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Food and Agriculture
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Продовольственная и
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Alimentación y la Agricultura

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COMMITTEE ON COMMODITY PROBLEMS

JOINT MEETING OF THE THIRTY-NINTH SESSION OF THE INTERGOVERNMENTAL GROUP ON HARD FIBRES AND THE FORTY-FIRST SESSION OF THE INTERGOVERNMENTAL GROUP ON JUTE, KENAF AND ALLIED FIBRES

Tanga, United Republic of Tanzania, 15-17 November 2017

REVIEW OF THE SISAL MARKET INDUSTRY: MARKET PROSPECTS AND POLICY

I. SISAL PRODUCTION AND SUPPLY

1. Sisal fibre is currently grown commercially mainly in Brazil, Kenya, Tanzania and Madagascar. Sisal is also grown in Mexico, Haiti, South Africa, Mozambique and China. However, the tonnages produced by these five countries are not significant for the global market, and with the exception of Mozambique, which exports a maximum of 1,000 tonnes of sisal annually, these smaller suppliers do not affect global supply and demand.

2. As indicated in Table 1 below, world sisal production for 2015 in the four major producing countries was approximately 161,160 tonnes. An estimated 16,000 tonnes were Lake/Hedge sisal, produced around Lake Victoria in East Africa. This fibre is hand-made and produced by subsistence farmers. It is not of an exportable quality and is used in the local market for mattresses as well as basic twines and ropes.

3. Approximately 35,000 tonnes of production were utilised locally, predominantly in Brazil, where 10 spinning mills produce twines for North America. In Kenya, Tanzania and Madagascar sisal is grown on large commercial farms, with sizes varying from 500 to 12,500 hectares. These plantations are capital-intensive, highly organised, mechanised and employ high-yielding varieties. Varieties differ across location, soil type, planting stock and overall efficiency of the operation. The sisal industry in Mozambique is characterized predominantly by small farms. Their production levels are lower and fibre quality is not as consistent as in other African sisal-producing countries.

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Table 1 – World sisal 2015 production [tonnes]

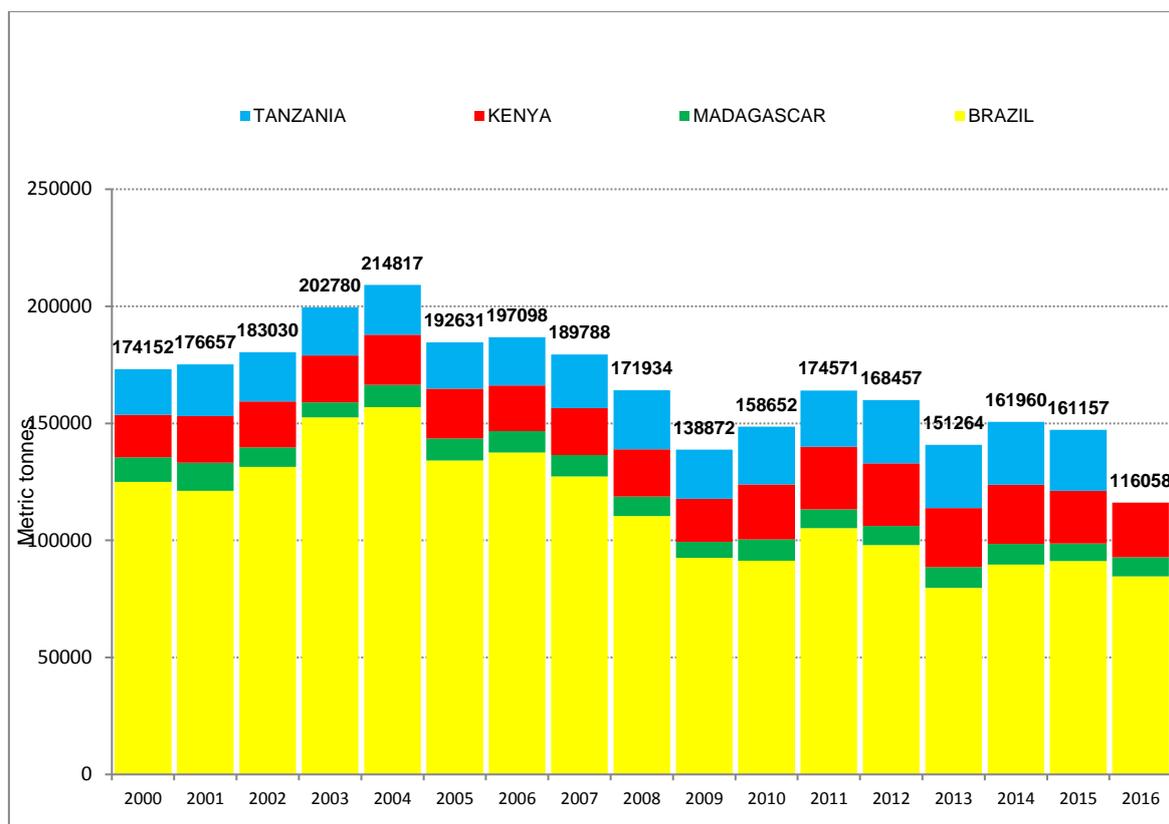
Brazil	2015	2016
Total production estimated	91,162	-
Raw sisal	34,256	34,321
Manufactured exports	31,983	27,424
Utilised locally/held in stock	25,000	-
Kenya		
Total production	25,310	24,263
Estate grown sisal	22,445	23,266
Hedge/Lake sisal	2,076	1,685
Exported	21,240	21,460
Tanzania		
Total production	40,000	36,753
Estate grown sisal	26,107	13,894
Hedge/Lake sisal	13,894	-
Madagascar		
Total production	7,549	8,324
Sisal export	6,427	6,260
Product export	64	-
Total production	-	8,241

4. In Brazil, sisal is a smallholder-subsistence crop, grown on small farms with other crops and/or cattle. Production is labour-intensive, using only basic machinery. The fibre is extracted mainly by hired labour using portable basic machines (“*raspadors*”). The fibre is then collected by intermediaries, transported to exporters who brush, grade and bale it for export.

5. The sisal growing region of Bahia covers a vast area with expensive transport to the port of Salvador. In the states of Paraiba and Rio Grande do Norte, sisal is produced in limited quantities and used locally by spinners and weavers.

6. While African sisal is mechanically decorticated through a water-based process, Brazilian sisal is stripped manually, or with basic machinery, using a completely dry process. These two processing methods affect the quality of the sisal fibre. African sisal fibre is of a superior quality commanding a premium market price for use in high-value end products.

7. African sisal production increased slowly in recent years, whereas Brazilian sisal production even decreased (Figure 1). Declines in demand/consumption of agricultural products and economic development in Brazil accelerated the shift from subsistence agriculture to city jobs, a trend that is likely to continue in the future.

Figure 1: Total Sisal Production 2000-2016

II. SISAL USES AND CONSUMPTION

8. Historically, sisal fibre was used for agricultural, and commercial twines and ropes, mattresses, furniture padding, woven into bags and sacking and low quality flooring. Sisal has been replaced over last 40 years by cheaper synthetic yarns. African sisal is increasingly used in high-value end-products and in a diverse range of uses, where the higher and consistent quality supports the use in more remunerative end-products (see Table 2). These product areas, particularly plaster reinforcements in the construction industry and pulp production, have seen consistent growth over recent years (see Figure 2). By contrast, use in composite materials has been limited, largely due to high prices. However, this use segment is expected to grow in the coming years, as sisal is not only biodegradable but also lighter than traditional building materials.

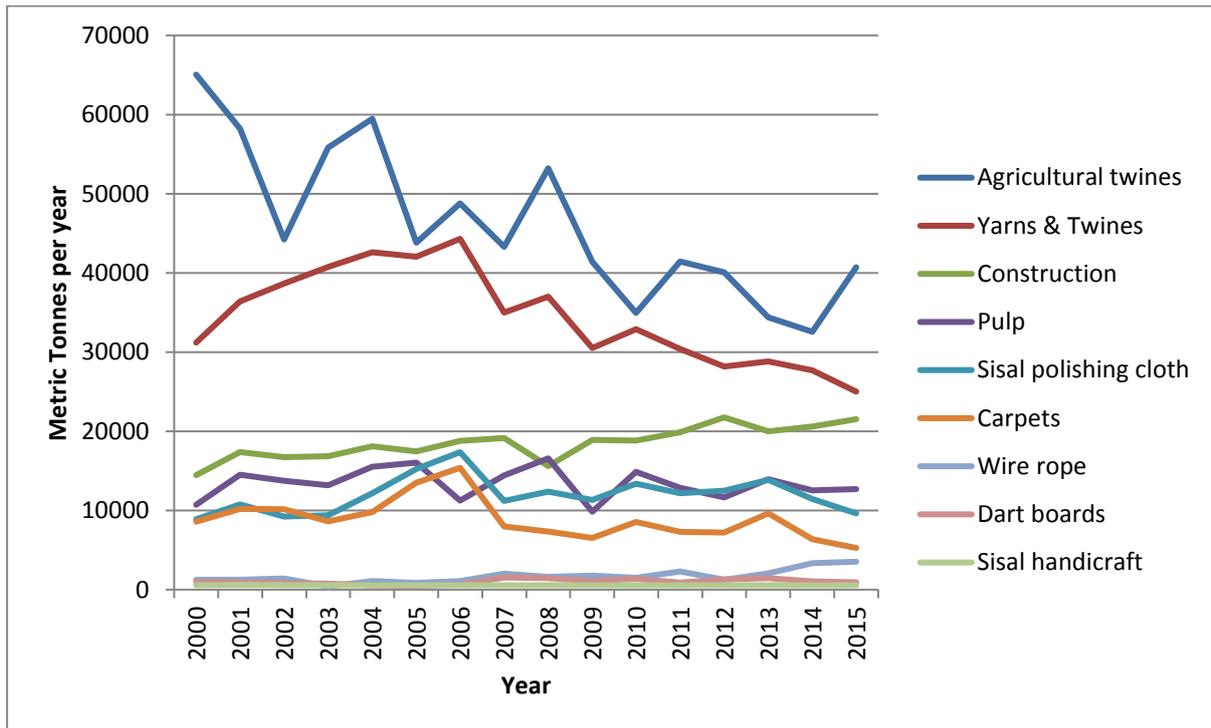
Table 2 – Product areas for African sisal

High quality fashionable floor and wall coverings
Dartboards
Wire rope cores in lifts and mining applications
Plaster reinforcements in the construction industry
High quality interior design (ornate ceiling, panels, statues, fireplaces and tiles)
Specialist pulp and paper production
Polishing cloths
High quality yarns
Sisal based composite and resin materials
Flower/plant industry
Sisal bath brushes and gloves
Bird breeder nests

9. The inherent nature and production method of Brazilian sisal make it unsuitable for many of the applications listed in Table 2. Brazilian sisal continues to be used for twines, low quality polishing cloths, paper and padding. Higher grade Brazilian sisal fibre is utilised in limited higher value products, including the pulp and paper industry.

10. The estimated offtake of 2015 global sisal fibre exports is 81,000 tonnes. The major market for sisal fibre remains China, production takes place mainly in the Guangxi Region and the Guangdong Province. Other markets include the Middle East, North and West Africa, India and Europe. The European market is an important niche market for high quality sisal fibre and yarns. The rest of the world is spread over many countries, which have become sisal users over the last 30 years.

Figure 2: Sisal usage 2000 to 2015 over 500 tonnes/year



III. SISAL PRICING

11. Since before the start of the millennium, the price of sisal in general, and the price of African sisal in particular, was characterized by an upwards slope price curve. The exception to this was a period of global economic crisis in 2008/9 which impacted negatively on pricing levels between March 2008 and July 2009. The upward price is attributable to the level of demand consistently, albeit marginally, outstripping the tonnages being produced. Table 3 shows the price levels for the two main grades produced in 'Bahia Type 3 DB' is produced in Brazil and 'UG/R' in Africa.

12. Weather conditions can have a significant impact on the supply/pricing of sisal fibre. The overall supply of the Brazilian sisal fibre declined in response to the 2013/2014 drought, which affected Bahia, the main growing region. It also weighed on the production of sisal from the African countries. The drought also had a significant impact on sisal prices in both regions, narrowing the African premium due to the lack of Brazilian sisal, particularly the Type 3 DB (double brushed) grade. During 2015 Brazil received good rains resulting in increased production to pre-drought levels, and sisal quality improved significantly. Africa and Brazil have both been affected by El Niño towards the end of 2016.

13. In East Africa, the short rains failed in November/December 2016. Tanzania was most seriously affected with a complete lack of rain across the country. In Kenya, dry areas were more

localised with small pockets of rainfall, but annual short rains failed in much of the country. Most farms in East Africa scaled back production to avoid long-term damage to plant productivity. Drought stresses sisal plants and to survive such periods, the plants shut down, leaves curl inwards to preserve moisture, which makes it difficult to produce good quality fibre during drought conditions.

Table 3: Price chart – start of year FOB basis and Average pricing for 250 kg bale Sisal Fibre (in USD)

Year	UG/R	Bahia Type 3 DB
2004	700	420
2005	800	580
2006	800	620
2007	900	670
2008	1,100	700
2009	900	630
2010	840	650
2011	1,200	720
2012	1,320	870
2013	1,320	880
2014	1,450	1,290
2015	1,850	1,580
2016	2,050	1,325
2017	1,700	1,200

14. The annual long rains arrived on time in April 2017, spreading across the East African region. The exceptionally dry and hard soils after the prolonged drought and the arrival of torrential rains caused widespread damage to roads, bridges and infrastructure on many farms. The extent of the long rains should be sufficient for the plants to ease back into normal production and should sustain the plants through to the short rains in November 2017.

15. In Brazil, at the end of year 2016, beginning of 2017, there was hardly any precipitation with the exception of sporadic and localised rain. However, it has been insufficient for the plants to grow and reverse the impact of the drought. Production in 2017 is estimated to be down by more than 30 percent compared to the same period in 2016. Significant rain would be required to bring the plants back to producing normal yields. The pricing of the fibre produced is increasing every week, as there is strong competition between exporters and local spinners to secure available sisal fibre. In addition, the pressure on fibre demand has increased as the agricultural twine season in North America starts, and contracts are being negotiated for the 2017/2018 season. This inevitably puts further upward pressure on pricing levels already at an all-time high. Brazilian Bahia Type 3 DB export prices are currently being quoted at USD 1 600 mt FOB basis up by more than 30 percent since the beginning of 2017.

IV. BACKGROUND TO A RECENT DEVELOPMENT FOR SISAL FIBRE USAGE IN SAUDI ARABIA

16. Saudi Arabia, with its well-developed construction industry, absorbs increasing amounts of sisal fibre to support its economic growth. The country's overall sisal imports range between 9 and 10 thousand tonnes annually. Sisal fibre is considered to be most suitable binding material as the fibres are thick and easy to separate, increasing the versatility for the various usages. Today, Saudi Arabia represents a niche market for sisal fibre, as the fibre is well established within the construction and building sector.

17. There is a broad spectrum of customers, ranging from large, well-established companies that purchase sisal fibre on a regular basis to service their construction projects. Sisal is used in the construction process as well as for the related decorative products. At the other end of the scale, the sisal fibre is typically sold in small shops to standard cottage industry style businesses, mostly producing bespoke interior design/decorative products.

18. Kenya is the largest exporter of sisal fibre to Saudi Arabia, followed by Tanzania. Most of the main importers are located in Jeddah, Dammam and Riyadh from where sisal is disseminated throughout the country in response to construction demand.

19. Whilst the Middle East remains the main area of sisal fibre usage in this sector, the techniques are also being adopted along the North African coast. It is also apparent that from Morocco south along the West Coast of Africa, sisal fibre is predominantly being used as a binder with Plaster of Paris. The use of 10 kg rolls of sisal fibre and 100 kg bales is geared towards small builders or individuals wanting to construct their own houses or make modifications to the existing ones.

V. PROSPECTS

20. The Sisal price outlook both in the short term (one year) and the medium term (five years) is generally positive, as is the outlook for the longer term beyond five years. Over the past ten years, the emergence of China as the major importer of sisal fibre, combined with the global growth in consumption of many higher value added sisal products, has created an imbalance in supply and demand that has led to the sustained bull market for all types and grades of sisal fibre, and for African sisal in particular. During this period, African production grew, but at a lower rate than the increase in demand. Plus, the lead times involved in establishing new sisal growing areas and the limitations on expanding production could impact on production levels of African sisal.

21. Whilst there has been some slowdown in the annual economic growth rate of China, a continued increase in demand for sisal from the country can still be expected over the coming years, especially as local sisal fibre production has fallen significantly over the last five to ten years.

22. Globally, further increase in the use of sisal fibre as a binding material with Plaster of Paris is expected. There is likely to be similar increase in demand as the economies develop and financing restrictions are eased in North and West Africa. In countries affected by natural calamities and/or civil strife, there is potential for a sisal fibre market opening up as it could be used for the manufacturing of reconstruction material.

23. Sisal fibre use in the speciality high value pulp/papers has proved to be more price sensitive than other sectors and tonnages being used are well below the 2014/2015 figures. The continued shortage of abaca fibre, which is the fibre of choice in this sector, could precipitate an increase in usage of sisal fibre as a “filler” in some specialist paper applications.

24. Sisal polishing cloth is an important product in the domestic market in China, and demand is expected to continue to increase in line with growth in the Chinese economy and the rising demand from its urban emerging-middle class. Another area of potential expansion is sisal fibre in composite materials and injection moulding applications. To date, high prices has limited the applications where sisal can be used.

25. Global demand for floor/wall coverings, dartboards, wire rope cores and high quality sisal yarns made from sisal should remain stable. Agricultural twine offtake is likely to decline over the next five years. The decline in use of sisal fibre in agricultural twine sector has been a feature of the sisal market since the early 1970's when substitution by synthetic twines first started. Fundamental changes in fodder conservation methods means sisal has become a small part of global agricultural twines, except in the Midwestern United States of America. Over the last 10 to 15 years, there has been a preference/requirement for natural fibres, and sisal has shared in this increased demand.

26. At local level, the rising demand for sisal products and by-products is expected to sustain the upward pressure on the international price as countries promote sustainable consumption practices. Most East African countries (Kenya, Rwanda, Ethiopia, and Zanzibar) have embarked on phasing out plastic bags with the expectation that the sisal industry will fill the gap with greener hand packs and baskets and respond to the high demand from the retail sector. The energy, fertilizer and animal feed production based on sisal by products launched in Tanzania will lower the cost of the industry and further enhance its sustainability profile.

27. Recent findings on the role of transfluthrin treated sisal emanators in protecting against outdoor mosquito bites and the efficacy that confers protection against potential infectious bites before people use bed nets, especially indoors, will lead to a further demand diversification in the long run.

VI. HARNESSING THE BENEFITS FROM CURRENT DEMAND GROWTH AND RELATED PRICES

28. The future prospects for well-presented, consistent, quality sisal fibre seem positive, but it will be important for production to keep pace with any increases in demand, especially from the high-value end-products. It is important that prices do not reach or exceed the recent historically high levels, which triggered key sectors to seriously consider substituting sisal with other, cheaper alternatives. Once an industry starts to seriously consider substituting sisal with other products, it is unlikely to revert back to utilising sisal fibre.

29. Careful monitoring and consideration of market movements and potential increases in demand are needed so that the production side of the sisal industry as a whole is able to react and be in a position to meet the demand from the various sectors, which play a key role in the overall sisal market.

30. Efforts aimed at increasing the acreage under sisal for both smallholder and commercial farming and launching new plants in Kenya and Tanzania¹ will lead to an increased production in the medium term reducing therefore pressure on local spinners and the global price. Strengthening both quality and quantity of the products will allow producers to harness the current market opportunities.

31. As the use of natural fibres expands, it becomes critical to strengthen quality management schemes from cultivation to harvesting, through fibre processing and nonwoven mat production to the final product. This will give more impetus to long-term demand growth as the user industry looks for better and reproducible fibre quality independent of climatic factors during cultivation, harvesting, and retting.

¹ In April 2016, the Tanzania Sisal Board (TSB) announced that the country was increasing its sisal production with the objective to reach 100,000 tonnes by 2021. Kenya has launched a new sisal factory at Nyatike in Migori County as part of a broad strategy aimed at revamping the industry.