

**ROFI FARMING COMPANY LTD AQUA -
FEED MILL PROJECT**

CHAPTER ONE: INTRODUCTION

1.1 Introduction

M/s Rofi Farming Company Limited is a newly-registered local company under certificate of incorporation number 167297765 dated 27th July, 2023. The company envisages developing an ultra-modern Aqua feed Mill project in Magu District, Mwanza region which when fully operational, the project will have a production capacity of 100,000 MT per annum for own consumption and for sell. The project is estimated to cost a total of TShs 17.4284 billion (US\$ 7,414,738) in fixed assets alone at full completion. Working capital requirement is estimated at US\$ 714,894.

1.2 Project Concept

The project entails establishing ultra-modern fully integrated aqua feed milling plant in Kisesa area, Magu District. The project will involve the establishment a modern aqua fee mill of international standard, the target market for the products includes local farmers, own consumption in our 500-cage project as well as neighboring countries such as Uganda and Kenya.

The automatic aqua feed plant project has a silo area, a raw material workshop, a production workshop and a finished product workshop. The silo area uses a skateboard elevator to transport the raw materials to the silo. The raw material workshop is used to store various bagged materials, and the silo raw materials are transported by a skateboard elevator.

This document has been prepared for four (4) main reasons. Firstly, to determine the viability of the proposed project and serve as a business plan for establishment of the proposed aqua feed mill project. Secondly, it will be used for applying various licenses such as industrial licenses. Thirdly, it is meant to facilitate the application for Tanzania Investment Centre (TIC) Certificate of Incentives so as to access exemptions on duties, VAT deferrals and other benefits and protections as statutorily provided for under Tanzania Investment Act (2022) for the project. Lastly, the Feasibility Study Report will serve as a supporting document in the application for local short-term finance to facilitate financing of working capital requirements.

1.3 Ownership

The project is promoted by M/s Rofi Farming Company Limited, a locally registered company with authorized share capital of TShs 2,500,000,000/= divided into 2500 ordinary shares of TShs 1,000,000/= each. The shareholders are five (05) Chinese nationals with respective shareholding as shown in the below table:

Shareholding Structure

	Name	Nationality	No. Of Shares	% Of Shares
1	Xiaojiao Lin	Chinese	750	30%
2	Changson Chen	Chinese	600	24%
3	Yufang Chen	Chinese	500	20%
4	Mao Chen	Chinese	375	15%
5	Yanhui Lin	Chinese	275	11%

1.4 Project Location and Infrastructure

The proposed project will be located at Plot No 2- 6 Block C Ihayabuyaga Kisesa ward in Magu District, Mwanza region. The project will be located in 36 acres of land along Musoma Road.

1.5 Project Investment Capital

The directors and shareholders of Rofi Farming Company Limited plan to make substantial investments in the development of the aqua feed mill including land acquisition, construction of processing buildings, structures and related civil works, storage buildings, residential buildings for key staff, office buildings, procurement and installation of machineries. The proposed project also involves acquisition of tools, equipment, and utility and administration vehicles.

Capital Investment Summary

	ITEMS	COST IN Tsh '000'	EQUIVALENT IN USD
1	Land Acquisition, Registration and Site Preparations	355,000	151,064
2	Civil works, structure and Buildings	1,735,000	738,298
	SUB TOTAL	2,090,000	889,362
3	Machineries and Equipments	12,218,400	5,199,318

4	Utility and administration vehicles	2,850,000	1,210,764
5	Furniture, fixture and office equipment's	150,000	63,830
6	Pre- operational costs	120,000	51,064
7	Contingencies	100,000	42,553
	TOTAL	17,428,400	7,414,738
8	Working Capital	1,680,000	714,894
	GRAND TOTAL	19,208,400	8,171,785

1.6 Investment Financing Arrangements

Fixed assets cost of the project estimated to cost TShs 17.4284 billion (US\$7,414,738) is planned to be financed through owners' equity contributions and directors' loans. Equity contribution is estimated at approximately 70% while bank loan is 30%.

Sources of Investment Finance

	Source of finance	Tsh in "000"	USD	%
1	Shareholders' Equity	12,199,880	5,191,438	70%
2	Bank Loan	5,228,520	2,224,421	30%
3	Add working capital	1,680,000	714,894	
	TOTAL	19,108,400	8,130,753	100%

Working capital will be financed through local short-term loan if and when required, depending on the business tempo. Initially, an overdraft facility of TShs 1.680 billion (US\$ 714,894) is considered adequate for the initial workingcapital requirements.

M/s Rofi Farming Company Limited will apply to be registered with Tanzania Investment Centre under this project so as to be eligible to enjoy the various taxincentives and other benefits as statutorily provided under Tanzania InvestmentAct of 2022 as well as for meeting conditions for obtaining processing and exportlicenses per The Fisheries Regulations of 2009.

1.7 Production Capacity

The directors envisage at establishing ultra-modern Aqua feed milling project for producing commercial tilapia feed, the project project is designed with 3 fish feed processing lines, 2 extruded fish feed production lines with an annual output of 30,000 tons and 1 fish pellet feed processing line with an annual output of 40,000 tons, with a total annual production capacity of 100,000 tons.

Materials for making own fish meal including sardines; maize, polished rice, cotton cake etc. will be obtained locally, mainly from surrounding villages. However, premix(minerals, micro- element etc.) will be imported from China.

According to the needs of production, the 48t/h fish feed factory project works 260 days a year and implements a shift system of 8 hours per shift. It can be calculated that the output of this big capacity fish feed factory project is 8333t/m, 385t/d, 48t/h (20-21t/h for tilapia food pellets, 28-29 t/h for tilapia floating fish feed).

Name		Production (tons/year)
1	Tilapia extruded feed	60000
2	Tilapia pellets	40000

The large scale 48t/h tilapia fish feed factory project mainly uses soybean meal, rapeseed meal, wheat by-products, fish meal, etc. as the main raw materials, plus corn distiller's grains and oil bran as auxiliary raw materials to produce high-quality aquatic feed. The raw materials are all purchased from outsourcing.

There are three fish feed lines in this 48t/h tilapia fish feed factory project, one compound feed production line for fish and two extruded fish feed production lines.

1.7.1 Revenue Estimates

The price of Aqua feed differs from fingerlings to 5 – 6-month Tilapia fish. Since the fingerlings in ponds consumes extruded fish feed and fish in cages consumes pelleted feeds due to its floating nature. Therefore, the price of feeds starts from 1000Tsh to 2500 Tshs per Kilo (US\$ 1.07). The price also varies from starter, grower and finisher. The estimated revenue from sale of aqua feed is 90,790,400,000 equivalent to 38,634,213 US\$.

The project envisages employing estimated number of 160 people among whom 10 will be foreign expatriate staff. Of the remaining 150 local employees, 65 will be skilled while 85 will be casual workers. Furthermore, among the local employees, 70 are expected to be males while 80 are expected to be females. Salaries, wages and allowance bill is estimated to be TShs 2,723,712,000- equivalent to US\$ 1,159,026- per annum.

CHAPTER 2: BUSINESS ENVIRONMENT AND SECTOR ANALYSIS

2.1 Introduction

Fish feed technology is one of the least developed sectors of aquaculture particularly in Africa and other developing countries of the world. Feed is one of the major inputs in aquaculture production. It is one of the fundamental challenges facing the development and growth of aquaculture in the African continent. Fish feed development in Sub-Saharan Africa has not made a significant progress in aquaculture as expected. It is observed that the research on inexpensive feed ingredients has not contributed greatly to aquaculture development in Africa and suggested that more research on how best plant protein can be used as fish feed is required. Development and management of fish feed, play very vital role in aquaculture growth and expansion. In fact, it is a major factor that determines the profitability of aquaculture venture. Reports shows that feed accounts for at least 60% of the total cost of fish production in Africa, which to a large extent determines the viability and profitability of fish farming enterprise. As aquaculture becomes intensive, most farmers in Africa depend largely on imported feeds which are also very expensive.

2.1.1 The Fisheries Sector

Tanzania is endowed with rich marine and inland waters that yield a wide range of living aquatic resources, providing livelihoods, food security, export revenues, and potential further economic development. The fisheries can be divided into the following subsectors: marine and inland capture fisheries, aquaculture, and fish processing. The scale of operations ranges from small-scale subsistence fishing to industrial fish processing. There is a vibrant export market, exploited by small-scale fish processors and traders serving the regional market, and by large fish processors selling into international markets.

Over the last decade, Tanzania fisheries production has been in the range of 325,000 to 380,000 tons per annum. About 85% is from inland fisheries, 14% from marine fisheries and just 1% from aquaculture. In 2014, there were some 183,800 people engaged in fishing, accounting for about 0.7% of the work force, with a large, but unknown number, also engaged in fish trading and processing.

The Ministry of Livestock and Fisheries (MLF) is responsible for the preparation, implementation, monitoring, and reviewing of national fisheries policies and regulatory frameworks in Tanzania. The Department of Fisheries Development within the MLF is

responsible for the management of inland fisheries, and for marine fisheries within the territorial waters of the mainland.

In addition, several institutions work in the fisheries sector in research, training and development roles. The Tanzania Fisheries Research Institute (TAFIRI) carries out research in Fisheries and has its headquarters in Dar es Salaam and offices in Mwanza, Kigoma and Kyela. The institute undertakes research in freshwater and marine capture fisheries, aquaculture and mariculture, fish processing and quality as well as socio-economic studies.

2.2 Aquaculture and Aqua feed supply in East Africa

Seafood consumption in Eastern Africa has been increasing as the region's population grows and more people are becoming more conscious of the health benefits of seafood despite a general fish output decline, especially from Lake Victoria, one of the biggest sources of seafood in Eastern Africa.

Kenya, Tanzania and Uganda, the three countries sharing Lake Victoria and which are members of the regional East African Community (EAC), a regional economic community, are focusing more on increasing aquaculture investments as a source of seafood to meet growing fish demand. This shift to aquaculture as a source of seafood also has increased demand for quality fish feeds, sustainable milling enterprises and a viable network with international organizations and development partners to secure uninterrupted supply of aquafeed and the ingredients that go into their manufacture.

With stagnating production from capture fisheries against rising demand for fish in domestic, regional and international markets, aquaculture presents a great opportunity to provide the much-needed fish supplies.

The case for farmed fishing in Eastern Africa also has been strengthened by an emerging trend where output of capture fisheries, especially from Lake Victoria, has been on a downward trend recently. Lake Victoria's output is declining rapidly due to pollution, overfishing, and lack of regulation. With declining capture fish from the lake, there has been a spike in the "import of fish — hence a missed opportunity — as East Africa has excellent capabilities to produce local fish for the local market. Total fish output in Kenya, for example, declined from 146,700,000 tonnes in 2018 to 146,500,000 tonnes in 2019, with freshwater fish output sliding to 120,900,000 tonnes in 2019 from 122,500,000 tonnes in 2018. The fish output from the lake

accounted for 62.5% of Kenya's total fish landed in 2019, which was the lowest output over a five-year period.

This shift to aquaculture as a source of seafood also has increased demand for quality fish feeds, sustainable milling enterprises and a viable network with international organizations and development partners to secure uninterrupted supply of aquafeed and the ingredients that go into their manufacture.

Currently, aquaculture accounts for a mere 7% to 8% of the fish consumed in East Africa, with the rest accounted for by the dwindling capture fisheries. Even then, scaling up aquaculture production in East Africa has been constrained by the lack of high-quality fish feeds and raw materials that go into their manufacture such as corn, rice, rice bran, wheat bran, sunflower cake, soybean seeds and sardines.

The sharp rise in demand for commercial feeds has forced a significant number of farmers to look for non-complete feeds, such as lake shrimp Cardinalfish farmers cannot profitably produce fish due to the lack of fish feed, and potential fish feed suppliers. Fish feeds make up roughly 70% of the cost for a fish farmer. A large share of Eastern Africa's aquaculture industry inputs is imported from the Netherlands, Mauritius, Israel, Zambia, Egypt and Brazil.

In Tanzania, there are five key private aquafeed investors — four of them local and one international importer — all of whom sell fish feeds directly to aquaculture enterprises. As early as 2015, Tanzania had through the National Fisheries Policy committed to the production and regulation of quality aquafeeds and seeds via promotion of private sector participation.

2.3 Aqua Feed Supply in Tanzania

The fish feed production in Tanzania is not sufficient. The actual demand for fish feeds in Tanzania is not yet established. There are several farms which are unregistered fish feed mills scattered over the countries and six small scale fish feed processing industry producing for farm and sales. These include Eden Agri-Aqua Services, Jans Aqua Centre, TanFeed, Kise Farm, Kisima Farm, Hill Feed Company, Feed and Fingerlinks Co. Ltd, Aquasol Tanzania Ltd and Mother and Child Hope (Mcheeo). The annual feed production for these mills is approximately 859.5 MT. However, currently the production is only 423.5 MT per year. To fill the gap, 638.87 MT of fish feeds is imported including Denmark, Kenya, Uganda, China, The Netherlands, Zambia and Zimbabwe. The imported improved fish products have been

prominent in commercial-based tilapia farms including cage culture and tilapia hatcheries. The pending issue with imported fish products is their cost in which most of them are sold at US\$1.2-2 per Kg which is not affordable to most farmers.

CHAPTER 3: TECHNICAL ASPECTS

3.1 The Project Concept

The project entails establishing ultra-modern fully integrated Aqua Feed mill project in Magu District. The Aqua feed mill will comprise of two (2) major components:

- ✓ Pelletized fish feed making process;
- ✓ Extrusion fish feed process.

3.2 Location and Infrastructure

The proposed project will be located in Plot No 2-6 Block C Ihayabuyaga, Kisesa- Magu District, Mwanza region. The company has managed to purchase a total of 38 acres of land along Mwanza-Musoma Road. Derivative process will start soon as we get our certificate of Incentive with TIC. This area will be used for the establishment of milling plant, storage administration building and residential area for key staffs.

3.3 Planned Activities

Specifically, the company plans to do the following during the next 3 years:

- ✓ Complete land acquisition and registration processes;
- ✓ Obtain the necessary licences, permits necessary for establishment of Aqua Feed milling Plant.
- ✓ Import modern machineries from China and obtain duty exemption through TIC.
- ✓ Construct project buildings, storage facilities and related civil works;
- ✓ Procure new transportation and administration vehicles.

3.4.1 Strategies to be employed

In order to realize planned activities, the company will use the following strategies

- ✓ Complete land acquisition process and obtain Derivative Right from TIC as well other licenses approvals and permits from other institutions for smooth project operations;
- ✓ Construct at the project site processing and storage buildings and develop necessary civil works structures to accommodate all the proposed project facilities.
- ✓ Procurement and installation of state of art milling machineries and other supporting equipment's from China
- ✓ Development of laboratory for quality analysis;
- ✓ Establish a workshop for service and maintenance of plant equipment and transportation facilities and procurement of engineering equipment;

- ✓ Undertake Staff recruitment and training;
- ✓ Procurement and installation of a new heavy duty Standby Electric PowerGenerator
- ✓ Procurement of trucks for transporting raw materials imported from China, 4 units light trucks for collection of feed materials from neighboring villages, 2 units multipurpose pickups, and 2 units 4-WD administration vehicles
- ✓ Identify and establish feeds distribution points and external markets;
- ✓ Ensure continuous specialized staff training and motivation throughout so as to maintain a local trained and dedicated work force.

3.5 Investment Costs

Capital investment in fixed assets is estimated to be TShs 17,428,400,000/= (US\$7,414,738-. In addition, there will be a need for about TShs 1.680 billion (US\$ 714,894) to finance working capital requirements as indicated under Annex I of the Financial Projections section of this document. The main investment items are indicated in the same annexure which also show the implementation plan. The specific activities to be financed are indicated in the table below:

Investment Cost Summary

	ITEAM	TOTAL COST TSHS 000)	TOTAL COST (USD)
1	Land and site preparation		
2	Civil works structure & Buildings	1,735,000	728,298
	Subtotal	2,090,000	889,762
	Machinery And Equipment's	12,218,400	5,199,318
4	Motor Vehicles	2,850,000	1,210,764
5	Furniture, fittings and office equipment's	150,000	63,830
6	Pre operational expenses	120,000	51,064
7	Contingencies	100,000	42,553
8	<i>Working capital</i>	<i>1,680,000</i>	<i>714,894</i>
	GRAND TOTAL	19,108,400	8,129,632

3.5.1 Financing Arrangement

The entire fixed assets cost of the project estimated to cost TShs17,428,400,000/= (US\$ 7,418,340) is planned to be financed through owners' equity contributions at approximately 70% (TShs 12,199,880,000/- equivalent to US\$ 5,191,438) and bank loan financing at 30% (TShs 5,228,520,000/= equivalent to US\$ 2,224,421) Working capital will be financed through

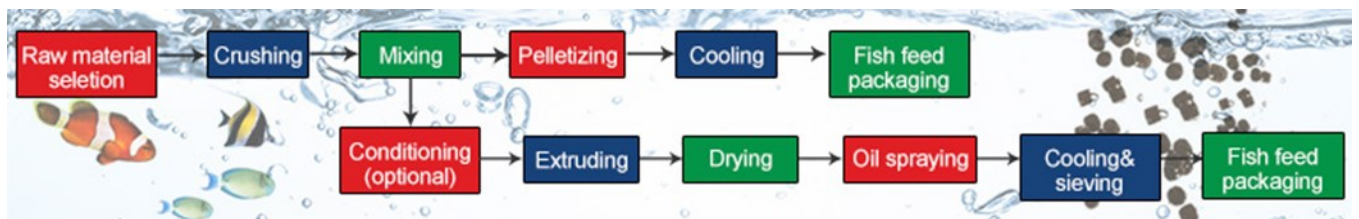
local short-term loan if and when required, depending on the business tempo. Initially, an overdraft facility of TShs 1.680 billion- is considered adequate for the initial working capital requirements.

M/s Rofi Farming Company Limited will apply to be registered with Tanzania Investment Centre under this project so as to be eligible to enjoy the various tax incentives and other benefits as statutorily provided under Tanzania Investment Act of 1997 as well as for meeting conditions for obtaining processing and export licences per The Fisheries Regulations of 2009.

3.6 Production process

This professional aqua feed mill project mainly produces pelleted fish feed and extruded aqua feed. During production, various raw materials are first put into the silo, and then pass the metering system according to the set ratio requirements. The batching system, mixing system, metering, material conveying and batching processes are all automated and closed.

The automatic aqua feed plant project has a silo area, a raw material workshop, a production workshop and a finished product workshop. The silo area uses a skateboard elevator to transport the raw materials to the silo. The raw material workshop is used to store various bagged materials, and the silo raw materials are transported by a skateboard elevator. The production process is as shown in the below figure:



Feeds can be classified based on the stage of the life cycle at which they are targeted as shown in the below table;

FEEDS BASED ON A LIFE CYCLE OF A FISH

1	Starter feeds	<p>Starter feeds are given as first feeds to feed the fry or larvae, when their yolk is exhausted or about to be exhausted. The transformation from an endogenous to an exogenous food supply is critical and thus starter feeds should be nutritionally complete, easily digestible, and with appropriate particle size. Starter feeds are generally in the form of fine crumbles or flakes.</p>
2	Fry Feeds	<p>Fry is the term used for the unmetamorphosed young stage in the life cycle of fish. Fry feeds generally contain higher levels of protein because the protein and energy requirements are high in the early stages of life because the highest relative weight gain is achieved in the fry stages. Fry feeds are generally in the form of flakes or crumbles</p>
3	Fingerlings Feeds	<p>The fingerling stage is defined as metamorphosed younger stage of fish to a growth of about 10-20g. Fingerling feeds vary from crumbles to pellets depending on the species to be cultured and their size. Fingerling diets tend to contain less protein and energy than fry and starter diets.</p>
4	Grow-out feeds	<p>The weight increase in fish during this grow-out stage is at a uniform rate, decreasing slightly as the fish increases in weight. Thus the nutritional requirement during this stage is rather uniform. It is important to ensure that the protein that the protein in the feed is used mainly for growth and not for metabolic activity. The biomass increments are considerable and also the quantity of feed administered is high. Thus, during this stage cost-saving feeds are essential. Generally pellet form of the feed is employed during grow-out stages.</p>
5	Broadstock Feeds	<p>A number of aspects of reproduction like the time of first maturity, number of eggs produced (fecundity), egg size and egg quality as measured by chemical composition, hatchability and larval survival can be affected by nutritional status.</p> <p>It has been shown that essential fatty acids, vitamins (A, E and C), trace minerals and carotenoids can affect fecundity, egg quality, hatchability and</p>

		larval quality. Nutritional requirements of Broadstock can further differ depending upon the phase of reproductive period.
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AQUA FISH PRODUCTION COMPOSITION

Name	Physical and chemical properties, description
Soybean meal	Also known as soybean meal, is a by-product of soybean oil extracted from soybeans. Soybean meal is generally irregularly crushed, with a light yellow to light brown color, and a taste of roasted soybeans. The main components of soybean meal are: protein 40%~48%, lysine 2.5%~3.0%, tryptophan 0.6%~0.7%. Methionine 0.5%~0.7%, moisture: ≤13.0%.
Cotton meal	Cottonseed meal is a kind of reddish or yellow granular product obtained by squeezing cottonseeds and then separating most of the residual oil inside through the leaching process. It is the main raw material for making feed. The ingredient is crude protein.
Rapeseed meal	Rapeseed meal, a by-product of rapeseed oil extraction, should have a crude protein content of more than 32% and a crude fiber content of less than 12%. Rapeseed meal is rich in lysine, macro and trace elements, and rich in sulfur-containing amino acids.
Fish Meal	A high-protein feed material that uses one or more kinds of fish as raw materials and is processed by deoiling, dehydrating, and crushing. The main characteristics of fish meal are that it does not contain cellulose, which is difficult to digest. It has high crude fat content and high effective energy value of fish meal. It is easy to prepare high-energy feed with fish meal as the raw material in the production. During the processing of fish meal, malodorous gases such as sulfur and organic amines are generated.
Corn distillers grains	In the process of using corn as raw material to ferment to produce ethanol, the starch in it is converted into ethanol and carbon dioxide, and other nutrients are left in the distiller's grains. At the same time, due to the action of microorganisms, the content of protein, vitamins and amino acids in distiller's grains are higher than corn, and contains unknown growth-promoting factors produced during fermentation.
Fish oil	is the general term for all the oils in the fish body, including body oil, liver oil and brain oil. The main fish oil is a kind of oil extracted from fatty fish and rich in unsaturated fatty acids.
Soybean oil	is the oil extracted from soybeans. It has a certain viscosity and is translucent liquid. Its color varies with soybean seed coats and soybean varieties, ranging from light yellow to dark yellow, with soybean flavor.

Calcium dihydrogen phosphate	Inorganic compound, is a colorless triclinic flake, granular or crystalline powder with a strong sour taste. It is widely used as a feed additive for aquaculture animals and livestock and poultry animals, as a leavening agent, dough regulator, and buffer Quality improvers such as additives, nutritional supplements, emulsifiers, stabilizers, etc.
Bran	is wheat husk, which is a by-product of wheat flour, which is yellowish, flake or powdery. It is one of the main raw materials used in animal breeding, mainly composed of seed coat, aleurone layer, a small amount of embryo and endosperm.
Table salt	The main component of salt is NaCl, an ionic compound. Salty in taste, easy to deliquesce when containing impurities; soluble in water or glycerin, hardly soluble in ethanol, insoluble in hydrochloric acid, the aqueous solution is neutral and conductive, non-toxic.
Lecithin	It is a brown-yellow powdery substance extracted from soybeans and deoiled with moderately modified or unmodified. It is a good emulsifier and thickener, which can be degraded naturally. Phospholipids are difficult to dissolve in water and acetone, easily swell into colloids with water, and are easily soluble in solvents such as ether, benzene, and chloroform.
Wheat protein powder	Also known as active gluten powder, it is a natural protein extracted from wheat (flour). It is light yellow and has a protein content of 75%-85%. It has viscosity, elasticity, extensibility, film-forming properties and liposuction properties. .
Bentonite	Solid, bentonite is mainly used as a feed additive and a binder for pellet feed in feed, and has strong water absorption, swelling, and adsorption.
Meat and bone meal	A kind of animal protein product, in solid powder form, the main components are: crude protein, total phosphorus, crude fat, moisture and ash.
Rice bran	is mainly processed from the peel, seed coat, ectoendosperm, aleurone layer and embryo. It is solid and is the main by-product of rice processing.
Squid liver powder	A traditional aquatic feed additive, which is produced with the liver of squid and squid as the main raw material. The addition amount in aquatic fish feed is generally 3-5%, which is a nutrient-rich feed nutrient fortifier. . After adding squid liver meal, the feed efficiency and protein utilization rate can be improved.
Flour	Flour is a powder made from wheat. According to the protein content of flour, it can be divided into high-gluten flour, medium-gluten flour, low-gluten flour and non-gluten flour.

Wheat middlings	Wheat middlings, also known as black flour, yellow flour, lower or third-class flour, are a by-product of wheat processing. They are mainly composed of finely crushed bran and part of wheat endosperm. It is made of wheat grains as raw materials to grind various flours. One of the by-products obtained later, the protein content of wheat flour accounts for about 12.5%-17%. Due to different wheat varieties and flour processing techniques, there are certain differences in its content.
Stone powder	Stone powder is a general term for stone powder. There are many types of stones, and there are many varieties according to the mineral composition, not necessarily calcium carbonate. Calcium carbonate is limestone, which is only one kind of stone powder. There is also talc powder in stone powder, which is used to make putty. There is also quartz powder, which is used to make glass. There are also rocks with many mineral components that can be ground into powder and used for different processes and uses.

The large capacity tilapia fish feed factory for producing commercial tilapia feed project is designed with 3 fish feed processing lines, 2 extruded fish feed production lines with an annual output of 30,000 tons and 1 fish pellet feed processing line with an annual output of 40,000 tons, with a total annual production capacity of 100,000 tons.

According to the needs of production, the 48t/h fish feed factory project works 260 days a year and implements a shift system of 8 hours per shift.

3.6.1 Revenue estimates

The price of Aqua feed differs from fingerlings to 5 – 6-month Tilapia fish. Since the fingerlings in ponds consumes extruded fish feed and fish in cages consumes pelleted feeds due to its floating nature. Therefore, the price of feeds starts from 1000 Tshs -2500 Tshs per Kilo (US\$ 1.07). This price varies from starter, grower and finisher. The estimated revenue from sale of aqua fee is approximated to 90,790,400,000 equivalent to 38,634,213 US\$.

3.6.2 Production Costs

Aqua feed mill production cost includes the cost of raw materials and labor costs (salaries, wages and allowances). Materials for making own fish meal including sardines; maize, polished rice, cotton cake etc. will be obtained locally, mainly from surrounding villages. However, premix (minerals, micro- element etc.) will be imported from China. It is assumed that raw materials and similar inputs for production of fish meal will cost about 60% of revenue generated from this source.

CHAPTER 4: MARKET EVALUATION

4.1 Market and Marketing aspects

The project targets both the local market and the E.A Community member states and beyond. The export market is not considered for the time being.

4.1.1 Competition

In Tanzania the fish feed production is not sufficient, the government through the National Fisheries Policy committed to the “production and regulation of quality aquafeeds and seeds via promotion of private sector participation. Few fish feed mills were established these includes Eden Agri-Aqua Services, Jans Aqua Centre, TanFeed, Kise Farm, Kisima Farm, Hill Feed Company, Feed and Fingerlinks Co. Ltd, Aquasol Tanzania Ltd and Mother and Child Hope (Mcheeo). The annual feed production for these mills is approximately 859.5 MT. To fill the gap, 638.87 MT of fish feeds is imported including Denmark, Kenya, Uganda, China, The Netherlands, Zambia and Zimbabwe while The Netherlands being a leading imported to animal and fish feeds in the East African Region. The pending issue with imported fish products is their cost in which most of them are sold at US\$1.2-2 per Kg which is not affordable to most farmers.

It is therefore evident that there is no serious competition in Aqua feed, considering the fact that the available supply does not meet the market demand putting in consideration our cage farming project which will increase the demand. tilapia fish demand in the country is very high compared to available supply.

3.2 Market and Marketing aspects

The project targets both local and export at the ratio of 50% for each. The export market includes E.A Community member states and beyond.

CHAPTER FIVE: FINANCIAL ANALYSIS

5.1 Financial assumptions

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

- ✓ By taking into consideration gradual increase in production capacity, the financial projections are for 5 years.
- ✓ For convenience and stability, all financial figures have been quoted in United States Dollar at US\$ 1 = 2,350/=TShs.
- ✓ Total capital investment cost is estimated at TShs17,428,400,000/(US\$ 7,414,738) excluding working capital requirements.
- ✓ It is proposed to finance the total fixed Investment costs of this project through foreign equity contributions (70%), and local bank term loan(30%). The Initial Working Capital Requirements estimated at TShs1,680,000,000/= (US\$ 714,894-) will be financed through bank short-term loan in form of overdraft facility to be charged interest at the prevailing rate of 8%.
- ✓ Implementation period of thirteen (13) months has been taken into consideration to allow for development of the site infrastructure and other civil works structures etc); procurement of milling machines, recruitment and training of technical staff; procurement and installation plant machinery equipment and necessary tools, and motor vehicles; and securing local and export markets.
- ✓ Discounting rate has been assumed to be 8%
- ✓ Depreciation of fixed assets and amortization of the pre-operational expenses/contingencies rates used are as shown in Appendix 3 (Annual Depreciation and Amortization of Assets) and Annex I (Investment, Replacement and Depreciation Schedules).
- ✓ Project capacity utilization is estimated at 60% in the first year, rising to 65% in second year, reaching 70% in year three, 75% in year four before stabilizing at 80% from year five onwards.
- ✓ Investment Costs are shown in Annex I (Investment, Replacement and Depreciation/Amortization Schedules).
- ✓ Direct production costs shown in Appendix 2 (Operational Costs) and Annex IV (Trading Account) are based on current rates.

- ✓ Salaries, Wages and Allowances have been based on the prevailing scales in the aquaculture industry in Tanzania. There is provision of 20% to cover company contribution to Social Security Fund (10%) and other Social Welfare Benefits (10%).
- ✓ Administrative/Overheads and farm/factory Overhead costs are based on the prevailing rates in the market and needs of the proposed project.

5.2 Major Operating costs

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 tax relief on both capital and deemed capital goods.

5.3 Analysis of Financial Results

Following are highlights of the financial projections and analysis:

5.3.1 Annex IV – Trading Account

Operations of the project are profitable right from year 1 when the company posts a net profit after tax of US\$ 4,114,407. The profitability position remains stable during the subsequent years, rising to US\$ 4,687,816 in year two, 4,981,404 in year three before climaxing at US\$ 5,828,880- by end of the 5th and last assumed economic life of the project.

5.3.2 Appendix V – Sources and Uses of Funds

The projected Cash flow for Financial Planning indicates that the project will generate enough cash to meet its financial obligations. The cumulative cash balance during the project period grows over six (6) fold, increasing from US\$ 4,114,407 to US\$ 25,027,411. This is a positive indication that the project is liquid enough to meet its cash requirements to support its trading operations.

5.3.3 Appendix VI – Project Balance Sheet

The balance sheets indicate a favourable state of affairs of the project throughout the projected period. Similarly current liabilities are well covered by the current assets, the ratio ranging from 6.64 to 36.52 fold. The company net-worth (Initial Shareholders Equity plus Retained Earnings) grows 5.82 fold during the economic life of the project, increasing from US\$ 5,191,438- at the end of construction period to US\$ 30,218,849- by end of the 5th year, a significant growth in the value and profitability of the company.

5.3.4 Payback Period

The Normal Payback Period is 1.3 years at zero discount rate

5.3.5 Breakeven Analysis

Break-even ratio for this project is 36.72%. This tells us that the firm can break-even when it operates at 36.72% of the assumed security services provision capacity.

5.3.6 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 price than changes in decline in capacity utilization and increase in direct operating costs.

CHAPTER SIX: ENVIRONMENTAL ASPECTS

6.1 Introduction

The project activities involve installation of Aqua feed mill machineries processing and packaging of the feeds. In the process, the company cooperates with various regulatory authorities, including BRELA for Industrial and Business License, OSHA, WMA, TRA, TBS and NEMC. Rofi Farming Company Limited will adhere to all regulations that are kept in place with all the regulatory authorities.

Generally, Tanzania has environmental regulations governing the industrial operations/manufacturing activities etc. Nevertheless, each operator takes basic precautions to ensure that during operations, damage to environment is limited to the minimum possible level.

6.3 Work Health and Safety Policy

To ensure environmental aspects are fully accommodated in the planned project activities, the Company will establish its Environmental Management Plan which shows commitment of Rofi Farming Company Limited Management and Workers to health and safety, with aims to remove or reduce risks to health, safety and welfare of all workers, contractors and visitors, and everyone else whomay be affected by the Company's business operations.

6.4 Environmental Impact Screening

The nature of the project indicates that there are no major negative environmental effects of public concerns, except dust which will be controlled internally.

6.5 Risk Analysis

The major risk factor considered under this project is the increase in the cost of production that may lead to our product to be more expensive more than the aqua feeds imported from Zambia and The Netherlands' ever given the increase in the investment in Aquaculture and government support to boost the sector we believe our investment will be protected.

6.6 Social, Economic and Developmental Benefits

The commercial Aqua feed cage fish farming activities generates a lot of developmental benefits, including but not limited to the following:

- ✓ The project will increase the supply of Aqua feed in the country and reduce cost of feeds to farmers.
- ✓ Magu Municipal Council will collect substantial revenue (levies/taxes) from fish farming and processing activities;

- ✓ Revenue to the government Treasury and other organs in the form of taxes, fees and levies;

6.7 conclusion And Recommendations

6.7.1 Conclusion

Financial and economic analyses above reveal the following:

- ✓ The project is financially viable, economically feasible and environmentally friendly as indicated by the projects' cost of production and profitability tables, cash flows and balance sheet.
- ✓ The project envisages expansion of Tanzania's market share in the fish export industry and thus maximizing government revenue in form of various taxes; The project has a very short payback period of 1.30 years relative to its fixed capital investment of US\$ 7,414,738-.
- ✓ The project is will employment opportunities, transfer of technology. It is geared to employ about 150 local employees, a significant number of which will be women.
- ✓ The project will generate a considerable amount of foreign exchange through the sale of tilapia fish.
- ✓ The project will have a huge impact in the economy of Mwanza region considering the amount of money that will be paid to workers per annum in form of salaries and wages and the estimated amount of TShs 2,723,712,000/= (US\$ 1,159,026-) that will be collected by local employees. In addition, the project will provide a potential for supply of various fish farm and processing factory supplies estimated at TShs 10,295,193,600/= (US\$ 4,380,977). The two factors are set to change the economy of Mwanza region irreversibly;

6.7.2 Recommendations

In view of the above it is strongly recommended that the project be approved by Tanzania Investment Centre and be granted the TIC Certificate of Incentives with its associated privileges and benefits as provided for under Tanzania Investment Act, 2022 to facilitate smooth implementation.

FINANCIAL PROJECTIONS AND ANALYSIS

**Rofi Farming Company Limited – Aqua Feed Mill
Project**

ANNEX I: INVESTMENT, REPLACEMENT AND DEPRECIATION SCHEDULES (IN US\$)

Year		YEAR 0	1	2	3	4	5
Land, Buildings & Structures		889,762					
Machineries & Equipment		5,199,318					
Vehicles		1,210,764					
Furniture & Office Equipment		63,830					
Pre-operational Expenses		51,064					
Contingencies		42,553					
Total Investment Cost		7,457,291					
Depreciation							
Land, Buildings & Structures	5%	22,244	22,244	22,244	22,244	22,244	22,244
Machinery & Equipment	12.5%	422,445	422,445	422,445	422,445	422,445	422,445
Vehicles	20%	193,722	193,722	193,722	193,722	193,722	193,722
Furniture & Office Equipment	12.5%	6,782	6,782	6,782	6,782	6,782	6,782
Pre-operational Expenses	20%	10,213	10,213	10,213	10,213	10,213	10,213
Contingencies		8,511	8,511	8,511	8,511	8,511	8,511
Total Depreciation		663,917	663,917	663,917	663,917	663,917	663,917
Cummulative Depreciation		663,917	1,327,834	1,991,751	2,655,668	3,319,585	
Cummulative Investment							
Book Value of the Assets		7,457,291	6,793,374	6,129,457	5,465,540	4,801,623	4,137,706
Balance outstand							

ANNEX II: LOAN, INTEREST AND REPAYMENT SCHEDULE(\$)

Years		0	1	2	3	4	5
Loan Receipt		2,224,421					
Loan Repayment	3		741,474	741,474	741,473		
Loan interest	8%		177,954	118,636	59,318		
Total Payment			919,428	860,110	800,791		
Balance outstanding		2,224,421	1,482,947	741,473	-	-	-

ANNEX III: WORKING CAPITAL SCHEDULE(\$)							
Year		0	1	2	3	4	5
Current Assets							
Stock of materials			428,573	375,954	383,335	383,335	383,335
Stock of output			197,872	214,362	230,851	230,851	230,851
			626,445	590,316	614,186	614,186	614,186
Current liabilities			492,860	284,763	230,001	230,001	230,001
Total W/C			1,119,305	875,079	844,187	844,187	844,187
Incremental W/C			(-264,226)	(30,892)		-	-
ANNEX IV: TRADING ACCOUNT (US\$)							
ITEM/YEAR		0	1	2	3	4	5
Materials			13,136,931	14,231,675	15,326,420	16,421,164	17,515,908
Farm/Factory Supplies		4,380,977	2,628,586	2,647,764	3,066,684	3,285,733	3,504,782
Salaries/Wages/Allowances			695,416	753,367	811,318	869,270	927,221
Other Operating Costs							
			16,460,933	17,632,806	19,204,422	20,576,167	21,947,911
Total Operating costs			16,460,933	17,632,806	19,204,422	20,576,167	21,947,911
Sales Revenue			23,180,528	25,112,238	27,043,949	28,975,660	30,907,370
Trading Profit			6,719,595	7,479,432	7,839,527	8,399,493	8,059,459
Trading Profit as% of Sales			28.99%	29.79%	28.99%	28.99%	28.99%
Years		0	1	2	3	4	5
Trading Profit			6,719,595	7,479,432	7,839,527	8,399,493	8,959,459
Total depreciation			663,917	663,917	663,917	663,917	663,917
Loan interest			177,954	118,636	59,318		
Net Profit			5,877,724	6,696,879	7,116,292	7,735,576	8,295,542
			25.36%	26.67%	26.32%	26.70%	26.84%
Cumm. Net Profit			5,877,724	12,574,603	19,690,895	27,426,471	35,722,013
Tax at	30%		1,763,317	2,009,063	2,134,888	2,320,672	2,466,662
Net Profit After Tax			4,114,407	4,687,816	4,981,404	5,414,904	5,828,880
			17.75%	18.67%	18.42%	18.69%	18.86%
Cumm. Net Profit after tax			4,114,	8,802,223	13,783,627	19,198,531	25,027,411

			407					
			4,114,407	4,687,816	4,981,404	5,414,904	5,828,880	
			177,954	118,636	59,318			
			4,292,361	4,806,452	5,040,722			
			0.58	0.65	0.68	0.73	0.79	

ANNEX V: SOURCES AND USES OF FUNDS (US\$)

SOURCES & USES/YEAR		0	1	2	3	4	5
Sources							
Foreign Equity		2,224,421					
Local Bank Loan		5,191,438					
Sales Revenue			23,180,528	25,112,238	27,043,949	28,975,660	30,907,370
Total Sources		7,415,859	23,180,528	25,112,238	27,043,949	28,975,660	30,907,370
Use of Funds							
Total Invest. Costs		7,415,859					
Total Operating costs			16,460,933	17,632,806	19,204,422	20,576,167	21,947,911
Incremental W/C			-	(264,226)	(-30,892)	-	-
Loan Repayment			741,474	741,474	741,473		-
Loan interest			177,954	118,636	59,318		-
Tax at	30%		1,763,317	2,009,063	2,134,888	2,320,672	2,466,662
Total Uses		7,415,859	19,143,678	20,766,205	22,170,993	22,896,839	24,414,573
Balance		-	4,036,850	4,346,033	4,872,956	6,078,821	6,492,797
Balance/CF		-	4,036,850	8,382,683	13,255,639	19,334,460	25,827,257

ANNEX VI: PROJECTED BALANCE SHEET AT THE END OF EACH YEAR (\$)

PERIOD		YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
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ASSETS								
Current Assets								
Cash C/F			4,114 407	8,802,223	13,783,627	19,198,531	25,027,411	
Stock of materials			428,573	375,954	383,335	383,335	383,335	
Stock of output			197,872	214,362	230,851	230,851	230,851	
Total			4,740,8 52	9,392,539	14,397,813	19,812,717	25,641,597	
Investment Assets								
Land		151,064	151,064	151,064	151,064	151,064	151,064	151,064
Buildings & Structures		738,298	719,841	701,384	682,927	664,470	646,013	
Machineries & Equipment		5,199,318	4,776,873	4,354,428	3,931,983	3,509,538	3,087,093	
Motor Vehicles		1,210,764	1,017,042	823,320	629,598	435,876	242,154	
Furniture & Office Equipment		63,830	57,048	50,266	43,484	36,702	29,920	
Pre-operational Expenses		51,064	40,851	30,638	20,425	10,212	-	
Total Investment Book Value		7,414,338	6,762, 719	6,111,100	5,459,481	4,807,862	4,156,244	
TOTAL ASSETS		7,414,338	11,503,571	15,503,639	19,857,294	24,620,579	29,707,641	
LIABILITIES AND EQUITY								
Current liabilities			492,860	284,763	230,001	230,001	230,001	
Other Liabilities			221,919	483,742	652,228	312,609	-	
Loan outstanding		2,224,421	1,482,947	741,473	-	-	-	
Equity		5,191,438	5,191,438	5,191,438	5,191,438	5,191,438	5,191,438	
Cumm. Net Profit after tax		-	4,114,407	8,802,223	13,783,627	18,886,531	24,286,202	
INTERNAL RATE OF RETURN ON INVESTMENT		7,415,859	12,218,350	16,272,144	20,739,523	25,163,189	29,937,642	
CL/CA			0.15	0.09	0.07	0.03	0.01	
CA/CL			6.64	12.23	16.32	36.52	111.49	

ANNEX VII - INTERNAL RATE OF RETURN ON INVESTMENT

Method of Computation: Double Your Money Scenario

Number of years required to double investment money = 3

100/3x75% = 25%

ANNEX VIII-PAYBACK PERIOD

Payback Period Analysis				
	Year	Beginning Balance	Net Profit After Tax	Ending Balance
Cost of investment	0	7,415,859	0	7,415,859
	1	7,415,859	4,114,407	3,301,452
	2	3,301,452	4,687,816	1,386,364
	3	1,386,364	4,981,404	6,367,768
	4	6,367,768	5,414,904	11,782,572
	5	11,782,572	5,828,880	17,611,552

Payback Period = 1.3 Years

ANNEX IX: RETURN ON EQUITY (RoE)

RoE = Net Income After-tax/Shareholders Equity x 100

Net Income After Tax for 5 years = Cumulative Net Profit After Tax = 25,027,411

Shareholders Equity = Initial Equity + Retained Earnings (Cumulative Net Income After Tax)

Net Income After Tax for 5 years	25,027,411
Initial Shareholders Equity	5,191,438
Add: Cumulative Net Profit After Tax	25,027,411
	30,218,849

RoE = 25,027,411/30,218,849 x100 = 82.82

ANNEX X: RETURN ON INVESTMENT (RoI)

RoI = Final Value - Initial Cost/Cost of Investment x 100

RoI = 238%

Final Value	25,027,411
Minus Initial Cost	7,415,859
	17,611,552

Divide by Cost of Investment	7,415,859							
	2.38							
Times 100 =	238							
ANNEX XI: DEBT TO EQUITY RATIO (D/E RATIO)								
D/E Ratio = Company's Total Liabilities divide by its Shareholders Equity.								
Total Liabilities = Current + Long Term Liabilities								
Total Liabilities = 230,001								
Shareholders Equity = Owners Equity + Cumulative Retained Earnings After Tax = 30,218,849								
D/E Ratio = 230,001/30,218,849 = 0.01								
ANNEX XII BREAK-EVEN POINT								
Break-even Point = Gross Profit Margin/Fixed Costs x 100								
Gross Profit = 8,059,459								
Fixed Cost = 21,947,911								
Break-even Point = 8,059,459/21,947,911 x100 = 36.72								

APPENDIX 2: OPERATIONAL COSTS				YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Materials								
Raw materials (local Purchase)				13,042,927	14,129,839	15,216,749	16,303,660	17,390,570
Raw material imports from China				100,003	108,337	116,670	125,004	133,338
Estate and Factory Supplies				2,628,586	2,847,635	3,066,684	3,285,733	3,504,782
		<i>Sub total</i>		15,771,516	17,085,811	18,400,103	19,714,397	21,028,690
Salaries, Wages & Allowances				695,416	753,367	811,318	869,270	927,221
Total Materials and Labour Costs				16,466,932	17,839,178	19,211,421	20,583,667	21,955,911
Other Operating Costs								
Water Supply & Treatment				7,200	7,800	8,400	9,000	9,600
Electricity				14,400	15,600	16,800	18,000	19,200
Rapairs & Maintenance of capital assets				219,634	237,936	256,239	274,542	292,845
Motor Vehicle Running Expenses				108,967	118,050	127,131	136,211	181,615
Estate and Factory Overheads				139,083	150,673	162,264	173,654	185,444

Administrative Overheads			123,438	123,438	123,438	123,438	123,438	
Licences, Permits and Authorizations			18,000	18,000	18,000	18,000	18,000	
Direct Marketing & Travelling Costs			117,578	117,578	117,578	117,578	117,578	
Marketing Overhead costs			47,031	47,031	47,031	47,031	47,031	
Total			795,331	836,106	876,881	917,454	994,751	
GRAND TOTAL			17,262,263	18,675,284	20,088,302	21,501,121	22,950,662	

APPENDIX 3: ANNUAL DEPRECIATION AND AMORTIZATION OF ASSETS

CAPITAL ITEM/YEAR	Scrap Value	Rate	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
Land									
Commulative Investment	0 %	%	151,064						151,064
Annual Depreciation	0%	0%	-	-	-	-	-	-	-
Book value			151,064	151,064	151,064	151,064	151,064	151,064	
Buildings & Structures			738,298						738,298
Commulative Investment			738,298	738,298	738,298	738,298	738,298	738,298	
Annual Depreciation	50%	5%		18,457	18,457	18,457	18,457	18,457	92,285
Book Value - Buildings			738,298	719,841	701,384	682,927	664,470	646,013	
Machineries			5,199,318						5,199,318
Cumulative Investment			5,199,318	5,199,318	5,199,318	5,199,318	5,199,318	5,199,318	
Annual Depreciation	35%	12.5 %		422,445	422,445	422,445	422,445	422,445	2,112,225
Book Value of Asset			5,199,318	4,776,873	4,354,428	3,931,983	3,509,538	3,087,093	
Vehicles			1,210,764						1,210,764
Cumulative Investment			1,210,764	1,210,764	1,210,764	1,210,764	1,210,764	1,210,764	
Annual Depreciation	15%	12.5		193,722	193,722	193,722	193,722	193,722	968,610
Book Value			1,210,764	1,017,042	823,320	629,598	435,876	242, 54	
Furniture & Office Equipment			63,830						63,830
Cumulative Investment			63,830	63,830	63,830	63,830	63,830	63,830	
Annual Depreciation	5%	12.5		6,782	6,782	6,782	6,782	6,782	33,910
Book Value			63,830	57,048	50,266	43,484	36,702	29,920	
Pre-operational Expenses			51,064						51,064
Cumulative Investment			51,064	51,064	51,064	51,064	51,064	51,064	
Annual Depreciation	0%	20%		10,213	10,213	10,213	10,213	10,212	51,064
Book Value			51,064	40,851	30,638	20,425	10,212	-	

Contingencies			42,553						42,553
Cumulative Investment			42,553	42,553	42,553	42,553	42,553	42,553	
Annual Depreciation	0%	20%		8,511	8,511	8,511	8,510	8,510	42,553
Book Value			42,553	34,042	25,531	17,020	8,510		
Total Cumulative Book Value			291,250	252,286	2,322	4,58	35,34	98,430	
Land			151,064	151,064	151,064	151,064	151,064	151,064	
Building and Structures			738,298	719,841	701,384	682,927	664,470	646,013	
Cages and Equipment's			5,199,318	4,776,773	4,354,428	3,931,983	3,509,538	3,087,093	
Motor Vehicles			1,210,764	1,017,042	823,320	629,598	435,876	242,154	
Furniture & Office Equipment's			63,830	57,048	50,266	43,484	36,702	29,920	
Pre-operational Expenditure			42,553	34,042	25,531	17,020	8,510		
Contingencies			42,553	34,042	25,531	17,020	8,510		
Total			7,448,380	6,789,952	6,131,524	5,473,096	4,814,570	4,156,244	