

KUNKAR LIMITED

Feasibility Report

For

**Set Up of Manufacturing Unit of
Building Materials**

By;

KUNKAR LIMITED

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Mwanza

Executive Summary

1 Introduction

This study is done with an objective of preparing a Feasibility Report for M/s KUNKAR LIMITED, of Shinyanga for a project of setting up of Manufacturing Unit of pipes and high pressure cylinders for heavy machines and fire suppressions systems for fire fighting in Mwanza, Tanzania.

The scope of services for the proposal feasibility report for development of manufacturing unit for the production of these materials in Shinyanga include: Market assessment, Development program, land and civil works, project implementation schedule, project cost, financial projections, and conclusion & recommendations.

The overall approach comprised a combination of secondary and primary research. A multi-disciplinary team of appropriate personnel with experience in techno economic studies and market research were deployed for undertaking this assignment.

The assignment commenced with a planning for the primary and secondary research. Initially, our team interacted with KUNKAR LIMITED officials to understand the requirements of the study.

Later, the team continuously interacted with KUNKAR LIMITED for their inputs on the plan of the unit, machinery, the constructing cost, project cost, financing etc.

The data obtained from the secondary and primary research has been analyzed and incorporated in the report. A worksheet model has been prepared for feasibility calculations.

The report is prepared on the basis of best of the information provided by the various stakeholders and associations/agencies. The information in the report should not be claimed and be used as evidence for any purpose.

2 Demographic Indicators & Development – Tanzania

Tanzania has been showing an appreciate growth in the past few years. The development taking place in the country has been in pace with the other developing nations. The GDP in real terms grew by 7.1 % in 2024, compared to 6.7 % in 2023. Over the years the construction has shown a decent increase.

Since the country started to implement economic and institutional reforms, there has been a steady increase of Foreign Direct Investment (FDI) inflows in the economy. Tanzania is among top three recipients of foreign direct investments (FDI) in non-oil producing African countries after South Africa and Ethiopia. Inflows of FDI have risen from US \$ 463.40 million in 2020 to US \$ 12.50 million in 2022.

3 Genesis & Details of the Project

The project involves set up of manufacturing unit of building materials at Shinyanga region

M/s. KUNKAR LIMITED of Dar es Salaam, was incorporated on the 7th October 2007 as private limited liability company under the Companies Ordinance (Cap 212 of the Laws of Tanzania).

The day to day activities would be managed by an individual appointed for the said purpose. It is expected that a significant number of people will be employed, during the construction of the commercial complex and about 20 local citizens would be employed permanently, excluding the security guards, once it becomes operational.

5 Project Cost and Means of Finance

The development cost of the entire project has been estimated to be around US \$ 1.98 million. The major factors contributing towards the cost of the project is the cost of machinery and building construction.

The table below indicates the detailed cost of project:

Table 1: Cost of Project

COST OF THE PROJECT AND MEANS OF FINANCE		
USD		
NO.	PARTICULARS	TOTAL
1	Building and Civil Work	400,000
2	Plant and Machinery	1,200,000
4	Motor Vehicles	240,000
5	Furniture & Fixture	10,000
6	Pre-operative Expenses	50,000
7	Working capital	80,000
	TOTAL	1,980,000

The finance for the project is already arranged for by the promoters. The table below indicated in details the manner in which the investment is going to be arranged:

Table 2: Means of Finance

NO.	MEANS OF FINANCE	TOTAL
1	Foreign Equity	660,000
2	Foreign Loan	1,320,000
	TOTAL	1,980,000

7 Financial Projections

Details of financial projections are attached as appendices to this report. However, in brief the annexed project financials show that the project will be one with a full proof financing scheme.

For the purpose of calculations and projections the following assumptions were made:

1. Long term loan is availed @ 8% per annum
2. The repayment of the loan would start very second year in installments of US\$ 666,667/- per annum.

The detailed calculations of the projected financial are given in the annexure. The Net Present Value for the project comes out to be US\$ 1,109,296/= and the IRR is reasonably good at 19%. Pay Back for the project is estimated to be around 4.59 years.

The next annexure indicates the calculation for the Break Even Analysis and the Margin of Safety. It must be noticed that the average Return on Investment for the five years is more than 22%, which is a very good sign for the investors.

As far as DSCR is concerned we can see that for the coming years it is expected to be more than 1 which means that the company can repay the loan from its current profits only and not require to repay from its accumulated resources.

8 Development Value

The Project's development value to the country is as under:-

The project will generate employment to several people both during the development and after completion. It has been estimated that directly or indirectly this project will provide employment to nearly 20 individuals excluding the security guards.

Government will also earn revenue in terms of various levies on the Company associated with the operation of the complex. Further as indicated in the financial projections the total contribution for five years by way of income-tax itself will be to the tune of about US\$ 778,910. Last but not the least, the manufacturing units are always considered to be a national property and will therefore add to the national wealth.

It may be mentioned here that total investment of US\$ 4.00 million will play a good part in boosting the local economy. Considering all relevant factors it is being recommended that the grant of 0% import duty and VAT deferment on capital goods and deemed capital goods is granted to this project not only to make the project viable but also to catalyse other development benefits that may accrue to the country on acceptance of this project.

1.1 Approach and methodology

Approach

The overall approach comprised a combination of secondary and primary research. A multi-disciplinary team of appropriate personnel with experience in techno economic studies and market research were deployed for undertaking this assignment.

Methodology.

The assignment commenced with a detailed planning for the primary and secondary research. Initially, our team interacted with KUNKAR LIMITED officials to understand the requirements of the study. Later, the team continuously interacted with KUNKAR LIMITED for their inputs on the plan of the commercial complex, the material that would be used, the construction cost, project cost, financing etc.

➤ Secondary Research

A detailed desk research was undertaken to gain a fair undertaking of the construction industry, its trends, market size, best practices etc. The sources from which the secondary data was collected included in-house database, internet,

and various periodicals. The secondary research was used for planning the primary research for the study and indentifying the data to be collected by way of primary research. A detailed desk research was undertaken to gain a fair understanding of the construction industry, its trends, market size, best practice etc. The sources from which the secondary data was collected included in-house database, internet, and various periodicals. The secondary research was used for planning the primary research for the study and identifying the data to be collected by way of Primary research.

➤ **Primary Research**

Interview guidelines were developed for the compilation of the necessary information by way of interview.

1.2 Data Analysis and Report Preparation

The data obtained from the secondary and primary research has been analyzed and incorporated in the report. A worksheet model has been prepared for feasibility calculations.

Report Format

The report is presented in 07 chapters.

Chapter 1 Introduction

This chapter outlines the objectives, scope, approach & methodology for the study.

Chapter 2 Demographic Indicators & Development – Tanzania

This chapter discusses about the demography of Tanzania and the macro-economic developments that are taking place in the Country.

Chapter 3 Genesis & Details of the Project

The chapter discusses the initiation of the project, the stakeholders, location, construction details, components of the projects, employment details and other relevant details.

Chapter 4 Project Cost and Means of Finance

The chapter presents the elements of the project cost and discusses the means of financing for the project.

Chapter 5 Financial Projections

Financial statements including projected income statement, projected cash flow statement and projected balance sheet for the first 05 years of operation and financial indicators such as IRR and payback period are given in this chapter.

The Return on Investment on annual basis for the project has also been calculated.

Chapter 6 Developmental Value

This chapter mentions about the benefits incurring to the nation and the citizens as a result of this implementation of the project in consideration.

Chapter 7 Conclusions and Recommendations

The chapter discusses the conclusions derived from the study and recommendations how to go ahead.

Annexure

1.3 Limitations

The report is prepared on the basis of best of the information provided by the various stakeholders and association/agencies. The information in the report shall not be claimed and be used as evidence for any purpose.

2. Demographic Indicators and

Development – Tanzania.

2.1 Tanzania – The Developing Economy

In the African continent Tanzania is among the fastest developing economies. Tanzania has clinched the top slot in the improvement index as published by the Centre for International Development at Harvard University.

The report titled “The Africa Competitiveness Report 2000/2001” ranks Tanzania as first on improvement index. Investors in Tanzania are highly optimistic of the future of the economy.

Low inflation, a reasonable stable currency, friendly government and peaceful country are what most of the international company chiefs quoted as being economic driving force.

Tanzania has been showing an appreciable growth in the past few years. The development taking place in the country has been in pace with the other developing nations.

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3. Genesis & Details of the Project

3.1 Introduction

The project involves setting up of Manufacturing Plant for pipes and high pressure cylinders for heavy machines and fire suppressions systems for firefighting at Mwanza.

Tanzania is growing commercially and is being viewed positively by outside world. The tourists are becoming more and more interested in viewing the national parks and hidden beauties. Tanzania depends largely on the performance of its agricultural sector for its social and economic development. Like many developing countries it is the agricultural sector that constitutes the major source of national food reserves and, at the same time is an engine for generating foreign exchange and raw materials for basic industries.

However, present economic reforms taking place in the country have started to show that other sectors of the economy like – general engineering and fabrication, tourism, general trade and commerce in non-tradition products, are becoming increasingly important sectors of the economy, especially considering their potential for generating foreign exchange earnings.

As a consequence it is imperative that the need for more and more manufacturing units will be felt and the fact is that there is shortage of such manufacturing units in Dar es Salaam which is the financial capital of the Country.

It is therefore inferred that such project should be undertaken. It is confirm that KUNKAR LIMITED has the required expertise for the Project.

With ready market, availability of proven management expertise and availability of funding to the extent needed, the success of the project is guaranteed.

3.3 Ownership:

Guo juncheng and Huong shouyong are the promoters and first directors of the KUNKAR LIMITED. Its head office is in Mwanza.

3.4 Location

The site is to be developed at Shinyanga and company has lease the land but plan to purchase in future depending with production and market. This place is well served with the necessary utility facilities, including the central sewerage system for all liquid waste. Communication links are also available.

3.5 Day to day management.

The management of the company has the required expertise in-house. The day to day activities would be managed by an individual appointed for the said purpose.

3.6 Employment

It is expected that a significant number of people will be employed, during the construction of the commercial complex and about 20 local citizens would be employed permanently, excluding the security guards, once it becomes operational. Security personnel will be contracted from an outside security firm.

3.7 Strategies

In order to achieve the objectives it is planned to implement the following strategies;

- Establish an effective preventive maintenance programme of the equipment, which will ensure sustainable equipment availability for operation.
- Establish a quality assurance and control system that will ensure provision of quality products and services.
- Conduct regular evaluations of production and servicing processes to ensure optimum costs of products and services.
- Devise and implement productivity improvement measures
- Develop and implement an effective marketing policy
- Develop and implement an advertising and promotion programme
- Establish effective financial and resources management.

3.8 Market

Recent reforms taking place in the economy indicate that there is an increase in demand for these kinds of balls. The following are some of the factors that have contributed to such an increase in demand for these products in the country:-

- Increased level of mining sites in Tanzania and neighbouring countries.
- Value addition on material found in Tanzania instead of importing the same.
- Increase of cement factories which use iron grinding balls on during productions

- Increased general level of investments in industrial activities which are the major users of industrial inputs;
- Increase transit trade between Tanzania and its neighbours especially – Uganda, Rwanda, Burundi, Malawi, Zambia and the Democratic Republic of Congo.

These factors have led to increased demand for general engineering activities for products in the country. Furthermore, these factors have created the impetus for increased inflow of investment capital by foreign and local private investors who now have decided to venture in the importation and industrial raw materials.

The reforms which are now being introduced in this sector aim at influencing the inflow of and increased supply of both capital goods and other industrial productions and their distribution in the country and beyond and national borders.

CYLINDERS PRODUCTION AND USES

Pipes are typically manufactured from carbon steel, copper, or stainless steel and are joined using welding or threading. High-pressure cylinders are made from specialized steel alloys and manufactured using processes like deep drawing and seamless tube formation to withstand immense internal pressure, followed by rigorous pressure testing and hydrostatic testing. For heavy machinery and fire suppression, these components are integrated with specialized valves, detection systems, and dispensing nozzles to create functional, high-pressure systems designed for safety and reliability.

Pipes

1. 1. Material Selection:

Pipes for heavy machinery and fire suppression systems are commonly made from carbon steel, stainless steel, or copper, chosen for their strength, durability, and corrosion resistance.

2. 2. Manufacturing Process:

- **Forming:** Steel is shaped into pipes through processes like welding together metal sheets or by creating seamless pipes from solid billets.
- **Joining:** Pipes are then joined using threaded fittings or by welding, depending on the system's requirements and pressure ratings.
- **Finishing:** The pipes are often coated or lined to prevent internal corrosion and ensure a smooth flow of the fire suppression agent.

High-Pressure Cylinders

1. 1. Material Selection:

High-pressure cylinders are made from specialized steel alloys designed to handle extreme pressures.

2. 2. Manufacturing Process:

- **Tube Forming:** Cylinders are often created using seamless tube formation, where a steel billet is pierced and then drawn into a seamless tube.
- **Shaping:** The cylinder is then subjected to deep drawing and forming processes to give it its characteristic shape and dimensions.
- **Heat Treatment:** The formed cylinder is heat-treated to achieve the necessary strength and ductility.
- **Safety Testing:** Cylinders undergo rigorous testing, including visual inspections, to ensure they are free from defects, followed by pressure testing.
- **Pressure Testing:** A critical step is the hydrostatic test, where the cylinder is filled with water and pressurized to a level significantly higher than its operating pressure to confirm its structural integrity.

Integration for Heavy Machinery and Fire Suppression

1. 1. System Design:

The pipes and cylinders are designed as part of a complete system, which also includes detection devices, valves, control panels, and dispensing nozzles.

2. 2. Assembly:

Components are assembled according to precise specifications. For example, a high-pressure fire suppression system might use hydraulic oil to power a pump that directs hydraulic oil through a pressure line to a hydraulic equipment.

3. 3. Functional Integration:

The high-pressure cylinders store the suppression agent (like CO2), and the piping delivers it to the discharge nozzles.

4. 4. Testing and Certification:

Before deployment, the entire system undergoes extensive testing to ensure all components function correctly, meet safety standards, and can reliably discharge the suppression agent when needed.

4. Project Cost and Means of Finance

4.1 Cost of Project

The development cost of the entire project has been estimated to be around US\$ 1.98 million. The major factors contributing towards the cost of the project is the cost of machinery and cost of equipments.

The table below indicates the detailed cost of project.

Table : Cost of Project

COST OF THE PROJECT AND MEANS OF FINANCE		
USD		
NO.	PARTICULARS	TOTAL
1	Building and Civil Work	400,000
2	Plant and Machinery	1,200,000
4	Motor Vehicles	240,000
5	Furniture & Fixture	10,000

6	Pre-operative Expenses	50,000
7	Working capital	80,000
	TOTAL	1,980,000

Considering the size of this project, and also keeping in mind the 3 months of implementation period, the contingencies and pre-operational expenses have been estimated at US\$ 170,000/-

Stock of Consumables has been considered at 1.5 months, and Debtors at 1 months.

On the other hand, 40 days credit has been considered from creditors.

5. Financial Projections

Details of financial projections are attached as appendices to this report. However, in brief the annexed project financials show that the project will be one with a full proof financing scheme.

The financing is so prudently designed that the smooth cash flow position is guaranteed throughout the gestation period.

5.1 Assumptions

For the purpose of calculations and projections the following assumptions were made:

Table h: Assumption for the project

Sr No	Particulars	
1.	Long Term Loan is availed @ 8% per annum	
2.	The repayment of the loan would start very second year in the instalment of USD 666,667/- p.a.	
3.	Production and Rate of Nuts & Bolts	

	Average Production per day in Tons	3
	Average Rate per Ton	3,000
	Number of days in year considered	300
	Turnover @ 100% capacity (A)	2,700,000
4.	Production and Rate of Nail Wire	
	Average Production per day in Tons	4
	Average Rate per Ton	1,000
	Number of days in year considered	300
	Turnover @ 100% capacity (B)	1,200,000
	Turnover @ 100% capacity (A+B)	3,900,000

The chart below indicated the summary of the projected profits of the company from the first five years of the operations.

Over a period of five years operations the total amount of Reserves generated shall be to the tune of US\$ 1,817,456. It shows a comfortable position for the company.

6. Developmental Values

The project's development value to the country is as under:-

1. The project will generate employment to several people both during the construction and after completion. It has been estimated that directly or indirectly this project will provide employment to nearly 20 individuals excluding the security guards.
2. Government will also earn revenue in terms of various levies on the Company associated with the operation of the complex. Further r as indicated in the financial projections the total contribution for five years by way of income-tax and withholding tax will be to the tune of about US\$ 778,910.
3. The project will also contribute directly and indirectly in the generation of foreign exchange.
4. Last but not least, the manufacturing units are always considered to be a national property and will therefore add to the national wealth.

7. Conclusions & Recommendations

The economic impact from implementing and operating it is also positive.

Since the project is technically feasible, financially and economically viable, socially and from nation's point of view desirable a fast implementation thereof is recommended. It is important that there are no cost overruns so as to enable the realization of the benefits as outlined above.

It may be mentioned here that total investment of US\$ 1.98 million will play a good part in boosting the local economy.

Considering all relevant factors it is being recommended that the grant of 0% import duty & VAT deferments on capital goods and deemed capital goods is granted to this project not only to make the project viable but also to catalyze other development benefits that may accrue to the country on acceptance of this project.