period. This demonstrates the company's capacity to service the debts and finance any replacement of capital expenditure without difficulty including working capital requirements.

4.5.1 **Conclusion:**

The analysis demonstrates that the viability will not be very much affected by reduction in the pipe production. The break-even capacity and sales have also been reduced, but not affecting the attractiveness of the project.

4.6 **Analysis of Economic and Social Benefits of the Pipes Manufacturing Project on the Economy:**

This section analyses the economic and social benefits that will accrue to the economy in general and the community in Dodoma province as a result of the Pipe Production project and these are discussed under the following headings:

- a) Increased capacity in the Pipe industry;
- b) Generation of Government revenue;
- c) Employment creation;
- d) Promotion of health among the population.

4.6.1 **Increased capacity in the Pipes manufacturing industry:**

Pipes manufacturing industry in Tanzania started way back in the 90s, Overtime investment in Pipes manufacturing plants has increased and plants are now being established at National level to enable consumers access material easily. The demand for plastic pipes is increasing and a good number of authorities prefer Plastic pipes instead of Steel or concrete pipes.. The advent of JET-HTL Company Limited will increase the availability of pipes produced in the country. This will lead to increased availability of pipes make in Tanzania.

4.6.2 **Revenue Generation to the Government:**

JET-HTL Company Limited will generate Government revenue in form of taxes such as Corporation tax , Pay-as-You-Earn on employed staff charged on their salaries, and any other taxes to be paid.

4.6.4 **Employment creation:**

The implementation of the Pipe production project will create and generate employment. At the start of operations, about 28 staff will be directly employed both in the office and administration, production floor and distribution, and several could

be from the village. Indirect employment is expected to be over 200 and will be generated by the plant in areas of distribution, marketing and trading business establishment in forms of kiosks.

4.6.5 **Economic empowerment:**

Income earned from the plant by employees will contribute to improvement of household welfare in the form of financial empowerment that would enable them access health services and education for their children. Further acquisition of assets like better housing and transport facilities like motor cycles will be another notable achievement.

4.6.6 **Conclusion:**

Pipe production project will have positive impact on the economy. The benefits analysed above, are a result of the implementation of the production project. The conditions of the village residents who be working at the plant either permanently or casually will improve their levels of income which will impact on their economic welfare in the village community.

5. GOVERNANCE ISSUES AND STAFFING:

5.1 Introduction:

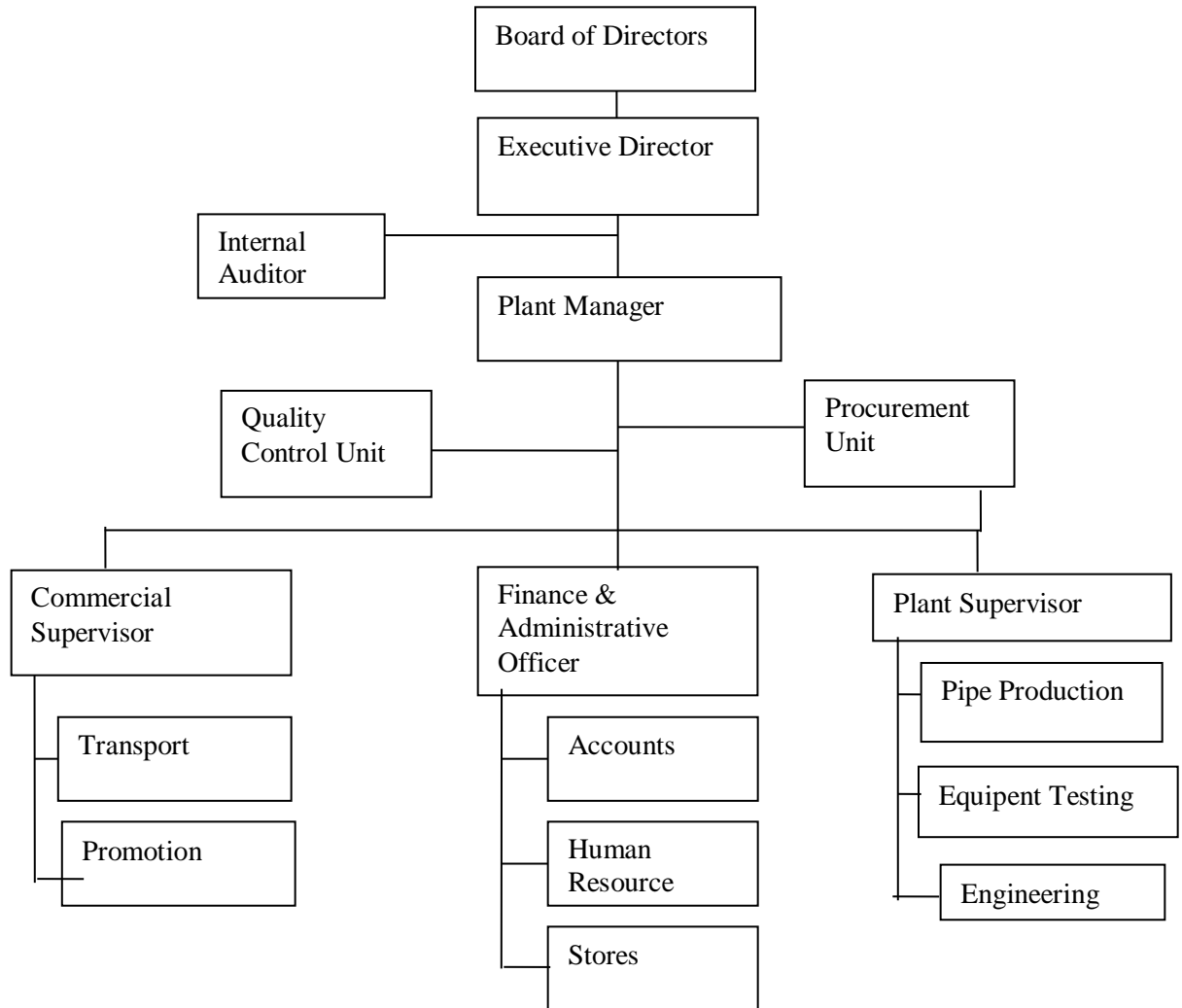
The preceding chapters have discussed the investment required to pipes manufacturing plant. Related issues have been discussed and cover working capital funds availability, marketing, capital expenditure and production scheduling. A financial analysis has been carried out to test the effects of these measures on the viability. The success of implementation of the pipe manufacturing project is dependent on being in place, foremost skilled and equally qualified and committed personnel and an enabling organisation structure. The issues of organisation structure and human resource aspects are discussed in this section as a precondition for rendering overall support to the operations.

5.2 Organisation Structure:

Organization structure is a tool that promotes good governance in an institution. A well-structured organization should promote efficiency and increased productivity leading to sustainable operations. An Organization structure also displays the required reporting arrangements and thus the span of control at different levels of authority. Any developed structure must lead to efficient way of undertaking tasks and it should always display efficiency and should be responsive to changes in the (business) environment. Heavy built structures have tended to be too expensive to maintain and slow in action, when translated in terms of manpower requirements and support facilities.

The above facts are what are guiding the design of the structure to be adopted by JET-HTL Company Limited and will guide the future operation of the company on a sustainable course. JET-HTL Company Limited will implement a structure that takes into consideration the practical and realistic way of accommodating private sector realities of life, change management philosophy, but also one that is efficient, promotes communication, eases information sharing and matches the resources to maintain it. The proposed structure is presented in Figure 2:

Figure 2: Organisation Structure:



5.3 Board of Directors:

A Board of Directors being in place and functioning is an indicator for achievement of corporate governance in an institution and is accountable for the performance of the company. JET-HTL Company Limited Board of Directors will be a high policy-making body in the company. The Board of Directors will meet at least quarterly and its role will be more on policy issues and will cover: approval of Annual Company Plans and Budget, monitoring the budget, preparing the accounts for the shareholders, confirmation of appointments for Company's Senior staff such as the General Manager and Head of Departments. The Board will also make decision on major policy issues and strategies that affect the company's operations. The Board will in no way be a hindrance to the Company's decision-making process and the Executive Director will facilitate this.

Members of the Board apart from the shareholders will include professionals appointed on merit due to their experience in their different fields and influence in the business sector. The Board members may include those who have demonstrated business/managerial capability elsewhere and also with backgrounds in commercial, engineering, processing, financial undertakings, particularly in private sector. However, the total number of the Directors will not exceed 6 including the Chairman.

The Board of Directors will depute one of the Directors to serve as an Executive Director on a full-time basis to facilitate faster decision making process where high level decision may be required. The post to be held by a competent Director will speed up the implementation of the Board directives. The Board will delegate the management of the company to a management team of qualified and committed experts who are professional in their respective fields; however, the Board would be accountable for the performance.

5.3.1 The Composition of the Board:

The Board of Directors has three members of different professional qualifications and experiences as follows:

Table 5.1: List of Board of Directors

S/N	Name	Title	Profession Qualification
1	Happy Timothy Lebe	Share Holder	Management, Bsc. Civil Engineering
2	John Elias Ntalimbo	Share Holder	
3	Plant Manager	Invited	
4	Finance Manager	Invited	
5	Procurement and sales	Invited	

Source: TIS

The Board of Directors has an oversight function on the management of the Company; whereas its day to day functions will be delegated to a management team of four members headed by the Plant Manager as per Organisation structure in Figure 2.

5.4 The proposed Departments in the structure include the following:

- Production;
- Commercial; and
- Finance and Administration.

5.4.1 Department of Production:

The Department to be headed by a Plant Manager will have three sections; namely Pipes Production, Utility Operation and Engineering. The Plant Supervisor will be a graduate in Process Engineering with strong background and experience in pipes production particularly Plastic pipes industry. Plant maintenance and repairs as part of engineering will also be handled by this department. The Department will ensure that raw material and water is available at the plant at all times. The Plant Supervisor will be reporting to the Plant Manager.

5.4.2 Department of Finance & Administration:

The Department will be headed by a Finance Manager who will be a qualified professional Accountant; preferably a CPA Holder registered with the National Board of Accountants and Auditors (NBAA). The Finance Manager will also be required to have exposure to human resource administrative issues. The Department will have three sections; namely Accounts, Human Resources and Stores. The Department will be responsible for handling all the accounting issues, budget preparation, and product costing and pricing and cost control. Other tasks will include supervising human resource and administrative issues in the company including stores management. The Finance Manager will be reporting to the Plant Manager.

5.4.3 Commercial Department:

The Commercial department will be headed by a Commercial Supervisor with professional qualifications in Business Management preferably MBA holder with working experience in a private sector environment particularly in the Pipes manufacturing industry. The Department will be responsible for undertaking opening new customer accounts, obtaining orders, monitoring and supervising sales accounts, monitoring performance of competition in the market and advising the management of action to take. Other tasks will include product promotion and advertising, ensuring product visibility in the market outlets and developing strategies to enhance product presence in the market.

5.4.4 Quality Controller:

A Quality Controller will be employed and will be responsible for quality control at every stage of factory operation: raw material, Quantitative and Qualitative tests etc.

The Quality Controller will head the Quality Control Unit and will report to the Plant Manager. The Controller will have experience in the Pipe manufacturing industry with chemical processing technology. The post is crucial in facilitating success of the project by promoting quality assurance process from raw material to pipes production and distributed to consumers.

5.4.5 Staffing and Management:

Availability of committed and experienced management and staff has been given priority in the operation of TIS and this will be emphasized more in the future. Management will be given greater priority in the implementation of TIS Business Plan. The Business Plan and all the equipment being proposed depend on availability /being in place of an experienced/committed management to blend it into reality. This is necessary to build the business and facilitate growth of the operations to making profit. Qualified staff will be available in the areas of plant management, production, marketing, and finance and engineering.

5.4.6 Manpower Requirement, Availability and Costs:

At optimal capacity utilisation covering Pipes production, marketing and distribution, engineering, accounts and administration sections, TIS will employ a total of about 28. Complete staff appraisal and the remuneration will be undertaken during this period in order to take into account industry competitiveness and the general economic situation. The main categories of staff are presented in Table 6.1 below:

Table 5.2: Proposed Manpower Requirements:

STAFF CATEGORY	TYPE	NO. REQUIRED			SALARY PER MONTH	TOTAL SALARY PER MONTH	TOTAL SALARY PER ANNUM
		SHIFT	STAFF	TOTAL			
MANAGEMENT							
Plant Manager	Skilled	1	1	1	2,500.00	2,500.00	30,000.00
Accounts Officer	Skilled	1	1	1	400.00	400.00	4,800.00
Receptionist/ Secretary	Skilled	1	1	1	300.00	300.00	3,600.00
Sales Officer	Skilled	1	1	1	400.00	400.00	4,800.00
Driver	Driver	1	1	1	200.00	200.00	2,400.00

TESTING QUALITY AND LABORATORY							
Lab Staff	Skilled	2	2	4	300.00	1,200.00	14,400.00
PIPE EXTRUSION MACHINES							
Operators	Skilled	2	2	4	400.00	1,600.00	19,200.00
AIR COMPRESSOR/CHILLER AND SHREDDER MACHINES							
Operators	Skilled	2	2	4	400.00	1,600.00	19,200.00
DISPATCH/DELIVERY AND MATERIAL HANDLING							
Floor workers/ Laborers		2	5	10	200.00	2,000.00	24,000.00
TOTAL						10,200.00	122,400.00
ADD 20% MEDICAL AND PENSION FUNDS CONTRIBUTION	Unskilled					2,040.00	24,480.00
						12,240.00	146,880.00

The monthly wage bill for the existing personnel is about USD 12,240. This figure may vary depending on policy on whether to use permanent or casual staff to undertake certain tasks.

6. RISK ANALYSIS, ENVIRONMENTAL IMPACT AND MITIGATION MEASURES:

We have evaluated possible risks that would have negative effect on the operations and the future of JET-HTL Company Limited. The risks are assumed to result from mismanagement of the natural disaster. The risks are rated High, Medium and Low depending on their possible occurrence.

6.1 Risk Analysis:

The risk analysed in a matrix form as follows:

Table 6.1: Matrix on risk analysis and its mitigation

No	Type of Risk	Rating of Risk	Mitigation
1	Inadequate water from underground formation due to possible environmental changes.	Low	JET-HTL Company Limited join other groups advocating against destruction of water sources and eco system.
2	Shortage of funds for financing of initial working capital requirements.	Low	Will be supported by companies owned by shareholders in Tanzania few months before launching the plant operations and while operating.

6.2 Environmental impact and Waste disposal:

Pipe Manufacturing industry is a healthy operation, which does not involve use of any chemicals or toxic substances in the process and it is a renewal process. The material which will be damaged can recycled into raw material with the help of the Shredder which is environmentally friendly.

From this analysis, it is evident that the problem of waste disposal will be well handled in the company. This will make the plant comply with the requirements of quality standards.

It is recommended that after start of the operations, the management of the company should contact the National Environmental Management Council to ascertain the need and areas for compliance by the company in the process.