

# **PREMIDIS LIMITED**

**Proposed Project for Establishing Facilities  
for  
Manufacture of Corrugated Carton Boxes  
and  
Plastic Containers and Related Products  
at  
Nyakato Industrial Area, Mwanza**

## **A BUSINESS PLAN**

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## **1.0 EXECUTIVE SUMMARY**

### **1.1. Introduction**

This report represents an objective analysis of the overall viability of establishing a proposed project for setting up and operating plants for manufacture of packaging materials using state-of-the-art technology. The proposed project will be located at Plot No: 11 Nyakato Industrial Area. The project is being promoted by Messrs. Premidis Limited, a well established company incorporated under the Companies Act (2002)) with Certificate of Incorporation No. 1081951 dated 19<sup>th</sup> May 2014 having its registered office in Mwanza. The company is also registered with TRA under Tax Identity Number (TIN) 124-030-269. The company Business is based at Nyakato Industrial Area off Musoma Road in Mwanza City.

The company currently owns and operates a factory for production of alcoholic spirits with distributions scattered all over the Lake Zone and neighbouring regions including Kigoma, Dodoma, Singida, Arusha and Kilimanjaro. Its most famous brands are *Shimha* and *Coffee Spirit*. The two brands have proved to be hotcakes since the start of production in year 2014, making the company one of the major tax payers in the region. As a strategy to expand its business, the company has of late decided to diversify and invest in the manufacture of industrial packaging materials. The objective is to exploit the unfolding opportunities in demand for quality packaging materials to cope with the ongoing expansion of the industrial sector nationwide.

### **1.2 Project Concept**

The project entails establishing facilities for the manufacture of packaging materials (focusing mostly on corrugated carton boxes and plastic containers), and manufacturer of PETG bottles and related plastic products.

The capital expenditure will involve procurement of corrugated carton box making plant, and installation of plastic moulding machines for manufacture of plastic containers and related products. Other major capital expenditure will be in the procurement of utility vehicles for products distribution including light trucks and single-cabin pick-up vehicles.

### **1.3 Business Plan Objectives**

The objectives of this Project Plan are four-fold. The major focus of this Plan is to establish and ascertain the technical and commercial viability of establishing plant for manufacture of corrugated carton boxes and production of plastic containers, PETG bottles and related plastic products in Mwanza to cater for the whole of Lake Zone.

The Second objective is to facilitate application for bank loan to partly finance procurement of fixed assets. Third and fourth are to facilitate the application for Tanzania Investment Centre (TIC) Certificate of Incentives to access exemptions on duties, VAT deferments and other benefits and protections as statutorily provided for under Tanzania Investment Act (1997) for the Project; as well as to facilitate application for Industrial Licence.

#### **1.4 Sponsors**

The proposed packaging and water production project is being promoted by Premidis Limited, a private company incorporated in the United Republic of Tanzania currently operating in Mwanza Region, Tanzania. The resident managing director is Mr. Srinivasa Reddy Atluri who has been managing the company from implementation stage in year 2014 to date. The company currently owns and operates a factory for production of alcoholic spirits in Mwanza. The directors and shareholders of the company are very well experienced business people, running various investments in Dar es Salaam and Kampala, Uganda.

#### **1.5. Location and Infrastructure**

The project will be located at Plot No: 11 Nyakato Industrial Area on own premises. The area is well established with water and electricity connections, as well as tarmac road (Mwanza/Musoma Road).

#### **1.6 Estimated Investment Cost and Proposed Financing**

The total project cost is estimated at US\$ 1,485,000- (excluding initial working capital of US\$115,000-). The promoters are planning to apply for bank loan at the tune of US\$ 685,000- at an assumed interest rate of 8% p.a for purposes of partly financing procurement of pre-fabricated structures for a new factory building as well as plant machinery. It is proposed that the loan be repayable in 60 months excluding 9-months moratorium period. The bank will likewise be requested to extend an overdraft facility of US\$ 115,000- to finance working capital requirements. Total bank financing adds to 50% of total project cost. The remaining US\$ 800,000- (50%) will be financed by the company's retained earnings.

## PROPOSED CAPITAL INVESTMENT STRUCTURE

(IN US\$)

S/N	Item	Cost
1	Land and Buildings (procurement and installation of steel structures)	320,000
2	Plant Machinery and Equipment	
	Corrugated Carton Boxes Making Plant	300,000
	Plastic containers, PETG bottles and related products Manufacturing Plant	400,000
	Electric Transformer, Generator and Electrical Installations	150,000
	Sub total	850,000
3	Utility Motor Vehicles	210,000
4	Furniture and Fittings	20,000
5	Add: Pre-Operational Expenditures	25,000
6.	Contingencies	60,000
	<b>Total</b>	<b>1,485,000</b>
7	Add: Initial working Capital	115,000
	<b>GRAND TOTAL</b>	<b>1,600,000</b>

## FINANCING PLAN

S/N	Source of Funds	Cost
1.	Bank Term Loan	685,000
2.	Retained Earnings	800,000
	Sub total	1,485,000
3.	Add: Bank Overdraft Facility	115,000
	<b>GRANDTOTAL</b>	<b>1,600,000</b>

### 1.7. Collateral Security

The project promoters will offer as security to both bank loans First Legal and continuous mortgage over property with under located on Plot No. 11 Nyakato Industrial Area registered in the name of the company, and Specific Debenture over the machinery to be procured; fixed and floating debenture over all current and future assets of the company; as well as personal and joint guarantees of the company directors.

## **1.8. Selection of Technology**

Both packaging and plastic container making machinery and equipment to be procured for the project will be obtained from China.

## **1.9. Production and Capacity Utilization**

The proposed project facilities will have a capacity to produce the following major products per annum:

### **1.9.1 Corrugated Carton Boxes**

Corrugated carton boxes manufacturing plant will have installed production capacity of 200 metric tons per month, equivalent to 2,400 metric tons per annum when operating at 100% capacity on an extended single 10-hours shift per day and when operating at 300 days per annum.

Capacity utilization has been estimated at only 60% in year one, rising to 70% in the second year before stabilizing at 80% from year three onwards.

### **1.9.2 Plastic Containers/PETG Bottles and related plastic products**

The project shall have the annual capacity of making 3,300 tons of plastic containers when operating at 100% capacity on an extended single 10-hours shift per day and when operating at 300 days per annum.

Capacity utilization has been estimated at only 60% in year one, rising to 70% in the second year before stabilizing at 80% from year three onwards.

### **1.10 Raw Materials Requirements and Availability**

The main raw material for making plastic containers and PETG bottles is HDPE granules to be imported.

On the other hand, to make corrugated boxes, you need three main materials: paper, steam, and adhesive (starch based corrugation glue). Paper is used to make the two main components of corrugated fiberboard: The linerboard – used as the outer facings, and the medium – fluted paper that is attached to the linerboard to produce combined board in a continuous web. Kraft paper will be obtained from local paper mills while the other consumables will be procured either locally or imported.

### **1.11 Production Costs**

Raw materials and consumables constitute about 70% of total production costs. Other major direct costs include salaries, wages and labour overhead costs; and repairs of machinery equipment. Major administrative costs will include factory building repairs and maintenance, motor vehicle running expenses, advertising and publicity. Salaries and Wages have been based on the prevailing scales in

the private sector. There is provision of 20% to cover company contribution to NSSF (10%) and other social welfare (10%). Administrative/Overhead costs are likewise based on the prevailing rates in the market and needs of the proposed project.

### **1.12. The Market**

The study has revealed that there is a huge demand for corrugated box cartons and plastic containers in the Lake Zone and beyond. Major brands in the country are interested in packaging and branding their products. A large number of companies operating in Tanzania and the Lake Zone in particular have to depend on far sources for the design of packaging and branding services from companies in Dar es Salaam and Arusha.

### **1.13 Environmental Considerations**

The project is environmentally sustainable and manageable. Neither wastes nor serious emissions are produced during the production process of both corrugated carton boxes and plastic containers. Therefore, no negative environmental effects are expected.

### **1.14 Project Developmental Values/Benefits**

Implementation of this project will lead to realization of the following development values/economic benefits.

- Creation of employment opportunities for about 62 local permanent jobs and 5 contract jobs for foreign expatriate.
- Contribution of revenue to the Government in form of various taxes
- The project involves transfer of technology to Tanzania from China for manufacture of packaging and branding products. Tanzanians will be trained on the job on how to manufacture the corrugated carton boxes and plastic containers.

### **1.15. Financial Projection and Evaluations**

Annex I of the attached Financial Projections analyses the Income Statement, Annex II analyses Cash Flow from Operation Activities while Annex III deals with the Balance Sheet. Annex IV analyses the Loan Repayment Schedule, Annex V the Internal Rate of Return (IRR) and Annex VI deals with the Payback Period Analysis as summarized hereto below:

(In US\$’)

Particulars	Year 1	Year 2	Year 10 onwards
Sales Turnover	2,379,600	2,776,200	3,172,800
Gross Profit from Operations	442,185	585,204	668,231
Net Profit/(Loss)	183,116	294,138	364,521
Net Profit/(Loss) as a percentage of t/over	7.69	10.59	21.06
Break-even Ratio (including cost of finance)	3.36	2.59	2.31
Net Fixed Assets/Current Liabilities	7.41	7.56	7.71
Debt/Capital Ratio	0.60	0.64	0.64
Equity to Total Liabilities (%)	40	36	36
Return on Investment	22.90	35.80	40.80

- Internal Rate of Return on investment 25.19%
- The Normal Payback Period is three (3) years at zero
- Breakeven Point ranges between 2.31% and 41.0%

### 1.16. Organization and Management

The project will be managed through the Board of Directors. The Board will formulate policy and offer strategic business guidance to management and regularly monitor and evaluate performance of the project. The day to day management of the project will be vested in the management team to be headed by a Managing Director.

Key technical personnel will include qualified and experienced production engineers, supervisors, machine operators, marketing and financial personnel. A total of 62 permanent local staff will be employed by this particular project while expatriate staff will be five (5).

### 1.17. Project Implementation

Given that the bank loan has already been approved, the project will be implemented immediately after grant of TIC Certificate of Incentives to access exemptions on duties, VAT deferments and other benefits and protections as statutorily provided for under Tanzania Investment Act (1997) before the arrival of imported machinery and equipment.

### 1.18. Conclusion and Recommendations

The Business Plan reveals that the project is:

- technically feasible
- financially viable
- economically viable
- socially desirable
- environmentally friendly, sustainable and manageable

In view of the growing demand for packaging and branding material products in Tanzania and in particular the Lake Zone and the benefits associated with this project as indicated in this report, the project is strongly recommended for financing and subsequently implemented without unnecessary delays. A fast implementation is advised and an application for term bank loan at the tune of US\$ 685,000- and an overdraft facility of US\$ 115,000- is advised to finance procurement and installation of plant machinery as well as financing working capital requirements respectively.

It is further recommended that the project be granted a Tanzania Investment Centre (TIC) Certificate of Incentives so as to enable this project access fiscal incentive and other benefits as provided for under Tanzania Investment Act, 1997.

## **2.0. THE PROJECT OVERVIEW**

The proposed project is divided into two components:

- (1) Plastic Containers and related products manufacturing; and
- (2) Corrugated Carton Boxes manufacturing.

The following is an overview of the project components:

### **2.1. PLASTIC CONTAINERS MANUFACTURING PLANT**

#### **2.1.1. Introduction**

In this project it is planned that a plant for manufacture of various plastic containers and PETG bottles be set up in Mwanza city. The following are the main activities involved in the proposed project.

- ❖ Construction of pre-fabricated steel structures factory & out buildings
- ❖ Purchase and installation of machinery.
- ❖ Purchase of motor vehicles, and
- ❖ Purchase of furniture and fittings.

#### **2.1.2 Plant Capacity and Proposed Production Plan**

The proposed project will have the capacity of producing 3,300 tons of assorted plastic containers and PETG bottles per annum when operating at 100% capacity on a single extended shift of 10-hours per day when operating for 300 days per annum. However, it is expected that the plant will slowly build up its operations starting at 60% capacity, increasing to 70% capacity in the second year and 80% from year 3 onwards. Improvement in capacity utilization is anticipated to arise from operational improvements of the workforce as they gain more skills and work experience. The proposed production plan will be as shown in the table below:

PROPOSED PLANT CAPACITY AND PRODUCTION PLAN

ITEM	ACTUAL PRODUCTION		
	YEAR 1	YEAR 2	Year 3 onwards
Capacity Utilization	60%	70%	80%
<i>Installed Capacity of plastic containers and PETG bottles/year</i>	3,300	3,300	3,300
Actual Production of assorted plastic containers and PETG bottles/year (tons)	1,980	2,310	2,640
Raw Material Requirement (tons) - (production = 95% of materials used)	2,084	2,432	2,779

The plastic products manufacturing machinery to be procured are versatile and can produce other plastic packing material as well. The project will produce containers for packing liquid detergents, disinfectants, shampoo as well as for packing cosmetics.

**2.1.3 Investment in Fixed Assets**

Civil work costs include installation of pre-fabricated factory building, out buildings, water pump house, reservoir tank and installation of utilities such as power and water.

Plastic Containers and related plastic products manufacturing plant will comprise of the following components:

COMPLETE PETG/PLASTIC CONTAINERS MANUFACTURING PLANT	COST (US\$)
	400,000
<b>Major Components</b>	
Blow Moulder (2 pcs)	
Blow Moulding Tools (1 set)	
Ceramic AC (30 Sets)	
UV Lamps (3 Pcs)	
Small Materials (1 set)	
Compressor & Air Cooler (2 pcs)	
Hopper Loader (2 pcs)	
Regrind Automixer (2 pcs)	
Mixing Vessels (6 pcs)	
Stirrer (2 pcs)	
Steam Cleaner (1 pc)	
Wrapper & Shrink Tunnel (2 Pcs)	
Dehumidifier Dryer (2 pcs)	
Granulater (2 Pcs)	
Screen Printer (2 Pcs)	
Master Batch Doser (1 Pc)	
Ink Jet Printer (2 Pcs)	
Injection Moulding M/C & Tools (2 Pcs)	

#### 2.1.4 Distribution and Marketing

The promoters of the project are currently involved in production and distribution of alcoholic spirits. The product is a very fast moving consumer item and distribution channels are scattered all over the Lake Zone and surrounding regions. The existing distribution channels of the alcoholic spirits include whole sale distributors in major trading centres in the Lake Zone and beyond which appear to be working very well. The promoters of the proposed project intend to use the same approach to distribute pure drinking water and to various areas in the country.

The project will employ a Marketing Manager who will focus on developing new markets so as to be able to achieve full market potential as quickly as possible. Furthermore, an initial marketing budget of 3% of sales revenue has been allocated to support marketing activities.

#### 2.1.5. Implementation Schedule

Implementation Schedule for the proposed project is as follows:

ACTIVITY	TIMING
Mobilization of Funds	April - July 2021
Installation of Pre-fabricated factory building and other civil works	June - October, 2021
Placing of order for machinery	April/May 2021
Arrival of machinery & equipment	September - October 2021
Installation	October - November 2021
Commencement of Commercial Production.	January, 2022

#### 2.1.6 The Impact of Environment

There is no negative environmental impact associated with this project because no harmful chemicals are used. Effluent water will be disposed off through city sewerage systems.

### 2.2 CORRUGATED CARTON BOXES MAKING PLANT

#### 2.2.1 Introduction

There are various types of packaging options, including Paperboard boxes (paperboard is a paper-based material that is lightweight, yet strong, Corrugated boxes, Plastic boxes, Rigid boxes, Chipboard packaging, Poly bags, and Foil sealed bags. The packaging material of the item depends on the product's nature and its usage. Corrugated Kraft Paper Board Box, technically called Corrugated Fibre Board Box is the most popular shipping container, nowadays. Today about 80% of all shipments in the world are made in the fibre board boxes.

Corrugated Cardboard is used in many packaging situations, from moving house to posting laptops and packaging food and beverage products. In simpler terms, the demand for corrugated boxes is everywhere in all sectors of the economies, be it agricultural packaging, industrial packaging etc. Carton box manufacturing is therefore a profitable venture.

In their quest for business diversification, M/s Premidis Limited are planning to introduce corrugated boxes manufacturing plan to supplement demand/supply gap in the supply of packaging cartons particularly in the Lake Zone to meet the ever growing needs for both agricultural and mainly, industrial packaging. The directors were motivated by the many advantages corrugated boxes have against the other kinds of packaging. These include the advantages listed below:

- ❖ Light in weight (freight advantage) and durable;
- ❖ Cellular structure with high compressive strength, resiliency & shock resistance. Offers a good cushioning and shock absorbing qualities;
- ❖ Can be stored conveniently in folded condition when not in use, thus saving storage space;
- ❖ Can be attractively printed thus advertizing advantage;
- ❖ By lining, laminating or coating, they can be made water resistance and resistant to other adverse conditions;
- ❖ Easy to fabricate;
- ❖ These boxes are re-usable.

### *Corrugated:*

Corrugated means molded into tight ridges and valleys. Materials are put into a corrugated shape to ensure elasticity and strength – cardboard boxes hold their shape because the cardboard is reinforced with a corrugated layer inside the two flat pieces. Corrugated cartons are made up of a few layers of material rather than just a single sheet. The three layers include an inside liner, an outside liner, and a medium that goes between the two, which is fluted. There are mainly four types of corrugated box, single-phase corrugated box, single wall corrugated box, double-wall corrugated box, triple wall corrugated box.

### **2.2.2 Raw Materials**

To make corrugated boxes, you need three main materials: paper, steam, and adhesive (starch based corrugation glue). Paper is used to make the two main components of corrugated fiberboard: The linerboard – used as the outer facings, and the medium – fluted paper that is attached to the linerboard to produce combined board in a continuous web.

### **2.2.2.1 Kraft Paper**

Kraft paper or Kraft is paper or paperboard (cardboard) produced from chemical pulp produced in the kraft process. Fully bleached kraft pulp is used to make high quality paper where strength, whiteness, and resistance to yellowing are important. Because of its strength, Kraft Paper is used for many industrial and commercial applications. The material is used in packaging operations for packing, wrapping individual items, bundling and void fill. Also, Kraft paper can be used as load binders between layers of palletized products.

Kraft paper is usually available in two different colours: white and brown. White is typically virgin paper that does not make it bad, in fact it makes for a great printing surface, but it is definitely not green if the goal is to use as much recycled content as possible. In addition to the obvious green benefit, brown board is typically 5 to 6% less expensive compared to white board.

### **2.2.2.2 Linerboard**

Linerboard is the paperboard used as the inner and outer facings of a corrugated sheet. It is made primarily through the chemical process. It is usually made from softwoods like Pine trees that have the longest fibers and produce the strongest board.

### **2.2.2.3 Medium**

Medium is the fluted paperboard that is in between the inner and outer facings. It is produced mainly from hardwoods that have shorter fibers through the semi-chem process.

### **2.2.2.4 Paperboard**

Paperboard boxes (paperboard is a paper-based material that is lightweight, yet strong. Paperboard is made primarily from cellulose fibers found in wood.

The liners and medium that make up the corrugated sheet are both forms of paperboard. Paperboard is made primarily from cellulose fibers found in wood. The fibers are held together by *lignin*. Fibers are separated from the wood in one of three ways: mechanical, chemical, & semi chemical. Mechanical involves chipping and grinding the wood into increasingly smaller units. Chemical separation, or pulping, uses sulfite or sulfate to dissolve the lignin. This is also known as the *Kraft process*. This method produces the highest yields with the least damage to fibers, thus the strongest paper. The semi-chem process combines the mechanical and the chemical methods.

Linerboard and medium are also made from recycled resources. Lumber byproducts like sawdust and wood chips constitute approximately 10% of the

fiber supply. Recycled paper provides approximately 25%. The fibers are separated from wood or recovered through recycling processes and cleaned. Liquid paper then flows onto a moving wire screen. Water drains through the wire until it hits the *dry line* where a paper mat is formed. The paper is cycled through the paper machine where it is further dried, compressed, and wound into large rolls that are shipped to customers that manufacture corrugated sheets.

#### **2.2.2.5 Adhesives:**

Adhesives are used in the paper and textile industries as binders and sizing materials. Corrugated board is produced by the adhesion of a fluted layer of paper to a flat layer. A two-phase starch adhesive is commonly used to join the two layers. The liquid phase, a gelled mixture of starch and sodium hydroxide in water, is called the carrier. The solid phase of ungelled starch and borax is suspended in the carrier phase. The mixture is applied to a warm fluted sheet. The ungelled starch gels from the heat gets from the heat of the sheets.

#### **2.2.3 Corrugated Boxes Making Process**

Corrugated fibre board consists of a flat layer of paper sheet (liner) glued on both sides of a corrugated paper. The corrugated board is made by passing two layers of Kraft Paper through corrugating machine. One layer of paper becomes corrugated after being passed through the heated rolls and other is brought into contact with it after the former having glued at tips. When only one liner is used, the products is known as “single face” or “two ply board”. The board is flexible in one direction. When the corrugated medium is combined on both sides with flat sheet, it is known as “double faced” or “3-ply board”.

The overall strength and performance of a corrugated container depends on many factors, such as engineering mechanical properties of the components (liner, medium, and adhesive), the manufacturing quality control protocol, machine precision, and human factor involved in the corrugation process.

To ensure quality of the corrugated packaging cartons to be produced by M/s Premidis Limited, the corrugated fibres will have to undergo eight (8) tests on:

- ❖ Moisture content;
- ❖ Folding endurance;
- ❖ Dimensions;
- ❖ Burst strength;
- ❖ Flat crush resistance;
- ❖ Edge crush test;
- ❖ Ring crush test;
- ❖ Flat crush or corrugating medium.

The proposal is based on market demand for these two products. Presently there is only one manufacturer of corrugated boxes in the whole of Lake Zone,

and therefore demand/supply gap has to be filled by manufacturers outside the zone. Likewise, despite the existence of several water processing facilities in the zone, there still exists a demand/supply gap which is currently being filled by manufacturers elsewhere, including Dar es Salaam and Arusha. Details on current and potential markets on the products have been done so as to determine reliability of the market.

**2.2.4 Plant Machinery & Equipment**

A complete Corrugated Carton Boxes Making Plant will be procured from China and installed at the project site. The plant is estimated to have an installed production capacity of 200 tons per month, equivalent to 2,400 tons per annum.

Corrugated carton box production line is the professional equipment for producing corrugated carton boxes. The production line consists of the mill roll stand, liner pre-heater, single facer machine, conveyor bridge, gluing machine, double facer machine, slitter scorer, cut-off, conveyer and stacker, heating system, air compression system and glue making system and so on. These are available in different grade 3,5,7 ply corrugated production line with different fitting. M/s Premidis Limited plans to procure for the project a plant with the following major components:

**Corrugated Carton Box Making Machine Main Units**




## 2.2.5 Production Plan and Capacity Utilization

M/s Premidis plans to install corrugated packaging boxes manufacturing plant with a production capacity of 200 tons per day. Assuming the plant operates for 300 days per year, this translates to 2,400 tons per annum. However, capacity utilization is planned at 60% in the first year, increasing 70% in the second year before stabilizing at 80% from year three onwards, thus:

S/No.	Item	Year 1	Year 2	Year 3 onwards
1.	Installed Capacity (tons)	2,400	2,400	2,400
2.	Capacity Utilization (%)	60%	70%	80%
3.	Kraft Paper requirement (tons)	1,440	1,680	1,920
4.	Production Loss (%)	5%	5%	5%
5.	Actual Products (tons)	1,368	1,596	1,824

## 2.2.6 Materials/Inputs and Cost

The major raw material will be brown Kraft paper to be procured in large extent from local paper millers, and a small amount of mainly white Kraft paper will be imported from South Africa, China and elsewhere. A survey conducted by the investors suggest that local price of brown Kraft paper currently stands at US\$ 560 per ton while imported Kraft paper from South Africa costs US\$ 840 per ton C&F Mombasa. To simplify financial computation, it has been assumed that the project will need only brown paper to start with. Adhesives and all other inputs will likewise be obtained locally. It is assumed that this item will amount to 12% of cost of Kraft paper.

## 2.2.7 Production Cost

S/No	Item	Year 1	Year 2	Year 3 onwards
1.	Kraft Paper Requirement (tons)	1,440	1,680	1,920
2.	Purchase Cost per ton (US\$)	560	560	560
3.	Cost of Kraft Paper (US\$)	860,400	940,800	1,075,200
4.	Cost of Adhesives and other inputs (10% of Kraft Paper) (US\$)	10%	10%	10%
5.	Actual Cost of Adhesives and other Consumables (US\$)	86,040	94,080	107,520
6.	Total Materials/Consumables cost (US\$)	946,440	1,034,880	1,182,720
7.	Other Operating Costs (8% of raw materials/consumable costs) (US\$)	75,715	82,790	94,818
8.	Total Operating Costs	1,022,155	1,117,670	1,277,338

## 2.2.8 Revenue from Corrugated Carton Boxes

S/No	Item	Year 1	Year 2	Year 3 onwards
1.	Production of boxes (tons)	1,368	1,596	1824
2.	Factory Price per ton (US\$)	950	950	950
3.	Gross Revenue (US\$)	1,299,600	1,516,200	1,732,800

## 2.2.9 Environmental considerations

- ❖ Corrugated cardboard is made from natural renewable resources and is easily recyclable. Apart from offering good protection during long journeys, it is also easily customizable and affordable; Packaging and crating activities consume a very heavy amount of resources;
- ❖ Corrugated materials can be engineered from secondary fibre sources including old corrugated containers, old newspaper and straw. These materials can even be picked up from municipal solid wastes;
- ❖ Another positive feature of this material involves the ability to use water-based ink for printing and marking the boxes. This means a significant reduction in the use of lead-based inks that pollute the environment during manufacture.

## 2.3 Combined Capital Investment Structure

<u>CAPITAL ITEM</u>	<u>COST (US\$)</u>
<b>LAND, BUILDINGS AND CIVIL WORKS STRUCTURES</b>	<b>320,000</b>
Factory Building	
Out Buildings	
Courtyard & Drainage	
Water Storage & Distribution system	
Electrical Fittings	
Pipe Fittings	
<b>PLANT MACHINERY EQUIPMENT</b>	
<i>Complete Plastic Containers and related Plastic Products Manufacturing Plant</i>	<i>400,000</i>
<b>Major Components</b>	
Blow Moulder (2 pcs)	
Blow Moulding Tools (1 set)	
Ceramic AC (30 Sets)	
UV Lamps (3 Pcs)	
Small Materials (1 set)	

Compressor & Air Cooler (2 pcs)	
Hopper Loader (2 pcs)	
Regrind Automixer (2 pcs)	
Mixing Vessels (6 pcs)	
Stirrer (2 pcs)	
Steam Cleaner (1 pc)	
Wrapper & Shrink Tunnel (2 Pcs)	
Dehumidifier Dryer (2 pcs)	
Granulator (2 Pcs)	
Screen Printer (2 Pcs)	
Master Batch Doser (1 Pc)	
Ink Jet Printer (2 Pcs)	
Injection Moulding M/C & Tools (2 Pcs)	
<b><i>Corrugated Carton Boxes Section</i></b>	<b>300,000</b>
A complete Corrugated Carton Boxes Making Plant	
<b><i>General Machinery, Tools and Equipment</i></b>	<b>150,000</b>
Electric Transformer and Electric Fittings	
Electric Power Generator (400 KVA)	
2 Fork Lifts	
Miscellaneous Tools & Equipment	
Installation & Commissioning	
<b><i>SUB TOTAL - MACHINERY EQUIPMENT</i></b>	<b>850,000</b>
<b>MOTOR VEHICLES</b>	<b>210,000</b>
6 Unit Trucks (3.5 tons light trucks) distribution vehicles	
2 Units Pick - ups	
1 Unit Station Wagon Administration Vehicle	
<b>OFFICE EQUIPMENT &amp; FURNITURES</b>	<b>20,000</b>
Computer + Accessories (6 pcs)	
Fax, Photocopying Machine	
Furniture	
<b>PRE-OPERATIONAL EXPENSES</b>	<b>25,000</b>
Professional Fees	
Travelling Expenses	
Legal Fees	
<b>CONTINGENCIES</b>	<b>60,000</b>
All other capital costs which may occur but not budgeted above	

<b>TOTAL FIXED COST</b>	<b>1,485,000</b>
INITIAL WORKING CAPITAL	115,000
<b>TOTAL CAPITAL COST</b>	<b>1,600,000</b>

#### 2.4 Combined Cost of Raw Materials and Consumables

CAPACITY UTILISATION	YEAR 1	YEAR 2	Year 3 onwards
<b>Production</b>	<b>60%</b>	<b>70%</b>	<b>80%</b>
<i>Plastic Containers Section</i>			
Installed Capacity/year (tons)	3,300	3,300	3,300
Granules Requirement (tons)	1,980	2,310	2,640
Less: 5% Production Loss	99	115	132
Actual Production per annum (tons)	1,881	2,195	2,508
<i>Corrugated Carton Box Manufacturing Section</i>			
Installed Capacity (tons)	2,400	2,400	2,400
Processed Materials per year (tons)	1,440	1,680	1,920
Less: Production Loss (5%)	72	84	96
Actual Production per year (tons)	1,368	1,596	1,824
<b>Raw Materials Requirement</b>			
Granules for Plastic Containers manufacturing (tons)	1,980	2,310	2,640
Kraft Paper and consumables (tons)	1,440	1,680	1,920
<b>Cost of Raw &amp; Packing Materials</b>			
Granules for Plastic Containers manufacturing (tons)	1,980	2,310	2,640
Cost per ton (US\$)	337.50	337.50	337.50
Total Cost (US\$)	668,240	779,728	891,101
Kraft Paper and other Consumables	946,440	1,034,880	1,182,720
<b>Total</b>	<b>1,614,680</b>	<b>1,814,608</b>	<b>2,073,821</b>

## 2.5 Combined Sales Revenue

<b>Sales revenue</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3 onwards</b>
<i>Plastic Containers and related products Section</i>			
Production (tons)	1,881	2,195	2,508
Price per ton (US\$)	574.16	574.16	574.16
<i>Sales of Plastic Containers and related products</i>	<i>1,080,000</i>	<i>1,260,000</i>	<i>1,440,000</i>
<i>Corrugated Carton Boxes Section</i>			
Production (tons)	1,368	1,596	1,824
Price per ton (US\$)	950	950	950
<i>Sales of Corrugated Carton Boxes (US\$)</i>	<i>1,299,600</i>	<i>1,516,200</i>	<i>1,732,800</i>
<b>Total Sales</b>	<b>2,379,600</b>	<b>2,776,200</b>	<b>3,172,800</b>

## 2.6. Combined Production Costs

- ❖ Salaries and Wages have been based on the prevailing scales in the private sector. There is provision of 20% to cover company contribution to NSSSF (10%) and other social welfare (10%).
- ❖ Administrative/Overhead costs are based on the prevailing rates in the market and needs of the proposed project.

The following will be the major production cost items: (IN US\$)

S/NO:	COST ITEM	YEAR 1	YEAR 2	YEAR 3 onwards
1	Raw Materials and Consumables	1,614,680	1,814,608	2,073,821
2	Labor (8% of total revenue)	107,878	143,837	179,796
3	Labor Overhead Costs (20% of labor cost)	21,575	28,767	35,959
	<i>Sub total (2+3)</i>	<i>129,453</i>	<i>172,604</i>	<i>215,755</i>
4	Water Supply (0.5% of total revenue)	11,898	13,881	15,864
5	Electricity (1.5% of total revenue)	35,694	41,643	47,592
6	Repairs & Maintenance (Furniture, Fittings and Office equipment) 10% of investment cost)	2,000	2,000	2,000
7	Repairs & Maintenance (Machinery & Equipment) (2.5% of investment cost)	21,250	21,250	21,250
8	Repairs & Maintenance (Civil	16,000	16,000	16,000

	Works) 5% of investment cost)			
9	Motor Vehicle Running Expenses (10% of investment cost)	21,000	21,000	21,000
10	Advertising & Publicity (1% of total revenue)	23,796	23,796	23,796
11	Rent	6,000	6,000	6,000
12	Licenses, Fees and Authorizations	7,500	7,500	7,500
13	Postages and Telecommunications	2,800	2,800	2,800
14	Travelling	12,000	12,000	12,000
15	Insurance (1.5% of total fixed cost)	7,500	7,500	7,500
16	Auditors and other Professional Fees	6,000	6,000	6,000
	<b>TOTAL COST</b>	<b>1,917,571</b>	<b>2,168,582</b>	<b>2,478,878</b>

❖ Corporate Tax is fixed at 30% of taxable profits.

## 2.7 DEPRECIATION AND AMORTIZATION SCHEDULE (IN US\$)

CAPITAL ITEM	CAPITAL EXPENDITURE	DEPRECIATION RATE	SCRAP VALUE	ANNUAL DEPRECIATION
1.Land & Buildings	320,000	5%	50%	8,000
2. Plant Machinery Equipment	850,000	12.5%	35%	28,438
3. Motor Vehicles	210,000	20%	20%	33,600
4. Office Furniture & Equipment	20,000	12.5%	85%	2,125
5.Pre-operation Expenditures	25,000	20%	0%	5,000
6. Contingencies	60,000	20%	0%	12,000
<b>TOTAL</b>	<b>1,485,000</b>			<b>89,163</b>

## 2.8 Combines Salaries, Wages and Allowances

<b>PRODUCTION</b>	<b>NUMBER</b>	<b>@ PM</b>	<b>TOTAL P.A.</b>
Production Manager	1	900	10,800
Quality Controllers	2	550	13,200
Chief Engineer	1	750	9,000
Foremen	2	350	8,400
Technician	4	150	7,200
Maintenance Staff	2	100	2,400
Machine Operators	8	100	9,600
Labourers	15	75	13,500
	33		74,100
Other Benefits 20%			14,820
<b><i>Sub total</i></b>			<b>88,920</b>
<b>ADMINISTRATION &amp; FINANCE</b>			
Accountant	1	700	8,400
Accounts Assistants	2	220	5,280
Store - Keepers	2	180	4,320
Secretary	1	120	1,440
Office Attendant	2	75	1,800
Watchmen	4	75	3600
	12		24,840
Other Benefits 20%			4,968
<b><i>Sub total</i></b>			<b>29,808</b>
<b>MARKETING</b>			
Sales and Marketing Manager	1	900	10,800
Sales and Marketing Officers	6	220	15,840
Procurement Officer	2	250	6,000
Sales Clerks	2	150	3,600
Truck Drivers	6	120	8,640
	17		44,880
Other Benefits 20%			8,976
<b><i>Sub total</i></b>			<b>53,856</b>
Total Basic Salaries and Allowances			143,820
Total Other Benefits			28,764
<b>Grand Total</b>	<b>62</b>		<b>172,584</b>

### **3.0 THE MARKET**

#### **3.1 Plastic Containers and related Plastic Products**

At present there are only few manufacturing facilities existing in Tanzania for plastic containers. The project will manufacture plastic containers based on moulds to be supplied by the buyers. As a result every buyer shall be able to obtain containers according to his own mould design.

The potential market for plastic containers can be divided into three segments namely: edible oil sector, beverage sector and food products. Since there are only a few producers in the country, it can safely be assumed that all the containers will be sold. It is important to note that HDPE containers are superior in quality compared to PVC containers. They have higher impact resistance, better clarity and are cheaper than PVC containers.

#### **3.2 Corrugated Carton Boxes**

The proposal is based on market demand for these two products. Presently there is only one manufacturer of corrugated boxes in the whole of Lake Zone, and therefore demand/supply gap has to be filled by manufacturers outside the zone. Likewise, despite the existence of several water processing facilities in the zone, there still exists a demand/supply gap which is currently being filled by manufacturers elsewhere, including Dar es Salaam and Arusha. Details on current and potential markets on the products have been done so as to determine reliability of the market.

### **4.0 RAW AND PACKING MATERIALS**

#### **4.1 HDPE Granules**

The Principal raw material is polymer products viz. HDPE granules. These materials will be imported from Far East or South Africa. Choice of the source of import will depend on price competitiveness and the quality of the material.

#### **4.3 Corrugated Carton Boxes**

To make corrugated boxes, you need three main materials: paper, steam, and adhesive (starch based corrugation glue). Paper is used to make the two main components of corrugated fiberboard: The linerboard—used as the outer facings, and the medium—fluted paper that is attached to the linerboard to produce combined board in a continuous web.

## 5.0. FINANCIAL ANALYSIS

### 5.1 Financial Assumptions

The estimated capital cost and basic operating assumptions are summarized in the financial projections as shown in Annex I to VI. In the financial analysis the following major assumptions have been taken into considerations:

- ❖ By taking into consideration repayment period of the Bank term loan and gradual increase in plant production capacity, the financial projections are for 3 years.
- For convenience and stability, all financial figures have been quoted in United States Dollar at US\$ 1 = 2,320/= .TShs.
- Total capital investment cost is estimated at US\$ 1,600,000- as summarized under Section 2.3 above and in the attached Financial Projections.
- ❖ The investors will apply for Bank long term loan of US\$ 685,000- to partly finance procurement and installation of machinery plant equipment at interest rate of 18% repayable in 3 years with a moratorium period of 9 months;
- ❖ The investors will further apply for a short term loan in form of an overdraft facility to finance initial working capital at the interest rate of 10% per annum.
- ❖ The project promoters will contribute US\$ 800,000- in form of reserved profits
- Depreciation of fixed assets and amortization of the pre-operational expenses rates used are as follows:

Land .....	0.00%
Civil Works/ Structures/Buildings.....	5.00% on straight line basis
Plant and Machinery.....	12.50% on straight line basis
Furniture/Equipment and Fittings.....	12.50% on straight line basis
Motor Vehicles.....	20.00% on straight line basis
Pre-operational Expenses .....	20.00% on straight line basis

The plants are to operate for 10 hours per shift/day. The actual Capacity Utilization is projected at only 60% during the 1<sup>st</sup> year, 70% in the 2<sup>nd</sup> year, and 80% from year three and subsequent years.

- The project is expected to generate revenue at the tune of US\$ 3,172,800- per annum at full commercial production from year three onwards

while raw materials and other consumables are estimated to cost US\$ 2,073,823-.

- Direct production costs shown in section 2.3.8 and are based on current rates.
- Salaries and Wages have been based on the prevailing scales in the private sector. There is provision of 20% to cover company contribution to NSSF (10%) and other social welfare (10%).
- ❖ Administrative/Overhead costs are based on the prevailing rates in the market and needs of the proposed project.
- ❖ Corporate Tax is fixed at 30% of taxable profits.
- ❖ The project will be granted a Tanzania Investment Centre (TIC) Certificate of Incentives and therefore enjoy a 75% import duty relief on all capital goods and VAT 45% exemption on the machinery plant.

## 5.2 Analysis of Financial Results

Following are highlights of the financial projections and analysis:

### **Appendix I - Projected Profit and Loss Statement**

The project will start making profit right from the very first year of operation. The project post net earnings of US\$ 183,116-- during the first year. The profitability position improves significantly during the second year, and reaches the peak of US\$ 390,009 during the 5<sup>th</sup> year.

### **Appendix II - Cash flow Projections**

The projected Cash flow for Financial Planning indicates that the project will generate enough cash to service the directors' loans and meet other financial obligations. Net cash/surplus balance increases from US\$ -183,116-- in year one to US\$ 293,649- by the 5<sup>th</sup> year of operation. The cumulative cash balances during the same period increases from US\$ 183,116- to US\$ 683,658-. This is a positive indication that the project is liquid enough to meet its cash requirements to support its trading operations.

### **Appendix XIII - Projected Balance Sheet**

The balance sheets indicate a favourable state of affairs of the project throughout the projected period. The net fixed assets as reflected in the security cover adequately cover the company's contribution. The security cover is above the normal rate of 1.25 required by the Bank of Tanzania. Similarly current liabilities are well covered by the current assets,

## **Appendix II - Discounted Cash flow**

The Discounted Cash flow yields an Internal Rate of Return (IRR) of 25.19%, which is well above the assumed cost of capital at 8%. This confirms the financial viability of the proposed project.

### **Key Financial Ratios**

- Debt Service Capital Ratio- ranges between 0.59 and 0.64. This is well above 1.0, another indicator that the project will comfortably service interest and principal repayments as and when they fall due.
- Return on Investment (ROI) is 22.9% during the first year. It increases over the years as the loan liability is reduced, up to 40.8%

## **Appendix VI: Payback Period**

The entire fixed investment of US\$ 1,485,000- is estimated to be recovered in about three (3) years at zero discount rate. This is a clear demonstration that the project has a reasonable return of return on investment.

## **Appendix II - Breakeven Analysis**

Highest breakeven capacity is estimated at 5.28-% during the first year of operation and the lowest breakeven point is 4.44-% during the 3<sup>rd</sup> and 4<sup>th</sup> years. The breakeven point declines as the loan is reduced over the years.

The management will strive to achieve higher capacity than the breakeven point at 4.44-% and 5.28%.

## **Sensitivity Analysis**

From the analysis carried out on changes of some key factors to show their effect on profitability and IRR, the project shows to be more sensitive to changes in selling price than changes in decline in capacity utilization and increase in direct production costs.

## 5.0 CONCLUSION AND RECOMMENDATIONS

Analysis of the project confirms that the project is:

- Technically feasible,
- Financially and Economically viable,
- Socially desirable
- Environmentally sound, manageable and sustainable.

A timely financing and implementation of the project is therefore highly recommended in order to realize the anticipated benefits outlined in this study/report.

Provided all other economic factors remain substantially the same, it is strongly recommended that the project be implemented with immediate effect. It is further recommended that applications for Industrial Licence and Environmental Impact Assessment for the proposed plant be submitted forthwith. It is further recommended that an application for TIC Certificate of Investment Incentives be submitted to Tanzania Investment Centre with a view to benefit from investment benefits and protection as statutorily allowed under Tanzania Investment Act, 1997.

# FINANCIAL PROJECTIONS

## ANNEX I - INCOME STATEMENT

<b>(All Numbers in USD\$)</b>							
	<u>Year 0</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	- <u>TOTAL</u>
Sales revenue on Plastic Containers and related plastic products (US\$ 574.16 per ton)		1,080,000	1,260,000	1,440,000	1,440,000	1,440,000	6,660,000
Corrugated Carton Boxes (US\$ 950-/ton)		1,299,600	1,516,200	1,732,800	1,732,800	1,732,800	<b>8,014,200</b>
<b>Total Operating Revenue</b>	-	<b>2,379,600</b>	<b>2,776,200</b>	<b>3,172,800</b>	<b>3,172,800</b>	<b>3,172,800</b>	<b>14,674,200</b>
<b><u>EXPECTED EXPENSES</u></b>							
	<u>Year 0</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	- <u>Total</u>
Salaries 8% total revenue		107,878	143,837	179,796	179,797	179,798	791,106
Social Charges & Pension Payments		21,576	22,223	22,890	23,576	24,284	114,548
Raw Materials and consumables		1,614,680	1,814,608	2,073,821	2,073,822	2,073,823	9,650,754
Utilities (Water and electricity)		47,592	55,524	63,456	63,456	63,456	293,484
Repair and maintenance Furniture's and fittings		2,000	2,000	2,000	2,000	2,000	8,000
Repair and maintenance machineries and equipments		21,250	21,250	21,250	21,250	21,250	85,000
Repair and maintenance Civil works		16,000	16,000	16,000	16,000	16,000	64,000
Motor Vehicles running expenses		21,000	21,000	21,000	21,000	21,000	84,000
Fuel and Lubricants		27,343	36,458	45,572	45,572	45,572	173,174
Renting		6,000	6,000	6,000	6,000	6,000	30,000
Travelling and overhead cost		12,000	12,000	12,000	12,000	12,000	60,000
Advertising & Publicity		23,796	23,796	23,796	23,796	23,796	118,980
Insurance/licensing/postage/Audit /Other charges		16,300	16,300	16,300	16,300	16,300	81,500
<b>Total Operating Costs</b>		<b>1,937,415</b>	<b>2,190,996</b>	<b>2,503,881</b>	<b>2,504,569</b>	<b>2,505,279</b>	<b>11,554,546</b>
<b>Operational Net Earnings before Depreciation, Interest &amp; Tax</b>		<b>442,185</b>	<b>585,204</b>	<b>668,919</b>	<b>668,231</b>	<b>667,521</b>	<b>3,032,061</b>
<i>%age Gross Contribution</i>		<i>19</i>	<i>21</i>	<i>21</i>	<i>21</i>	<i>21</i>	<i>1</i>
<b>Depreciation at and Amortization</b>		<b>89,163</b>	<b>89,163</b>	<b>89,163</b>	<b>89,163</b>	<b>89,163</b>	<b>272,886</b>
<b>Net Earnings before Tax &amp; Interest</b>		<b>353,022</b>	<b>496,041</b>	<b>579,756</b>	<b>579,068</b>	<b>578,358</b>	<b>2,759,176</b>
<b>Interest Paid (Bank Loan)</b>		<b>64,000</b>	<b>53,091</b>	<b>41,309</b>	<b>28,584</b>	<b>14,842</b>	<b>201,826</b>
<b>Tax (30%)</b>		<b>105,907</b>	<b>148,812</b>	<b>173,927</b>	<b>173,720</b>	<b>173,508</b>	<b>775,874</b>
<b>Net Earnings</b>		<b>183,116</b>	<b>294,138</b>	<b>364,521</b>	<b>376,763</b>	<b>390,009</b>	<b>1,608,547</b>

## ANNEX II: CASH FLOW FROM OPERATING ACTIVITIES

Cash Flow statement from Investing Activities for 5 years					
(All Numbers in US\$)	Year 1	Year 2	Year 3	Year 4	Year 5
Cash receipts from Sales	2,379,600	2,776,200	3,172,800	3,172,800	3,172,800
Cash paid to suppliers and employees	(1,937,415)	(2,190,996)	(2,503,881)	(2,504,569)	(2,505,279)
Cash generated from operations	442,185	585,204	668,919	668,231	667,521
Dividends received*	0	0	0	0	0
Interest received	0	0	0	0	0
Interest paid	(64,000)	(53,091)	(41,309)	(28,584)	(14,842)
Corporate Tax paid (30%)	(105,907)	(148,812)	(173,927)	(173,720)	(173,508)
<b>Net cash flow from operating activities</b>	<b>272,279</b>	<b>383,301</b>	<b>453,684</b>	<b>465,926</b>	<b>479,172</b>
<b><u>CASH FLOW FROM INVESTING ACTIVITIES</u></b>					
Replacement of equipment	0	0	0	0	0
Proceeds** from sale of equipment	0	0	0	0	0
<b>Net cash flow from investing activities</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b><u>CASH FLOW FROM FINANCING ACTIVITIES</u></b>					
Proceeds from capital contributed	800,000	0	0	0	0
Proceeds from loan	800,000	0	0	0	0
Payment of loan	(136,365)	(147,274)	(159,056)	(171,781)	(185,523)
<b>Net cash flow from financing activities</b>	<b>1,463,635</b>	<b>(147,274)</b>	<b>(159,056)</b>	<b>(171,781)</b>	<b>(185,523)</b>
<b><u>NET INCREASE/ DECREASE IN CASH</u></b>	<b>1,735,914</b>	<b>236,027</b>	<b>294,627</b>	<b>294,145</b>	<b>293,649</b>
Cash at the beginning of the period	183,116	294,138	364,521	376,763	390,009
Cash at the end of the period	<b>1,919,029</b>	<b>530,165</b>	<b>659,148</b>	<b>670,908</b>	<b>683,658</b>

### ANNEX III: PROJECTED BALANCE SHEET

Pro forma balance sheet					
(all numbers in USD)	Year 1	Year 2	Year 3	Year 4	Year 5
<b>ASSET</b>					
Current asset	183,116	294,138	364,521	376,763	390,009
Fixed asset	1,485,000	1,514,700	1,544,994	1,575,894	1,607,412
Liquidity	442,185	585,204	668,919	668,231	667,521
<b>TOTAL ASSET</b>	<b>2,110,301</b>	<b>2,394,042</b>	<b>2,578,434</b>	<b>2,620,888</b>	<b>2,664,942</b>
<b>NET ASSET MINUS DEPRECIATION</b>	<b>2,021,138</b>	<b>2,304,879</b>	<b>2,489,271</b>	<b>2,531,725</b>	<b>2,575,779</b>
<b>EQUITY &amp; LIABILITIES</b>					
Equity	800,000	821,120	893,904	973,140	1,059,399
Reserves	0	0	0	0	0
<b>Total Own Equity</b>	<b>800,000</b>	<b>821,120</b>	<b>893,904</b>	<b>973,140</b>	<b>1,059,399</b>
Provisions	825,703	1,045,419	1,131,912	1,095,337	1,053,345
Long term loan	200,365	200,365	200,365	200,365	200,365
Short term Liabilities	195,070	237,975	263,090	262,883	262,671
<b>Total Equity &amp; Liabilities</b>	<b>2,021,138</b>	<b>2,304,879</b>	<b>2,489,271</b>	<b>2,531,725</b>	<b>2,575,779</b>
NET FA/CL	7.41	7.56	7.71	7.87	8.02
CL/CA	1.07	0.81	0.72	0.70	0.67
<b>DEBIT/CAPITAL RATIOS</b>	<b>0.60</b>	<b>0.64</b>	<b>0.64</b>	<b>0.62</b>	<b>0.59</b>
ROI	22.9	35.8	40.8	38.7	36.8
<b>BREAK EVEN POINT</b>	<b>3.36</b>	<b>2.59</b>	<b>2.31</b>	<b>2.36</b>	<b>2.41</b>
<b>BREAK EVEN RATIO</b>	<b>5.28</b>	<b>4.49</b>	<b>4.44</b>	<b>4.44</b>	<b>4.45</b>
<b>EQUITY/TOTAL LIABILITIES (%)</b>	<b>40</b>	<b>36</b>	<b>36</b>	<b>38</b>	<b>41</b>

## ANNEX IV: LOAN AND REPAYMENTS SCHEDULE

Loan Information and Payment Schedule			
Loan Data	All number in USD	Loan Summary	
Original Principal	800,000.00	Scheduled Payments	200,365.16
Loan Term (Years)	5.00	Scheduled number of payment	5.00
Annual Interest Rate	8%	Actual number of payment	5.00
Payments per Year	1.00	Total Early Payment	-
Payment	200,365.16	Total Interest	201,825.82

Year	Payment	Interest	Cumulative Interest	Principal	Balance
-					800,000.00
1.00	200,365.16	64,000.00	64,000.00	136,365.16	663,634.84
2.00	200,365.16	53,090.79	117,090.79	147,274.38	516,360.46
3.00	200,365.16	41,308.84	158,399.62	159,056.33	357,304.13
4.00	200,365.16	28,584.33	186,983.95	171,780.83	185,523.30
5.00	200,365.16	14,841.86	201,825.82	185,523.30	0.00
		201,825.82			

## ANNEX V: INTERNAL RATE OF RETURN (IRR)

### IRR for the Project

(all numbers in USD)

	Initial Investment	-800,000
Year 1	Additional Annual Net Profit	183,116
Year 2	Additional Annual Net Profit	294,138
Year 3	Additional Annual Net Profit	364,521
Year 4	Additional Annual Net Profit	376,763
Year 5	Additional Annual Net Profit	390,009
	<b>IRR (in 5years)</b>	<b>25.19%</b>

The IRR above indicates that the expected return on the USD 800,000 initial investment after 5 years is 25.19%.

**ANNEX VI: PAYBACK PERIOD**

<b>Payback Period Analysis</b>				
	<b>Year</b>	<b>Beginning Balance</b>	<b>Net Cash Flows</b>	<b>Ending Balance</b>
Cost of investment	0.00	800,000.00	0.00	800,000.00
	1.00	800,000.00	183,115.68	616,884.32
	2.00	616,884.32	294,138.01	322,746.31
	3.00	322,746.31	364,520.68	41,774.36
	4.00	41,774.36	376,763.10	418,537.46
	5.00	418,537.46	390,009.07	808,546.53

<b>Payback Period =</b>	<b>3.00</b>	<b>Years</b>
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