RUBY TECHNOLOGY MANUFACTURING COMPANY LIMITED

Feasibility Report

For

Set Up of Manufacturing of Steel Structures

By;

RUBY TECHNOLOGY MANUFACTURING COMPANY LIMITED

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MLANDIZI

Executive Summary

1 Introduction

This study is done with an objective of preparing a Feasibility Report for M/s RUBY TECHNOLOGY MANUFACTURING COMPANY LIMITED, of Dar es Salaam for a project of setting up of Manufacturing Unit of Steel Structures in Dar es Salaam Region, Tanzania.

The scope of services for the proposal feasibility report for development of manufacturing unit for the production of building materials in Dar es Salaam Region, 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 RUBY TECHNOLOGY MANUFACTURING COMPANY LIMITED officials to understand the requirements of the study.

Later, the team continuously interacted with RUBY TECHNOLOGY MANUFACTURING COMPANY 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 2017, compared to 6.7 % in 2016. 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 2017.

3 Genesis & Details of the Project

The project involves set up of manufacturing unit of building materials at Dar es Salaam Region.

M/s. RUBY TECHNOLOGY MANUFACTURING COMPANY LIMITED of Dar es Salaam, was incorporated on the 13th August, 2024 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 60 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 $ 1.0 million. The major factors contributing towards the cost of the project is the cost of machinery and building construction.

It has been conveyed to us that the promoters have already had consent form the bank. 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$ 50,000/-

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:

COST OF THE PROJECT AND MEANS OF FINANCE		
USD		
NO.	**PARTICULARS**	**TOTAL**
1	Building and Civil Work	100,000
2	Plant and Machinery	600,000
4	Motor Vehicles	30,000
5	Furniture & Fixture	10,000
6	Pre-operative Expenses	50,000
7	Others	10000
8	Working Capital	200,000
	TOTAL	**1,000,000**

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

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 that I which means that the company can repay the loan from its current profits only and note 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 60 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$ 0.83 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 RUBY TECHNOLOGY MANUFACTURING COMPANY LIMITED officials to understand the requirements of the study. Later, the team continuously interacted with RUBY TECHNOLOGY MANUFACTURING COMPANY 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 identifying 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 Steel Structures at Dar es Salaam Region.

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 steel structures in Dar es Salaam and other neighboring regions or Tanzania as a whole as one of the key financial input of the Country regions.

It is therefore inferred that such project should be undertaken. It is confirm that RUBY TECHNOLOGY MANUFACTURING COMPANY 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:

Ren Songfeng, and Qu Gongpu are Shareholders, promoters and first directors of the RUBY TECHNOLOGY MANUFACTURING COMPANY LIMITED. Its head office will be in Coast Region.

3.4 Location

The site is to be developed at Mikocheni B industrial Area, Dar es Salaam. 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 60 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.
- Device and implement productivity improvement measures
- Develop and implement an effective marketing policy
- Develop and implement and advertising and promotion programme
- Establish effective financial and resources management.

3.8 Market

Recent reforms taking place in the economy indicate that there is and increase in demand for steel and steel structure. 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 rehabilitation and expansion of roads by the Government and international assistance agencies – which has subsequently resulted in increased kilometers of passable roads by small and heavy duty vehicles.
- Rise in people's standard of living and a change in people's consumption patterns;
- General improvement in the national economy, especially the balance of payments which has made it possible for the Government to achieve greater capability to import critical products into the country;

- 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 lead 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.

3.9 The Technology & Process

Steelmaking is the process of producing steel from iron ore and/or scrap. In steelmaking, impurities such as nitrogen, silicon, phosphorus, sulfur and excess carbon (most important impurity) are removed from the sourced iron, and alloying elements such as manganese, nickel, chromium, carbon and vanadium

are added to produce different grades of steel. Limiting dissolved gases such as nitrogen and oxygen and entrained impurities (termed "inclusions") in the steel is also important to ensure the quality of the products cast from the liquid steel.

Making the Iron

To create pure steel, the products that go into it- lime, coke and iron ore- must be made into iron. These are all put into a blast furnace and melted down to create what is called molten iron or hot metal. The iron still has many impurities at this point, and they will have to be removed to ensure the metal is not brittle.

Primary Steel Making

To get the impurities out, the molten metal is infused with scrap steel. Oxygen will be forced through the furnace as well, which gets out a lot of the carbon and other impurities. For electric furnaces, electricity will be forced through the furnace and the same results can be achieved. After this process has finished, we have raw steel.

Secondary Steel Making

The different grades of steel are used for different tasks. The grading is based on which elements are still in the metal, such as carbon dioxide. A lot of the carbon will be removed, but aluminium will take its place to create a Drawing Quality steel. To create structural steel, there is more carbon left inside, and this gives the steel more tensile strength. Certain techniques can be implemented to alter the level of impurities left, including:

- Stirring
- Raising or lowering the temperature
- Removing the gasses
- Ladle injection

When the process is over and the right grade has been achieved, the next step can begin.

Continual Casting

Next, the steel in its molten form is cast into cooling moulds. This allows the steel to become hard, and the steel is drawn out of there while it is still hot. Guided rollers are used to pull it out and then the steel is cut into the desired lengths. It may be used for beams, billets, slabs or other items, and when the parts are fully cooled they are sent elsewhere for primary forging.

Primary Forging

In this step, the rough cast items are formed into shapes through a process called hot rolling. This get rid of defects in the shape and creates the desired quality of steel. This process can be used to make seamless tubing, long and flat products and a variety of bespoke items.

Secondary Forming

To create the final shape of the steel there are a number of secondary techniques that can be used, including:

- Coating
- Thermal treating
- Joining
- Pressing
- Drilling
- Machining
- Riveting

That is the entire process by which steel is formed. If you are creating project out of steel and would like some professional advice about what technique to use or what type of steel to implement then contact us. We can take your design plans and turn them into the products you want to ensure the success of your project. Call us today for a free quote.

Production Capacity

The project expect to produce 6,000 Tons of steel per day as per secondary modern type of machines

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$ 0.83 million. The major factors contributing towards the cost of the project is the cost of machinery and cost of equipment's.

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.

5.2 Financial Indicators

Considering the usage and demand of Steel Structures, it can be safely presumed that the premises will safely enjoy 65% occupancy from year 1 and then 5% increase every year. On the basis as mentioned above, the profitability for the company in year 1 has been worked out as following:

Table i: Annual Profitability of the Company

Particulars	**Year 1**
Capacity Utilisation	65%
Sales Turnover	2,535,000
Less Cost of Production	1,394,250
Gross Profit	1,140,750
Less	
Administration Expenses	202,800
Marketing Expenses	25,350
Financial Expenses on Long Term Loan	231,667
Depreciation	481,432
Total Indirect Cost	941,249
Operating Profit Before Tax	199,501
Taxation @ 30%	59,850
Operating Profits After Tax	139,651
Proposed Dividends	-
Cumulative Net Cash Profits CF to Balance Sheet	139,651
Net Cash Profit from Operations	621,083

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 ate 19%. Pay Back Period for the project is estimated to be around 4.59 years.

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

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 60 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.

7.5 IMPLEMENTATION SCHEDULE

The company lease a warehouse. January 2025 the company will Import machines and equipment's which will expected to reach on March/April 2025.

The installation process will finish before July/August 2025, and startup of project will be expecting to be on December 2025.

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$ 1.0 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.

FINANCIAL STATEMENTS

INVESTMENT BREAKDOWN

COST STRUCTURE				AMOUNTS USD	
PARTICULAR					
Land and Buildings				100,000	
Plant & Machines				600,000	
Motor Vehicles				30,000	
Furniture & Fixtures				10,000	
Pre Expenses				50,000	
Others				10,000	
Working Capital				200,000	
TOTAL				**1,000,000**	

FIXED ASSETS SCHEDULE

NAME OF ASSETS		YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Land and Buildings		100,000	95,000	90,000	85,000	80,000
Plant & Machines		600,000	480,000	360,000	240,000	120,000
Motor Vehicle		30,000	22,000	17,000	12,000	7,000
Furniture & Fixtures		10,000	8,750	40,000	35,000	30,000
Total		**740,000**	**605,750**	**507,000**	**372,000**	**237,000**
Depreciation		**YEAR 1**	**YEAR 2**	**YEAR 3**	**YEAR 4**	**YEAR 5**
Land and Buildings		5,000	5,000	5,000	5,000	5,000
Plant & Machines		120,000	120,000	120,000	120,000	120,000
Motor Vehicles		8,000	5,000	5,000	5,000	5,000
Furniture &Fixtures		1,250	1,250	1,250	1,250	1,250
ANNUAL DEPRECIATION		**134,250**	**131,250**	**131,250**	**131,250**	**131,250**
CLOSING FIXED ASSETS		**605,750**	**474,500**	**375,750**	**240,750**	**105,750**

OTHER OPERATING COST

Other Operations Cost		YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Motor Vehicle running expens		23,000	25,070	27,326	29,786	32,466
Salaries and Wages		20,600	22,660	24,926	27,419	30,160
Adminitrative Overhead Costs		29,000	31,900	35,090	38,599	42,459
Utility Costs		27,000	29,700	32,670	35,937	39,531
Interest on Loan		74,400	66,960	60,264	54,238	48,814
Communication Exepnses		26,000	28,600	31,460	34,606	38,067
Total Costs		**200,000**	**204,890**	**211,736**	**220,584**	**231,497**

PROJECTED BALANCE SHEET					
	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Fixed Assets	740,000	605,750	507,000	372,000	237,000
Long term Assets					
Depreciation	134,250	131,250	131,250	131,250	131,250
Total long termassets	**605,750**	**474,500**	**375,750**	**240,750**	**105,750**
Current Assets					
Cash	3,528,730	4,058,040	2,632,581	4,941,437	7,570,679
Account Receivable	200,000	230,000	264,500	304,175	349,801
Inventory	0	0	0	0	0
Total Current Assets	**3,728,730**	**4,288,040**	**2,897,081**	**5,245,612**	**7,920,480**
Total Assets	**4,334,480**	**4,762,540**	**3,272,831**	**5,486,362**	**8,026,230**
Curent Liabilities					
Accounts Payable	50,000	57,500	66,125	76,044	87,450
Other Current Liablit	6,750	7,763	8,927	10,266	11,806
Subtotal Current Liabi	**56,750**	**65,263**	**75,052**	**86,310**	**99,256**
Long term Liabilties					
Long term Liabilitie	0	0	0	0	0
Total Liabiities	**56,750**	**65,263**	**75,052**	**86,310**	**99,256**
Captil and Reserves					
Owners Contribution	1,000,000	1,111,875	1,348,419	1,729,395	2,283,952
Retained Earning	**55,125**	**171,281**	**305,924**	**468,247**	**663,795**
Total Capital	**1,111,875**	**1,348,419**	**1,729,395**	**2,283,952**	**3,047,002**

PROJECTED INCOME STATEMENT						
		YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Sales Revenue		450,000	540,000	648,000	777,600	933,120
Cost of Sales		90,000	90,000	90,000	90,000	90,000
Gross Profit		**360,000**	**450,000**	**558,000**	**687,600**	**843,120**
Operating Expenses						
Administrative Overhead						
Costs		29,000	29,290	29,583	29,879	30,178
Motor Vehicle running		23,000	23,230	23,462	23,697	23,934
Salaries and Wages		20,600	20,806	21,014	21,224	21,436
Depreciation		134,250	135,593	136,948	138,318	139,701
Utility Costs		27,000	27,270	27,543	27,818	28,096
Insurance		25,000	25,250	25,503	25,758	26,015
Interest on Loan		74,400	75,144	75,895	76,654	77,421
Total Expenses		**281,250**	**284,063**	**286,903**	**289,772**	**292,670**
Profit before Tax		**78,750**	**165,938**	**271,097**	**397,828**	**550,450**
Tax (30%)		23,625	49,781	81,329	119,348	165,135
Profit After Tax		**55,125**	**116,156**	**189,768**	**278,479**	**385,315**