

WISCAP COMPANY LIMITED

PROPOSAL BUSINESS PLAN FOR ESTABLISHMENT OF PVP PIPE AND FITTINGS FACTORY IN KAHAMA TOWNSHIP, SHINYANGA REGION, TANZANIA.



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List of Abbreviations

BSF- Blow-Fill-Seal
CAPEX – Capital Expenditure
COMESA- Common market for eastern and Southern Africa
CSI - Corporate Social Investment
EAC – East Africa community
EIA – Environment Impact Assessment
GDP – Growth Domestic Products
KASHUWASA – Kahama Shinyanga Urban Water Supply Authority
KVA –Kilovolt Amperes
MT – Metric Ton
NBS – National Bureau of standard
NEMC – National Environment Management Council
OPEX – Operating Expenditure
SADC –Southern Africa Development Community
SKU- Standard keeping units
SWOC - strengths, weaknesses, opportunities and threats.
TANESCO – Tanzania Electric Supply Company
TIC- Tanzania Investment Centre
TZS-Tanzania Shillings
US – United State Dollar
US\$ - United State Dollar
VAT – Value Added tax

EXECUTIVE SUMMARY

Polyvinyl chloride, also known as PVC or “vinyl,” has become one of the most widely used plastics today. The company encounter PVC on a daily basis in products ranging from packaging, lawn furniture to water and sewer pipes, medical equipment, and building materials. In the East Africa region, one of the largest markets for plastic and PVC pipe goods is Tanzania. The country has been importing PVC pipe and fittings goods and machinery from all across the world in increasing quantities over the last five years and has emerged as a lucrative market for PVC goods in the region.

Tanzania's plastic imports include plastics consumer items, writing instruments, rope & twines, plastics & metal spectacle frames, strainers, laminated & non laminated packaging material, bio-medical products, kitchenware, woven sacks & bags, pet preforms, gift & novelties & other plastic products. In fact, some enterprising companies in Tanzania are turning waste plastic bottles into Coronavirus face shields and meeting the rising demand for face shields in East Africa.

In an effort to strengthening the country economy, the Government of Tanzania cited PVC pipe and fittings industry as one of the potential revenue and job creation sector, its important is not only to social economic development, but has positive significantly towards economic development. WISCAP COMPANY LIMITED decided to establish PVC pipe and fittings industry in Shinyanga- Tanzania factories as major expansion of related products from purchasing used plastic materials from end use products (recycling) as raw materials for production and additional materials will be imported as additives to factory demand.

WISCAP COMPANY LIMITED aimed at expanding her own production line by importing complete set of two lines of productions by importing Machine and equipment's, the company will produce PVC pipes and fittings products of different types according to market and demand of her customers. The machines will have the capacity of producing 300kg/hour of PVC pipes and 200Kg/hours of fittings, production will be done in a double shift of 16 hours per day. Anticipated days works are 240 per year.

The proposed integrated project is estimated to cost US\$3,342,402.25 All this include cost of buildings structure, machines and equipment's, motor vehicles, initial capital investment, furniture's and fittings, Generators, Laboratory equipment's, other charges, working capital, flight charges etc. The project will be implemented within 5 years.

The factory will work for 20 days per month during the first year of production, The production capacity of the plant is based on 240 working days excluding Holidays and Sunday. The factory runs per day with a maximum of 250-300KG per hours in production of PVC pipe and 100-200KG per hour in production of PVC fittings. Annual production capacity is estimated to 480MT and 192MT for PVC Pipe and fittings respectively.

The estimated sales per MT is 65.22US\$ and 21.74US\$ per MT for PVC pipe and fittings respectively. The annual sales of PVC pipe and fitting is 3.9MUS\$ and 0.52M US\$

The startup project for the first year working hours will be 8 as the marketing extend the working hour will increase to 16hour per day. All machines will be imported from well-known Asia brands (India/China), after being over hauled, run 20-25 years.

The proposed project will start in early November 20221; some of machines and equipment's will be imported as strategic plan for establishment of the project. Machineries

and motor vehicles will be imported immediately while construction/renovation works are in process.

The whole process of production lines is looking at providing direct employment to at least 58 permanent jobs on full implementation and operation of the project. The industry is divided into 3 Departments; Administration (10) Finance and Marketing (7) and operational (40) departments are already in place.

The development of a large and complex project such as WISCAP COMPANY LIMITED is necessarily accompanied by multiple risks during all the phases of the project development, construction, operation and maintenance. The right approach to manage the project in a manner which is fairly and adequately address the multiple risks in a comprehensive as well as systematic manner is to use the risk analysis and management methodology which identifies the risk issues and their instrumental cause. In this regard, the risk is eliminated or effectively managed by the party best suited with capacity to handle or deal with the risk factors.

The development of this integrated plant will be funded by private finances. The company acting through its various shareholders and structures will provide the initial risk capital amounting to 3,342,402US\$, the whole amount will be raised shareholders and commercial banks.

On the basis of all the analysis done on this Business Plan on all aspects of assessment on both SWOC Analysis, market analysis, risk analysis and the financial analysis, the proposed investment options in the project as prescribed on this business plan have shown that the project is commercially viable. Nonetheless, WISCAP COMPANY LIMITED through professional consultative manner, will continue to find ways of implementing cost effective options given time and financial resources that will be made available. Financial analysis results show that when the construction of plant facility is financed using a combination of equity debt ratio (20:80), it gives an IRR of about 22.46%. The computed IRR is well above Dollar market of the annual loan interest rate of (8.00%) which is technically interpreted that the project is financially viable. The payback period for the project is estimated at 3 years, which is within the range for this type of investment. Sensitivity analysis results also favor the project. Financial analysis for the project has shown feasible returns. Based on the investment scope and the assumptions taken in this Business Plan, the project will not face any difficulties during establishment, according to the projected cash flow be in a position to accomplish repayment of the loan and start generating profit.

1.0. INTRODUCTION

1.1. PVC and Fittings industry in Tanzania

Polyvinyl chloride, also known as PVC or “vinyl,” has become one of the most widely used plastics today. The company encounter PVC on a daily basis in products ranging from, packaging, and lawn furniture to water and sewer pipes, medical equipment, and building materials. PVC production exposes workers and communities to vinyl chloride and other toxic substances. PVC products such as medical equipment and children’s toys can leach toxic additives during their useful life. Vinyl building materials release hydrochloric acid fumes if they catch fire, and burning PVC creates byproducts including dioxin, a potent carcinogen.

Tanzania has become a key player in PVC (polyvinyl chloride) industry, the PVC industries registers a steady growth. The country's overall economy is currently on a growth path. The country has experienced several years of strong economic growth (ranging from 8-12% in 2020) and it is now one of the fastest growing markets for plastic building material and industrial development in eastern Africa.

WISCAP COMPANY LIMITED is matching grants opportunity for businesses in Tanzania that wish to develop or increase their ability to trade, support product quality improvement and the meeting of international standards to access potential markets within and outside Tanzania. In this respect the company is planning to establish PVC pipes and fittings industry in Kahama Township, Shinyanga region in Tanzania that will support government initiatives endeavor to develop the business sector as an engine of pro-poor economic growth, in line with Tanzania’s National Strategy for Growth and Reduction of Poverty (MKUKUTA).

1.2. Why Plastic fittings in Tanzania?

In the East Africa region, one of the largest markets for plastic and PVC pipe goods is Tanzania. The country has been importing PVC pipe and fittings goods and machinery from all across the world in increasing quantities over the last five years and has emerged as a lucrative market for PVC goods in the region.

Tanzania's plastic imports include plastics consumer items, writing instruments, rope & twines, plastics & metal spectacle frames, strainers, laminated & non laminated packaging material, bio-medical products, kitchenware, woven sacks & bags, pet preforms, gift & novelties & other plastic products. In fact, some enterprising companies in Tanzania are turning waste plastic bottles into Coronavirus face shields and meeting the rising demand for face shields in East Africa.

In an effort to strengthening the country economy, the Government of Tanzania cited PVC pipe and fittings industry as one of the potential revenue and job creation sector, its important is not only to social economic development, but has positive significantly towards economic development. WISCAP COMPANY LIMITED decided to establish PVC pipe and fittings industry in Shinyanga- Tanzania factories as major expansion of related products from purchasing used plastic materials from end use products (recycling) as raw materials for production and some will be imported as additives to factory demand to suit customer satisfaction in Tanzania.

Considering such level of market growth and demand driven variables with notably few local manufacturing facilities already functioning in Tanzania and neighboring countries, the investment venture will become potentially profitable business.

As a part of plastic made project, WISCAP COMPANY LIMITED considering plastic pipe and fittings is alternatives of the iron steel pipe and fittings hence help to enhance the shelf life of clean water supply and sewerage products while retain healthy condition to its citizen.

1.3. Demand of PVC pipe and fittings products in Tanzania

The construction industry is expected to remain the most important market for PVC in the future, accounting for around two-thirds of the global demand. Examples of PVC applications in the construction industry include pipes, window frames, doors and covers, panels, cables and cable sheathing, dowels, screws, fasteners and coatings. Flooring also accounts for a significant share of global PVC demand. The second largest market is the packaging industry, which uses PVC for flexible and rigid packaging, with a share of nearly 16.5%. The most important applications include packaging films, bags and sacks, and shrink and stretch films. Rigid packaging includes containers such as butter or yogurt pots, bottles, boxes as well as lids. Other industrial uses of PVC include shoe soles, coatings and medical products such as infusion bags.

In 2020, pipes and pipelines were the most important PVC products with a share of over 37%. They were followed by profiles (20.3%) and films and sheets (17.3%). PVC offers significant advantages for the production of sewage pipes: The weight drops dramatically compared to pipes made of concrete or metal. PVC is also resistant to many chemicals and corrosion. Worldwide, more than 7.1 million tonnes of PVC were processed into sewage pipes last year. The market for PVC potable water pipes is somewhat smaller. The requirements for this market are different from those for sewage water, and the legal requirements for drinking water pipes are often very high, especially in highly developed industrialized countries. PVC pipes are at an advantage here with their insensitivity to UV radiation, chlorine and ozone.

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1.4. Benefits of PVC Pipes

PVC Pipe is a product of modern technology that offers reliable and durable service to a variety of users including contractors, engineers, operators, industries, utilities, and

irrigation districts. A number of performance advantages means PVC Pipes now replace many traditional materials.

1.4.1. Lightweight

PVC Pipes offer a tremendous weight advantage over alternative piping materials. The comparatively low weight of PVC Piping means that installers are less likely to get injured, and while it may take a team of workers or mechanical hoists to carry a large section of metal pipe, PVC Pipe is so light that a single person could easily move a long piece. This means fewer installers are required and those hired can get the piping installed comparatively faster than iron or steel. Less weight also means cheaper transport because the majority of transport companies charge by weight. This also enables larger payloads (more pipes) to be loaded.

1.4.2. Flexibility

PVC Pipe's **resistance to fracture** is an extremely important performance advantage. While PVC Pipes are made from rigid PVC compound, the PVC Pipe itself has the ability to yield under loading without fracturing. PVC Pipes can successfully be used where the surface will be subject to external loading such as road traffic. The modulus of elasticity of PVC Pipes is a major advantage for buried applications, particularly where soil movement or vibration is anticipated. In pressure applications, PVC's modulus of elasticity also reduces the magnitude of pressure surges i.e., water hammer. PVC-O Pipes has higher resistance to water hammer than all other pressure pipe types.

1.4.3. Watertight Joints

A major requirement for all piping applications is joint tightness. PVC Pipes are available with deep insertion, push-together gasketed or solvent cement joints. **Gasketed PVC Pipe Joints have consistently outperformed those of traditional pipe products** in actual service. PVC Pipes are also now available with Fusion Joints to provide a monolithic fully sealed pipeline particularly suited for trenchless installations and contaminated sites.

1.4.4. Coefficient of Friction

When piping systems are designed one of the main concerns is flow rate and pressure. PVC Pipes provide **smoother wall surfaces that reduce fluid friction and resistance to flow**. This hydraulic smoothness inhibits slime build-up in sewers and virtually eliminates tuberculation and encrustation in water distribution mains. The end results are significantly lower maintenance costs, more efficient initial pipeline design, and superior performance over the lifetime of the PVC pipe.

1.4.5. Safe Material

PVC pipe is a **non-toxic and safe material** that has been used for more than half a century. It is also the world's most researched and tested plastic.

1.4.6. Longer Lengths

PVC pipe is typically supplied in lengths of 6m, however can be supplied in other lengths as required. This reduces the number of joints required as compared with other pipe products. Fewer joints allow for **faster and more efficient installation, less hydraulic friction, and fewer opportunities for leakage.**

1.4.7. Design Versatility

The physical properties of PVC Pipes allow designers and specifiers a **high degree of freedom when designing new products and developing solutions** where PVC acts as a replacement or refurbishment material. Its versatility is reflected in the wide range of applications it is found in such as pipes, cables, window frames, floor coverings, and roofing as well as packaging, interior design, clothing, billboards, marine, safety equipment, and medical products.

WISCAP COMPANY LIMITED plastic production company produces PVC pipes and fittings products of quality design and sizes for different end users and for other industries. The goal of project is to expand her production from imported raw materials and local collected plastic as recycled material for production of PVC products and meet the market demand for plastic products at competitive price to be used in different sector.

This product will contribute to the development of Tanzania economy. The entire product range manufactured should follow the Weight and Measurement Act and packed accordingly in different standard keeping units (SKU). The product should be stored as per batch number allocated to particular product.

2.0. PROJECT OVERVIEW

2.1. The industry ownership and share distribution

WISCAP COMPANY LIMITED is a limited liability company, registered in Tanzania under certificate of incorporation No 154200282 issued on the 23rd November, 2021. The project is located at Plot No.9373 Nyasubi street, Kahama Township, Shinyanga. Currently, the company manages to employ 58+ and indirect 580 in plastic production chain.

The factory will be located in Kahama township in Shinyanga Region. Anticipated raw material of factory will be imported and some will be collected as recycled plastic for factory need. All plastic material will be imported from abroad. The establishment involves adding two lines of production for PVC Pipe and fitting production processing factories. This will involve cost of machine and fixing, operational and management cost, distribution of commodities etc.

The initial Authorized Share Capital of the company is TZS 100,000,000/= divided into 1,000 ordinary shares of Tshs 100,000 each and the company have the power to divide the original or any increased capital into several classes, and to attach thereto any preferential, deferred, qualified or other special rights privileges, restrictions or conditions. Unless the conditions of issues shall otherwise expressly declare, every issue of shares, whether preference or otherwise, or any such rights, privileges or conditions shall not be altered or modified except in accordance with the registered Articles or Association. The liability of the members is limited and the following names compromise the company ownership and principal shareholding as illustrated on

Table 2.1. Company Ownership and Principal Shareholders

S/No.	Shareholder's Name	Address	Number of Shares
1	Mr. William David Machali (TANZANIAN)	P O Box 701, KAHAMA, SHINYANGA	500
2	Mr. Paschal Maziku Mabula (TANZANIAN)	P O Box 701, KAHAMA, SHINYANGA	500

The address for this company is;
WISCAP COMPANY LIMITED;
P O Box 701,
KAHAMA, SHINYANGA,
TANZANIA.
Email:

2.2. Project Description

2.2.1. PVC Pipes Manufacturing Process

PVC pipes are made out of a material known as polyvinyl chloride, a durable, strong plastic-like substance. Pipes are constructed from this material and used in various applications from plumbing to construction. The pipe is designed to be universal

2.2.2. What is a PVC Pipe?



All pipes are designed around specific requirements to ensure that multiple pipe sections will fit together. The ends of the pipe can either be smooth or grooved (similar to a screw). Additionally, there are several different pipe sizes ranging from very small (one-fourth inch) to very large (10 feet).

Currently, PVC piping counts for the majority of plumbing in Tanzania and is the preferred standard for new construction.

2.2.3. How is it Made?

PVC pipes are created by starting with a molten mixture of the material and shaping them around a cast. The casts are made to be the exact width of the pipe. The mixture is poured into a cast and surrounded by an outer shell. The complete set is then placed into an oven to be cooked. Once the pipe has solidified, it is cooled and moved into finishing. Sections of the pipe are then cut based on common sizes and needs.

The sections are then coated in a chlorine solution to prevent harmful bacteria from growing during shipping and use. Once the coating is dried, the ends of each section are finished. If the pipe is a smooth connection, the top of the pipe is sanded down to ensure a perfectly flat surface. For fitted pipes, a machine engraves a series of grooves into the pipe. As the grooves are cut, high-pressured water is sprayed on the pipe to remove excess PVC fragments. After the grooves are added, the ends are smooth and the sections are sent into testing.

2.2.4. Quality Control

Because PVC pipes are used in many housing and commercial construction applications, it is important that each pipe is tested to ensure quality. To do so, the pipes are tested for their seal, connection (on grooved sections), and strength. The seal tests are conducted by adding a special cement to the pipe and allowing it to dry. Once this is complete, a series

of liquids are passed through the pipe at high pressure. If no leaks occur, the cement is removed and the section is cleaned. For fitted pipes, a similar process takes place without the cement. The final test of the pipes is to ensure their strength. This is completed by using several presses that push weight down on the pipe. If the section does not break or show stress points, it is sent for packaging and shipping. If a section fails at any point in the process, it is sent back to be melted down and re-constructed.

2.2.5. Process of the PVC Pipe Production Line and Characteristics of Materials'

Forming

2.2.5.1.PVC Manufacture

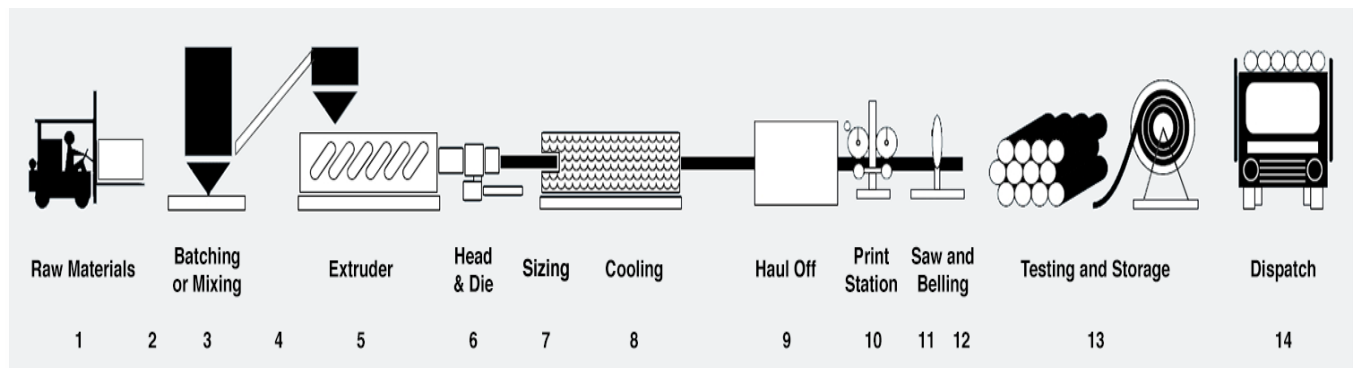
Basically, PVC products are formed from raw PVC powder by a process of heat and pressure. The two major processes used in manufacture are extrusion for pipe and injection moulding for fittings.

Modern PVC processing involves highly developed scientific methods requiring precise control over process variables. The polymer material is a free-flowing powder, which requires the addition of stabilizers and processing aids. Formulation and blending are critical stages of the process and tight specifications are maintained for incoming raw materials, batching and mixing. Feed to the extrusion or moulding machines may be direct, in the form of “dry blend”, or pre-processed into a granular “compound”.

2.2.5.2. Technological process of PVC pipe production line

Raw material in production process + auxiliary preparation → mixing → conveying and feeding → forced feeding → conical twin-screw extruder → extrusion die → sizing sleeve → spray vacuum setting box → immersion cooling water tank (components: high water tank, water storage tank, low water tank) → ink printing machine → crawler tractor → knife lift cutting machine → pipe stacking rack → inspection and packaging of finished products.

Extrusion process



Pictorial - Extrusion line



Polymer and additives (1) are accurately weighed (2) and processed through the high-speed mixing (3) to blend the raw materials into a uniformly distributed dry blend mixture. A mixing temperature of around 120°C is achieved by frictional heat. At various stages of the mixing process, the additives melt and

progressively coat the PVC polymer granules. After reaching the required temperature, the blend is automatically discharged into a cooling chamber which rapidly reduces the temperature to around 50°C, thereby allowing the blend to be conveyed to intermediate storage (4) where even temperature and density consistency are achieved.

The heart of the process, the extruder (5), has a temperature-controlled, zoned barrel in which rotate precision “screws”. Modern extruder screws are complex devices, carefully designed with varying flights to control the compression and shear, developed in the material, during all stages of the process. The twin counter-rotating screw configuration used by all major manufacturers offers improved processing.

The PVC dry blend is metered into the barrel and screws, which then convert the dry blend into the required “melt” state, by heat, pressure and shear. During its passage along the screws, the PVC passes through a number of zones that compress, homogenize and vent the melt stream. The final zone increases the pressure to extrude the melt through the head and die set (6) which is shaped according to the size of the pipe required and flow characteristics of the melt stream. Once the pipe leaves the extrusion die, it is sized by passing through a precision sizing sleeve with external vacuum. This is sufficient to harden the exterior layer of PVC and hold the pipe diameter during final cooling in a controlled water-cooling chamber (8).

The pipe is pulled through the sizing and cooling operations by the puller or haul-off (9) at a constant speed. Speed control is very important when this equipment is used because the speed at which the pipe is pulled will affect the wall thickness of the finished product. In the case of rubber ring jointed pipe, the haul-off is slowed down at appropriate intervals to thicken the pipe in the area of the socket.

An in-line printer (10) marks the pipes at regular intervals, with identification according to size, class, type, date, Standard number, and extruder number. An automatic cut-off saw (11) cuts the pipe to the required length.

A belling machine forms a socket on the end of each length of pipe (12). There are two general forms of socket. For rubber-ring jointed pipe, a collapsible mandrel is used, whereas a plain mandrel is used for solvent jointed sockets. Rubber ring pipe requires a chamfer on the spigot, which is executed either at the saw station or belling unit.

The finished product is stored in holding areas for inspection and final laboratory testing and quality acceptance (13). All production is tested and inspected in accordance with the appropriate Australian Standard and/or to specifications of the purchaser.

After inspection and acceptance, the pipe is stored to await final dispatch (14). For oriented PVC (PVC-O) pipes, the extrusion process is followed by an additional expansion process which takes place under well-defined and carefully controlled conditions of temperature and pressure. It is during the expansion that the molecular orientation, which imparts the high strength typical of PVC-O, occurs.

2.2.5.3. Injection Moulding

PVC fittings are manufactured by high-pressure injection moulding. In contrast to continuous extrusion, moulding is a repetitive cyclic process, where a “shot” of material is delivered to a mould in each cycle. PVC material, either in dry blend powder form or granular compound form, is gravity fed from a hopper situated above the injection unit, into the barrel housing a reciprocating screw.

The barrel is charged with the required amount of plastic by the screw rotating and conveying the material to the front of the barrel. The position of the screw is set to a predetermined “shot size”. During this action, pressure and heat “plasticize” the material, which now in its melted state, awaits injection into the mould.

All this takes place during the cooling cycle of the previous shot. After a preset time, the mould will open and the finished moulded fitting will be ejected from the mould.

The mould then closes and the melted plastic in the front of the barrel is injected under high pressure by the screw now acting as a plunger. The plastic enters the mould to form the next fitting. After injection, recharge commences while the molded fitting goes through its cooling cycle.

2.2. capacity project Description

WISCAP COMPANY LIMITED aimed at expanding her own production line by importing complete set of two lines of productions by importing Machine and equipments, the company will produce plastic and fittings products of different types according to market and demand of her customers. The machines will have the capacity of producing 300kg/hour of PVC pipes and 200Kg/hours of fittings, production will be done in a double shift of 16 hours per day. Anticipated days works are 240 per year.

The project is already importing machineries and the company will manage to distribute said products all over the country. The anticipate raw materials will be imported from China and some will be collected from local SMEs, all machines are fully automated from receiving bay to final products production.

2.3. Product: Demand and Market Analysis

2.3.1. Market analysis - Plastic Products

In Tanzania, the PVC pipe market is on the peak as the infrastructure growing high and high. PVC pipes are mainly used in construction and agriculture sector and the demand is

become increasing in the nearest future. It is used for various purposes like water supply, spray irrigation, deep tube well schemes and also in land drainage.

The PVC slotted and corrugated pipes are widely used for drainage of water from the land where waterlogging is necessary. As the demand in rural water suppliers, for irrigation facilities, development in the construction industry and the expansion of electricity network in rural areas. Over 60% of the demand for PVC pipe is in up to 110 mm outer diameter.

The market analysis conducted indicates that there are few industries in Lake zone regions producing plastic products for the said activities. The plastic supply base in Dar es Salaam is geared towards the manufacturing of low volume, hand-crafted, expensive products to service a niche market; this market requires the supply of a quality, volume fulfillment and pack-off service.

The WISCAP COMPANY LIMITED will produce PVC pipe and fittings products in different uses, The company will sales her products at a wholesale price of start for PVC pile per MT is 65.22US\$ and fitting per MT is 21.74US\$.

2.3.2. Market potential for the Plastic products:

As the PVC pipes are widely used for piping, there are lots of pipe manufacturers. So, to ahead in the race from competitors, manufacturers should deliver continuous product quality and also a wide range of products at competitive prices. This can be solved by using excellent quality manufacturing equipment which increases productivity with minimum cost and able to manufacture various PVC pipe sizes. WISCAP COMPANY LIMITED has set its sales target at US\$ 3,913,043 and 521,739.13 US\$ for PVC Pipe and Fittings respectively in year one, increasing to total sales of 5,390,506US\$ in year five for both products. Year one target sales equates increases by 5% there is the possibility of extending the business into the area of order fulfillment, which means on-line packing of products for customers. This will lead to efficiency, costs savings and shortened lead-time for potential customers. However, it is the director's intention not to enter this sector in the initial three years of operation.

2.4. Technical Characteristic of the project.

2.4.1. Project Site analysis

Based on physical inspection of the proposed site, the availability of basic and essential industrial infrastructure such transport, water supply, effluent disposal, electric power supply, telecommunication system and security were all checked out and are ok for factory establishment. The realization of the project development requires successful completion of a number of necessary activities and facilities to enable a successful development of the project. The project location is already installed necessary utilities such as reliable supplies of energy, water, transportation, telecommunications services, waste disposal and other services are in place.

2.4.2. Buildings and related fixed cost

The floor plan and elevation of buildings and other related structures will be rehabilitating to WISCAP COMPANY LIMITED as rented by the shareholders. However, the total cost of Land acquisition and registration, factory buildings, Storage of raw materials and finished PVC pipe and fitting's products structure has been done by the owner, the estimated cost of the structure is estimated to 536,655.22US\$ as cost associate to rehabilitation of the structure, project fixed cost have been estimated at US\$ 2,902,402.25 which includes purchasing of machines, motor vehicles and structure rehabilitation.

The industry also set budget as working capital which involves purchase of raw materials and factory overhead cost of 434,782US\$. The minor rehabilitations costs are inclusive of contingency and reflect prevailing cost of building materials and labour costs in the country. Mostly local building materials will be used in the construction of the same.

2.4.3. Machinery and Equipment.

Proper machinery selection is one of the key problems in the development of an industry. The machinery must suit the two-fold requirements of the developing countries, i.e. it should be up-to-date to allow for competitive production. In view of the foregoing, an effort has been made to choose from modern technological alternatives, a level that strikes a balance between fixed costs based on depreciation and variable costs based essentially on wages.

The requirements of various items of equipment have been worked out taking into consideration the production programs, average equipment utilization and normal productivity level of an average worker etc. While working out details of equipment required, it has been assumed that the plant will be working in a a single shift in the first and second years of production and double shift of 16 hours a day, 20 days a month or a total of 240 days a year.

The projects machinery and equipment will be sourced from Asian and Europe and are estimated to cost 589,660.08US\$, this includes, complete set PVC Pipe and PVC fittings production lines, laboratory equipment for testing quality, flight charge. These cost assumptions are C.I.F Dar es Salaam and include installation, commissioning, consultancy, port charges and transport to the project site. Calculated depreciation of machines and other working facilities is estimated to cost 245,965US\$. Others working facilities have already in place this includes weighing scales, mini laboratory equipment, communications, computers and other office equipment, standby power generator and miscellaneous machinery and equipment.

2.4.4. Motor Vehicles

10 heavy Box body trucks will be purchased in the first of production whereas truck will be purchased at a price of 78,260.87US\$ each totaling to 782,608.70US\$, and 25 Light Vehicles Lorries for indoor distribution at a price of 34,782.61 totaling to 869,565.22US\$ will added for smoothening distribution and 2 forklift 3.5MT @ 26,086.96US\$ totaling to

52,173.91US\$, 2 utility vehicle, The total cost for motor vehicles and forklift is 1,739,130.43US\$.

2.4.5. Furniture & Fittings and computers

This cost item includes the purchase of various office furniture: tables, chairs cabinets, safes, telecommunication gadgets, firefighting equipment, air conditioners etc. A budget of 10,870US\$ will be allocated from general administration budget for furniture fittings and computer accessories. The total budget for furniture and fittings is small due to nature of industry as few or minor requirement of furniture and fittings.

2.4.6. Pre-Operational Expenses

Under pre-operational expenses are considered costs like company formation, preliminary project studies, business plan preparation costs, licenses, permits and authorization, including processing of TIC Certificate of Incentives, and legal fees, travelling expenses, initial recruitment and training expenses, and interest accrued during project construction period. Budget allocated for this is 5,217.39US\$

2.4.7. Initial Working Capital

This item will mainly cover initial imports of raw materials estimated to last for the first three months of operations. Otherwise, raw materials will generally be maintained at one month's stock and debtors at one month's sales volume constitute the biggest portion of current assets. Trade credits will be 15 days for the items listed. The initial working capital allocated budget is 434,782.61US\$.

2.5. Business plan Objectives

The objectives of this study are two-fold. First is to determine the viability of the proposed project and if viable, use it as a business guide in implementing the project. Second is to facilitate the application for Tanzania Investment Centre (TIC) Certificate of Incentives so as to access exemptions on duties, VAT deferments and other benefits and protections as statutorily provided for under Tanzania Investment Act (1997) for the Project.

The project promoters have commissioned a reputable engineering and project planning consulting firm to advice on detailed technical and economic evaluation of the project and in determining its viability. As the report will be used to guide development of the project and will be tailored to meet standard requirements of financial institutions in the region.

2.6. Project Cost & Financing Pattern

The proposed integrated project is estimated to cost US\$3,342,402.25 All this include cost of buildings structure, machines and equipment's, motor vehicles, initial capital investment, furniture's and fittings, Generators, Laboratory equipment's, other charges, working capital, flight charges etc. The project will be implemented within 5 years.

2.7. Project Capital Investment Summary

The project investment summary is as follows;

INVESTMENT SUMMARY - WISCAP COMPANY LIMITED				
S/NO.	CAPITAL ITEM	No. OF UNITS	UNIT OF MEASURE	ESTIMATED COST US\$
NB	ALL FIGURES IN USD			
	A. LAND AND BUILDINGS			
1	Land Acquisitioning			23,478.26
2	Processing factory Building structure	1		82,472.61
3	Semi-permanent Building and office	1		43,478.26
4	Warehouse for finished goods	5		52,400.00
5	Fencing and gates			39,173.91
6	Laboratory for quality testing	2		52,173.91
7	packaging room	4		152,173.91
8	TP and waste disposal	1		91,304.35
	SUB TOTAL			536,655.22
	B. MACHINERY EQUIPMENT			
9	Production line of PVC pipe	1	set	217,391.30
10	Production line for fittings	1	set	152,173.91
11	weighing scale Max 100MT	1	set	47,826.09
12	Diagnosis Equipment for testing quality	2	Set	2,173.91
13	Weighing Measures - 0.1 to 100Kg	5	unit	1,043.48
14	Transformer	1	unit	35,217.39
15	cutting, Sorting and Packaging machines	2	Complete set	18,181.82
16	Reserve water tanks -durable	2	100,000Lts	13,043.48
17	Generator 500KVA	1	Unit	37,391.30
18	Miscellaneous Tools and Equipment	1	unit	65,217.39
	SUB TOTAL			589,660.08
10				
	C. MOTOR VEHICLES			
	Folk lift	2	unit	52,173.91
	Utility vehicle	2	unit	34,782.61

	Light Vehicles Trucks	25	unit	869,565.22
23	Lorries with trailers 32MT	10	unit	782,608.70
	SUB TOTAL			1,739,130.43
	D. FURNITURE			
28	Office Furniture		set in lump sum	10,869.57
30	Contingency			26,086.96
	SUB TOTAL			36,956.52
	TOTAL FIXED ASSET			2,902,402.25
	E. CURRENT ASSETS			
31	Pre operational expenses			5,217.39
32	Initial working capital			434,782.61
	SUB TOTAL			440,000.00
	TOTAL INVESTMENT			3,342,402.25

2.7.1. Project Financing

The project costs, including fixed costs (machinery, equipment, building renovations, motor vehicles, office furniture and equipment and pre-operation expenses will be financed by shareholders own resources 20% and 80% will be facilitated by local commercial banks. Working capital requirements will be financed by shareholder or seeking short term bank financing in form of overdraft facility. The project promoters are planning to finance project cost in the following pattern:

EQUITY + LOAN		
1	LOAN (80%)	2,673,921.80
2	EQUITY (20%)	668,480.45
	TOTAL FINANCING	3,342,402.25

2.7.2. Project Implementation

The proposed project will start in early November 2022; some of machines and equipment's will be imported as strategic plan for establishment of the project. Machineries and motor vehicles will be imported immediately while construction/renovation works are in process.

2.7.4. Explanatory Notes

The factory will work for 20 days per month during the first year of production, The production capacity of the plant is based on 240 working days excluding Holidays and Sunday. The factory runs per day with a maximum of 250-300KG per hours in production of PVC pipe and 100-200KG per hour in production of PVC fittings. Annual production capacity is estimated to 480MT and 192MT for PVC Pipe and fittings respectively.

The estimated sales per MT is 65.22US\$ and 21.74US\$ per MT for PVC pipe and fittings respectively. The annual sales of PVC pipe and fitting is 3.9MUS\$ and 0.52M US\$

The proposed project is a complete set of modern technology with output capacity of maximum of 300Kg per and line two with maximum capacity 200Kg per Hour. The startup project for the first year working hours will be 8 as the marketing extend the working hour will increase to 16hour per day. All machines are from well-known Asia brands (India/China), after being over hauled, run 20-25 years.

2.7.5. Auxiliary Materials/ services

Falling under this category is PVC pipe and fittings for bran, lubricants, grease and other miscellaneous items.

Utilities and service facilities that will need to be provided in this plant are as follows:

- (i) Workshop
- (ii) Electric power
- (iii) Water supply
- (iv) Miscellaneous facilities {Canteen; First Aid Kit, Storage and transport and Office Facilities }

(i) Workshop

It is necessary to make provision for a small workshop in the plant premises so that certain maintenance operations could be carried out following sudden breakdowns and major routine matters.

The facility will comprise of necessary machines like small centre lathe, drilling machine, welding set, soldering and gas-cutting equipment including complete electrical kit to take care of necessary electrical maintenance as well as to replace worn-out parts and periodic oil and greases needs for the plant. Equipment provision has been restricted to the minimum.

(ii) Electric Power and Generator

The proposed site will be supplied with industrial production 3-phase standard power supply from Tanzania Electric Supply Company (TANESCO), the electricity is available through the National Grid Line from Tabora to Kahama township, and if possible, the company will request installation electric Transformer in case the available power supply is not enough to feed the collage.

As part of project budget, the collage will be installed with a stand by generator with a

capacity of 500KVA that will be installed for power supply. Solar energy will be alternative source for administration and other miscellaneous activities and not processing activities. 500KVA power generator automated generator that will be connected to the plant and premises for standby power supply costing to 37,392US\$.

The WISCAP COMPANY LIMITED will install an online UPS system that secures clean and uninterrupted power free of surges, brownouts, fluctuations and other power problems. The client manufactures PVC pipe and fittings in a high-temperature, high-pressure environment, in which electricity interruptions cause economic and material losses. The total cost of generator not included to business plan as it's already in place.

(iii) Water Supply

Apart from the needs of electric power, water is also required for the actual process and other social needs. The proposed site has close to KASHUWASA water network, the agency is major supplier of water to urban and peri urban area in Kahama town. While depending on water supply from KASHUWASA, the main line is close to the proposed industry from Shinyanga to Kahama District area. The main line from this source will be tapped and let to the land site and water collected in an overhead reservoir provided at the top of the building of the plant. Adequate provision has been made in the project cost for the two overhead tanks with capacity of 100,000m³ and supply and laying of pipelines etc.

(iv) Miscellaneous Facilities e.g. First Aid Kit, Storage and Transport, Office Facilities etc

- Provision has been made in the project costs for necessary facilities for external telephones and fire alarm system;
- Sickness and ill-health are recognized to be among the cause of absenteeism and low morale leading to decreased production, increased waste and bad employee-management relations. Therefore, necessary provision has been made for the canteen and first aid facilities in case of accidents, sudden sickness etc.
- Storage and transport needs of the plant have been duly recognized and been attempted mostly manual. Regarding transport, twenty (10) trucks with a capacity of 32 MT will be purchased and other 25 light trucks will be purchased and some will be hired for plastic collection as recycled raw materials and for distribution purpose,
- Necessary provision for furniture and office equipment has been made in the Capital Cost estimates.
- Provision has also been made for the various types of weighing equipment in various sections for material-handling equipment etc.

2.7.6. Warehousing and distribution

WISCAP COMPANY LIMITED's warehousing service is ready to meet 24/7/365 with produced plastic products and raw materials imported. The efficiency of on-site combined with focal lift is already accommodated all needs and reduce supply chain costs. The

industry uses electronics inventory management system means will ready for the efficiently movements of goods to next level.

The industry will use quick dispatch for fast distribution of final products and packed by manual means or by semi-automatic machines. The industry will take Extra care is therefore taken to make it hygienic so that the products do not get spoiled during storage.

2.7.7. Waste management for industry

In order to create a sustainable society, it is necessary to develop effective utilization of all sorts of wastes. One of the major wastes from our living is fiber wastes. Fiber wastes are generally divided to nonindustrial (organic chemicals) and industrial wastes (inorganic Chemicals)

In his strategic management for a WISCAP COMPANY LIMITED; the industry has to move from an understanding of improvement at all costs to an understanding of continuous and balanced improvement once established. In modern times, environmental protection is being implemented not because it is enforced law, but as an administrative philosophy.

Rapid degradation in environmental conditions has changed at attitude of industrial managers toward ecological environment and had them consider ecology a significant factor while taking decisions related to industrial management. Parameters responsible for environmental pollution include chemicals discharged into air, water and soil as well as energy pollution all these will be taken into consideration of the proposed project. Noise pollution caused by poorly planned settlement programs is also included in this plan. Furthermore, safety and health of those working in production will be also taken into account by installing modern machines free from noise pollution.

3.0. MANPOWER REQUIREMENT - SALARY PROJECTION

3.1. Employment

The whole process of production lines is looking at providing direct employment to at least 58 permanent jobs on full implementation and operation of the project. The industry is divided into 3 Departments; Administration (10) Finance and Marketing (7) and operational (40) departments are already in place.

3.2. Recruitment

Recruitment of the 43 persons will be carried out by giving first preference to ex-technician from our local technical institutes such as Vocation Education Training Authority “VETA” and employees of PVC pipe factories in Tanzania, based on demonstration of skills and aptitude basis and their willingness to work for WISCAP COMPANY LIMITED.

Careful methodology is being worked out by a competent management consultant who will set the job descriptions. To ensure that the right caliber is recruited. Recruitment of expatriate personnel will be carried out in consultation with the relevant authorities in Government and the collaborating agencies.

3.3. Training and the use of consultants

The Company plans to initially carry out on the job training for most of the technical staff to be dispatched to the project site by the suppliers of the plant which will be specified under sales agreement. In general, the company will ensure that employees acquire new skills and procedures to increase their productivity fourfold. Educational materials will be subsidized or paid for to motivate the workers to develop themselves.

Whereas the company will endeavor to obtain the best talents to fill the permanent posts in the organization, it is intended where necessary, to continue with the policy of hiring out some specialized skills by way of consultants. Alternatively, those skills not required throughout the year will be left to consultants. These include legal counsels, systems and management consultants. To ensure efficient and scientific management, operational manuals will be prepared for the core functions of the company.

3.4. Organization and Management

The project will be managed by qualified professionals given the vast experience that the promoters have acquired over years in running and managing similar businesses. The Board of Directors formulates policy and offer strategic business guidance to management and regularly monitor and evaluate performance of the company.

All the production line will be under the administrator under which the day-to-day leader/management of production line will be vested in the management team headed by an Administrator. The Administrator is to be assisted by qualified and experienced personnel.

Table 3.1. Proposed organization and manpower requirement for the plant is as follows:

A. ADMINISTRATION DEPARTMENT	FULL TIME STAFF	MONTHLY SALARY FULL TIME STAFF	TOTAL ANNUAL SALARY
DEPARTMENT	POSTS	AMOUNT USD	AMOUNT USD
EXCUTIVE DIRECTOR	1	1,000	12,000
LOGISTIC	1	500	6,000
DRIVER	2	270	6,480
SECURITY GUARD	6	150	10,800
SUB TOTAL	10	1920	35,280
B. FINANCE AND MARKETING DEPARTMENT			
DEPARTMENT	FULL TIME STAFF	MONTHLY SALARY FULL TIME STAFF	TOTAL ANNUAL SALARY
DEPARTMENT	POSTS	AMOUNT USD	AMOUNT USD
MARKETING	1	210	2,520
ACCOUNTANT	2	300	7,200
PROCUREMENT OFFICER	2	250	6,000
DRIVER	3	150	5,400
TOTAL	8	910	21120
C. OPERATIONAL DEPARTMENT			
DEPARTMEN TPVC & FITTING PRODUCTION	FULL TIME STAFF	MONTHLY SALARY FULL TIME STAFF	TOTAL ANNUAL SALARY
DEPARTMEN TPVC & FITTING PRODUCTION	POSTS	AMOUNT USD	AMOUNT USD
QUALITY CONTROL	1	650	7,800
ICT EXPERT	1	650	7,800
OPERATORS	5	320	19,200
MOLDING EXPERT	2	200	4,800
ELECTRICIAN	1	350	4,200
MECHANICS	1	350	4,200
HELPERS	4	250	12,000
DRIVERS	20	165	39,600
SUPPORTING STAFFS	5	100	6,000
TOTAL	40	3,035	105,600
GRAND TOTAL	58.00	5,865.00	162,000.00

4.0. FINANCIAL ANALYSIS- FINDINGS

4.1. Production, Revenue and project viability

- ❑ The estimated revenue gain in selling PVC pipes and Fittings sales is estimated to 4,434,783US\$ and the sales increases to the second year to 4,656,522US\$. excluding Value Added Tax.
- ❑ Net profit before tax is 2,808,004US\$, second year earning is 2,980,939US\$, which show the profit is increasing,
- ❑ Net profit after tax is 1,579,699S\$, second year earning is 1,726,624US\$, which show the profit is increasing,
- ❑ Gross sales contribution in the first year of production is 63% which increases tremendously in the second years up to 5th year
- ❑ The expected sales increase annually is 5% while increase production cost is 3% which depends on inflation rate of the country, for WISCAP COMPANY LIMITED, will not phase inflation challenge
- ❑ Total investment cost of the project is 3,342,402.25US\$ whereas the own equity is 20% and loan-able amount 80%, project current assets for the first year is 1,579,699US\$, fixed asset 2,902,402.25US\$, Project liquidity is 2,808,004US\$
- ❑ The end balance of project in cash flow statement is positive and increases tremendous.
- ❑ Testing the project viability is positive whereas IRR is positive 22.46%, and payback period of project is within 3 years. The Discounted Cash flow yields an Internal Rate of Return (IRR) of which is well above the assumed cost of capital. which is above normal bank interest rate in case promoter will borrow a commercial loan the project will recover bank loan within project economic life - see balance sheet,
- ❑ The end balance of project in cash flow statement is positive and increases tremendous. Cash generated from operation and net cash from operational activities increases positively of project (see cash flow sheet)
- ❑ Return on Investment is above 100%, Depreciation of fixed assets and amortization of the pre-operational expenses rates used are as follows: land 5%, Civil Works/ Structures/Buildings 5.00% on straight line basis, Plant Machinery & Technical Equipment 12.50% on straight line basis, Motor Vehicles. 20.00% on straight line basis. The business plan uses 12.5% as depreciation factors. Depreciation is amounted to 245,700US\$ and the value of assets increases as asset depreciate
- ❑ Salaries and Wages have been based on the prevailing scales in the industry. There is provision of 20% to cover company contribution to NSSF (10%) and other social welfare (10%). Included to the total amount (see Income statement)
- ❑ Corporate Tax is fixed at 30% of taxable profits. The project is able to pay tax hence increase government revenue via GDP by 768,691US\$ this is for both industries PVC and fittings production
- ❑ The business plan has an assumption all capital investment will be recovered within 3 years for 5 year projected economic life,

5.0. RISK ANALYSIS

5.1. Risk Analysis

Risk is the probability that an event or action will adversely affect the organization. Risk assessment is the identification and analysis of risks associated with the achievement of operations, financial reporting and compliance goals and objectives. Risk management is a central part of the WISCAP COMPANY LIMITED. The industry's management will determine the level of operations, financial and compliance risk they are willing to assume. Risk assessment is one of the Company's management responsibilities.

5.2. Macroeconomic risk analysis

Since early 1986, the Government of Tanzania has launched a comprehensive economic policy and stabilization plan with the aim to enhance the amount of infrastructure construction and improve the lives of the poor. During this time the main economic indicators significantly improved. However, uneven development of various region in the country, lack of relevant infrastructure in transportation, telecommunications, networking, health facilities, electricity and water supplies have proven to be investment barriers. Overall, Tanzania has a weak economic foundation but the project can achieve a greater impact in attaining social and economic goals for the country.

5.3. Financial risk analysis

- a) **Supply Risk:** The risk in Primary production relates to supply of raw material, transportation and price fluctuations. There is no assurance of enough supply of raw materials in the local market instead mostly of raw materials are imported.
- b) **Processing Risks:** The technology, machines and equipment used in PVC and fitting are in rudimentary stages all of which contribute to reducing production efficiency. Also quality, safety and standards consideration in the production environment is limited. In PVC pipe and fittings facilities operation know-how is very low as there are notarized labourers.
- c) **Sales/market risk:** Placing value added products on the consumer markets bears risk of demand fluctuations and rejections through retailers. Furthermore, consumers are not aware of the PVC pipe and fittings quality and safety criteria and are usually very price sensitive.

5.4. Other potential external risk

- a) **Lack of Governance:** the governance mechanism in the value chain is underdeveloped, actors operate in an uncoordinated and unorganized fashion, and if rules exist, they are often ignored;
- b) **Lack of market coordination:** No lead organization has a coordinating role in relation to markets, technology and information such that producers and processors have no incentives for improving neither their product nor the chain process to promote sustainable income earning opportunities;

- c) **Unclear and conflicting roles regulatory authorities:** Regulatory Agencies are responsible for quality control as well as enforcing TBS, NEMC etc, are regulatory role in issuing licensing etc
- d) **Industry associations:** Associations are weak at all levels of the chain;
- e) **Operating procedures:** Standard procedures are inadequately enforced, or not enforced at all, because of relaxed production and trade regulations; and
- f) **Integration:** there is little vertical integration of importers, mid chain actors and processors.

5.4. Mitigating potential risk

The development of a large and complex project such as WISCAP COMPANY LIMITED is necessarily accompanied by multiple risks during all the phases of the project development, construction, operation and maintenance. The right approach to manage the project in a manner which is fairly and adequately address the multiple risks in a comprehensive as well as systematic manner is to use the risk analysis and management methodology which identifies the risk issues and their instrumental cause. In this regard, the risk is eliminated or effectively managed by the party best suited with capacity to handle or deal with the risk factors.

6.0. PROJECT SWOC ANALYSIS

The SWOC (Strengths, Weaknesses, Opportunities and Challenges) analysis provides a quantitative and qualitative review of internal strengths and weaknesses and their relationship with external challenges and opportunities. The results of the analysis provide a basis for determining the project future goals and for identifying strategies and initiatives that would be required to develop the project. The matrix below summarizes the project strengths, weaknesses, opportunities and threats.

Table 6.1: SWOC Analysis – WISCAP COMPANY LIMITED

SWOC ANALYSIS	
Strengths	Weaknesses
(a) Close proximity market and SME, (b) Preferential operational and incentives scheme enshrined in the TIC law (c) Political will, the government’s legal and policy framework support development of the project	i) Skilled labour to run factory, ii) Inadequate electric power, iii) Lack of working tools and machinery iv) Inadequate ICT system in place thus hindering effective and efficient service delivery. v) Weak collaboration/facilitative links with TRA, TPA, TANESCO and other Government departments which may create bottlenecks in investor facilitation;
Opportunities	Challenges
(a) Strategic location of Tanzania which is a hub for international business (b) Existence of preferential markets (c) e.g. EU, COMESA, EAC, USA; and Regional markets like EAC, SADC and COMESA (d) Political and macroeconomic stability of the country (e) Goodwill and support from the (f) Government and the parent ministry;	i) High cost of doing business due to inefficiencies in the infrastructure system e.g., electricity, roads and air; ii) Lack of industrial linkages between research institutions and investors; iii) Government activities not fully coordinated and lack of appreciation of the TIC programs by other arms of the Government iv) regional competition from other countries investment and markets.

7. ECONOMIC AND SOCIAL ASPECTS

The project is also likely to have a positive impact on the economy of Tanzania as a whole by creating employment, and contributing to Government revenues through various taxes, which will be paid. It also has potential for substantial exporting to foreign markets specially to neighboring countries in the Great Lakes Region. In summary the following table will show impact investment index framework

7.1. Impact Investment Index Framework

Impact Investment Index		
Frame Work for WISCAP COMPANY LIMITED		
Performance Area	Quantitative Indicator	Remarks
Investment Capital	Total investment capital, CAPEX and OPEX US\$ 3,342,402	Substantial amount of capital invested into the domestic economy.
Export Earnings	Indicative Annual sales of 100% earnings of 4,434,783 US\$ out of annual average collection	Increased foreign earnings.
Job requirements	Job creation after plant in operation 2020-2021. DIRECT TANZANIAN JOBS 58 local employed, and over 580 indirect employments for PVC pipe processing, 500+ SME (Small and Medium Enterprises) will be generated in Tanzania	<ul style="list-style-type: none"> • Reasonable number of direct jobs created to local Tanzanians with direct impact on poverty reduction through enhanced income generation; and • Improving skills development for Industrial production
Technology applied	High Tech Environmentally friendly machinery	<ul style="list-style-type: none"> • Enhancing technological transfer; and • Applied technology which is free from environmental pollution,
Other Implied Project Benefits		
<ul style="list-style-type: none"> ▪ Increased sales to the Utility Companies providing services of electricity, water and sewerage, telecommunications; ▪ Increased business transacted by local banks and institutions providing financial services; ▪ Business opportunities for local entrepreneurs in market distribution channels, ▪ Business opportunities to contractors and sub-contractors during the minor construction phase; ▪ Increased regional intra-trade and international trade due to better infrastructure facility and links to markets; ▪ Increase of technology transfer & expertise to local employed staff, ▪ Capital spends in local economy over US\$ 3.342Milion US\$ and ▪ Contribution to GDP growth through increased economic activities 		

Based on the Impact Investment Index analysis, the company can develop projections that the project can deliver both value for money in the context of broad socioeconomic impact and return on investment while complying with governance requirements. In this regard therefore, WISCAP COMPANY LIMITED will promote the industrialization process in the country, create employment, attract new technologies, expand foreign exchange earnings and ultimately contribute substantially to the country's economic growth.

8.0. FINANCIAL MODELLING AND ANALYSIS

The Financial Modelling and analysis, is the main source of information for assessing the potential financial viability of the WISCAP COMPANY LIMITED. The analysis is based on the assumptions that have been taken for the implementation of the site development, demand and the associated potential investment requirements for a 5years time period. The purpose of establishing integrated factory is to speed up the country's economic development by being a catalyst for restructuring the existing local recycled plastic and industrial set up and attracting new, both foreign and domestic entrepreneurs to a liberalized legal business framework.

8.1. Project sale forecast and inputs

Expected quantities for production

All cost and revenue in US\$	
Working days per month	20.00
Annual working days	240.00
working hours per day	8.00
Machineries production PVC per Hour in KG	250.00
Machineries production of fittings per Hour in KG	100.00
Annual production of PVC Pipe in MT	480.00
Annual production of PVC Fittings in MT	192.00
Processed PVC Pipe per MT	65.22
Processed PVC fittings per MT	21.74
Annual sale PVC Pipe US\$	3,913,043.48
Annual sale of PVC fittings in US\$	521,739.13
Total sales Revenue	4,434,782.61

8.2. Objective and Scope of Financial Model

8.2.1. Objective

The main objective of the financial modelling and analysis is to setup a financial model framework for potential generated revenues and operational & maintenance costs for the full operation of WISCAP COMPANY LIMITED based on the assumptions taken for the Market Analysis, the plan for the facility development, unit production costs and other overhead and operational charges.

8.2.2. Scope

The scope consists of a financial model that will be used to analyse the potential financial viability of the project based on the assumptions taken for the concept and scope of the integrated processing factory on the Market Analysis. The financial model has been developed in excel spread sheet and include information on costs, expenses and the

subsequent sales revenue based on the average market prices and linked to the financial cash flow.

ANNEX I – INCOME STATEMENT

<i>Income Statement Projections</i>							
(All numbers in US\$)							
Revenue	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Annual sale PVC Pipe US\$		3,913,043	4,108,696	4,314,130	4,529,837	4,756,329	21,622,035
Annual sale of PVC fittings in US\$		521,739	547,826	575,217	603,978	634,177	2,882,938
Total Operating Revenue	-	4,434,783	4,656,522	4,889,348	5,133,815	5,390,506	- 24,504,973
Expected Expenses							
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Salaries		162,000	166,860	171,866	177,022	177,022	854,769
Social Charges & Pension Payments		32,400	33,372	34,373	35,404	35,404	170,954
Raw materials		434,783	447,826	461,261	475,099	475,099	2,294,067
Administrative expenses		38,400	39,552	40,739	41,961	41,961	202,612
Fuel and lubricants for machineries and generators		432,000	444,960	467,208	490,568	490,568	2,325,305
Security services		86,400	88,992	91,662	94,412	94,412	455,877
Work wear and other related facilities		45,000	46,350	47,741	49,173	49,173	237,436
Insurances/licensing/healthy premium/other charges		36,000	37,080	38,192	39,338	39,338	189,949
Utilities - Electricity and water services		144,000	148,320	152,770	157,353	157,353	759,795
Overhead cost		215,796	222,270	228,938	235,806	235,806	1,138,618
Total Operating Costs		1,626,779	1,675,582	1,734,749	1,796,136	1,796,136	8,629,381
Operational Net Earnings before Depreciation, Interest & Tax		2,808,004	2,980,939	3,154,599	3,337,680	3,594,370	15,875,592
<i>%age Gross Contribution</i>		63	64	65	65	67	1
Depreciation at 12.5% (Machines, Equipt.)		245,700	260,832	276,027	292,047	314,507	1,428,803
Net Earnings before Tax & Interest		2,562,303	2,720,107	2,878,571	3,045,633	3,279,863	14,446,789
Interest Paid (Bank Loan)		213,914	177,451	138,071	95,540	49,607	674,583
Tax (30%)		768,691	816,032	863,571	913,690	983,959	4,345,943
Net Earnings		1,579,699	1,726,624	1,876,929	2,036,403	2,246,297	9,465,951

ANNEX II CASH FLOW

<i>Cash Flow statement from Investing Activities for 5 years</i>					
(all numbers in US\$)	Year 1	Year 2	Year 3	Year 4	Year 5
<u>CASH FLOW FROM OPERATING ACTIVITIES</u>					
Cash receipts from Sales	4,434,783	4,656,522	4,889,348	5,133,815	5,390,506
Cash paid to suppliers and employees	(1,626,779)	(1,675,582)	(1,734,749)	(1,796,136)	(1,796,136)
Cash generated from operations	2,808,004	2,980,939	3,154,599	3,337,680	3,594,370
Dividends received*	0	0	0	0	0
Interest received	0	0	0	0	0
Interest paid	(213,914)	(177,451)	(138,071)	(95,540)	(49,607)
Tax paid	(768,691)	(816,032)	(863,571)	(913,690)	(983,959)
Net cash flow from operating activities	1,825,399	1,987,457	2,152,957	2,328,450	2,560,804
<u>CASH FLOW FROM INVESTING ACTIVITIES</u>					
Replacement of equipment	0	0	0	0	0
Proceeds** from sale of equipment	0	0	0	0	0
Net cash flow from investing activities	0	0	0	0	0
<u>CASH FLOW FROM FINANCING ACTIVITIES</u>					
Proceeds from capital contributed	668,480	0	0	0	0
Proceeds from loan	2,673,922	0	0	0	0
Payment of loan	(455,787)	(492,250)	(531,630)	(574,161)	(620,093)
Net cash flow from financing activities	2,886,615	(492,250)	(531,630)	(574,161)	(620,093)
<u>NET INCREASE/ DECREASE IN CASH</u>					
Cash at the beginning of the period	1,579,699	1,726,624	1,876,929	2,036,403	2,246,297
Cash at the end of the period	6,291,713	3,221,831	3,498,256	3,790,691	4,187,007

ANNEX III BALANCE SHEET

(All numbers in US\$)	Year 1	Year 2	Year 3	Year 4	Year 5
Current asset	1,579,699	1,726,624	1,876,929	2,036,403	2,246,297
Fixed asset	2,902,402	2,656,702	2,395,870	2,119,842	1,827,795
Liquidity	2,808,004	2,980,939	3,154,599	3,337,680	3,594,370
TOTAL ASSET	7,290,105	7,364,266	7,427,398	7,493,925	7,668,462
NET ASSET MINUS DEPRECIATION	7,044,404	7,103,434	7,151,371	7,201,878	7,353,955
Equity	668,480	635,056	603,304	573,138	544,482
Reserves	0	0	0	0	0
Total Own Equity	668,480	635,056	603,304	573,138	544,482
Provisions	4,691,832	4,721,812	4,738,767	4,753,301	4,841,306
Long term loan	669,701	669,701	669,701	669,701	669,701
Short term Liabilities	1,014,391	1,076,864	1,139,599	1,205,737	1,298,466
Total Equity & Liabilities	7,044,404	7,103,434	7,151,371	7,201,878	7,353,955
NET FA/CL	4.33	3.97	3.58	3.17	2.73
CL/CA	0.64	0.62	0.61	0.59	0.58
DEBIT/CAPITAL RATIOS	0.91	0.91	0.92	0.92	0.93
ROI	236.3	271.9	311.1	355.3	412.6
BREAK EVEN POINT	1.03	0.89	0.76	0.64	0.51
BREAK EVEN RATIO	1.18	1.15	1.12	1.10	1.05

ANNEX IV – INTERNAL RATE OF RETURN

IRR for the Project

(All numbers in US\$)

Initial Investment	-3,342,402
Year 1 Additional Annual Net Profit	1,579,699
Year 2 Additional Annual Net Profit	1,726,624
Year 3 Additional Annual Net Profit	1,876,929
Year 4 Additional Annual Net Profit	2,036,403
Year 5 Additional Annual Net Profit	2,246,297
IRR (in 5 years)	22.46%

The IRR above indicates that the expected return on the 3,326,750USD initial investment after 5 years is 22.46%.

ANNEX V – PAYBACK PERIOD

Payback Period Analysis				
	Year	Beginning Balance	Net Cash Flows	Ending Balance
Cost of investment	0.00	3,342,402.25	0.00	3,342,402.25
	1.00	3,342,402.25	1,579,698.63	1,762,703.63
	2.00	1,762,703.63	1,726,624.32	36,079.30
	3.00	36,079.30	1,876,929.29	1,840,849.99
	4.00	1,840,849.99	2,036,402.55	3,877,252.54
	5.00	3,877,252.54	2,246,296.63	6,123,549.17
Payback Period =		3.00	Years	

ANNEX VI – LOAN PAYMENT SCHEDULE

Loan Information and Payment Schedule					
Loan Data	All number in US\$		Loan Summary		
Original Principal	2,673,921.80		Scheduled Payments		669,700.97
Loan Term (Years)	5.00		Scheduled number of payments		5.00
Annual Interest Rate	8%		Actual number of payments		5.00
Payments per Year	1.00		Total Early Payment		-
Payment	669,700.97		Total Interest		674,583.07

Year	Payment	Interest	Cumulative Interest	Principal	Balance
-					2,673,921.80
1.00	669,700.97	213,913.74	213,913.74	455,787.23	2,218,134.57
2.00	669,700.97	177,450.77	391,364.51	492,250.21	1,725,884.36
3.00	669,700.97	138,070.75	529,435.26	531,630.23	1,194,254.14
4.00	669,700.97	95,540.33	624,975.59	574,160.64	620,093.50
5.00	669,700.97	49,607.48	674,583.07	620,093.50	-
		674,583.07			

8.0. CONCLUDING REMARKS AND WAY FORWARD

8.1. Evidence of project viability based on financial model and policy framework support

On the basis of all the analysis done on this Business Plan on all aspects of assessment on both SWOC Analysis, market analysis, risk analysis and the financial analysis, the proposed investment options in the meat processing plant as prescribed on this business plan have shown that the project is commercially viable. Nonetheless, WISCAP COMPANY LIMITED through professional consultative manner, will continue to find ways of implementing cost effective options given time and financial resources that will be made available. Financial analysis results show that when the construction of integrated plant facility is financed 20% by shareholders and 80% financed by local banks, it gives an IRR of about 22.46%. The computed IRR is well above Dollar market of the annual loan interest rate of (8.00%) which is technically interpreted that the project is financially viable. The payback period for the project is estimated at 3 years, which is within the range for this type of investment. Sensitivity analysis results also favor the project. Financial analysis for the project has shown feasible returns. Based on the investment scope and the assumptions taken in this Business Plan, the project will not face any difficulties during establishment, according to the projected cash flow be in a position to accomplish repayment of the loan and start generating profit.

8.2 Evidence of project viability based on financial model and policy framework support

On the basis of all the analysis done on this Business Plan on all aspects of assessment on both SWOC Analysis, market analysis, risk analysis and the financial analysis, the proposed investment options in the project as prescribed on this business plan have shown that the project is commercially viable. Nonetheless, WISCAP COMPANY LIMITED through professional consultative manner, will continue to find ways of implementing cost effective options given time and financial resources that will be made available. Financial analysis results show that when the construction of plant facility is financed using a combination of equity debt ratio (20:80), it gives an IRR of about 22.46%. The computed IRR is well above Dollar market of the annual loan interest rate of (8.00%) which is technically interpreted that the project is financially viable. The payback period for the project is estimated at 3 years, which is within the range for this type of investment. Sensitivity analysis results also favor the project. Financial analysis for the project has shown feasible returns. Based on the investment scope and the assumptions taken in this Business Plan, the project will not face any difficulties during establishment, according to the projected cash flow be in a position to accomplish repayment of the loan and start generating profit.

8.2. Policy Framework Support

The development of the WISCAP COMPANY LIMITED is designed to take advantages of the current Tanzanian market-oriented reforms. The Project will be developed and established to accelerate the industrialization process. The vision 2025 emphasizes the importance of the allocation of public funds for strategic investments and private sector financing for development investments.

The 15 years Perspective Plan (2015-2025); Prioritize private investment in the context of Public Private Partnership. The First Five Years Development Plan (2020-2025) recognizes the

fundamental role of the private sector in enabling the government to allocate its fund to strategic projects to facilitate a higher level of development. MKUKUTA II (2020-2025) identifies Public Private Partnership as a means of increasing the level of stakeholder participation and of easing the financial burden on the government. It should be noted that existing public resources are clearly insufficient to meet Tanzanian's huge development needs. The increased use of private enterprises participation in development projects can help alleviate the financing gap. This approach is now applied by WISCAP COMPANY LIMITED to ensure development of one among the ultra-integrated plant to be developed in Kahama District, Shinyanga Region. Private sector and investment have been recognized as the most significant potential source of additional funding required to facilitate development projects.

8.3. Conclusive Remarks and Way Forward

The development of this integrated plant will be funded by private finances. The company acting through its various shareholders and structures will provide the initial risk capital amounting to 3,342,402US\$, the whole amount will be raised shareholders and commercial banks. The company will fund the development of the project minor rehabilitations of factory building, business offices, bulk storage facilities and purchasing machines as stated on this business plan. Before the Company engages into the development of this project as a private enterprise, it needs to accomplish the pre development activities to make way for the development of the designated project.

a) Apply for TIC certificate

The company by using this Business Plan and other required supporting documents should apply for the TIC Certificate at Tanzania investment centre or Dar es Salaam zonal Office. with this certificate, the company will be able to access tax reliefs which to a large extent will help to in reducing project costs, particularly in the purchasing of machineries and minor building of area of proposed industrial area.

b) Conduct Environmental Impact Assessment.

The company has to engage a consultant to conduct EIA in order to ensure that environmental and possibly other sustainability aspects are considered effectively in policy, plan and project development. The EIA Directive aims at introducing systematic assessment of the environmental effects of strategic land use related plans and programs. It typically applies to regional and local, development, waste and transport plans, within the country. EIA ensures that plans and programs take into consideration the environmental effects they cause.

c) Minor rehabilitation to suit integrated Industrial requirement

The company should engage a firm to make minor rehabilitation of existing structure that will suit integrated manufacturing requirements. The structure should include all vital service facilities described in this business plan. When possible, the process of design of the facility should be consultative insomuch that it should allow and incorporate ideas from experienced professionals from the industry.

d) Mobilizing Funds

As previously discussed on the Financial Analysis of this business plan, financing mechanism for the integrated plant should be scrutinized well before commencing the project implementation. There may be several options of financing the project development but the company will find the best option. The investment team should do consultation with relevant financial institutions (Banks and non-bank Financial Institutions), both within and outside the country. This exercise should be more effective if the team works closely with central government agencies, particularly TIC and the Ministry of Industry & Trade and Ministry of Investment.