

FEASIBILITY STUDY AND BUSINESS PLAN

FOR

THE ESTABLISHMENT OF A GRANITE QUARRY

OPERATIONS AND PREMIX CONCRETE
PRODUCTION BUSINESS

FOR

GUANGTANSHENG INVESTMENT COMPANY LIMITED



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CHAPTER ONE

1.0 EXECUTIVE SUMMARY

1.1 The project

This investment proposal sets out to examine the financial viability and economic desirability of the acquisition of quarrying machinery by Guangtansheng Investment Company Limited to expand and develop granite aggregates quarrying for local consumption and acquisition of necessary working capital to run the Company profitably.

The project also involves a forward integration process of establishing a pre-mix batch processing plant for the production of ready-mixed aggregate concrete to be delivered to construction sites ready for use by contractors. While the quarry will be located at Muungano Village Chamwino District in the Dodoma Region Area the pre-mix batch concrete plant will be located at Muungano along with the delivery depot also used as bulk storage of granite aggregate to facilitate quick delivery to customers. The major construction activities in Dodoma and other nearby Regions and along the Iringa, Morogoro, Singida and Arusha Roads will be supplied from this site. Various concrete and cement products like paving slabs, stormwater and sewage pipes and culverts, cement blocks etc will also be produced at the same site.

1.2 The Market

There is a ready market for the company's products in Tanzania specifically in Dodoma where construction activities have increased tremendously during the past five years. Currently, there are twelve other quarries near and around Dodoma which supply aggregate to contractors in and around Dodoma but the volumes produced are inadequate to meet contractors' requirements. Several big projects require granite products as follows:

Project	Granite Requirements
Standard Gauge Railway Line (SGR) Dsm-Kigoma Mwanza (Dar- Moro section)	Ballast and granite concrete
Ruvu Dry Port	granite concrete
Bagamoyo New Port	granite concrete
Public Private Partnership Dar -Chalinze – Morogoro- Dodoma: 6 lane Road (Dar Moro section)	granite concrete and culverts
Mlandizi- Bagamoyo Railway Bypass	granite concrete and culverts
Mlandizi -Bagamoyo Road Bypass	granite concrete and culverts
Several High Rise Buildings in Dodoma and other Regions.	granite concrete, premixed etc

There are five pre-mix or concrete batch production companies in Dodoma, four of which are owned by construction companies and cater for their own needs. Only one of them has excess capacity and supplies limited quantities of pre-mix concrete to other contractors. Despite the presence of these competitors in the market the company’s marketing strategy, superior quality of the products, and timely delivery of the company products will enable it to compete effectively. The marketing plan aims at controlling approximately twenty-five percent (35%) of the market in Dodoma and approximately twenty percent (30%) of the remaining market in the country.

1.3 Management and Organization

The intended activities of the company call for an organizational structure that is self-supporting and capable of attracting high-caliber staff because of the attractive recruitment procedures and remuneration packages. A training program will be instituted so that all technical jobs are manned by capable Tanzanians and a few foreigners. Some of the incentives will include free on-the-job training, and study tours to the machinery and equipment suppliers to familiarize the employees with the machinery operations and maintenance. Other specialized services like legal counsel, auditors, and transporters will be hired as necessary while operational, stores, and accounting manuals will be prepared by external consultants for permanent use by the company to ensure consistency and efficiency and ensure smooth operations.

1.4 Capital Cost and Capitalization

The total cost of the project is envisaged to be **US \$ 5,000,000** which will cover pre-operational expenses, machinery and equipment purchase, local transport, handling and installation, motor vehicles and office buildings, and operational systems. This investment will be financed through investors' equity and a short/medium-term loan. The investors will provide a total of **US \$ 2,200,000** as equity and local banks will provide a short/medium term loan of **US \$ 2,800,000** repayable in five years with one one-year grace period at an interest rate of **8.5%** per year.

1.5 Financial Appraisal

Based on the various assumptions contained in the schedules, to this report, the net sales are expected to rise from **TShs. 43,301,988,000** in year one to **T.shs.102,639,301,000** in year ten and profit after tax from the business operations of this project is expected to rise from **TShs. 3,181,421,000** in year one to **TShs. 15,486,714,000** in year ten. By the end of year 10 the company will have accumulated, reserves of **TShs. 83,577,824,000** if no dividends are paid out.

The company's cash generation from operations is good throughout the period under consideration. Cash balances accumulate rapidly from **TShs. 3,181,421,000** in year one to **TShs. 92,849,295,000** in year 10.

The company's internal rate of return (IRR) before interest and taxes is **28%**. The payback period is **two years and three months**. All these tests confirm the financial viability of the project.

1.6 Economic Appraisal

In addition to the proven commercial viability of this project, it is also economically viable on several parameters.

The project will attract foreign exchange through sales in foreign currency to foreign construction companies which are more than 50% in the class one rating according to the Tanzania Contractors Registration Board. The foreign exchange impact on the economy is thus quite substantial.

The project will generate employment for 60 new jobs on permanent terms. Over 1,000 indirect employment opportunities will be generated through forward and backward linkages. This will have a big effect on the economy by way of family members of employees and other people who will be supported by the workers.

The project will contribute substantially, to Government revenue by way of taxes, levies, royalties, and licensing fees.

The project will enhance forward linkages in the granite aggregates and construction industries in the economy.

1.7 Conclusion

This feasibility report shows that the project is financially profitable, economically desirable, commercially viable, and socially acceptable. The project is based on a well-founded base as Bagamoyo Mining Limited management has considerable experience and the company has the financial ability to undertake this business.

Based on the commitment of the Management of this company and with the support of short/medium-term financing institutions, Bagamoyo Mining Limited will be capable of generating a big turnover with a big impact on Tanzania's economy.

It is therefore recommended that this project with the objectives and span of interest and magnitude demonstrated above, be given full support by a short/medium-term loan from banks and all other institutions concerned.

CHAPTER TWO

2.1. Name and Ownership of the Company

The Name the company is Guangtansheng Investment Company Limited.

2.2. Share Capital

The Authorized Share Capital of the Company is One Hundred Million Tanzania Shillings (TShs 2,524,200,000) divided into 100 shares of Tanzania Shillings One Thousand Each (TShs 25,242). These are issued to the Directors of the company who are all Tanzanians and shareholders in the company as follows:-

Name of Shareholder	Profession	Percentage of shares held.
JOHN VEDASTO RWEHUMBIZA	Businessman	60
QUAN ZHENG	Businessman	20
QUAN WEI	Businessman	20

The directors have for most of their professional service worked with the government and the private sector and held senior positions in management, planning, designing, and execution of both rural, urban, and local government issues. They are highly conversant with the mining and housing sector in Tanzania. An associated company dealing in water borehole drilling run by Mr. John Vedasto Rwehumbiza is also linked to this organization and will be assisting in the granite blasting operations as a subcontractor.

2.3. ACTIVITIES

The objectives and activities for which the company is established are as follows:-

- (a) To carry on the business of quarrying of granite, limestone, quartz, feldspar, and sand and buying and selling of minerals of all sorts and kinds in Tanzania and elsewhere and trading in minerals in and outside Tanzania.
- (b) To apply for, purchase, take on lease, minerals claims, and mining rights and licenses of any nature whatsoever in respect of any minerals within Tanzania or elsewhere.
- (c) To purchase, take on lease or otherwise acquire for any interest therein, and to hold, build upon, work exercise, develop, finance and turn to account, building plots and lands of any nature and of any tenure in Tanzania or elsewhere and to sell, let on lease or otherwise dispose thereof and grant rights there over.
- (d) To carry on business of sellers, and distributors and to extract, treat, cure, submit to any process of manufacture and prepare for market, deal in and turn to account and agricultural or forest produce of any description whatsoever.

2.3.1 Offices

The company has a registered office in Dar es Salaam at Dar Free Market Second Floor near Century cinema along Ally Hasan mwinyi Road. The company also plans to have other two field offices, one at the mining and granite quarry site about 10 km off the Morogoro-Dodoma Highway turning left at Muungano Village at Chamwino on the Dar-Morogoro Highway.

2.3.2. Legality of the Borrower and the Business.

The company is a private limited liability Tanzanian Company registered under the Companies Ordinance (Cap 212) in the name of Guangtansheng Investment Company Limited Ltd that, as the name implies, specializes in mining of both granite and limestone aggregates for the construction industry in Tanzania. The Company was incorporated on 25th March 2024 under Certificate of Incorporation Number 173356951.

2.5 Purpose of the Project

The purpose of the project is to purchase quarrying, machinery and equipment, installation of the mining and processing machinery and equipment at the mining and quarry site at Muungano area in Chamwino District in order to mine and crush the granite into aggregate and transport it by trucks and the pre-mix batch concrete and other cement products to customers in Dodoma and elsewhere in Tanzania hence run the mine/quarry profitably. The investors have already obtained Ten (10) the mining licences (PML'S) from the Ministry of Energy and Mining covering an area of 120,000 sq metres of granite reserves. They have also undertaken discussion with the Chamwino Town Planning Committee to purchase an area where the pre-mix concrete plant will be installed. The premises will also be utilized for production of various cement products and as a storage area for bulk aggregate awaiting delivery to customers. Once the machinery and equipment arrive on site, the erection and installation will take ninety days and operations will start soon after. The suppliers of the machinery will send five qualified engineers and technicians to supervise and assist the local personnel in the installation of the machinery testing and commissioning. They will also train the local personnel on the operations of the machinery and equipment.

CHAPTER THREE

3.0 ECONOMIC ASPECTS OF THE PROJECT.

3.1 Employment Generation

The granite aggregates quarry will create employment for **60** permanent employees. The cost per job created is **Shs. 5,611,800** per annum, which works out to **Shs. 336,708,000** for sixty employees per annum. Another **800** jobs will be created through indirect employment, first on the backward linkages, the transporters who deliver the product to the premix batch plant and onwards to the contractors, the producers of concrete articles and on the forward linkage on the employment created through building contractors and their sub contractors.

3.2 Foreign Exchange Generation, Impact and Diversification Plans

The company intends to sell 100 per cent of its goods to the local market but due to the existence of many foreign contractors undertaking large projects in Tanzania about 30% of the sales will be paid for in foreign currency. The company will be able to retain 100 percent of these payments to pay for all of its foreign procurements like valuable inputs and spare parts for the quarry plant and machinery without requesting the Central Bank for funds. This will make the company a large contributor of foreign exchange earnings to the National Foreign Exchange Reserve. This impact is quite substantial.

On diversification, the company plans to set up concrete articles manufacturing facilities which will produce paving slabs, kerb stones, cement blocks, storm water and sewerage water pipes etc using the residual crusher dust produced through the process of crushing the granite to produce aggregate.

3.3 Government Revenue

The project will generate revenue to the Government as follows:-

Import duties

Excise duties

Vehicle registration fees and taxes

Quarrying license and royalties

Corporate taxes (income)

Payroll levy

Skills development levy

Personal income tax (PAYE)

Withholding taxes on interest/dividends on the distribution of profits

Business licenses

Export taxes

Land rent and property taxes

Although the company will be entitled to the incentives under the Investment Centre Act (since the amount invested is greater than \$ 300, 000 for a joint venture with foreign majority shareholding to qualify as an Approved Enterprises) as an inducement to the investors, the taxes become payable after four years.

3.4 Incentives Available under Tanzania Investment Centre Act 1997.

Under the industrial classification by Tanzania Investment Centre, the project will be classified under the Lead Sectors where it will qualify for a number of incentives under the TIC Certificate Of Incentives since the fixed investment for new investment is in excess of at least \$ 300,000 for projects whose majority shares are owned by foreigners. Other incentives include:-

The recognition of private property and protection against any non commercial risks.
Reduced import tariff on project capital items (5% investment in priority sectors and zero % for investments in lead sectors):

Favorable investment allowances and deductions (100%) on industrial buildings, plant and machinery and on agricultural expenditure;

Deferment of VAT payment on project capital assets

Import duty drawback on raw materials

Zero-rated VAT on manufactured exports

Straight line accelerated depreciation allowance on capital goods

Yearly appreciation of unrecovered capital investment in mining

A five year carryover of all business losses against future profits

A reasonable corporate tax rate 30% and low withholding tax rates; on dividends (10%) and on loan interest (0%)

The right to transfer outside the country 100% of foreign exchange earned, profits and capital

The ease of obtaining other permits such as residence/work permits, industrial license, trading license etc

Automatic permit of employing up to five foreign nationals on the project holding Certificates of Incentives from the TIC.

3.5 Forward and Backward Linkages

On the macro-economic level there will be forward and backward linkages. The backward linkage will be for the people of Dodoma and neighboring townships to be able to get quality granite building materials for their construction projects. Other linkages are to the products of mining and water supply, electricity, communication services, fuel and oil supply, vehicles and equipment maintenance service used by the quarry. The forward linkages will be to the construction industry, the transporters

who deliver the products to the various building contractors to Dodoma and the neighboring townships.

3.6 Economic Rate of Return

The economic rate of return has been calculated on the total investment without any shadow coefficients because most of the transactions are based in Tanzania Shillings, which are very easily convertible to foreign exchange. With the above approach the Economic Rate of Return (**ERR**) as shown in the schedules to this study is quite high for the mining and concrete articles manufacturing industry.

CHAPTER FOUR

4.0 TECHNICAL ASPECTS

4.1 Project Location.

Bagamoyo Mining Limited quarry is located at Muungano Area in Chamwino District in the Dodoma Region.

4.2 Available Infrastructures.

The mining site in at Muungano in Area in Chammwino District can be reached by one major highway The road to the mine site is passable throughout the year. On telecommunications, Chamwino is linked to TTCL network for land lines for telephones and fax services while mobile service phone providers like Tigo, Vodacom and Zein also provide services. There is a Three Phase Electricity supply at Msata Minor Settlement and a connecting power supply line to the mine site. Due to frequent electricity supply interruptions, the company will install an 850 KVA electricity standby generator at the site to ensure uninterrupted electricity supply for smooth operations.

The site at Chalinze Township shall comprise of a five acres plot with two large factory buildings, a one storey office building a main store building, a generator building and the necessary ablution buildings. The area is well served with the necessary infrastructure like roads, water, electricity and telephone services.

4.3



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Characteristics of the Granite Available at Muungano Quarry Site

Promoters of the project have issued with Primary **Mining Licences (PMLs)** by the Ministry of Minerals and

Energy (Central Zonal Office) for granite rock basically as **building materials**. The area is

said to contain not less than 45 million cubic meters of granite rock that can be economically mined. In November 2006 the Promoters requested the Department of Geology of the University of Dar es salaam to carry out engineering tests of samples collected from the quarry site and the results were as follows:-

4.3.1 Petrography Analysis

Rock type quartz feldspathic GNEISS with garnet. Mineral content from two samples (Quartz 36-60, feldspar 15-16, biotite 1-2 hornblende 1-2 garnet 15-16, opaques 2-3)

4.3.2 Engineering Tests

Density (kg/m ³)	3020
Water Absorption (%)	0.6
Aggregate crushing value	15-20
Aggregate reactivity value	18-20
Unconfined Compressive strength (MPa)	200

4.4 Procurement of Quarrying and Transport Equipment and other equipment.

The management of Guangtansheng Investment Company Limited has made a careful evaluation of their machinery and equipment requirements and needs which are shown below.

- 1) One complete granite crushing plant with primary and secondary crushers with a capacity of producing 300 tons per hour of crushed products.**
- 2) Two drilling machines.**
- 3) One excavator with chain wheel equipped with a drilling hammer.**
- 4) One back hoe excavator.**
- 5) One mobile shovel.**
- 6) One 850 KVA standby Generator**
- 7) Two ten tons capacity mining trucks.**
- 8) One water pump**
- 9) Five forty tons capacity transport trucks.**
- 10) One thirty passenger's capacity bus.**
- 11) Two 4WHD double cabin pickups**
- 12) One welding machine**
- 13) Four hand drillers**
- 14) One forklift**

The Pre-mix Concrete Plant which will be located at Muungano Village at Chamwino will have the following machinery and equipment.

- 1) One Complete Concrete Mixing Plant with a capacity of mixing 120 cubic meters of concrete per hour.**

- 2) One 100 KVA standby generator.
- 3) Five ten tons capacity rotating tankers.
- 4) Two pneumatic pumps for delivery of concrete up to 42 meters high to be used in high-rise buildings construction sites.
- 5) One 20,000 capacity water tanker.
- 6) One welding machine.
- 7) Two big vibrators.
- 8) Three high pressure water pumps.
- 9) Laboratory and Testing Centre Equipment

The quarry area at Muungano in Chamwino Area has 120,000 square meters will accommodate the quarry machinery and aggregate storage areas including crusher dust. Office buildings and other social facility buildings will occupy about 40,000 square meters.

Table 4.3.1 LAND AND BUILDINGS

Description	Total Qty in year 1	Total costs in \$
Granite Mining Claim Land at Muungano	3plots	185,874
Office Buildings, Stores and canteen at Muungano	Various	60,204
Premix and delivery/storage yard/office buildings at Muungano	Various	1,810,000
Water supply storage tanks	Various	20,000
TOTAL	\$	2,076,078

4.3.2 PLANT, MACHINERY AND EQUIPMENT

Description	Total Qty in year 1	Total costs in \$
Complete Set of Quarry Equipment, Motors, Conveyers, Rollers and installation costs. Complete set of concrete batch plant, mixing plant and batch station. Complete set of operational equipment and two pneumatic pumps (one mounted on a truck and one stationary but movable)	Various	1,781,922
One Stand by Generator	850 KVA	60,000
One standby Generator	100 KVA	10,000
Welding Machines	Two	10,000

Big Vibrators	Two	15,000
Land Drillers	Two	20,000
High Pressure Pumps	Two	15,000
One fork lift	One	50,000
Laboratory and testing Equipment	Various	20,000
Culvert Pipes Molding Machinery	Various	20,000
Paving stone Molding Machinery	Various	15,000
Kerb Stone Molding Machinery	Various	15,000
Weigh bridges	Two	20,000
VHF Radio Communication/Telephone	Various	8,000
Air Conditioners	Various	4,000
Computers/Printers	Various	4,000
Kitchen Equipment	Various	1,000
TOTAL	\$	2,068,922

4.3.3 MOTOR VEHICLES

Description	Total Qty in year 1	Total Installation in \$
18Ton Dumping Trucks.	2 units	80,000
Five forty tons capacity delivery trucks.	5 units	200,000
Five ten ton capacity rotating tankers.	5 units	250,000
One 20,000 liter capacity water tanker	1 unit	50,000
Bus for Workers' Transport	1 unit	30,000
4WD vehicles	2units	50,000
TOTAL	\$	660,000

Table 4.3.4 FURNITURE AND FITTINGS

Description	Total Qty in year 1	Total costs in \$
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Office and Social Welfare Furniture, Fittings and Equipment	Various	120,000
TOTAL \$		120,000

4.4 SUMMARY

Description	Amount in US Dollars
Land and Buildings	2,076,078
Plant, Machinery and Equipment	2,118,922
Motor Vehicles	660,000
Office and Social Welfare Furniture Fittings and Equipment	130,000
Pre operational expenses	15,000
Total US \$	5,000,000

4.5 Timing and Phasing of the project

The implementation of the project is expected to start in June 2023 and become operational in September 2024 in which period the Bagamoyo Mining Limited management will undertake the following development programs to a sustainable satisfaction.

To train and develop the manpower that will be self sufficient to operate the quarry and the pre-mix concrete batch plant.

To establish markets for its products through aggressive advertising using radio, newspapers, pamphlets and television and of course personal visits to various civil and building contractors.

Enter into marketing and collaboration agreements with civil and building contractors and other users of aggregate, pre-mix concrete and concrete articles.



Consolidate the production of granite aggregate and concrete articles to cope with demand.

The investors have already purchased the mining area from the previous operator and he has removed his machinery and equipment from the site.

The aggregate production plant will have a capacity of producing 300 tons of

aggregate per hour and it will operate on a ten hour single shift and produce 3,000

tons of aggregate per day. The plant will operate for 300 days in a year to produce a total of 900,000 tons. Out of this total 90% will be aggregate of various sizes and 10% will be crusher dust which will be utilized for production of various concrete products. Out of this total production, 60% of the aggregate will be sold directly to various contractors and 40% will be transferred to the pre-mix batch concrete plant for production of ready mix concrete to be delivered to various construction sites according to orders.

4.6 Human Resources.

The overall management of the Company will be through a two members Board of Directors at the beginning to be appointed by the shareholders. The day to day management of BML will be headed by the Managing Director who will also be the Chief Executive Officer of the company. An Internal Auditor will report directly to the Managing Director. The Technical and Production Department will be responsible for quarrying activities, granite production, pre-mix concrete production and concrete article manufacturing while the Marketing Department will be responsible for Sales and Promotional Activities of the company.

The Finance and Administration Department will handle the Finance and Administration functions and will have four sections. Personnel, Accounts, Stores and Security. The Accountant will be responsible for the keeping of the books of the company while the Personnel Officer will be responsible for the day to day personnel, administrative, disciplinary, communications, and transport matters of the company. The Security Officer will handle all security matters of the company.

The supplies officer will procure and distribute all the company inputs including ballasting materials, quarry machinery, equipment, spare parts thereof, fuel and oils.

This complete team will be able to instill high quality team spirit and excellent workmanship in the company and make it the most efficient company in the construction materials industry in Tanzania and be competitive in the market to ensure good returns to the investors and the financiers.

CHAPTER FIVE

5.0 FINANCIAL PLAN AND FINACIAL PROJECTIONS

5.1 Project Start up Costs

The preceding investment by Guangtansheng Investment Company Limited before application for loan financing for the investment amounts to **\$1,361,078** made up of **\$15,000** as the pre operational expenses, **\$160,204** as office, stores and canteen buildings at the Pongwe Msungula site and **\$185,874** by way of acquisition of the mining area and **\$1,000,000** for acquisition of the property at Chalinze Township which will be used for installation of the pre-mix concrete batch plant, manufacturing of various cement products and storage of bulk aggregate

5.2 Full Project Costs

The full project costs are made up of the cost of acquiring new machinery and equipment amounting to **US. \$1,957,000** acquisitions of motor vehicles **US. \$ 660,000** and buildings amounting to **US. \$. 2,060,000**. The cost of office and canteen furniture, equipment and operating systems will cost **US. \$323,000**. These are expected to be financed through a **US. \$2,800,000** short/medium term loan from a development bank at an interest rate of 8.5% per annum and **US \$. 2,200,000** owner's equity. The initial working capital amounting to **Shs. 3, 147,517,000** will be financed through a short-term overdraft from a commercial bank.

5.3 Projected Profit and Loss Statements

The profit before taxes of the combined operations amounts to **Shs.4,544,887,000** in year 1, **Shs.13,402,525,000** in year 5 and **Shs.22,004,877,000** in year 10. In terms of margins of net profit before taxes to turnover the performance is 10% in year 1 rising to 21% in year 10. This is adequate for a quarrying enterprise. Annual retained earnings before dividends accumulate from **Shs. 3,181,421,000** in year one to **Shs.92, 849,295,000** in year ten. This will be available for further investment. The operation is therefore attractive and profitable.

5.4 Projected Balance Sheets

The company balance sheets as shown in the Schedule of the Financial Projections are quite healthy. The net working capital moves from a surplus of **Shs. 3,147,517,000** in the first year to **Shs. 92,616,256,000** in year 10. Apart from debit/equity ratio of 1.5:1 in year 1 for fixed asset financing, the company will own all its fixed assets from the end of the second year through equity contributions and retained earnings. It will still have substantial cash balance for further investments.

5.5 Projected Cash Flow Statements

The sources of funds will be equity, the short/medium term finance from the bank, profit before interest and taxes and depreciation. After initial financing no addition equity or loan is required since all future financing will be from retained earnings.

Starting with modest **Shs. 4,019,184,000** in year 1 the company ends up with **Shs. 16,022,707,000** cumulative cash flow in year 10

5.6 Financial Internal Rate of Return

The discounted cash flow analysis calculated on the given assumptions yields a financial internal rate of return of **28%** before interest and taxes. This is an attractive indicator of performance for the activities of the company.

5.7 Payback Period

The payback period is calculated on the mining and concrete article manufacture operations. The calculations show that the investment will be recouped in **two years and three months**. This means the company will commence building up reserves within **twenty seven months** of operations making this an attractive investment in the building materials sector.

CHAPTER SIX

6.0 MANAGEMENT AND ORGANIZATION

6.1 Management and Personnel.

The overall management of the company will be through a Board of Directors to be appointed by the shareholders. The day to day management of GICL will be headed by the Managing Director appointed by the company shareholders. He will set up a network that will be able to instill new spirit and workmanship to the company and enable it to earn dividends to the shareholders and repay the loan within a very short time. The Managing Director will also handle Corporate Planning. Under the Managing Director there will be three Department Managers namely Production and Technical, Finance and Administration and Marketing. The Departmental of Finance and Administration will have three sections namely Personnel, Accounts and Stores. The accountant will be responsible for the keeping of the books of accounts and the Personnel officer will be responsible for the day personnel, administrative, disciplinary, communications, and transport matters of the company while the Storekeeper will handle all the procurement and issue of all types of stores including ballasting materials, machinery spares, fuels and oils etc.

(See proposed Organization Chart under Annex 1 to this Report).

6.2 Availability of Labor

Tanzania has a large pool of middle level trained manpower in almost all sectors serving the mining and construction sectors. The company considers that the critical issues are retention of qualified skilled staff at Chamwino being a little far from Dar Es Salaam the main urban centre.

Management plans to use incentives such as:-

Attractive progressive salary programmes.

Medical insurance for employee and dependants.

Social security benefits and other terminal benefits including education for children.

Housing and transport (Bus, Motorcycles and bicycles,) loans to staff.

In order to attract employees and retain them, the company will introduce a self reliance housing scheme where the company will secure plots at Muungano Village and provide building materials to employees on loan basis and at reduced prices. This will enable employees to have their own modern houses for their families' sustainable life.

6.3 Recruitment

Recruitment of the operating manpower will be carried out over a span of six weeks by giving first preference to ex-employees of quarrying and construction sectors based on a merit basis and their willingness to work for Guangtansheng Investment Company Limit at Muungano Village Area in Chamwino District. A careful selection methodology will be worked out by a competent management consultant who will set up appropriate job descriptions and remuneration systems to ensure that the right caliber of staff is recruited.

6.4 Training and the use of Consultants

The company plans to carry out on – the – job training for most of the technical staff. The maintenance staff will be sponsored to go for field trips outside the country particularly to the machinery and equipment suppliers to familiarize themselves with the operations of the plant and machinery. In general the company will ensure that employees get new skills and operational procedures to increase their productivity throughout. Educational and technical materials will be subsidized or paid for to motivate the workers to develop themselves educationally and in technical skills.

Alternatively those skills not required throughout the year will be provided by private consultants. These will include legal counsels, financial systems, auditors, and management consultants. To ensure efficient and scientific management, operational manuals will be prepared for core functions of the company.

CHAPTER SEVEN

7.0 HUMAN RESOURCES DEVELOPMENT AND WELFARE

7.1 Human Resources Development Plan.

The company plans to limit itself to employing Tanzanians only. It does not expect to employ expatriates at the company and if any they will be employed on short term basis and for specific purpose and skills which are not available in the country. The expatriates will in most cases be used for training purposes. On recruitment policies the company will advertise for qualified and experienced Tanzania on the market, interview and recruit them. The company will also conduct in house, in country training programs for its operative staff. Management staff will get training to obtain state of the art management skills like use of computers, information technology, materials management and communication skills.

7.2 HIV/SDS Action Plan

Bagamoyo Mining Limited will put in place the following HIV/ADS Action plan in place.

7.2.1 Awareness

Education seminars, workshops, presentations, leaflets, television and visual aids will be presented by several groups including, District Health Officers, NGOS and religious groups.

People already infected with HIV/AIDS virus will be appropriately counseled to take appropriate care and exercise restraint by not infecting others. The company will provide supporting services to them and where needed will provide free supplementary food and medicines.

7.2.2 Prevention

The Company Management will take positive action by providing facilities for distribution of condoms to sexually active partners and as a right of every employee. This will be facilitated through cooperation with District Health Officers and NGOs providing condoms at near free-of-charge prices.

The company will also conduct seminars to employees and emphasize the HIV/AIDS awareness and the risks involved.

7.2.3 Care

The company Management will allow for and support community-based care for HIV/AIDS patients.

7.2.4 Community Based Terminal Care

The Company will ensure that it takes care of terminally ill employees and family members and in case of death funeral and burial services are provided for those employees who die whilst working with the company.

7.3 Gender and other Social Considerations

Bagamoyo Mining Limited is an equal opportunity employer without discrimination on gender, creed or ethnicity of the employee. If by mere coincidence the majority of the company employees turn out to be men, they will be paid equally with women. Bagamoyo Mining Limited plans to build a dispensary, nursery school, canteen, social services hall/shop, and a maize milling machine near the mining site to be available to all the employees and neighboring villages' residents at affordable prices.

CHAPTER EIGHT

8.0 MARKETING

8.1 Market for the Products of the Company.

Guangtansheng Investment Company Limited will produce aggregate of sizes 2'', 1^{1/2}'', 1'' ^{3/4}'' and 1/2'' of crushed granite including crusher dust as well as concrete articles made from the crusher dust. The company will also produce ballast for use in the construction of railway lines but this product will only be produced on special order. About 40% of the aggregate to be produced will be transferred to the Pre-mix Concrete Batch Plant to be located at Chamwino where it will be mixed with cement and sand in required and appropriate ratios and ready for delivery to construction sites by specially designed rotating concrete delivery tankers.

8.1.0 Granite aggregate and Pre-mix Concrete Batch Plant Market

The market for granite aggregate exists in Tanzania especially in the Dodoma area. The demand for granite aggregate is not met but what is required is to increase the quantity and quality of what is to be produced. Granite aggregates will make about 60% of the company's production and turnover, hence the most important product line. The next product line in terms of importance and value is pre-mix batch concrete which will be produced at a separate mixing plant to be located Chamwino for ease

of delivery to construction sites in Dodoma



A detailed marketing research has been carried out by reputed marketing consultants and their report indicates that the construction industry in Tanzania has been growing at an average rate of 18.5% over the past five years. Reports from the Contractors Registration Board and the National Construction

Council have shown that the average total value of construction projects in Tanzania has been Tanzanian Shillings Seven hundred sixty three billion (**Shs. 763,400,000,000**) per year during the past five years. Building construction accounted for 54% of the total value of the projects while civil construction works accounted for 17% of the total. The remaining 29% was undertaken by Electrical Contractors, Mechanical Contractors and other specialized construction fields. The

market research also indicated that close to 60% of the building construction work and 22% of the civil construction work was undertaken in Dar es Salaam.

The management of Guangtansheng Investment Company Limited having taken into consideration the available market for its products in Tanzania and specifically in Dodoma, has targeted to capture 25% of the market in Dodoma and 20% of the market in the rest of the country as a starting point.

The management has also taken keen interest in the new developments in the reconstruction of the Central corridor roads with financing already firmed up under the several financiers and donors; and the intended interconnection of the five East African Community countries roads. The management will maintain a very close follow up on this new avenue because it will create a big market for the company products.

8.1.1 Other products

The company also plans to produce concrete articles like cement blocks, man-hole covers, paving slabs, paving blocks, curbstone and cement storm water culverts and pipes of various sizes for the internal market and if need be for export.

8.2 Marketing and Distribution of the Products

The company will import high quality machinery and equipment from China, Dubai, Germany and India and employ qualified technical personnel to ensure that the products produced are of the highest quality to meet international standards. Competition exists in the marketing of the concrete articles as there are several other small producers of granite at Msata. However with the superior machinery, the aggressive marketing plans, the quality of granite, pre-mix batch concrete and the concrete articles produced by Guangtansheng Investment Company Limited will be able to compete favorably. The location of the pre-mix batch concrete plant at Muungano Settlement in the vicinity of the main construction centers in the city of Dar Es salaam which will also be used for stockpiling of granite aggregate and other cement products will ensure timely delivery (real time) which is a critical aspect in the construction industry materials delivery.

8.3 Prices of the expected products

Guangtansheng Investment Company Limited expects to produce 2'', 1¹/₂'', 1''³/₄ '' and ¹/₂'' sizes of crushed granite including crusher dust as well as concrete articles made from the crusher dust. Ballast will also be produced on special order.

Price per cubic meter in Tanzanian shillings:

Pre-mix concrete **T. Shs.250,000**

Granite aggregate **T. Shs.100,000**

Crusher dust **T. Shs.80,000**

Concrete articles will vary from **T. Shs.5,000** and **T. Shs.10,000** per piece depending on the product.

Concrete culverts **T. Shs.30,000** to **T. Shs.100,000** depending on size.

The price of ballast will be determined by the quantity ordered but will be **T. Shs.100,000** per cubic meter on the average.

However since the company is a new comer to the aggregate and concrete trade it will adopt introductory prices which will be slightly lower than the market prices. It will also offer special rates and discount for large orders and long term purchasers.

On transportation the company will own a fleet of five forty ton capacity semi trailers for delivery of aggregate and other concrete products to construction sites. At times of big orders the company will contract out to private transporters. On the delivery of the Pre-mix batch concrete the company will own a fleet of five ten ton capacity rotating tankers to ensure well planned and timely delivery schedules because this is very critical for the success of this operation.

The **Unique Selling Point (USP)** for the company products to ensure effective competition will be **New Technology, Safety Standards, Clean Environment, Quality Products and Strict Delivery Schedules.**

The special pneumatic pumps mounted on mobile trucks and capable of pouring concrete up to forty two (42) meters high (*fourteen floors*) will be an added advantage to the company over its competitors.



CHAPTER NINE

9.0 ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

9.1 Environmental Impact Assessment

The project envisages being environmentally friendly in the area of water, air, flora and fauna, geomorphology social effects and archaeology. The project will have no effect on the hydrology as no ground water will be extracted.

The project will have no gaseous emission that will affect air quality. No chemicals will be used. There will be little dust emissions. It is therefore anticipated that there will be little or nor damage to flora and fauna

The area directly affected by the mining is basically miombo wood land with isolated grassland and has minimal animal population. However no mining activities will attract animals to the site. The project is culturally acceptable to the residents as this is a continuation and improvement of an existing cultural feature.

9.2 Environmental Management Plan

Guangtansheng Investment Company Limited plans to adhere to all environmental standards as per schedule of the Mining (Environmental Management and Protection) Regulations, 1999. Measures to avoid, minimize or mitigate effects to the environment due to this project will be taken. The general objective of the Environmental and Social Management Plan (ESMP) for Bagamoyo Mining Limited is to minimize environmental degradation and to optimize social benefits to the area. The specific objectives of the Environmental and Social Management Plan for Guangtansheng Investment Company Limited are:-

1. To develop actions and recommendations that the Company management should adopt in the cutting of trees for firewood and charcoal making to minimize environmental degradation impacts.
2. To develop actions and recommendation that the operational managers should adopt during the land clearing and operational phases to minimize social impacts.
3. To develop effective monitoring elements that will assist the timely mitigation of adverse environmental impacts and the achievement of positive impacts.
4. To ensure that land recovery and leveling is carried out after the completion of the mining operations.

Objectives of a monitoring program essentially examines whether or not identified project objectives are achieved as expected in terms of output and time.

In the case of the Guangtansheng Investment Company Limited project, the monitoring program will also seek to ensure that proposed mitigation factors are followed and are effective.

9.3 Air Quality

If dust becomes a significant nuisance factor it will be suppressed by spraying with water. Workers or laborers working in dusty areas e.g. in the mining pits, loading of rocks or gravel and crusher dust will be issued with protective masks. It will be the duty of the Operations Manager to ensure that all employees wear protective masks when on duty.

9.4 Social Economic Impact

The presence of the mine at Muungano will bring prosperity to the surrounding area during the life span of the mine. The company will have a deliberate employment program to ensure employment of people from the community surrounding the mine. It will only employ people from other regions where special skills are needed and are not available in the area. This will bring satisfaction and cultivate acceptability of the project and develop good neighborhood spirit by the members of the community surrounding the mine.

9.5 Access Road.

The 5 km access road from the main highway to the mine will be rehabilitated and maintained by the company to make it passable throughout the year. The other members of the community and surrounding villages will be able to use the road for transportation of their crops and other goods to and from the market.

9.6 Mine Closure

Upon completion of each section of mining activities the site will be cleared of all equipment and works. This may include filling and grading of soil and vegetation replanted where it has been disturbed. The closure objective includes the restoration of the properties to the condition where it can be used for other purposes such as farming or grazing. Top soil originally stock piled will be spread over waste dumps and natural vegetation allowed to grow. Trees will also be planted. All structures and installations will be removed from the site and the original topography reconstructed.

All employees and leaders of the members of the community around will be informed of the closure of the mine well in advance and will be prepared for retrenchment so that they can look for alternative employment elsewhere.

9.7 Conclusion and Recommendations on the Environmental and Social Management Plan. (ESMP)

The proposed project is environmentally friendly, commercially viable, technically and financially sound and socially beneficial and is therefore recommended to be carried out as per schedule. With relevance to the EIA of the Bagamoyo Mining Limited, the Environmental and Social Management Plan (ESMP) has been proposed to incorporate among others the identification and summary of major anticipated environmental and social impacts as well as mitigation measures.

CHAPTER TEN

10. RECOMMENDATIONS

10.1 Mission of Guangtansheng Investment Company Limited at Muungano in Msata in Chamwino District.

Guangtansheng Investment Company Limited plans to create a new economic base in Muungano Area and indeed in Chamwino District through the installation of a granite aggregate quarrying plant through the purchase of high quality quarrying machinery and equipment and acquiring the necessary working capital to run the company in the next fifteen to twenty five years.

10.2 Strengths

Over the years of existence of the granite aggregates quarrying in Muungano Area of Chamwino District, the area has earned a reputation of being the best granite aggregates producing area in the Dodoma Region. This has given the current Guangtansheng Investment Company Limited management the desire to exploit this potential for developing a reputable operation and become the most successful and prosperous company in the construction materials industry in the future.

The following are considered to be, the strengths that Guangtansheng Investment Company Limited has at its disposal that can be relied upon to enable the company grow and become prosperous.

10.2.1 The Company has a large and unsatisfied local market in Dar es Salaam and Tanzania as a whole for its products, which is a challenge to increase production to meet the ever increasing demand for aggregates and its allied products.

10.2.2 GICL will over the years of its existence, build a name and goodwill to the public at large and the people of Tanzania especially in the supply of best quality granite aggregates in Tanzania. This will enable the company to market its products with relative ease in the future given proper and committed management from GICL.

10.2.3 The company management is now seriously engaged in building a strong financial and logistic infrastructure, firming up financing arrangements with local development banks and setting aside sufficient funds for investment in this project from its oil and other trading operations.

10.2.4 The GICL landed assets especially the mining claim and the facility at Chamwino Township area can be used as collateral for obtaining development loans from local banks since all of them have title deeds and are of high values.

10.3 Opportunities

In planning what can be done by the company during the next five years, the investors have taken into account the opportunities that exist for the company to increase its net worth. The new management of the GICL will have to use its experience and wisdom to overcome the threats or reduce their impact drastically and at the same time consider utilizing the available opportunities as follows:-

10.3.1 The prevailing improvement in investor confidence in Tanzania, in view of the new Tanzania Investment Centre Act 1997 and other fiscal policies which make mining and concrete article manufacturing especially granite aggregates quarrying a suitable investment destination in view of the ever increasing demand in the construction industry for granite aggregates and the concrete articles to be produced by the company.

10.3.2 To increase the Company's competitive edge and expand its market share for aggregate and pre-mix concrete. There exists an opportunity to undertake the manufacture of concrete articles from the quarry dust thereby increasing productivity and profitability.

10.3.3 The company has an opportunity to start cutting granite slabs, polish them for both local consumption and export markets in Europe, India, USA and Japan.

10.4 Threats

The Company will face various threats in the existing operational environment. These include the following:-

10.4.1. Power Supply

The lack of reliable electricity at the mining site and in Dodoma in general, will contribute to high operational costs in the production of products leading to lower profits in view of the high costs of electricity produced from diesel generators due to the ever increasing prices of oil in the world market. The possibility of using gas fired generators to mitigate this factor is being explored.

10.5.0. Conclusion

This study has demonstrated that Guangtansheng Investment Company Limited (GICL) has acquired adequate mining claim rights to sustain operations of a large granite aggregates production, given the sufficient funding to finance the investment of the mining for aggregate production and concrete article manufacturing activities under GICL management.

By undertaking the pre-mix concrete supply, concrete articles manufacture and the granites slabs cutting and polishing for export, the company can increase its profitability and net worth to become a leading exporter from East Africa.

The company will be managed as a private limited liability company and will be operated efficiently under private sector management ethics with overheads kept to a minimum.

The Government will benefit from taxes generated by the mining and concrete article manufacture operations especially VAT (to exceed \$ 100m per annum) to be paid by BML.

As a result of the large investment in the mining and concrete articles manufacturing activities the investors will enjoy incentives under the Tanzania's Investment Center policy, (The investment will be over \$ 300,000 therefore qualify as an Approved Enterprise under the 1997 TIC Act) under the priority group sectors.

The mining and concrete articles manufacturing activities will generate direct and indirect employment in the region for over 800 people in terms of the backward and forward linkages to the company activities.

10.6. Recommendations.

This study has shown that the plan to develop the quarrying of granite aggregates, pre-mix concrete supply and concrete article manufacture through the acquisition of quarrying machinery and equipment, and acquiring of necessary working capital to run the company is technically feasible, economically viable, financially profitable and socially desirable and it is therefore strongly recommended so that the demonstrated benefits can be realized.

Given the commitment of the GICL management, the quarrying of granite aggregates and concrete article manufacturing activities will be capable of generating a high turnover in both local and foreign currency with a tremendous impact on the economy.

It is therefore recommended that the investors with the objectives and the span of interest and magnitude of investment by GICL should be supported by financing institutions to finance the new investment in quarrying equipment and transportation facilities in order to achieve the envisaged objectives and returns.

GUANGTANSHENG INVESTMENT COMPANY LIMITED ORGANISATION CHART

