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Making the Most of Sisal Exports:

An Analysis of Prices Paid to Tanganyika and Kenya

RURAL DEVELOP
MENT RESEARCH
PROJECT
H.D. Patel and E.B. Riordan

For more than a decade sisal exported from Tanganyika has tended to earn less per ton than the sisal from Kenya. Further it may be inferred, from the grade composition of production in the two countries, that Tanganyika exports a higher grade of sisal than Kenya. Thus Tanganyika would appear to be foregoing earnings of foreign exchange from her major export. Sometimes the earnings apparently forgone have been large, as in 1963 when Tanganyika would have earned at least another two million pounds had she received the prices paid to Kenya. This paper examines and then endeavours to explain these differences in sisal export values, a phenomenon apparently neglected by previous students of the sisal market, such as G.W. Guillebaud.¹ At the end of the paper this opportunity will be taken to review and comment upon the place of sisal in the Development Plans of Tanganyika and Kenya.

Sisal prices are principally determined on the major import markets, foremost being the London market. On the London market East African sisal is quoted on a cost insurance and freight' (c.i.f.) basis at United Kingdom ports. These quotations are available for each East African grade and no distinction is made between sisal from Tanganyika and that from Kenya. The different market experiences of the two countries may be examined by using East African Trade Statistics to show the unit values of sisal at point of export from Tanganyika and from Kenya. In the annual trade statistics sisal exports appear under the following three headings: line fibre, tows and flume tow. In practically every year since 1950, for both Tanganyika and Kenya, over ninety percent of the weight of sisal exported has been line fibre, most of the remainder being tow with often less than two percent of the total being flume tow. Separate figures for these groups are not published in the monthly statistics. The secretary of the Tanganyika Sisal Marketing Association confirms that the export unit values given in Table I provide an accurate picture of the sisal export performance of these two Nations.² In comparing these export values it may be assumed that the freight rates to import markets are the same for both countries.



TABLE I
Sisal Export Unit Values for Tanganyika and Kenya
1950 - 1965
£ per ton f.o.b. East African Ports

Year	Line Fibre			Tows		
	Tanganyika	Kenya*	Kenya's Premium	Tanganyika	Kenya*	Kenya's Premium
1950	103.9	115.9*	12.0	70.2	75.3	5.1
1951	173.2	183.5	10.3	121.1	126.2	5.1
1952	145.1	134.4	-10.7	83.5	88.2	4.7
1953	77.2	72.6	4.6	57.2	60.8	3.6
1954	67.1	64.6	- 2.5	50.9	48.8	-2.1
1955	58.6	59.1	0.5	49.7	50.9	1.2
1956	59.5	59.9	-	51.5	51.4	-
1957	53.3	53.3	-	42.9	42.1	0.8
1958	53.3	53.4	-	40.3	41.4	1.1
1959	64.9	69.6	4.7	41.3	44.7	3.4
1960	76.3	81.4	5.1	58.8	62.9	4.1
1961	71.6	74.0	2.4	55.1	59.2	4.1
1962	73.6	78.2	4.6	53.4	58.4	5.0
1963	108.9	120.0	11.1	74.6	82.0	7.4
1964	108.4	107.6	-0.8	75.3	76.4	1.1
1965	69.7	67.7	-2.0	53.4	52.8	0.6

Notes: * before 1961 figures for Kenya include Uganda, but Uganda was never more than 3% of the joint total

- denotes a price difference of less than \$10/- per ton

Derivation: Value of sisal exports divided by weight exported, both figures from the Annual Trade Reports, E.A.C.S.O.

The premiums earned by Kenya, as shown in Table I, could be attributed to one or more of the following sources:

1. The quality of Tanganyika sisal being inferior to that from Kenya.
2. Differences in the timing of sales made by Tanganyika and Kenya.
3. The existence of transactions outside international markets such as under bilateral trade agreements. Unfortunately no useful information has been obtained on this point, so it will not be discussed.

Considering first the quality of sisal exports. This is assessed by a set of grade standards used in both Tanganyika and Kenya, set out in Appendix A. These grades may be qualified by estate trade marks. Many of the grading points and premiums paid for estate marks refer to the ease of manufacturing twine from line fibre. The characteristics sought by buyers have been described as follows:

"The fibre must be parallel and free of entanglement for good spinning. Knots, 'Bird's nests' (small tangles of fibre 1 cm. across) are anathema to spinners who require straight fibre when hanking and drafting a sliver. A silver is a continuous ribbon of overlapping parallel fibres, having uniform length per unit of weight, that is prepared prior to spinning the fibre into a yarn".³

Differences in the grade composition of exports from Tanganyika and Kenya may be inferred from data on production by grade as the grading done by producers also serves for export sales and very little sisal is not exported. Compared with Kenya, proportionately more of the sisal produced in Tanganyika gains top grades. This is simply and accurately shown by comparing the percentage of production gaining top grades in Tanganyika and Kenya as shown in Table II. Here the superior group A comprises grades 1 A, 2 and 3 L and the inferior group B comprises grades 3 and R (or U.G.) A tedious grade by grade comparison of Tanganyika and Kenya would yield the same result as that shown in Table II. The price differential between successive grades in group A is small, not exceeding three pounds a ton since 1954 while during this period the differential between grade 3 L and 3 has not been less than three pounds a ton and has reached seven pounds.

TABLE II
Percentage Composition of Sisal Output in
Tanganyika and Kenya
(by weight)

Year	LINE FIBRE GRADE				TOW		TOW ETC. to make 100%	
	A		B		Tanganyika	Kenya*	Tanganyika	Kenya*
	Tanganyika	Kenya*	Tanganyika	Kenya*				
1942	84.8%	61.6%	9.3%	29.1%	5.8%	5.5%	.1%	3.8%
1943	84.7	56.2	8.7	23.9	6.4	6.3	.2	3.6
1944	85.1	64.1	8.0	27.2	6.3	5.9	.6	2.8
1945	84.1	59.8	9.2	31.5	6.2	5.4	.5	3.3
1946	80.9	54.9	11.7	35.4	6.7	6.0	.7	3.7
1947	77.7	49.1	14.3	39.4	7.0	6.8	1.0	4.7
1948	76.1	42.3	15.3	43.5	7.0	7.4	1.6	6.8
1949	76.6	45.6	14.0	40.7	7.5	7.3	1.9	6.4
1950	73.4	41.3	16.5	45.4	7.5	6.5	2.6	6.8
1951	66.5	39.0	21.3	42.5	7.2	6.0	5.0	12.5
1952	69.0	42.5	19.9	43.7	7.1	7.1	4.0	6.7
1953	70.2	45.3	19.7	41.7	6.5	6.6	3.6	7.4
1954	70.9	51.0	19.8	36.8	6.5	6.0	2.8	6.2
1955	67.1	51.3	23.2	36.0	7.0	5.7	2.5	7.0
1956	68.7	50.6	21.8	38.5	6.8	5.3	2.7	5.6
1957	66.8	54.3	23.4	35.0	7.2	5.7	2.6	5.0
1958	65.5	51.7	25.6	36.6	7.1	6.1	1.8	5.6
1959	64.1	46.0	27.2	43.2	7.0	5.7	1.7	5.1
1960	61.2	44.8	29.9	44.3	6.3	5.3	2.6	5.6
1961	59.3	41.1	32.3	47.3	5.9	5.2	2.5	5.4
1962	60.0	44.2	31.3	44.3	5.9	5.4	2.8	6.1
1963	61.8	34.5	29.5	56.3	5.7	5.1	3.0	4.1
1964	59.5	38.6	31.7	50.6	5.4	5.8	3.4	5.0
1965	52.2	40.4	29.8	48.5	5.2	5.2	2.8	5.9

Notes: A includes grades: 1, A, 2 and 3 L

B includes grades: 3 and R.

* Before 1961 figures for Kenya include Uganda.

Sources: Tanganyika Sisal Growers' Association - Annual Reports Kenya Sisal Board Bulletins.

Differences in grade composition of exports clearly do not explain the premiums earned by Kenya, for were grades the only source of differences in export values, Tanganyika should always earn higher export values than Kenya.

Premiums paid for trade marks could account for part of the higher export values gained by Kenya as the exports of her producers are handled individually by agents while in Tanganyika about forty per cent of the exports are handled in bulk by the Tanganyika Sisal Marketing Association representing many small estates.⁴ A producer's trade mark may earn a good reputation for very reliable grading or attention to points not covered by the grade standards such as the practice in Kenya of machine drying which produces a preferred fibre. An agent who was interviewed stated that Kenyan trade marks had a higher reputation than the trade marks of producers in Tanganyika who sold through agents. Evidence of the potential benefits of trade marks is provided by the wish of the larger estates in Tanganyika to revert to this system of trading after their war time experience of bulk buying.⁵

If quality factors alone accounted for the premiums earned by Kenya, superior trade marks offsetting inferior grades, then this would be a constant market feature. Table I shows that Kenya's premium fluctuates considerably and is sometimes negative. These fluctuations are unlikely to be due to the requisite sharp changes in premiums paid for trade marks thus other factors are probably at work.

Timing of sales was a second possible explanation for differences between the unit values of sisal exports from Tanganyika and Kenya. This will now be examined. On a market where prices fluctuate, the temporal pattern of sales determines the average export unit value of sales made and shipped within any trading period. This average export unit value can fall anywhere between the highest and lowest price paid during the period. The size of price fluctuations usually increases with the length of the period considered, thus the greater the scope for making sales ahead of the date of shipment, the greater the range of possible average export values. Sisal offers considerable scope for forward sales, for example, early in January 1963 forward sales had been made for shipment as far ahead as December of that year.⁶ The price of grade one British East African (B.E.A.) sisal on London was £ 125 a ton c.i.f. early in January 1963, by March it reached £ 148 and remained at this very high price until August 1964. Thus if Tanganyika's producers sold most of the output they expected that year in January at £ 125 a ton and if producers in Kenya did not enter the market until it reached £ 148, the average prices paid for exports from the two could differ by as much as £ 23 a ton c.i.f.. In 1963 the actual difference was £ 11 a ton f.o.b. East African Ports. The possible reasons for the gap

between the maximum and the actual difference will now be noted before considering why the countries might adopt different sales strategies.

A gap between the maximum and actual differences in average export is always to be expected as sellers are unable to sell all of the year's output on a forward basis before it is cut while those aiming at high prices are unlikely to hold off the market completely until the high prices are reached. This gap could also be due to the inferiority of Kenya's sisal on a grade basis and, to a small extent due to the shift from quotations for No. 1 c.i.f. to average unit value f.o.b.

In examining why Tanganyika seems to be less successful than Kenya in taking advantage of market conditions, the situation in 1963 will be studied in further detail. The reasons for making forward sales on a rising market might include one or more of the following:-

1. Poor judgement of the market, this is unlikely as some agents act for producers in both Kenya and Tanganyika. This would also be hard to establish while its remedy is clear.
2. To reduce uncertainty, prices of £ 120 a ton c.i.f. London for B.E.A. No. 1 were attractive to sisal producers compared with prices in the previous year of £80 - 90 a ton. Now the greater a producer's reliance on sisal and the higher his costs of production the stronger are the reasons for insuring against a price fall under these conditions. Tanganyika is more reliant on sisal than Kenya and costs of production there are higher than in Kenya. Thus at this price of £120 a ton forward sales would be likely from Tanganyika, especially as Tanganyika Sisal Marketing Association, handling forty per cent of the sales, takes risks on behalf of its numbers.
3. Taking short term gains might cause losses in the long term. Sisal is in competition with both natural and synthetic fibre. In 1963 sisal producers were concerned that the high prices of their produce would encourage investment in synthetic fibre factories⁸, and once opened these factories would continue to supply part of the fibre market regardless of the price of sisal. This fear was probably behind the request made to the United States Government, early in 1963, to release ten thousand tons of sisal from their stock pile⁹. Under these conditions there would be an argument for selling the bulk of the expected output for many months ahead before market prices reached dangerous heights. This argument would be strongest for a monopolist facing sisal's price inelasticity of demand in the market term.¹⁰ Tanganyika providing about forty per cent of the world's sisal export might also have argued the case for foregoing temporary high prices, while Kenya with twelve per cent of the market, might have preferred to take the profits of high prices.

If then, Tanganyika tends to sell forward particularly when prices are rising to disadvantageously high levels, the following occurrences would be expected.

1. In times of steady prices, such as the period 1955 to 1958 premium gained by Kenya would be approximately nil.
2. When prices are rising but at fairly low levels, such as early in 1959, Kenya's premium would be small compared with the maximum possible.
3. When prices are generally profitable for Tanganyika producers and rising such as in 1962-1963, Kenya's premium would be considerable.
4. In times of falling prices, especially when following months Tanganyika's output was sold forward, Kenya's premium would be negative. The size of negative premia and their occurrences is limited by the skill of buyers in avoiding forward purchases on a falling market.

The occurrence of these situations may be seen in Table III where the premiums earned by Kenya has been copied from Table I. These data and Chart I confirm the propositions stated above. It will also be seen that these four propositions would apply to sellers wishing to insure against prices falling to unprofitable levels, advanced above as the second reason for Kenya's premium. Thus it is concluded that Tanganyika foregoes some export earnings in order to reduce uncertainty of earnings, and to minimise substitution against sisal in the sisal using industries.

Assuming that the above conclusion is correct, Tanganyika is probably concerned that the cost of sisal producers' selling strategies is commensurate with their benefits. As the benefits would increase by collaboration between all sisal exporters, it is hardly surprising that Tanganyika took the initiative in establishing a Food and Agriculture Organisation study group for hard fibres as a first step to a commodity agreement. So in this respect, while Kenya seems to be squeezing the most money out of every ton of sisal exported, Tanganyika may be working to make the most of its major export over the years. It has also been noted that Kenya probably makes more out of its estate marks than Tanganyika. This benefit comes from a trading system that transmits incentives like quality premiums, to repay the expertise used to establish and maintain estate marks of good repute. What cannot be answered here is whether the premiums paid for grade and estate marks are sufficient recompense for sustaining high quality. For example in respect of grades Tanganyika may be making the most of the market although the percentage of her production in the first grade has fallen from thirty percent in 1950 to nine percent in 1965. While the percentage in grade 3 L has risen from nineteen to forty percent. The effect of this change on her earnings will have been small due to small grade premiums and might have been more than compensated by a fall in production costs.

CHART I
Sisal Prices 1962 - 66

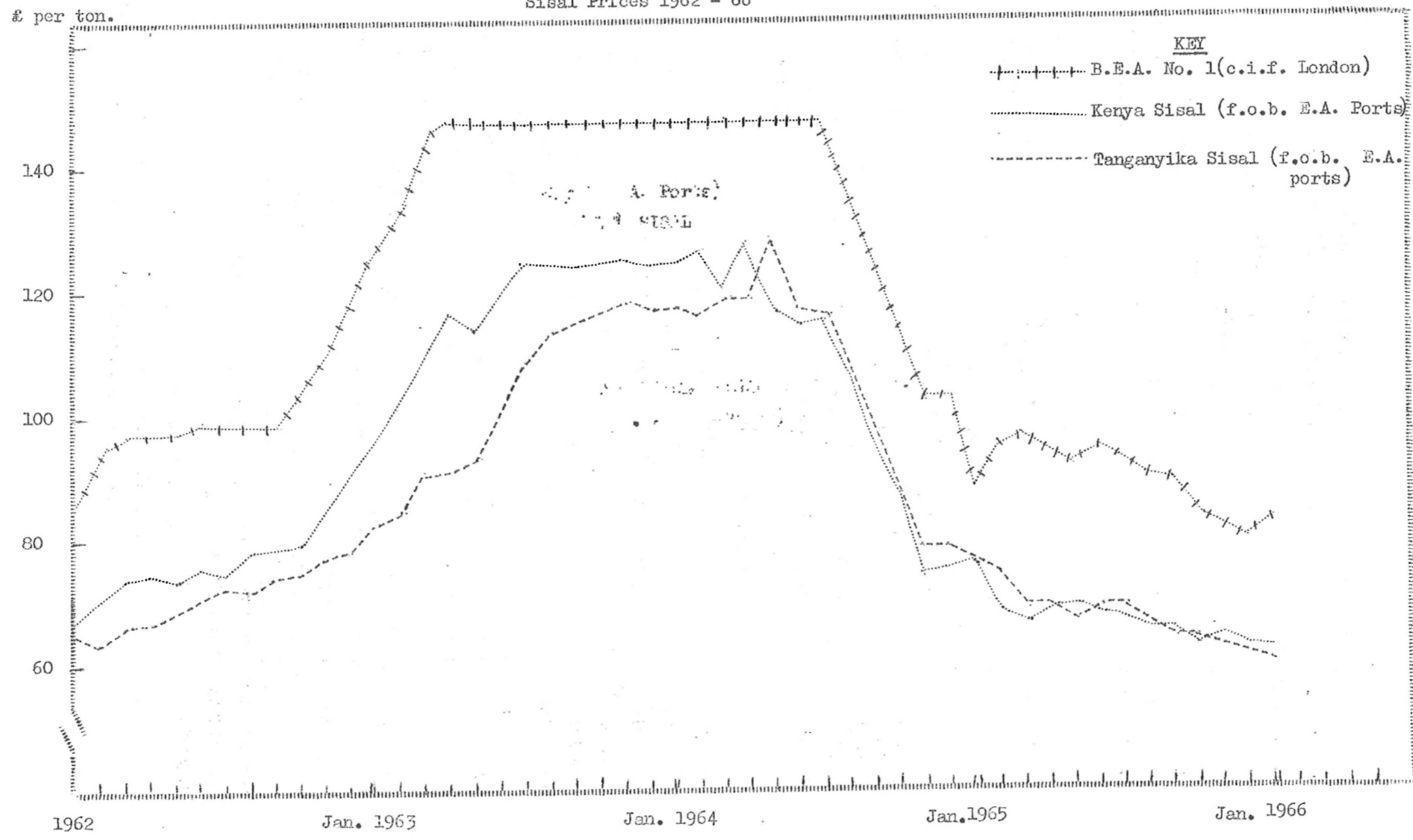


TABLE III
Prices for B.E.A. No. 1 Sisal 1951 - 1965

Year	January	February	March	April	May	June	July	August	September	October	November	December	Kenya's Premium £/ton
1951				243 248	243 250	243 247½	243 247½	245	245	230	213	213	10.3
1952			230	230	170	143	143	120	100	108.9	110	105	
	213	230	232½	232½	171½	144¼	144½	121	101		111	106	-10.7
1953	95.6	95.6	93	97	90	92	90	90	93	98	95	90	-
1954	100	103	90	90	90	90	90	90	88	79	72	72	- 2.5
1955	69	75	85	83	80	80	83	85	85	84	76	79	0.5
1956	85	90	82	80	80	78	75	75	78	71	73	75	-
1957	76	76	71	72	71	70	71	74	70	72	70	69	-
1958	73	72	70	70½	69	70	72	78	74	72	71	75	-
1959	80	79	80	90	100	100	93	83	90	90	92	95	4.7
1960	98	103	103	103	103	103	100	100	103	103	103	103	5.1
1961	103	103	101	98	96	95	93	91	89	86	80	85	2.4
1962	88	95	97	98	98	99	99	99	99	104	110	120	4.6
1963	127	134	144	148	148	148	148	148	148	148	148	148	11.1
1964	148	148	148	148	148	148	148	135	125	115	108	108	-0.8
1965	106	94	94	94	92	94	93	90	90	84	82	80	2.0

The last topic to be discussed in this paper is the place of sisal in the development plans of Tanganyika and Kenya. Tanganyika's continuing reliance on sisal is evident from the 1964-1969 Development Plan with its targets of increasing sisal production from 210 thousand tons in 1964 to 270 thousand tons in 1969 and 366 thousand tons in 1980. The assumptions used for these targets are given below and will subsequently be examined.

- (a) The present average high quality of exportable fibre will be maintained as production expands;
- (b) additional outlets will be found in East Asian and Eastern Europe;
- (c) demand for sisal leaf, boles and poles for paper production will outweigh any future change in the traditional end-uses of sisal fibre;
- (d) the average f.o.b. price of fibre will average £100 per ton until 1970 and £90 thereafter.¹¹

The maintenance of sisal quality should be seen in the context of the extension of co-operative organisation in production and especially in sisal processing.

To expect large and profitable exports to East Asia and Eastern Europe would appear to be too optimistic. So expansion of trade in these directions will still leave a lot of the planned additional output to be sold elsewhere.

The use of sisal by-products, such as boles and poles, together with surplus sisal leaf for paper making, might make a useful addition to producers' receipts. Further, if the intake of sisal leaf for paper making could be varied inversely with the quantity of fibre sold for export, this scheme would reduce price fluctuations. Yet, will it be possible to sell sufficient paper from sisal at a profit to make good losses of fibre sales on traditional export markets? It would be interesting to know what other measures are being taken to find and popularise rewarding uses of fibre other than twine and rope making. Possible uses of this cheap strong fibre include floor covering and the strengthening of plastic panels and fibre boards.

An average f.o.b. export value of £100 a ton corresponds to an import price for B.E.A. No. 1 sisal, c.i.f. London of £140 a ton. In 1964 a sisal substitute, polypropylene fibre, was selling for £129 a ton c.i.f. London.¹² Thus the price expected for sisal fibre is too high by at least £20 a ton. Agronomists doing research on sisal production in East Africa are fairly confident that production costs could be reduced enabling efficient estates to survive low export prices. Profitable uses for sisal by-products, mentioned above, would also be helpful. Yet does all this provide for an expansion of production and increased wages for estate workers?

In Kenya's Development Plan 1966-1970 written two years after Tanganyika's no significant expansion in Kenya sisal production is anticipated. The plan states " ... In general, Government policy is that there will be no public investment in any aspect of the sisal industry, apart from research, except on firm evidence that such investment will be profitable at sisal prices expected to prevail in the 1970's" ¹³

Even allowing for the fact that Tanganyika's plan was made during a boom in sisal prices, Tanganyika may still be far more committed to dependence on sisal than Kenya. In Kenya sisal is not only of lesser importance but also has to compete for resources with several expanding export enterprises. So one topic for the ensuing discussion is "what can Tanganyika do to make the most of her sisal industry in the future?"

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10. Guillebaud, op. cit., p. 37.
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12. Government of Kenya, Development Plan 1966-1970, p. 180.
13. Ibid.

APPENDIX A

REWORKED SISAL GRADING DEFINITIONS AS AGREED BY ALL SECTIONS
OF THE EAST AFRICAN SISAL TRADE

SISAL

- GRADE 1 Length from 3 feet upwards. Free of defective decortication. Properly brushed, free of tow, tousled and bunchy ends, knots and harshness. Colour creamy white to cream.
- GRADE A Length from 3 feet upwards. Free of defective decortication. Properly brushed, free of tow, tousled and bunchy ends, knots and harshness. Colour yellowish, slightly spotted or slightly discoloured.
- GRADE 2 Length from 2 feet 6 inches upwards. Free of defective decortication. Properly brushed, free of tow, tousled and bunchy ends, knots and harshness. Colour creamy white to cream.
- GRADE 3L Length from 3 feet upwards. Brushed fibre with minor defects in cleaning permissible but it must be free of tow, knots, bark or undecorticated fibre. Colour may vary from creamy white to yellowish but a higher proportion of spotted or discoloured fibre is permissible than for Grade A.
- GRADE 3 Length from 2 feet upwards. Brushed fibre with minor defects in cleaning permissible but it must be free of tow, knots, bark or undecorticated fibre. Colour may vary from creamy white to yellowish but a higher proportion of spotted or discoloured fibre is permissible as for Grade 3L.
- GRADE R
OR UG Fibre that does not conform to the above-mentioned grades as regards colour. Although defects in cleaning are allowable and some imperfectly decorticated fibre or bark runners are permissible, it must be free of undecorticated leaf and knots. Length to be not less than 2 feet.
- S.C.W.F. Length from 18" upwards. Short Clean White Fibre. Free of defective decortication. Properly brushed, free of tow, tousled and bunchy ends, knots and harshness. Colour creamy white to cream.

Note No. 1.

All grades to be of parallel packing, no ties or knots free from dampness and excessive baling pressure. Where reference is made in the above definitions to tousled and bunchy ends it refers to faulty packing and not to anything caused through handling or stowage in transit.

Note No. 2

Harshness. The word "harshness" included in the definitions refers to fibre from which the gum has not been sufficiently extracted by cleaning and does not apply to fibre which is coarse in texture due to soil or climatic conditions.

Note No. 3

Slight sunburning-meaning over-exposure of the fibre to sunlight - is permitted in Grades A, 3L and 3.

Note No. 4

Premium marks are marks which from the point of view of length and/or texture, and/or colour, and/or cleaning, and/or packing are in request by manufacturers for special purposes.

SISAL TOW

TOW 1

Proper tow from the brushing machine. Free of line fibre, cuttings and reasonably free of dust but entirely free of sweepings, knots, bark and undecorticated fibre. Colour creamy white to cream.

TOW 2

Darker colour allowed. Small percentage of line fibre long white cuttings, and not entirely free of dust but entirely free of sweepings and knots.

Note No. 1

The term 'line fibre' included in the definitions of Nos. 1 and 2 tow indicates "pieces of Sisal" not tow.

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