

# Overview of the Sisal and Henequen Industry: A Producers' Perspective

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## **1. INTRODUCTION**

The Sisal and Henequen Industry is 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 re-export. However this feature has been changing with fibre producers also processing the fibre in their countries.

The sisal and henequen industry (herein referred to as the sisal industry but always meaning to include henequen) has, in the last 30 years, gone through a familiar pattern afflicting many agricultural and agro-industrial products. It has faced a decline in production of about 38 percent 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. The aim of this paper is to look at the major problems facing the industry and the possible way forward. 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. That data has formed part of the basis of the issues discussed in this paper.

## **2. PROBLEMS OF THE INDUSTRY**

The main problems afflicting the Sisal Industry can be divided into two main groups; the Demand Side and the Supply Side problems.

### **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.

#### **2.1.1 Terms of trade**

Like most other agricultural products, the terms of trade of sisal has been deteriorating in general with wide fluctuations over the years. Today's price of East African grade

UG sisal fibre is US\$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.

### **2.1.2 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 products is done in the major markets. Sisal in turn faces negative marketing from competing substitutes.

### **2.1.3 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 percent 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 these 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.

### **2.1.4 Technological change**

Seventy percent of sisal was sold in the form of Agricultural Twine. 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 in demand. The traditional market players in the industry have accepted this situation and it is only recently that some reaction is seen.

## **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.

## **2. Lack of change and of research and development**

In many cases sisal has been produced in the same way for the last 50 years and the same products have been produced. The only dedicated Sisal Research Centre -

Mlingano in Tanzania concentrated in agronomical research. Single product 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.

### **2.2.2 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 of the 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 percent 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 percent of its peak in 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.

### **2.2.3 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 percent 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 decortication thus disposal of this huge amount of biomass becomes a problem. 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.

### **2.2.4 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, contributing 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 that in many cases the returns on investment are actually higher.

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

### **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.

#### **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 a sustainable renewable resource for its cordage, woven and 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, 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 twice before buying them. Some countries have started to take the right action but pressure needs to be intensified by everybody. The sisal producing countries should start with their own economies by taking stringent measures to promote natural fibres. The rich developed economies who are the main culprits of environmental degradation should put aside partisan and selfish considerations by addressing the damage they are doing to all of us on earth. Small actions on their part will mean a lot for the economies of developing countries.

Sisal is a tough plant. It can thrive in drought conditions and in rough land with very little nutrition. For example, in 100 years of commercial sisal growing in Tanzania there has not been a year when there was a drought to kill sisal plants but there have been years when lack of rain devastated many other crops. Drought is the worst enemy of agriculture in many of the developing economies, which rely heavily on rain fed agriculture.

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.

These are very serious advantages for an agricultural product especially in poor areas which are continually ravaged by drought, plant diseases, bush fires; where agriculture is the mainstay of their economies but is still primitive and has no protection of state subsidies or insurance.

#### **3.2 International trade improvement**

Concerted action through multilateral bodies, like the FAO, ITC and IFAD; national and regional bodies 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. Globalisation is here but it needs to be regulated in favour of the weaker economies.

Regional and trading blocks should open their markets to other players. Developing nations should be assisted and encouraged to develop regional trading blocks themselves. These can be important starting points to improve international trade and equalize competition and negotiating power and diversify from traditional South-North business.

### **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 countries, which were predominantly estate based is seen as one of the ways 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 future 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.

### **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, geographical and cost advantages. There is a wide range of products like pulp, geotextiles, buffing cloth, bonding, construction materials, handicrafts, furniture, padding, mattresses and in the automotive industry. If all these

are developed to their potential then demand for sisal fibre will increase five fold in a period of twelve years.

### **3.5 Utilisation of the "waste"**

The concentration of development has been in the utilization of the fibre. But as mentioned earlier, only 2 percent of the plant is extracted as fibre. In the worldwide production of fibre of 300 000 tons, about 15 000 000 million tons is 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. RESEARCH AND DEVELOPMENT**

Clearly one cannot expect to continue with the same methods of production for over 50 years. 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.

### **4.1 Project on product and market development for sisal and henequen products**

The FAO Intergovernmental Group on hard Fibres has sponsored to the Common Fund for Commodities (CFC) a project designed to develop new end uses for sisal, to evaluate the market potential for the products and the best way to penetrate those markets. The focus is in the development of sisal pulp.

The project is co-funded by UNIDO, the Belgian Government, IFAD and counterpart funds from the Tanzanian and Kenyan sisal industries. It has been underway since 1998 under UNIDO, Katani Ltd. in Tanzania and Kenya Sisal Board in Kenya and to December 2000 had accomplished the following:-

- An international workshop was conducted in Tanga, Tanzania to review past research results and current production practices to find ways to improve them in order to reduce costs of production and raise productivity. This review is now being published for dissemination to all members of the FAO and CFC.

- Established variety trials plots to find out the best varieties and spacing for mass production of fibre or pulp and the most cost effective way of preparing nurseries and fields. It will also be possible to find the best way to semi-mechanise the various activities for enhanced efficiency and cost reduction.
- In conjunction with IFAD, established 48 smallholder sisal growers in Tanzania as a pilot and developed processing facilities for them. The Brazilian and Mexican smallholder production and processing system have been studied and are being improved on. The development of smallholder schemes is seen to be one of the major future activities in the sisal industries in Africa where large estates have been predominant.
- Established two Meristematic Tissue Culture laboratories in Tanzania and Kenya with collaboration of a Mexican research institute. These will propagate better planting material and accelerate research on various varieties.
- Conducted research into use of sisal waste as animal feed and concluded that it can be effectively used and found especially good for beef cattle. The final report on this is being perfected for dissemination.
- Produced equipment designed to recover flume tow (short fibres) from the waste channels of fibre processing which hitherto have been thrown away. Estates are now looking into investing in these recovery machines to enhance their production of fibre.
- Improving the sisal pulping fibre production process used in Brazil to produce fibre at a cheaper cost and in an environmentally friendly way. The fibre extraction mill will be ready by mid 2001.
- Conducting a survey on the potential markets for sisal pulping fibre. Initial results are encouraging but more concrete information is needed for possible commercial exploitation.
- Pursued a loan from the CFC to put up a pilot plant to produce biogas and electricity from sisal waste. Research has been completed in collaboration between Danish and German Research Institutes and researchers in Tanzania.

The project is found to be very useful in the development of alternative processes and products. It is clear, however, that more action is needed by the industry itself and by various producers, marketers and consumers to assist in the redevelopment of the sisal industry.

## **5. CONCLUSIONS**

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 and henequen industries should not be revitalized to offer hope, prosperity and improved standard of living for millions of people in poor and rich countries alike. It can and should be done.