

SAGARAJI EXPLORATION (T) COMPANY
LIMITED

A FEASIBILITY STUDY REPORT ON SISAL
FARMING AND PROCESSING FOR
PRODUCTION OF SISAL BAGS AND FIBRE
FOR EXPORT.



SISAL TANZANIA

Sisal The sisal sub-sector is the oldest commercially organized agricultural undertaking and one of the longest surviving agricultural industries in Tanzania. Today, the sisal industry in Tanzania employs over 100,000 people, with a total production of about 40, and smallholders growing sisal as a cash crop in non-estate areas tons. Farmers participating in the sisal value chain include those engaged in planting sisal for hedges, smallholders in estates. In 2012, approximately 25% of sisal was produced by smallholders. The main product derived from sisal is fibre. However, the extracted fibre constitutes only 2% of the sisal plant, while the other 98% is regarded as waste.

The fibres are then used to produce twine, cordage for hay, packaging, baling, building and many other uses including carpets, wall covering, doormats, car mats, buffing cloth used for polishing of metal and furniture, fine yarn, bag cloth, padding, mattresses and handicrafts. New products developed from the sisal plant include pulp and paper mainly for making boxes for packaging. According to the Food and Agriculture Organization (FAO) of the United Nations (UN), recent studies have shown that sisal waste is more valuable than the fibre. Products obtained from sisal waste include biogas used in engine-generator sets to produce electricity. The by-product from the biogas plant is organic fertilizer. Sisal waste can also be used directly as animal feed. Traditionally, sisal fibre and products have mostly been exported to the European Union (EU), the Russian Federation, the former Yugoslavia, Japan, India, China and Pakistan and recently to Saudi Arabia, Iraq and Iran. According to the latest data by the Bank of Tanzania (BOT), Tanzania exported 793 tons of sisal in Q3 2016. Tanzania Sisal Market Outlook In April 2016, Yunus Mssika, Senior Quality Assurance Officer at the Tanzania Sisal Board (TSB), announced that the country is increasing its sisal production with the objective to reach 100,000 metric tons by 2021. FAO indicates that demand for new products made from sisal has been growing at a very fast rate in the world market over the past decade. "Tanzania has a

unique position as it has comparative and competitive advantages in sisal, such as the weather, soil and human capital which is a catalyst to the growth of the industry,” FAO notes. Furthermore, it is estimated that by 2025 at least 100 000 tons of fibre will be needed in Tanzania alone. In the Near East the increased utilization of sisal in construction has made the region the second largest user of sisal fibre in the world. In the Far East, particularly China, imports of sisal fibre have grown significantly in recent years, according to FAO. The majority of this fibre is utilized more in the new products, such as industrial polishing cloth and composites.

According to Mssika, Tanzania’s sisal output could increase to 43,000 tons in 2016 from 40,000 tons in 2015 as farmers start to harvest a new crop planted three years ago. Tanzania has been implementing a 10-year Sisal Crop Development Plan in FY 2012-13. Its objectives include to increase production of various sisal products, to increase utilization of the sisal plant, to increase the country’s export market share, to undertake research and development of products and markets and to increase the participation of smallholder and out grower farmers in the industry. The plan also envisages putting in place a total of 14 biogas plants that will produce biogas for electricity generation to run a total of 14 estates. According to the latest available statistics from the United Nations’ Food and Agriculture Organization (FAO), in 2013 the global production of sisal reached 281,000 tons. Of these, 150,584 or 53% were produced by Brazil, 34,875 tons or 12% were produced by Tanzania, 28,000 tons or 9% were produced by Kenya, 18,950 tons or 6% were produced by Madagascar and 16,500 tons or 5% by were produced by China.

Currently a ton of sisal trades between USD 1,900 and USD 2,200. According to Mssika prices have stabilized since 2010, resulting increased investments in the crop in Tanzania. According to the latest Bank of Tanzania (BOT) Monthly Economic Review, in January 2016, Tanzania’s sisal total export reached USD 20.6 mln, against USD 16.8 mln in January 2015 (+22.6%).

The same report indicates that the price of sisal reached USD 1,980 per ton, owing to low supply from Madagascar, China and Brazil. Sisal is a species of agave native to southern Mexico but widely cultivated and naturalized in many other countries. It yields a stiff fibre used in making rope and twine, and has many other uses, including paper, cloth, wall coverings, carpets, and dartboards.

CHAPTER ONE

1.0 Executive Summary

1.1 Company

This feasibility study has been prepared by M/S Sagar Exploration (T) Company Limited of Box 72906 Dar Es-Salaam, Sagar Exploration (T) Company Limited is a new private limited Company incorporated under the Companies Act (2002) which certificate of Incorporation No. 95600 dated 23rd January 2013 the principal objective at which company was formed to establish and operate agricultural [projects with the main focus being sisal farming and processing initially, the project will be producing sisal fibre only for export, but later the company plans to raise the utilization of the sisal plant from fibre production alone to other sisal products. A small production however will be allocated for production of sisal bags.

To achieve the abovementioned goals, the Company plans to acquire at least 1,000 hectares and establish own plantations to the tune 300 hectares and broaden ownership of the project by encouraging smallholder out growers to acquire the other 700 ha of land and grow sisal as well as other food crops. The smallholders will then sell the sisal leaves to the company for processing.

To achieve the objectives above the projects will involve acquisition of 1,000 ha of land and pay for survey costs and registration of title develop the land and establish nurseries for own seeding's as well as seeding's for distribution to out growers, establish the cop and provide extension services to the out growers. The project will there need to acquire agricultural machinery and implements to develop the land.

As for sisal processing and production of sisal bags, the project needs to procure plant and other processing and sisal bag making machinery, equipment and other facilities as well as construction of factory, storage facilities and office buildings. Vehicles and motor cycles will likewise be required to run the estate.

This document has been prepared for three main reasons. Firstly to determine the viability of the proposed project and serve as a business plan of the company's development programme. Secondly, it is meant to facilitate the application for Tanzania Investment Centre (TIC) Certificate of Incentives so as to access exemptions on duties, VAT deferments and other benefits and protections as statutorily provided for under Tanzania Investment Act (1997) for the Project. Thirdly, it will be presented to Banks/Financial Institutions for application of Term Loan USD 800,000 to support smooth implementation of the proposed project.

The proposed project is estimated to cost about USD 640,000 which is to be financed by owners' equity at about 35% and Development Financing Institutions (65%) Implementations of the project is envisaged over a period of eighteen months from the time the project is approved by the TIC and Bank loan granted.

The project Promoters

The project is promoted by the Sagar Exploration (T) Company Limited a new locally registered company with certificate of Incorporation No. 95600 dated 23rd January 2013 The following are the founding directors and shareholders

| S/NO | NAME | NATIONALITY | SHARE | SHAREHOLDING |
|------|-------------------|-------------|--------|--------------|
| 1 | Fadhili D. Mbagu | Tanzania | 15,000 | 15% |
| 2 | Thomas V. Nguruwe | Tanzania | 15,000 | 15% |
| | Total | | | 30% |

All the two shareholders are well-established businesspersons in Dar es Salaam and elsewhere, running multiple businesses.

CHAPTER TWO

2.0 Information about the Company

The Sagaran Exploration (T) Limited is a newly incorporated private limited company under Companies Act. (2002). The Company was incorporated on the 23rd day of January under certificate of incorporation No. 95600 the principal objective of forming the company to undertake agricultural projects, with initial focus in sisal farming and processing to produce sisal fibre for export as well as production of sisal bags for the local market in phase one. Phase two of the projects will involve products diversification and production of other sisal products.

The company shareholders being seasoned businessmen are seeing a very bright future in the sisal industry. With organic awareness, the demand for sisal packing materials like bags, baskets, blankets and other household items and industrial packing needs are increasing throughout the globe. The sisal market is expanding with new products that had been developed through research in the last ten years.

The concentration of development has been in the utilization of the fibre. But only

2% of the plant is extracted as fibre. In the worldwide production of fibre of 300,000 tons, about 15,000,000 tons is the biomass and sort fibres called "waste".

Focus is now using this as a source of:

- Energy-biogas and electricity
- Animal feed
- Organic soil improver
- Pharmaceuticals
- Raw materials for bags and padding

Organized commercial utilization of the "waste" is bound to increase the return per hectare and make sisal fibre more competitive thus opening up further commercial applications. The Sagaran Exploration

(T) Company Limited plans to do exactly this during the second phase of the project.

2.1 Major activities

Major activities of the Company during the phase one of the project will be:

- Establish own sisal plantation of about 300 ha;
- Establish a contracts farmers/smallholder out growers willing to produce 700 ha of sisal in a land to be provided by the company to make the project economically viable;
- Establish nurseries to produce sisal seeding for own use and for distribution to contract farmers/out growers free of charge;
- Processing of sisal leaves to produce quality sisal fibre for export;
- Produce sisal bags for the local market.

The company will export most of the sisal fibre to the country's traditional markets of Europe, China, the middle and Far East.

SHAREHOLDING

The Sagaran exploration has an authorised share capital of the Company Tanzanian Shillings three hundred million only (Tzs 300,000,000/=) divided into thirty thousand shares (30,000) ordinary shares of ten thousand (TZS 10,000) each with power of the Company.

2.2 Physical Location

Registered office at the project is at Samora Tower Dar Es Salaam the plantation and contract farmers/smallholder out growers will be located at Tanga, Morogoro, Simiyu

CHAPTER THREE

3.0 The Project

- This is a new project and comprises of four sub projects, namely
- Establishing own sisal plantation
- Establishing contract farmers/smallholder out growers
- Setting up sisal processing facilities to produce sisal fibre
- Setting up facilities for sisal bags making

3.1 Own Sisal Plantation

In this project component, the Company plans to undertake the following activities;

- Acquire at least 300 ha of land. Survey the land and obtain land title deed;
- Develop the 300 ha of land into own sisal plantations;
- Establish nurseries for production sisal seeding for own plantation as well as for distribution to out growers free of charge;
- Procure agricultural machinery and implements (including tractors, graders etc.) for land clearing and development;
- Construction of irrigation infrastructures and water storage facilities;
- Construction of barns, shades and other agricultural structures.

3.2 Establishing Contract Farmers/Smallholder out Growers

The Sagar plan so source most of the raw material (sisal leaves) from out growers. These are envisaged to cultivate about 700 ha of land and sell sisal leaves to the company. To facilitate availability of the raw material, the company plan to do the following:

Selecting and entering into contract farming with the right farmers recruit an adequate number of dedicated agricultural extension officers

to supervise and monitor the contract farmers/out growers and equip the officers with the at least motor cycles

Providing adequate sisal seedlings to the out growers at the right time

3.3 Setting up Sisal Processing and Sisal Bags Making Facilities

Of the three sub projects. This is by a large the most important and the most costly.

The project will involve

- Construction of processing, storage, workshop, and staff quarters, office block and other building structures;
- Procurement and processing plant/decorticators and other processing machinery and equipment as well as sisal bags making machinery;
- Establish and equip a modern workshop;
- Put in a place a water treatment plant for environmental protection
- Procure a heavy duty standby power generator
- Procure utility vehicles including trucks, pickups, Toyota Land Cruiser hard tops and motor cycles
- Establish reliable markets

The proposed sisal plant will have a processing capacity of 2,000 metric tons of sisal fibre per annum. This means the plant will consume about 50,000 tons of sisal leaves per annum to produce 2,000 tons of sisal fibre.

CHAPTER FOUR

4.0 Raw Material Supply

The principal raw material for this project is sisal leaves. The company will establish own 30 ha plantation. The bulk of the raw material will however be sources from contract farmers/smallholder out growers. These are envisaged to cultivate about 700 ha. The company will undertake to provide seedlings and agricultural extension officers and purchase the entire crop of sisal leaves from the contract farmers.

4.1 Sisal General Information

- Family: Agavaceae
- Genus: Agave
- Species: Sisalana

4.1.1 General Background on the Plant

Sisal is a native of the Yucatan Peninsula, Mexico. Sisal grows best in a hot climate and may be grown throughout the humid and sub-humid lowland tropics.

Sisal is a perennial succulent which, with good growing conditions forms an inflorescence after 6-9 years after having produced 200- 250 leaves, and then dies. Leaves average 120cm in length and are arranged spirally around the thick stem. The leaves are 75% sclerenchyma bundles. The root system is shallow but extends up to 3.5 m from the stem.

As a cactus, Agave plants survive and produce a marketable product in infertile arid regions which in many cases would otherwise be unproductive. As it is a labour intensive crop it offers at least stability for a large rural population.

There are three other closely related species also commercial importance: Agave fourcroydes, Yucatan sisal which produces henequen hemp of Mexico; A. cantata the Maguey sisal of the

Philippines; and *A. letonae* which produces the Salvadorian henequen hemp of San Salvador.

Details of quality characters

It is the most important of the group of hard fibres, which includes New Zealand flax and Manila hemp. Sisal is essentially a commercial crop hardly ever grown by small-scale farmers except the hedges. This crop requires large scale production to justify the use of expensive machinery required. The greatest demand for sisal is for use as binder twine, but it can also be used to make ropes, sacks and bags of various types as well as marine cordage.

4.1.3 Current Production and Yields

Sisal occupies 6th place among fibre plants, representing 2% of the world's production of plant fibres (plant fibres provide 65% of the world's fibres). The world's largest producers are Brazil (199,000t) Kenya (40,000t), Tanzania (28000t) and Madagascar (20,000t). There are significant exports only from Brazil (65,00t) Kenya (30,000t), Tanzania (18,00t) and Madagascar (9,000t)

In the Countries of production about 50 leaves, each weighing up to 1 kg may be cut per plant per year. The ripest lower leaves are cut first and this continues periodically over the next four years. On average, over the first 4 years, two cutting are made annually, in following years only one cut is made per year, until the flower stalks begin to develop. A total of about 300 leaves may be harvested during the economic life of each plant giving a total of 500-600 tonnes fibre/ha. Over the usual 8 year production period, the average annual yield is 67 leaves; about 2.25 tonnes fibre/ha. The crop dies after producing the inflorescence and bearing a crop of vegetative bulls, when the plant is 8-10 years old;

4.1.5. Markets and Market potential

Long Fibres (90cm long) are used for ropes and binder twine. Approximately 25% of the fibres are shorter (flume tow and tow fibre). And these are used for padding, mats and stair carpets, also for paper

and building panels. After fibre extraction 95-96% of the leaves weight still remains, thus is used as fertiliser, or the dried pulp as a fuel for methane production.

4.1.6 Other Information

Sisal prefers a rainfall of not less than 1000 to 1500mm p.a the more even the rainfall distribution the higher the quality of fibre and opportunity for continuous leaf harvesting. The crop generally prefers a medium or light soil, with a pH between 5.5. and 7.5

Fertilizer Application

A superphosphate fertilizer applied at about 25 kg/ha per annum with about 50 kg/ha applied as calcium ammonium nitrate or urea ensures a good crop. Apply lime where the pH of the soils falls below 6.5 where rainfall levels are good. Nitrogen can be supplied by growing leguminous cash crops in-between rows.

It has also been known to have a sizeable demand for calcium as a nutrient and frequently responded to small dressings of lime when grown acid soils. The crop is also susceptible to boron deficiency.

The yield deteriorates over the year, and more rapidly under continuous cultivation. Soil potassium deficiencies are indicated by a bending-over of the normally straight and stiff older leaves. Boron deficiency which causes leaf cracking is more difficult to control. Decorticating wastes including both liquids and solids have proved effective as a fertiliser supplement, especially when supplemented with lime.

Preparation of sisal is by means of bulbils which appear on the flower stalk, or by suckers growing around the base of plant. Plants produce up to 400 bulbils/plant compared with less than a quarter of this number of suckers; hence bulbils are preferred for preparation. Only large bulbils should be selected for planting. Bulbils are first planted into nursery beds at spacing of 25-30 cm apart in rows 50 cm apart. The bulbs are allowed to grow to about 40 cm or until they are about 9-

12 months old, after which they are transplanted to the field. At this time the bulbils have good roots. The growth of bulbils is improved by mulching sisal nurseries with grass, paper or polthelene. Mulching with partially rotted sisal gives best results.

Transplanting takes place preferably at the beginning of the rainy season. A recommended planting pattern in the field is a series of double rows 60 cm apart with a 2.5 m alley between pair of rows. Plant spacing is at 75 cm, giving a population of about 25000 plants per hectare. Alternatively plant can be spaced 1m apart in 3m rows.

The crop should be kept weed-free and annual legumes such as beans may be cultivated between rows to suppress weed growth and limit erosion.

Pests and Disease

The plant has a leathery epidemic and some species have sharp spines for protection. Only pest known to occasionally reach pest proportions is the Sisal Weevil (*scyphophorus interstitialis*).

4.1.7 Harvesting and Processing

In the countries of production and optimal production cutting of the leaves takes place 18-24 months after planting. More usually plants are harvested after 24-36 months. About 50 leaves, each weighing up to 1 kg may be cut per plant per year. The ripest lower leaves are cut first and this continues periodically over the next four years. On average, over the 4 first years, two cutting are made annually. In following years only one cu is made per year, until the flower stalks begin to develop. A total of about 300 leaves may be harvested during the economic life of each plant, giving a total of 500-600 tonnes fibre/ha.

4.1.8 Fibre Extraction

A process of decortication is used to extract the fibre from the leaf tissues. Leaves are crushed and beaten by a rotating wheel set with blunt knives, so that only fibres remain. All other parts of the leaf are washed away by water. Decorticated fibres are washed before drying in

the sun or by hot hair. Proper drying is important as fibre quality depends largely on moisture content. Artificial drying has been found to result in generally better grades of fibre than sun drying has been. Dry fibres are machine combed and sorted into various grades, largely on the basis of the previous in-field separation of leaves into size groups.

4.2 Constraints on Sisal Production and Markets

4.2.1 Background Information

Sisal is essentially a plant of the tropics and subtropics and production benefits from the temperature above 25 centigrade and plenty of sunshine. The sisal industry is therefore concentrated in the mostly tropical regions of Africa, Central and South America and Asia (particularly China). It is produced in some of the poorest areas of the world and in many cases it is the only source of income and economic activity in those areas. Thus it contributes significantly to the efforts to reduce poverty and provide rural employment to nearly 6 million people.

Traditionally, raw fibre was produced in the tropical, predominantly developing countries and shipped to the developed economies in Europe, North America, Japan and Australia/New Zealand for transformation into products for consumption in those markets and pre exports. However this feature has been changing with fibre producers also processing the fibre in their countries.

The sisal industry has in the last 30 years, gone through a familiar pattern afflicting many agricultural and agro-industry products. It has faced a decline in production of about 38 percentage and its international trade has shrunk by about 52 percent. Different producing countries have faced different levels of change but in general the fortunes of the industry have declined significantly in those years.

Efforts are underway to revitalize the sisal industry and transform it from maturity and traditional production and products to a more modern and vibrant industry. A lot of background work has been done

under the auspices of the FAO and the International Trade Centre with statistical data being available especially on production, exports and imports.

4.2.2 Problems Facing the Industry

The main problems afflicting the sisal industry can be divided into two main groups the demand side and the supply side problems.

4.2.2.1 Demand Side Problems

These are problems which are of an international nature and concern mainly of developments in the major markets for sisal fibre and its products.

Terms of trade

Like most other agricultural products, the terms of trade sisal has been deteriorating in general with wide fluctuations over the years. Today's price of East African grade UG sisal fibre is USD 550 per ton-the same as it was 15 years ago, however, today, a tractor costs eight times more than it did then. This has resulted in very serious commercial hardship and lack of interest to participate in international trade for the producers of sisal and sisal products leading to negative growth of this trade,

Barriers to free trade

Exports of agricultural and agro-industrial products have faced stiff barriers from importing (mostly developed, rich) countries. These have taken the form of tariffs, non-tariff, quotas and legal barriers. For example, imports of sisal products into the European Union from Brazil have been subject to a tariff for more than twenty years.

Huge subsidies have been paid by the developed countries to their domestic sisal processing companies and to the synthetic substitutes to eliminate competition from sisal exports as was done in EU for 15 consecutive years.

No market promotion or market development for sisal product is done in the major markets. Sisal in turn faces negative marketing from competing substitutes.

Synthetic Substitutes

Sisal and other natural products have faced a concerted push by the developed countries (and markets for sisal products) to produce and market synthetic substitutes. These were initially heavily subsidized and in the case of sisal, polypropylene substitutes acquired 55 per cent of the market share in 14 years in the 70s and 80s. Due to the added fact that these were produced in the same markets for sisal products and in most cases by the same companies which were previously producers of sisal products, competition became very stiff for sisal producers from the poorer developing countries who relied on the markets. In some cases manufacturers of baling equipment went so far as telling their customers to use these synthetic substitutes instead of sisal for no particular technical reason but as a way of supporting the synthetic producers.

Technological changes

Seventy percent of sisal was sold in the form of Agricultural Twin. Technological change requiring less twine or no twine at all resulted in the reduction of demand for twine. With lack of research and development in sisal production, there has been no positive reaction to this technological change resulting in decline demand. The traditional market players in the industry have accepted this situation and it is only recently that some reaction seen.

4.2.2.2. Supply Side Problems

These are production side problems which may differ in intensity from country to country and may not apply to all.

Lack of Change and of Research and Development

In many cases sisal has been produces in the same way for te last 50 years and the same products have been produced. The only dedicated

sisal research centre Mlingano in Tanzania dependency resulted from this and there was no reaction to change in the market place. Naturally this has meant that old technology is still in use and there has been little improvement in productivity and efficiency. Since sisal has been predominantly produced in poor countries, resources for research and development have been limited.

Internal economic policies and management

Poor economic policies in the producing countries have contributed significantly to the decline in the sisal industry. Many of these countries were in the process of changing from being colonies consuming countries and adjustments had to be made in the ownership and management of their economies due to lack of expertise and experience and due to the economic backlash unleashed during this transformation most of these economies have suffered very seriously. Economic experiments were tried, some with disastrous effects, for example, Tanzania (by the 60s the largest producer in the world with nearly 40 percent of the total global production) nationalized 70 per cent of the sisal industry and ushered in a centralized, socialistic economic system. Together with the other international forces mentioned above, the industry went into freefall decline to 15 per cent of its peak 25 years. Mexico's industry (especially) the processing side) was also in public ownership for most of the 60s the 70s and the 80s and suffered a similar fate-but not to the same extent.

Non_Utilisation of the Total Plant

Long sisal fibre and its products is the mainstay of the Industry and this is what has kept the industry going. This is however, only 2 per cent of the sisal plant. The rest is a biomass and short fibres which have been thrown away or burnt at cost financially and environmentally. This is more prevalent in Africa where the mode of production has predominantly been estate based and therefore leaves are transported to a central factory for decoration thus disposal of this huge amount biomass becomes a problems the traditional answer has been to pump

in a lot of water to convey this material from the decorticator at some places directly into a river causing oxygen depletion in the water. The return from the plant therefore has been low due to this low utilisation.

Lack of Reinvestment and Market Development

Due to the various problems facing the sisal industry, there has been lack of reinvestment, lack of product and market development and promotion, continuing to the decline of the industry.

Being an activity undertaken mostly in third world countries there has been dependence on foreign investment and assistance. These have been declining especially for African producers despite the fact in many cases the returns on investment are actually higher.

All in all, the sisal industry has faced and still facing problems which need to be addressed if the industry is to be revitalized.

4.2.3 The way forward

The sisal industry has persevered in such adversity mentioned above and various initiatives are in place to assist in its revitalization. Below are highlighted some of those initiatives and others needed for the industry to continue playing its part in economic development poverty eradication and expanded free international trade.

4.2.3.1 Attractiveness of sisal –natural and environmentally friendly

The sisal plant and its products have proved, over centuries of natural and commercial production, that they can serve mankind as pharmaceutical products. After a century in which synthetic substitutes created havoc to the environment and threatened the very existence of the earth as we know it, to the world is at last waking up to these dangers and re-examining the natural products they had discarded in favour of the more 'fashionable' but deadly synthetics. The environmental attractiveness of sisal has to be continually highlighted and utilized to put sisal products back into contention. Ecology taxes have to be encouraged and synthetic products have to be banned or

made so expensive and difficult to market that consumers will think it twice before buying them. Sisal is a tough plant. It can thrive in drought conditions and in rough land with very little nutrition. It has very few diseases which in most cases does not need any pesticides. It helps to stop soil erosion and captures moisture from the atmosphere. It can be planted any time of the year and harvested throughout the year. It even survives fire. There are very few commercially grown plants in the world with these qualities.

4.2.3.2 International trade improvement

Concerted action through multilateral bodies, like FAO, ITC and IFAD; national and regional body's needs to be taken to improve demand and trade for natural agricultural and agro-industrial products. This can be done through special campaigns and moral suasion of governments, multinational companies and the general public

The World Trade Organization should continue strongly with efforts to address the continually worsening terms of trade between developing and developed nations and also address the problem of the huge subsidies being granted by developed nations to their producers and barriers to trade in form of tariffs and protectionism. Developing countries need to be safeguarded against unfair and unequal competition. Globalization is here but it needs to be regulated in favour of the weaker economies

4.2.3.3 Appropriate national economic policies (attract investment)

Many producing countries have started taking the necessary actions but more needs to be done.

Most countries including Mexico and Tanzania have privatized their parastatal bodies and powers of regulatory bodies re-examined to remove undue interference to the private sector activities. This has been a welcome development and is bound to result in improvements if other conditions are right. The involvement of small holders especially in those contrives, which were pre dominantly estate based is seen as one way to increase production.

There have to be in place proper fiscal, monetary and trade policies with good governance to attract both local and foreign investment in the producing countries. We have seen, in the last 25 years, transfer of processing facilities from the developed countries to the fibre producing developing countries to take advantage of geographical, logistical and labour factors which are more favourable. For further expansion and improvements these have to be backed with proper policies. These partnerships and joint ventures between entities in developed and developing countries are very important for the further of sisal

It is quite clear that the fibre producing nations have to assist their exporters to combat what are still daunting obstacles to their trade. This can be in the form of invoking WTO rules by reciprocating subsidies and barriers which they face. Funding for agriculture cannot come from the conventional commercial banks who are short term in their outlook. Therefore specialized national and multilateral funding is needed to address sisal development

4.2.3.4 Widen Product Base

There is a dire need to widen the product base. Traditional products of twines, ropes, carpets and bags need to be sustained and improved to combat competition. But efforts have to be intensified to produce and market those products where sisal has technological, environmental like pulp, geotextiles, buffing cloth, bonding, construction materials, handicraft, furniture, padding, mattresses and in the automotive industry. If all these are developed to their potential then demand for sisal fibre will increase fivefold in a period of twelve years.

4.2.3.5 Utilisation of the waste

The concentration of development has been in the utilization of the fibre but as mentioned earlier, only 2 per cent of the plant is extracted as fibre. In the worldwide production of fibre of 300000 tons, about 150000000 tons in the biomass and short fibres called waste

Research has been going on to establish how best to exploit this huge quantity of biomass commercially. Focus is now on using this as a source of:

- Energy –biogas and electricity
- Animal feed
- Organic soil improver
- Pharmaceuticals

Raw material for bags and padding

There is already haphazard utilization and production of these various products from the “waste” but an organized commercial prototype is needed and efforts are being made to do this. This is bound to increase the return per hectare and make sisal fibre more competitive thus opening up further commercial applications.

4.2.3.6 Research & development

There is dire need to embark on R&D to address production methods in order to improve yields, productivity, new products, quality and to reduce costs of production. This is an expensive task considering the years of inactivity in R&D. Assistance is required but producers themselves must put weight and resources behind R&D either individually or collectively.

4.2.4 Conclusion

The measures highlighted above are possible given the willpower and goodwill of individuals, companies, governments and other bodies. If undertaken, then there is no reason why the sisal industry should not be revitalized to offer hope, prosperity and improved standard of living for millions of people in poor and rich families alike. It can and should be done.

4.3 Sisal Production in Tanzania

4.3.1 Introduction

Sisal was introduced in Tanzania by Germans In 1892. By 1913 the country produced about 20,000 tons of sisal fibre annually. The production increased to 215,000 tons annually during the 1960's. Production started to decline in 1960's and in recent year's production is less than 10% and export less than 5% of earlier levels.

Virtually, all sisal produced in Tanzania is by estates which form their own closed systems. Out growers schemes have been proposed in various cases for years but it is only very recently that it has started being implemented after privatization of former government estates are located in Tanga region. Morogoro is second in importance, aims sisal is grown in Arusha, Kilimanjaro, lindi, Mtwara and to a small extent in Tanga region.

4.3.2 Production Levels and Trends

Production Practices

Production and processing aspects (up to the fibre stage) are discussed in combination as production is usually in tonnage of sisal fibre.

Sisal has a number of characteristics that makes it unattractive crop under rather marginal conditions and is low demanding in specific cultural practices. The crop:

- Is low demanding in external inputs – no fertilizer, no pesticides are required for a good production (in Tanzania) assuming that land can be put to fallow for a couple of years.
- Can be planted anytime and harvested anytime of the year
- Is a conservative use of water can survive long periods of drought, can take a lot of water without having problems
- Has a few argotic problems

- Needs a lot of sun, which is plentiful in Tanga, Mara and elsewhere. There is no need of planting shading trees.
- Is a very strong plant: even after several years of abandoning and overtaken by bush, once cleared of bush and weeds, the sisal estate starts growing again and can be harvested giving still good yields; so rehabilitation of a plantation is not expensive, as there is no need of uprooting and planting need of uprooting a new planting.
- Sisal is produced mainly in estates. Each sisal estates has its own processing unit for making sisal fibre (by use of decorticators).due to low profitability, sisal has been neglected for some time - very few innovations were introduced. Basically, the operations are the same as they were 30 years ago. This applies for the labour intensive-harvesting on the fields, as well as for processing.

Yields and Yield Gap

Yields in Tanzania are at present far below those of other countries as indicated in the table below:

| PRODUCING COUNTRY | AVERAGE YIELD (FIBRE IN KG\HA) | |
|-------------------|--------------------------------|---------|
| | 1989\91 | 1993\95 |
| Angola | 1,369 | 1,250 |
| Kenya | 1,136 | 1,144 |
| Malagasy | 980 | 1,073 |
| Tanzania | 577 | 534 |
| Africa | 716 | 690 |
| Brazil | 780 | 769 |
| China | 1,338 | 1,321 |

A survey conducted directly on private sisal estates in Tanzania reveal that the current average production for the well-kept estates ranges between 1.0 metric ton to 2.0 metric tons. The latter figure is calculated for years 7 - 10 excluding the first three years when there is no harvest. The first cut is on average 0.5 tons with 1.9% fibre, whereas the top cuts may yield up to 2.5 tons of 4.5% with maximum 6% fibres. The low yields in Tanzania is due to:

- Partial neglect to the field crop
- Genetic degeneration of varieties
- Losses due to low management
- Poor fibre extraction by the poor state of decorticators

4.3.3 Profitability

The profitability of sisal depends on the development in the international prices and on the development of the cost structure in Tanzania. The following aggregate data gives the overall picture:

Prices

From 1985 to 1995 the prices of sisal fluctuated between US\$ 500 and US\$ 600. Since 1995 the prices have gone up to \$700 - 880. With that price level, the sisal producers in Tanzania were making good profits for the first time in many years. Survey conducted in private sisal estates reveal that on the average the cost of production of 1.0 metric ton of sisal fibre (mixed grade) is around US\$ 500

Production cost structure

Sisal estates face a number of major problems that leave them at best with very small profits margins. These problems are:

- Severe taxation burden. In 1998 land rent went up to Tshs 4.38 per acre to Tshs 1,200 per acre. The problem has been rectified. Land rent for investment purposes in agriculture is now fixed Tshs 200 per acre per annum.

- High cost of electricity: the cost of electricity is very high. The share of processing cost is about 40% to 45%. Often the power is down which causes high losses of quality fibres and reduces the processing efficiency.
- Labour: The productivity of labour is very low, and cost are very high, taking into account those additional payments that have to be made on social costs. This particularly true for the “cutters” who harvest and bring the sisal leaves to the collection points. Many estates face problems in labourers (nowadays almost all cutters are old men, as young men are not interested in doing such kind of work).

An essential point in profitability of the estates is annual replanting. If an estate does not minimally replant 10% annually, they are rapidly decreasing the supply of raw materials and turn over.

4.3.4 Marketing

Tanzania was a major producer and exporter of sisal during the 1960's and 1970's. In the 1960's Tanzania produced annually about 215,000 metric tons of sisal fibre. By 1980 the production was less than half the 1970 level. Output declined continuously and stabilized since c1991 at an annual production level fluctuating between 20,000 to 25,000 metric tons, or about one-tenth of what it used to be in the 1960's.

The drop in exports is even much more significant. It dropped to less than 5% of the earlier levels. Initially, sisal was predominantly an export item. In recent years however, only one - third of the production is being exported and two - thirds sold in the domestic markets. A part from the general declining demand, the world market share of Tanzania fell from 24% in 1960 to about 10% in 1995.

A parallel trend took place in the acreage cultivated. By 1967 government estates cultivated 117,000 ha of sisal, and by mid-1990's the area under sisal cultivation was about 20,000 23,000 ha.

| YEAR | PRODUCTION(MT) | SHARE OF PRIVATE SECTOR | DOMESTIC SALES (MT) | EXPORT SALES (MT) |
|------|----------------|-------------------------|---------------------|-------------------|
| 1970 | 202,180 | 48% | 35,730 | 198,184 |
| 1980 | 85,978 | 53% | 25,563 | 49,868 |
| 1990 | 31,942 | 54% | 28,309 | 6,379 |
| 1991 | 32,298 | 56% | 24,141 | 5,140 |
| 1992 | 21,458 | 69% | 26,000 | 4,104 |
| 1993 | 25,648 | 60% | 16,561 | 4,498 |
| 1994 | 25,230 | 64% | 15,849 | 8,373 |
| 1995 | 21,976 | 72% | | 6,842 |
| 1996 | 22,158 | 76% | | |
| 1997 | 15,317 | | | |
| 1998 | 24,000 | 100% | | |

Source: MAC-MDB, 1998

During 1960's sisal was the leader in foreign exchange earnings. By 1972, this position of sisal was taken over by coffee and cotton. Since then, the earnings have been eroded drastically that by now sisal's contribution to the total export earnings is about 1% only. Tanzania is not an exceptional case. The decline in the sisal industry is taking place in all producer countries. For instance, in Kenya the sisal production dropped from 40,000 MT in 1990 to 20,000 MT in 1997.

There are three major structural problems that caused the long term decline

- Reduced demand due to very stiff competition with synthetic products;
- Nationalization of the industry that led to large inefficiencies and low productivity in production and processing, and poor marketing;

The replacement of the sisal fibre by synthetic products is an irreversible process. Although with a changing consumer preference in the higher-income countries are in favour of "ecoproducts and sisal would fit well on this trend, the market for finished products is limited and there are high quality demands. Increase of production appears unlikely.

Since 1990 the privatization of sisal industry was completed. Now all estates are privately owned by foreign and local investors or by a combination of both.

4.3.5 FINAL PROCESSING

Products and Volume

Twine, yarn and rope are the main products of spinning mills. Manufacturing facilities make also sisal products such as buffing cloth, gunny bags etc.

Sisal fibre provides two groups of products: natural fibre products and non-fibre products. Examples of fibre products are:

- Ropes, twines (that were largely pushed out of the market by synthetic products) and yarn
- Finished consumer goods such as carpet and rugs
- Industrial products such as polish cloth for metal (hard enough, but does not scratch); bonding materials in fibre glass (a new use)

Until very recent, no use was given to non-fibre material uses:

Pulp to strengthen recycled paper

- Using the bio-mass for electricity generation; a side product is an organic soil compost
- Pharmaceuticals
- Alcohol

4.3.6 The First Ever Sisal Biogas Plant in Tanzania

The Government of the United Republic of Tanzania through Katani Limited and the Tanzania Sisal Board (TSB), in cooperation with a German and Chinese companies have recently completed construction of US\$ 1.5 million biogas plant designated to use sisal waste to produce electricity at Hale /sisal Estate in Korogwe District.

The project was financed by the Common Fund for Commodities (CFC US\$ 927,712) the United Nations Industrial Development Organization (UNIDO US\$ 225,600) and the Tanzania Government (US\$ 350,000) including counterpart financial contribution from Katani Limited and the Tanzania Sisal Board (TSB)

The plant was completed in April 2007, and is to go on-stream in July 2007. Construction of the Plant has been as a major breakthrough in search of alternative energy sources in the face of a serious energy crisis in Tanzania.

CHAPTER FIVE

5.0 Project Implementation Schedule

According to the various offers of land and equipment being considered from land owners and equipment suppliers, the implementation of the project is expected to move quite quickly with completion expected before the end of 2009. The following implementation schedule is envisaged.

| s/No | ACTIVITY | PERIOD |
|------|---|------------------------|
| 1 | Completion of project feasibility study | Dec 2019 |
| 2 | Land Acquisition and Registration of Title Deed | Dec 2019 |
| 3 | Civil Works | Jan 2019/Feb 2019 |
| 4 | Placement of Agricultural Machine & implements orders | Jan 2020 |
| 5 | Arrival of Agricultural Machinery & Implements | June 2020/Dec 2020 |
| 6 | Land clearing & Development | January/September 2020 |
| 7 | Development of Sisal Nursery | January 2020 |
| 8 | Placement of processing/Sisal bag making Plant, Machinery & Equipment/workshop machinery & Equipment orders | June 2020 |
| 9 | Trial run production | January 2020 |
| 10 | Full Commercial production | July 2020 |

CHAPTER SIX

6.0 Investment Structure and Financing Plan

6.1 Investment Structure

The project investment cost is estimated at **USD 500,000** including initial working Capital of **US\$2,000,000** the project cost is broken down as follows:

| | | 2007 | 2008 | TOTAL |
|------------|---|---------|---------|---------|
| 1.0 | CAPITAL INVESTMENT ITEM | | | |
| 1,0 | LAND | | | |
| 1.1 | Acquisition, survey & Registration of Title | 30,000 | 0.00 | 30,000 |
| 1.2 | Land Development | 11,583 | 27,027 | 38,610 |
| 1.3 | Nursery & Crop Development | 62,5 00 | 87,500 | 150,000 |
| | SUB TOTAL | 104,083 | 114,527 | 218,610 |
| 2.0 | CIVIL WORK STRUCTURE | | | |
| 2.1 | Agricultural structures | | | |
| | Irrigation infrastructures & Water storage facilities | 11,100 | 25,900 | 37,000 |
| | Bans & Sheds | 50,000 | 50,000 | 100,000 |
| | Other Agricultural structures | 0.00 | 12,000 | 12,000 |
| 2.2 | Factory/processing & storage building structures | 0.00 | 200,000 | 200,000 |
| 2.3 | Senior staff quarters | 25,000 | 25,000 | 50,000 |
| 2.4 | Workshop buildings & ancillary infrastructure | 17,500 | 32,500 | 50,000 |
| | Sub total | 103,600 | 345,400 | 449,000 |
| | | | | |
| 3.0 | PLANT, MACHINERY AND EQUIPMENT | | | |
| 3.1 | Tractors, graders and other agricultural implements | 70,000 | 30,000 | 100,000 |
| 3.2 | Decorticators and other processing machinery & equipment | 0.00 | 300,000 | 300,000 |
| 3.3 | Sisal bags making plants, machinery and equipment | 0.00 | 100,000 | 100,000 |
| 3.2 | Weighing scales, weigh bridges, moisture meter, firefighting equipment, etc | 0.00 | 100,000 | 100,000 |
| 3.3 | Workshop machinery, tools & equipment, power generators etc | 0.00 | 200,000 | 200,000 |
| 3.4 | Water treatment plant & other environmental protection equipment | 0.00 | 25,000 | 25,000 |
| | Sub total | 70,000 | 755,000 | 825,000 |
| 4.0 | MOTOR VEHICLES & CYCLES | | | |
| 4.1 | TRUCKS (10 units @ US\$ 35,000) | 175,000 | 175,000 | 350,000 |
| 4.2 | Pickups (9 units @ 20,000) | 60,000 | 120,000 | 180,000 |

| | | | | |
|-----|--|---------|-----------|-----------|
| 4.3 | Toyota land cruiser hard top (6 units @ US\$ 30,000) | 60,000 | 120,000 | 180,000 |
| 4.4 | Motor cycles (10 units @ US\$ 2,500) | 12,500 | 12,500 | 25,500 |
| | SUB TOTAL | 307,500 | 427,500 | 735,500 |
| 5.0 | furniture, fixture & fittings | 6,250 | 18,750 | 25,00 |
| 6.0 | Miscellaneous project overheads | 15,000 | 15,000 | 30,000 |
| 7.0 | Contingency Allowance | 10,000 | 10,000 | 20,000 |
| 8.0 | Pre - Operation Expenditures | | | |
| 8.1 | Feasibility studies | 15,000 | 0.00 | 15,000 |
| 8.2 | Company formation & legal requirements | 3,000 | 0.00 | 3,000 |
| | Staff recruitment & training | 15,000 | 15,000 | 30,000 |
| 8.4 | Other pre - operation expenditures | 10,000 | 0.00 | 10,000 |
| 8.5 | Capitalized interest | 0.00 | 100,248 | 100,248 |
| | GRAND TOTAL | 659,433 | 1,801,429 | 2,460,858 |

6.2 Financing Plan

It is planned that regional banks and financial institution be approached for provision of term loan. It is planned that the loan be for a period of five years with eighteen months grace period. The term loan will finance the complete sisal processing plant, agricultural machinery and implements as well as procurement of heavy duty trucks for transportation of sisal leaves from the collection centres to the factory, as well as transportation of other materials and products.

The proposed financing of the project activities is summarized below:

| SN | SOURCE OF FINANCE | 2007 | 2008 | TOTAL |
|-----|--|--------|------|--------|
| | OWNERS EQUITY CONTRIBUTION (35%) | | | |
| | FINANCING ITEMS | | | |
| 1.1 | Land acquisition survey and registration title | 30,000 | 0.00 | 30,000 |

| | | | | |
|-----|--|----------------|------------------|------------------|
| 1.2 | Land Development | 11,583 | 27,027 | 38,610 |
| 1.3 | Nursery & Crop establishment | 62,500 | 87,500 | 150,000 |
| 1.4 | Pre-operation Expenditure | 43,000 | 15,000 | 58,000 |
| 1.5 | Motor vehicle & motor cycle | 307,500 | 117,500 | 425,000 |
| 1.6 | Furniture, Fixture & fittings | 6,250 | 18,750 | 25,000 |
| 1.7 | Miscellaneous project overheads | 15,000 | 15,000 | 30,000 |
| 1.8 | Contingency allowance | 10,000 | 10,000 | 20,000 |
| 1.9 | Capitalize interest | 0.00 | 100,248 | 100,248 |
| | Sub total | 485,833 | 391,029 | 876,858 |
| 2.0 | TERMS LOAN 65% at 6 % | | | |
| | FINANCING ITEMS: | | | |
| 2.1 | Buildings & other Civil works structures | 103,600 | 345,400 | 449,000 |
| 2.2 | Agricultural Machinery and Implements | 70,000 | 30,000 | 100,000 |
| 2.3 | Plant and Other Machinery and Equipment | 0.00 | 725,000 | 725,000 |
| 2.4 | Motor Vehicle | 173,600 | 1,410,400 | 1,584,000 |
| | TOTAL FINANCING | 659,433 | 1,801,429 | 2,460,858 |

6.3 Security for Term Loan

As security for the term loan, the company will offer a fixed charge on its assets, through mortgage and debenture. This will be shared pari pasu with other short-term lenders to the company.

7.0 PRODUCTION AND REVENUE

Underlying assumption

7.1 PRODUCTION

1. Area under cultivation
 - Own plantation(s) 300 ha
 - Contract (small holder) Growers 700 ha.
2. Plant population: 25,000 plant per
3. Economic Life of the crop: 10 years
4. Yield: 1.5 metric tons per ha. Per annum
5. Product: Sisal Fibre for export and sisal Bags for domestic market
6. Production & processing Cost: USD 1,150,000

Major Cost Items as a % of Total Cost

| COST ITEM | AS % OF TOTAL COST |
|--|--------------------|
| Labour | 15.0% |
| Labour Overhead Cost | 5.0% |
| Other Factory Supplies | 2.5% |
| Water | 10.0% |
| Electricity (including cost of running power generator(s)) | 25.0% |
| Spare parts: Estate | 4.0% |
| Plant | 6.0% |
| Motor Vehicle Running Expenses | 4.5% |
| General estate & Factory overheads | 5.0% |
| Market Costs | 1.5% |
| Administration Materials & Services | 2.5% |
| Land Rent & Insurance | 5.0% |
| TOTAL | 100.0% |

7.2 Revenue

Sisal Fibre

Annual production 1,500 metric tons of sisal fibre on the average
F.O.B PRICE US\$ 600 per metric ton

Production of one piece of sisal bag requires 1.2 kgs of sisal fibre

Selling price per pc US\$ 1.4 per piece

Fiscal Incentives

It is assumed that the project will be granted TIC Certificate of Incentives and therefore enjoy the following fiscal benefits:

- Zero import duty of all capital goods
- VAT deferment on all capital goods

- VAT deferment on all locally procured building materials
- 50% capital investment allowance on all capital goods
- Indefinite loss carry forward period against future profit

CHAPTER EIGHT

8.0 Financial Projections and Analysis

Based on the assumptions discussed in chapter 8 above and loss projections, cash flow projection and balance sheet projections have been prepared and are presented as under financial statement annex

8.1 Projected Profit And Loss Statement

Presented in detail in Financial Statements and summarized here below for the first four years of operation are the projected profit and loss statements:

| ITEM | Year 1 | Year 2 | Year 3 | Year 4 | Year 10 |
|---|------------|-----------|----------|-----------|-----------|
| Sales Revenue | 508,000 | 776,000 | 894,000 | 1,012,000 | 1,012,000 |
| Variable Costs | 191,030 | 372,660 | 489,540 | 501,420 | 501,420 |
| Variable Margin | 316,970 | 403,340 | 404,460 | 510,580 | 510,580 |
| Variable Margin As % of Sales | 62.40% | 51.98% | 45.24% | 50.45% | 50.45% |
| Fixed Costs | 284,993 | 284,993 | 284,993 | 284,993 | 27,800 |
| Operational Margin | 31,976 | 118,346 | 119,466 | 225,586 | 482,780 |
| Financial Costs | 95,040 | 85,437 | 75,258 | 64,469 | 0.00 |
| Gross profit from Operations (as% of sales) | (-12.41) | 4.24% | 4.95% | 15.92% | 47.71% |
| Net profit | (-141,700) | (-45,723) | (34,424) | 82,485 | 330,957 |
| Net Profit (as % of sales) | (-27.89)% | (-5.89%) | (-3.85) | 8.15% | 32.70% |

8.2 Project cash Flow

As presented in the financial statements, the project annual cash generation will enable timely servicing of the term loans and other

financial obligations and leave enough cash to cushion against future risks.

8.3 Balance Sheet projections

The financial Statement analyses the projected balance sheet over the ten year period of the project operations. From the projections it is observed that, current liabilities are adequately covered by current assets throughout the period. Again from the perspective of the investors, net worth of the company grows from US\$ 892,684 at the beginning of project operations to more than US\$ 2.210 million in the year ten.

8.4 discounted Cash Flow and Internal Rate of Return

Discounted cash flows presented in the financial statements gives an after tax internal rate of Return (IRR) of 12.01% for the project total investment at the assumed discount rate Of 6% while the same is 15.39 for equity invested.

8.5 Financial and Liquidity Ratios

Debt service coverage ratio, debt equity ratio, return on investment and return on equity have been calculated in the Financial statements and are presented in the table below giving these ratios for the four five years of operations.

| RATIO | Year1 | Year 2 | Year 3 | Year 4 | Year 10 |
|---|-----------|----------|----------|--------|---------|
| Net profit to equity | (-15.87%) | (-5.12%) | (-3.86%) | 9.24% | 37.07% |
| Net worth to Total liabilities | 36.04% | 32.07% | 33.17% | 33.13% | 97.46% |
| Net profit + Interest to Investment ratio | (-1.86) | 1.57% | 1.60% | 5.73% | 12.91% |

8.6 payback period

Payback period computation presented the in Financial Statement shows the total investment is expected to be recouped in 8 years at zero discount rate and 10 years when discounted at the current international long term discount rate of 6% this is also quite a good

performance of the project. Furthermore the NPV Ratio is positive and is computed at 0.38

On the other hand, internal rate of return on Equity is computed at 15.39% with the payback period of 8 years at zero discount rate and 9 years at the assumed equity discount rate of 6%

CHAPTER NINE

9.0 Management and Organization

The company will be organized with a central head office management it is planned that the company will establish a head office management and staff and plant managers/supervisors and other staff for the plantation, sisal processing plant and sisal bags making plant. Transport operations will also have its own management/supervision to be headed by an experienced logistic Manager.

CHAPTER TEN

10.0 Social and Economic Benefits

The project will bring the following additional advantages to the domestic economy:

- This project being Agriculture in its implementation programme will usher technology in processing (Transfer of knowledge/technology). The advantages to the country are quite significant, in terms of knowledge of proessing business, tourism and commerce etc. Further the project will promotes make Tanzania as the sisal destination.
- The programme will cause more people to be employed about 100 local people and raise their income, improve their social welfare and pay taxes; it is poverty alleviation programme to them.

- The business will continue to contribute towards boosting government revenue through the various taxes like corporate tax, withholding taxes and skill development levy.
- The project will be a reliable market for the sisal smallholder farmers in the region who will be established by the project, buying sisal leaves from them and processing it to the products mentioned above. Tanzanian farmers/peasants are generally at the very bottom of the poverty ladder. Having a reliable buyer of the produce, goes a long way in guaranteeing a source of cash income, so important for meeting educational costs for their children and paying for their hospital expenses.
- The project will employ on permanent terms about 65 people. During the sisal cutting period the project will employ an additional 50 to 75 casual labourers for loading, unloading of sisal leaves from the collecting centres and at the factory site.
- The project will manufacture sisal fibre for export, thus providing a necessary raw material used by other industries abroad;
- The project will manufacture sisal bags a necessary packaging material for exports of agricultural produce like coffee. Sisal bags are continuously becoming popular again, especially in packaging products for the high income earners in Europe with the awareness of “ecoproducts” where these people now prefer natural products rather than cheap synthetic products;
- The entire sisal fibre production will be exported in the initial years before going into phase to plan for manufacture of various sisal products. The exports will thus generate foreign exchange for the country;
- Increased tax revenue to the government, generated through corporate tax, VAT on consumables, employees PAYE, etc.

CHAPTER ELEVEN

11.0 Conclusions and Recommendations

- Raw materials in form of sisal leaves will be made available through the proposed plantation and cultivation by smallholders

on contract farming arrangement. Tanga region has all necessary conditions required for sisal cultivation and processing;

- Promoters of the project are experienced and successful executives with a record of accomplishment. They are resourceful and have transportation, with connections in both the export and domestic markets. Their experience guarantees successful entry into sisal industry in Tanzania;
- The project will generate stable direct employment to 65 people more than 50 additional employed during sisal cutting period. This means the project will directly support a population of at least 500 people;
- The company will be in a position to service the envisaged level of borrowing without any difficulty;
- The agricultural, processing and manufacturing facilities will be run at the highest level of professional competency, safe to the workers and the environment;
- The project will have multiplier effect advantages to many other sectors of the economy.

The study has shown that the project is technically feasible, financially viable and economically desirable. A fast implementation is advised and it is recommended that financial institutions extend support to the Sagarán by financing project to the tune of US\$ 640,000 and granting TIC Certificate of the incentives so as to enable this local resources based and export oriented project access fiscal incentives and other benefits as provided under Tanzania Investment Centre Act. 1997.

SUMMARY SHEET

Project title:

Sagarán Exploration (T) Company Limited

Project description:

To establish sisal plantation and sisal processing at Tanga, Moshi, Simiyu, Morogoro for production of sisal bags for the local market and

sisal fibre for export. The project also contract sisal out growers for supply of sisal to the processing factory

Date and Time: April 2020

Project Classification: New Project

CAPITAL INVESTMENT COST

| | | |
|------------------------|---------------|------------------|
| Land/Building | USD \$ | 650,000 |
| Vehicles (Tractors) | USD \$ | 150,000 |
| Furniture and Fittings | USD \$ | 50,000 |
| Pre-expenses | USD \$ | 100,000 |
| Other Expenses | USD \$ | 100,000 |
| Working Capital | USD \$ | 100,000 |
| TOTAL | USD \$ | 1,150,000 |

FINANCIAL PLAN (SOURCE OF FUNDS)

- Own Local equity USD \$ 650,000
- Foreign loan USD \$ 500,000
- **TOTAL USD \$ 1,150,000**

M/S Sagar Exploration (T) Company Limited has allocated the funds for the intended Sisal processing Project by its own foreign fund and foreign loan:-

EFFECT OF COST INCREASE ON PROFITABILITY (ON THE BASIS OF YEAR II

| INCOME | COSTS | INCREASE | PROFIT BEFORE DEPRECIATION |
|--------|-------|----------|----------------------------|
| 860.0 | 600.0 | % | 260.0 |
| 860.0 | 630.0 | 5% | 230.0 |
| 860.0 | 660.0 | 10% | 200.0 |

EFFECT OF COST DECREASE ON PROFITABILITY (ON THE BASIS OF YEAR II USD

| INCOME | COSTS | INCREASE | PROFIT BEFORE DEPRECIATION |
|--------|-------|----------|----------------------------|
| 860.0 | % | 600.0 | 260.0 |
| 817.0 | 5% | 600.0 | 217.0 |
| 774.0 | 10% | 600.0 | 174.0 |

ROJECTED INCOME STATEMENT

| Income | Years | | | | |
|---------------------------------------|--------------|--------------|--------------|--------------|----------------|
| | I | II | III | IV | V |
| Processing Income & allied services | 800.0 | 860.0 | 930.0 | 970.0 | 1,000.0 |
| Total Income | 800.0 | 860.0 | 930.0 | 970.0 | 1,000.0 |
| Utilities | 200.0 | 200.0 | 200.0 | 200.0 | 200.0 |
| Salaries and wages | 60.0 | 70.0 | 80.0 | 90.0 | 100.0 |
| Transportation | 50.0 | 60.0 | 70.0 | 80.0 | 80.0 |
| Administrative expenses | 50.0 | 50.0 | 60.0 | 60.0 | 60.0 |
| Advertisement | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Clearing Charges | 50.0 | 60.0 | 70.0 | 70.0 | 70.0 |
| Electricity | 50.0 | 60.0 | 70.0 | 70.0 | 80.0 |
| Water | 50.0 | 50.0 | 60.0 | 60.0 | 60.0 |
| Telephone bills | 30.0 | 40.0 | 40.0 | 50.0 | 50.0 |
| Total Expenditure | 550.0 | 600.0 | 660.0 | 690.0 | 710.0 |
| Net Profit (pre tax and depreciation) | 250.0 | 260.0 | 270.0 | 280.0 | 290.0 |

Appendix III

PROJECTED LONG TERM LOAN REPAYMENT

(Fig. in USD \$ '000')

| Year | Repayment | | | |
|------|-----------|----------|-------|--------|
| | Principal | Interest | Total | Amount |
| O | | | | 500.0 |
| I | 50.0 | 50.0 | 100.0 | 450 |
| II | 50.0 | 45.0 | 95.0 | 400 |
| III | 50.0 | 40.0 | 90.0 | 350 |
| IV | 50.0 | 35.0 | 85.0 | 300 |
| V | 50.0 | 30.0 | 80.0 | 250 |
| VI | 50.0 | 25.0 | 75.0 | 200 |
| VII | 50.0 | 20.0 | 70.0 | 150 |
| VIII | 50.0 | 15.0 | 65.0 | 100 |
| IX | 50.0 | 10.0 | 60.0 | 50 |
| X | 50.0 | 5.0 | 55.0 | 0 |

