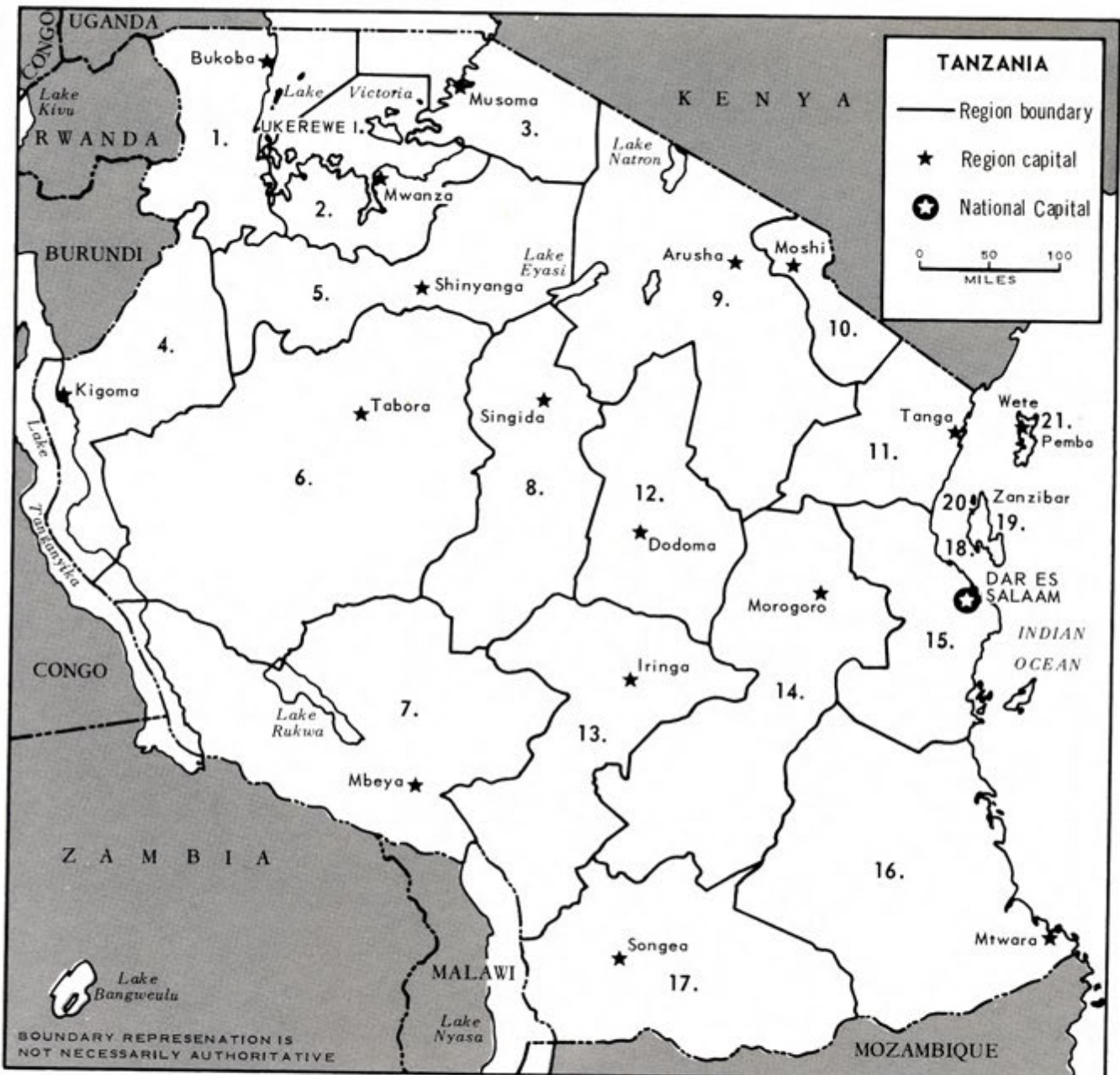


7

COTTON In TANZANIA

Don Ethridge



REGIONS

- | | | |
|--------------|-----------------|-----------------------------|
| 1. West Lake | 8. Singida | 15. Coast |
| 2. Mwanza | 9. Arusha | 16. Mtwara |
| 3. Mara | 10. Kilimanjaro | 17. Ruvuma |
| 4. Kigoma | 11. Tanga | 18. Zanzibar Mjini |
| 5. Shinyanga | 12. Dodoma | 19. Zanzibar Shambani South |
| 6. Tabora | 13. Iringa | 20. Zanzibar Shambani North |
| 7. Mbeya | 14. Morogoro | 21. Pemba |

FOREWORD

Cotton is a major crop in Tanzania. During the 3 years 1966-68, cotton provided about 19 percent of the value of Tanzania's total foreign sales and was the country's first-ranking export. The other two major export earners for Tanzania were sisal and coffee.

In addition to its importance as an earner of foreign exchange, cotton is the major source of income for many thousands of farmers who produce it. Further, it is the source of raw material for both the local cotton textile industry and the cottonseed crushing industry.

This publication is another in a continuing series of reports on competitive developments in foreign cotton-producing countries. It is intended to help U.S. cotton interests evaluate the significance of developments in Tanzania as they may affect the world cotton economy and the export outlook for U.S. cotton. In part, this study updates Foreign Agriculture Report 117, *Cotton Production in Africa*, February 1960.

The author wishes to express his thanks to the many persons who generously contributed to this study by providing information on the cotton economy of Tanzania and by reviewing the manuscript. Special recognition is due J. R. Spence and his colleagues at the Western Research Center; Mr. M. P. Collinson of the National Development Credit Agency; Mr. Herbert C. Kriesel and Mr. Charles K. Laurent of the Michigan State University team in Tanzania under the joint auspices of the Ministry of Agriculture, Food and Cooperatives and the U.S. Agency for International Development (AID); Mr. J. F. Robinson, manager of the Lint and Seed Marketing Board, and his colleagues; Mr. B. J. Jans, manager of Tasini Textiles Co., Ltd.; and members of the economic section of the American Embassy in Dar es Salaam. The author also is indebted to Mr. Don Anderson, president of Beltwide Cotton Producers, Plains Cotton Growers, Lubbock, Tex., who traveled and worked with the author in the western area of Tanzania during June 1969.

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COTTON IN TANZANIA

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SUMMARY AND CONCLUSIONS

Tanzania has made solid progress in cotton production of the past 10 to 15 years and continued expansion is in prospect. The national goal is for production to reach 600,000 bales (480 lb. net weight) by 1974-75 compared with 333,000 bales in 1969-70. While the goal is unlikely to be reached, there is reason to expect modest gains in acreage, in yield of seed cotton per acre, and in the percentage of lint outturn. Each of these plus factors point to continued gains in total production.

The nation's key policymakers appear to favor continued efforts to expand cotton production, and no restrictions exist—formal or informal—on increasing production and export of cotton. In contrast, both sisal and coffee—Tanzania's other major export crops—do have production restrictions.

Cotton generally is the major source of cash income for individual farmers in cotton-growing areas. Cotton can always be sold through Tanzania's effective marketing system. Even if the price in any given year should be disappointing, farmers realize that costs are mainly in the form of unpaid family labor rather than purchased inputs. Farmers also generally recognize that cotton has such a commanding lead in terms of cash income over any other cash crop locally produced that they have no practical alternative to cotton production. Furthermore, the adverse effect upon a farmer's income in any period of declining world prices is lessened by the rising yields of seed cotton and by the higher percentage of lint outturn.

Finally, the Government of Tanzania will continue to encourage farmers to intensify their farming operations by using oxen to plow and cultivate rather than relying entirely on human labor, by using fertilizer and insecticides as recommended, and by following other recommendations with respect to planting dates, spacing, and other cultured practices. Improvements in cotton cultivation will probably occur very slowly. More immediate results in the form of higher yields will be obtained from the built-in characteristics of the varieties developed at cotton research stations. These varieties will be passed on to farmers in issues of new and improved seed.

The growth of production will continue to be concentrated in western Tanzania and will continue to spread away from Lake Victoria as some farmers enlarge their acreage in cotton and other farmers take up cotton production.

Most of the increased production will continue to be exported to the Far East and to Europe, but moderately greater amounts will be used in the future by the domestic textile industry.

THE RAW COTTON INDUSTRY

Importance, Location, and Scale

For a number of years cotton has been a very important crop in Tanzania. It is important as a source of employment and income for many thousands of farm families and also as an important source of foreign exchange

for the country. More recently, with the establishment of both cottonseed oil mills and cotton textile mills in Tanzania, cotton farming is the source of raw material for two growing, though still comparatively small, industries.

Tanzania has had a rising trend in cotton production. During the decade of the 1950's cotton production averaged 93,000 bales per year. Production increased to nearly 188,000 bales annually in the first half of the 1960's and to a record 363,000 bales in 1966-67. There is widespread interest within both Government and industry circles in seeing cotton production continue to expand. In fact, the goal for 1974-75 production is 600,000 bales. In the planning which led to this national goal for 1974-75, it was expected that two-thirds of the projected increase in production would reflect acreage expansion—especially in the southern and eastern parts of western Tanzania—and one-third would reflect better yields owing to well-organized rural extension work and planting of higher yielding varieties. It is probable that actual 1974-75 production will fall well below the goal but that production will increase moderately.

Practically all of the cotton grown in Tanzania is produced on family farms in western Tanzania. Elevations of the cotton growing portions of western Tanzania range from about 3,000 feet to 4,500 feet. Cotton is the largest source of income in a number of regions of western Tanzania. This is especially true in Mwanza and Shinyanga, where it accounts for over 75 percent of all crop income. In Tabora, Mara, and Singida cotton accounts for a much smaller absolute share of the total, but it is nevertheless the most important single source of crop income.

Some cotton also is grown in eastern Tanzania, where it centers in the Morogoro, Kilosa, and Ulanga districts of the Morogoro region. Elevations in the eastern cotton-growing area range from just above sea level to 2,000 feet. In both the western and eastern areas rainfall distribution is such that the planting date for cotton is critical if high yields are to be obtained.

Table 1.—Cotton: Production in Tanzania by cotton zone, 1957-69

Crop year, beginning July 1	Lake and West Lake ¹	Western ²	Eastern ³	Northern ⁴	Tanga ⁵	Total ⁶
	<i>1,000 bales⁷</i>	<i>1,000 bales⁷</i>	<i>1,000 bales⁷</i>	<i>1,000 bales⁷</i>	<i>1,000 bales⁷</i>	<i>1,000 bales⁷</i>
1957	126.1	0.6	10.6	1.8	1.9	141.0
1958	124.8	.7	11.8	2.4	1.5	141.2
1959	151.6	1.2	11.2	3.4	1.8	169.2
1960	134.1	1.6	13.7	4.4	3.4	157.2
1961	132.0	2.6	3.0	1.5	.5	139.6
1962	159.7	3.8	12.2	2.1	.6	178.4
1963	191.5	7.2	14.6	3.8	1.7	218.8
1964	214.0	10.5	15.1	2.5	2.3	244.4
1965	269.2	12.9	22.2	1.4	2.2	307.9
1966	314.3	23.6	19.3	2.5	3.3	363.0
1967	312.8	--	--	--	--	325.8
1968	228.2	--	--	--	--	236.5
1969	(⁸)	(⁸)	(⁸)	(⁸)	(⁸)	⁹ 333.3

¹Mwanza, Mara, Shinyanga, and West Lake Regions. ²Iringa, Mbeya, Kigoma, and Tabora regions. ³Coast, Dodoma, Morogoro, and Singida regions. ⁴Kilimanjaro region. ⁵Tanga region. ⁶These data differ slightly from those in table 2. ⁷Bales are 480 lb. net weight. ⁸Not available. ⁹Estimated.

Source: Unpublished manuscript, *Cotton Marketing in Tanzania*, by Charles K. Laurent.

Although data on production of cotton in Tanzania are satisfactory, knowledgeable cotton leaders in Tanzania feel that data on acreage and yield carried by some of the leading sources of international statistics seriously understate cotton acreage and overstate cotton yields in Tanzania. Thus, since the available series of data are believed to be highly inaccurate, no attempt is made in this report to present any series of data on either acreage or yield per acre. One leader stated that in the period 1957-63 the yield of seed cotton per acre was perhaps around 350 pounds to 400 pounds. In his judgment the trend in yield has been sufficiently upward to now average about 600 pounds per acre and he envisions that the yield may well reach 700 pounds of seed cotton per acre in the next few years. Such an increase would be especially significant in terms of the increase of total cotton production. It

would combine with some further expansion of acreage and a larger share of the acreage being planted to varieties with a higher lint outturn—all plus factors—to push up the annual size of the Tanzanian cotton crop even though crops are still expected to fall short of the goal of 600,000 bales for 1974-75.

Table 2.—Cotton: Supply and distribution in Tanzania, 1955-70

Crop year, beginning August 1	Beginning stocks	Production ¹	Total supply	Consumption	Exports	Ending stocks
	<i>1,000 bales²</i>	<i>1,000 bales²</i>	<i>1,000 bales²</i>	<i>1,000 bales²</i>	<i>1,000 bales²</i>	<i>1,000 bales²</i>
1955-56	15	100	115	--	106	9
1956-57	9	111	120	--	108	12
1957-58	12	140	152	--	143	9
1958-59	9	143	152	--	147	5
1959-60	5	168	173	--	171	2
1960-61	2	157	159	--	156	3
1961-62	3	139	142	--	140	2
1962-63	2	175	177	--	167	10
1963-64	10	215	225	--	218	7
1964-65	7	250	257	--	245	12
1965-66	12	310	322	5	312	5
1966-67	5	360	365	10	350	5
1967-68	5	320	325	15	283	27
1968-69	27	235	262	20	208	34
1969-70 ³	34	325	359	20	300	39

¹ Production data differ slightly from those in table 1.

² Bales of 480 lb. net weight.

³ Estimated.

Source: Compiled from official records of the Foreign Agricultural Service.

Cotton Improvement Work

The research work related to cotton in Tanzania has made a marked contribution to the economy of the country and to the role of cotton in the economy. The work is centered at two research stations—Ukiriguru, near Mwanza, and Ilonga, near Kilosa. Work at the two stations is supplemented by field trials scattered over the producing areas. Although cotton is known to have been grown to some extent since late in the last century, it is recognized as being an “introduced” crop into a traditional subsistence agriculture in the areas where it is now grown. A cash crop was needed, and cotton promised to be a profitable undertaking without cash inputs.

Cotton improvement work has continued to emphasize changes which, if adopted, would increase the return to the farmer while maintaining or improving the qualities of fiber placed on the market. Because of the system of subsistence farming in areas that already were raising cotton or might do so, the view was and is held that the best way to achieve progress in cotton production is incorporating in the varieties themselves features capable of substituting for purchased inputs and improved agronomic practices.

Resistance of cotton varieties to insects and diseases was originally given top priority, and it continues to be a major objective. Other aims have been ability of varieties to recover from early setbacks in the growing season and stability of production under the wide range of conditions found in growing areas. Major attention also has been given to increasing the inherent seed-cotton-yield capabilities of varieties and to increasing the percentage of lint outturn.

Bacterial blight was a major hindrance to cotton output in Tanzania until varieties were developed that possessed a high degree of resistance, and currently it is necessary to insure this characteristic in all new varieties. Fusarium wilt was first recorded in Tanzania in 1954 around the shore of Lake Victoria, and efforts have since been made to develop tolerance in varieties intended for use in this area. Incidence of Verticillium wilt is restricted to

some coastal areas. Cotton is also subject in Tanzania to various other diseases at all stages of plant growth, but these other diseases are only of local importance and occur only in some seasons. Therefore, they are not a major factor in cotton improvement work.

As in many other African areas, early attention was given to developing cotton varieties with hairy leaves, which reduce the level of insect damage—especially jassid. Other cotton insect pests in Tanzania include bollworms, stainers, aphids, lygus bugs, and *Helopeltis*. Climatic conditions are conducive to greater insect damage near the coast than in the west, where an acceptable yield can be achieved without the use of insecticides. Even so, the rate of return from carrying out proper spraying programs is quite high in much or all of western Tanzania.

Considerable attention in cotton improvement work has also been devoted to hand versus ox-drawn implements for land preparation, optimum planting dates, spacing within and between rows, and crop rotation. As a consequence, much research is available to back up present recommendations on Tanzanian cotton production. These recommendations can be put into use at such times as farmers become interested in shifting from their traditional patterns of farming.

In the meanwhile, research workers continue to build in characteristics into seed issues that will raise Tanzanian cotton-farm income levels under the present state of the arts and that will improve the competitive position of Tanzanian cotton in world markets.

Farmers are supplied free planting seed for their cotton crops. The Lint and Seed Marketing Board provides the seed, and the Board pays ginners to treat and bag the seed for distribution. Seed is then turned over to the Ministry of Agriculture, which oversees its distribution without charge to farmers.

Considerably more seed is distributed than is actually planted. There are several financial implications of this system. One is that a smaller share of the crop of seed is available for sale for crushing. Another is that costs of treating and distributing planting seed are higher than really necessary because of the extra tonnage involved. Furthermore, in periods when new strains of seed are being bulked, more years are required to saturate an area with a new variety than if all the seed were used for planting. The full benefit of the new seeds' higher inherent productivity is delayed.

Nevertheless, the prevailing system of free seed distribution provides a mechanism for encouraging cotton production inasmuch as the farmer must supply his own seed for other crops. Also, the present system enables new varieties to be introduced where they will make their greatest relative contribution to the cotton economy of the country.

Support for Expanded Cotton Production

In addition to fostering agricultural research, officials of the Government and of the Lint and Seed Marketing Board are also strengthening extension activities, agricultural credit facilities and programs, and farmers' cooperatives that already are, or can become, involved in helping farmers obtain purchased inputs. Cooperatives already perform all of the primary marketing for raw cotton; and cooperative gins handle most of the ginning, after which the cotton and the seed are delivered to the Lint and Seed Marketing Board.

However, cooperatives have had little experience in extending credit, and usually the employed staff and farmer directors have had no training in the extension of credit. All too often credit experiences to date have been generally unsatisfactory.

It, therefore, remains to be seen both what type of credit system is established and how well it works in its efforts to help cotton farmers finance annual purchases of fertilizer and insecticides and the occasional purchase of machinery. It also remains to be seen how effective the agricultural extension system and other forces are in encouraging farmers to shift from their traditional system of cotton farming to one that is more intensive. Both credit and the extension programs must move together if either is to experience much success.

Production Suggestions and Practices

Historically, most of the increases in cotton production in Tanzania have been attributable to expanded acreage and the use of higher yielding varieties. Research workers have developed recommendations for production practices that would, if widely adopted and successfully carried out in combination with one another, also contribute significantly to higher cotton production. By and large, however, Tanzanian producers prefer to employ

extensive rather than intensive approaches to increasing production; and some research studies indicate that under certain conditions of farmer ability and resource availability the extensive approach may be as effective a way to raise farmers' incomes as the intensive approach.

Of course, a prerequisite to employing the extensive approach is to have extra land available. In parts of western Tanzania much extra land is available. But in some other parts additional land can be used for farming only by reducing the area that is being, or should be, rested to maintain yields under typical Tanzanian farming conditions or by increasing the use of soils that normally support grazing. Another prerequisite to more extensive operations is to have either extra labor or a mixture of labor and nonhuman power sources (oxen or tractors).

Intensive production suggestions.—A number of Tanzanian key research, governmental, and industry leaders recognize a need for Tanzanian farmers to intensify their operations, and these people are actively promoting well-tested and proved intensification practices. The plant breeders on the research stations have supplied well-adapted varieties with high-yield capability and desirable fiber characteristics. Further improvements in yields are being made by breeding for high lint outturn, and the variety now being introduced into western Tanzania as fast as the seed supply can be multiplied represents a marked improvement.

Research has also indicated which production practices—if followed in appropriate combinations—will pay well for the additional effort. For example, recommendations published a few years ago in the Maswa district of the Shinyanga region of western Tanzania suggested that cotton be planted between December 1 and December 20, that five seeds be planted in each hole, that holes be 18 inches apart in the row, and that later in the season each hill be thinned to two plants. The fertilizer recommendation was that 200 pounds of single superphosphate be placed under the row and that 5 weeks after weeding and thinning the field be topdressed with 100 pounds of sulphate of ammonia. It was estimated that these practices, if done in an effective manner, would result in a yield of about 850 pounds of seed cotton per acre. At prices equivalent to 7 U.S. cents per pound for AR cotton and half this for BR cotton, net return would be about \$49 per acre, which is well above the typical Tanzanian return. (AR cotton is the clean cotton that normally is about 90 percent of the crop, and BR cotton is the remaining imperfect and discolored cotton.) For the most part, however, farmers continue traditional practices rather than those being recommended.

Traditional production practices.—In some of the older cotton-growing areas of western Tanzania along the lake shore and on Ukerewe Island, population pressure has led to relatively continuous land use and yields have declined as fertility has dropped. (The traditional pattern was cropping for several years and then resting the land or letting it lay idle except for such pasture as it might provide after crop production was discontinued.) Research and demonstration plots indicate that fertilization would pay good dividends in such areas if other recommended practices were also followed. But estimates are that only about 40,000 acres of cotton received fertilizer in all of western Tanzania in 1967-68.

Insects are also recognized as a problem in a number of areas in Tanzania. But, even so, insecticides are estimated to have been used on only 10,000 acres in 1967-68. Typically, six sprayings are suggested—but only if other recommended production practices are followed.

In the areas where fertilizers and insecticides are recommended Tanzanian officials estimate that the returns, if other intensive cultivation practices are followed, should range from three to eight times the cash outlay. Such a rate of return would be more than adequate to interest commercially oriented farmers in many countries; but comparatively few Tanzanian farmers have taken steps to intensify their farming operations.

In the cotton areas close to Lake Victoria where there is little use of either oxen or tractors, about 3 weeks of work are needed to prepare and plant 1 acre of land. Under such circumstances it is not surprising that farmers with the need to raise both staple food crops and a cash crop such as cotton may fail to plant cotton as early as suggested.

Cotton farmers in Tanzania follow no definite rotation, but in parts of western Tanzania at least it is common for farmers to alternate land between cassava and other food crops and cotton every 3 or 4 years. A typical cotton farm has about 12 acres, of which 6 acres are in rough grazing, 3 acres are in food crops (cassava, corn, etc.), and 3 acres are in cotton.

An example of traditionalism.—Cattle are common in the cotton-producing areas of Tanzania, and yet only in the eastern and southern parts of western Tanzania are oxen used—and then only for initial plowing at the start of the farming season. Public officials believe that the farmers would benefit materially from using oxen to cultivate

their food crops and cotton. Of course, crops would have to be planted in rows straight enough to permit plowing; but the higher yields that would tend to result from earlier planting and more timely care would more than compensate for costs of peak labor requirements during the period of cultivation and would open the way to higher production and income per farm family. Labor requirements at harvesttime would also be increased but would not be an insurmountable obstacle. All told, the potential contribution of effective utilization of oxen for initial plowing, for seed bed preparation, and for cultivation should be appreciable both in areas where they are now used for initial plowing and where all farming operations are done by hand.

The use of ox power for cultivation as well as for initial plowing and planting, however, conflicts with the traditional method of cotton culture in which cotton is seeded in two rows on a high ridge with ridge crests 5 feet apart. The ridges are traditionally constructed by hand. If oxen are to be used for cultivation, the widely spaced ridges would need to give way to narrower spaced rows—presumably 3 feet apart—that could be either ridged or flat. Many farmers continue to shun this major change.

However, research work has demonstrated that the change is feasible and that the narrow ridges can be “tied” sufficiently by lifting the cultivating plow (sweep) every few steps to avoid soil erosion and to utilize available moisture in the lower rainfall areas and/or periods.

Staple Lengths Grown

Currently, cotton grown in eastern Tanzania is slightly longer and finer than cotton from the western area. According to information supplied to the International Cotton Advisory Committee, the western area produces cotton ranging in staple length $1 \frac{1}{16}$ inches to $1 \frac{1}{8}$ inches with a modal length of $1 \frac{1}{16}$ inches and a micronaire of from 3.8 to 4.4; cotton grown in the east ranges in staple length from $1 \frac{1}{16}$ inches to $1 \frac{5}{32}$ inches with a modal length of $1 \frac{3}{32}$ inches and a micronaire of from 3.5 to 4.0.

Table 3.—Staple length distribution of Tanzanian AR cotton, crop years 1958 through 1968¹

Crop year	Staple length					
	1 5/32 inches and longer	1 1/8 inches	1 3/32 inches	1 1/16 inches	1 1/32 inches	1 inch and below
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
1958	1.18	4.54	22.03	43.89	23.20	5.13
1959 .....	.24	4.81	22.01	40.46	24.57	7.91
1960	1.58	5.44	18.94	52.90	15.22	5.92
1961 .....	.07	1.14	15.23	46.99	23.07	13.51
1962	5.68	2.69	18.19	45.21	24.75	3.49
1963	2.08	4.49	20.78	64.29	8.36	--
1964	1.37	3.22	13.55	71.80	10.06	--
1965	1.01	4.86	13.12	72.78	8.24	--
1966	--	6.07	20.96	71.67	1.30	--
1967	--	1.20	7.80	83.40	7.60	--
1968 .....	.04	2.75	11.00	85.73	.48	--

¹Before 1958 crops were not classified.

Note: In some years, percentages do not add to a 100.

Source: Tanzanian country statement to International Cotton Advisory Committee, 1969.

Western Producing Area

Most of the western producing area is in that portion of Tanzania to the south and east of Lake Victoria. It is known historically as Sukumaland and is the home of the Wasukuma tribe. In the early 1960's this tribe was reported to number over 1 million, and they were estimated to own over 2 million head of livestock.

A distinctive feature of the area is the granite outcrops. The area is characterized by varied soil types running as catenae from the tops of the granite outcroppings to the valley floors. Just below the outcroppings are the fertile hill sands; below them are the infertile leached sands; still further down are the hardpan soils, which give way to dark alluvial soils; and in the valley floors are heavy clays. Traditionally corn, cotton, and cassava are planted on the hill sands and sweetpotatoes on the less fertile sands. The heavy soils are mostly grazed. In those parts of Sukumaland where rice is grown, it is grown on the heavy alluvial soils. Typically, a farm will consist of a number of recognized soil areas, which may range in size from only a fraction of an acre to a few acres each.

The land tenure pattern in the western cotton area is rather complex. Basically, farmers have usufructuary rights, which are inherited. In fact, it is so unusual for a man to be turned off his land that his property right is close to being freehold. Initially, land was allocated by the elders with the headman acting as the executive. Typically, a "farm" would contain some of each type of soil even if it were necessary to allocate noncontiguous tracts to accomplish this objective since the farmer would then have the kind of soil recognized as typical for each line of food production. Livestock is grazed on common pasture, but owners of cattle have the right to overgraze the crop residues of all farmers without compensation.

Agriculture in western Tanzania has basically and traditionally been a subsistence type. Cotton and rice have been introduced into the subsistence system as cash crops with cotton the chief cash crop. Since farmers in western Tanzania are accustomed to raising most of their own food, it appears improbable that cotton production would expand greatly at the expense of food crops unless yields of foodstuffs rose sharply and released land for additional cash crops. Accelerated food-crop production is unlikely to occur in the area in the near future.

Furthermore, markets for alternative crops to cotton are either nonexistent or poorly developed. Local cooperatives have had little or no experience in the marketing of other farm products that may be grown in excess of producers' needs on farms that raise cotton. A cotton farmer who produces a product other than cotton in excess of his family needs may attempt to sell or barter the excess in his local market, or he may be able to sell the excess to some of the small shopkeepers in his local town. This relatively poor marketing system for crops other than cotton helps to strengthen cotton's competitive position in the area.

Typical cotton acreages in western Tanzania range from about 3 acres in the Mwanza region to about 8 acres in the south, where oxen are commonly used for initial breaking up of the fields.

Profiles of cotton farms.—Cropping information for two locations in western Tanzania is contained in two economic studies made in the early 1960's by Mr. M. P. Collinson,¹ who at the time he made the studies was stationed at the Western Research Center, which is located near Mwanza at Ukiriguru. One of his studies dealt with a part of the Usmao chiefdom, Kwimba district, Mwanza region. This locality is in the older cotton area south of Lake Victoria where hand methods and wide ridges predominate. The other study was in the Luguru ginnery zone, Maswa district, Shinyanga region, which lies in the newer eastern part of the western cotton area. In this locality oxen are used for much of the plowing and more of the land is farmed without ridging. In neither of these localities are farms as large as those found further south in western Tanzania.

Collinson's studies found that ox-using farmers in the Maswa district cultivated an average of 8.68 acres; hand farmers in the same district cultivated an average of 6.69 acres. The average areas under cotton were 3.02 acres for ox-using farmers and 2.19 acres for hand farmers. By comparison, Kwimba district farmers cultivated an average of 6.58 acres with 3.23 acres in cotton.

Collinson found that in the ox-farming area many farmers who did not own oxen hired plowing done with either oxen or tractors. In the Maswa district tractor plowing costs averaged \$7.84 per acre. Ox plowing costs averaged \$5.18 in the same area. Most equipment hiring in the Maswa district was by hand farmers; and most labor hiring was by ox farmers. In the Kwimba district tractor plowing cost an average of \$7.14 per acre.

¹Tanganyika Ministry of Agriculture Farm Management Survey Rept. 2, Usmao Chiefdom, Kwimba District; and Tanganyika Ministry of Agriculture Farm Management Rept. 3, Luguru Ginnery Zone, Maswa District.

Table 4.—Acreages of crops grown in the Kwimba and Maswa districts¹

Crop	Percentage of farms in sample raising crop		Average crop acreage per farm in sample		Average crop acreage per farm where grown	
	Kwimba	Maswa	Kwimba	Maswa	Kwimba	Maswa
	<i>Percent</i>	<i>Percent</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
Cotton	96	94	2.94	2.61	3.23	2.78
Rice	70	--	.80	--	1.14	--
Maize and legumes . .	61	73	.79	1.84	1.30	2.54
Maize and cassava . . .	51	--	.85	--	1.66	--
Maize	17	44	.22	.83	1.34	1.90
Sweetpotatoes	84	73	.58	.40	.68	.55
Sorghum	13	42	.11	.79	.84	1.88
Cassava	11	--	.07	--	.62	--
Groundnuts	11	--	.07	--	.63	--

¹The Kwimba survey covered 1961-62 and the Maswa survey covered 1962-63.

Table 5.—Characteristics of sample farms in the Kwimba and Maswa districts

Characteristic	District	
	Kwimba	Maswa
Family size number..	8.22	10.10
Family labor available man equivalent..	3.32	3.74
Family labor use man equivalent..	1.09	1.24
Cattle number..	15.24	35.20
Cultivated area acres..	6.58	7.69
Cotton area acres..	3.23	2.78
Area cropped per man equivalent available acres..	1.98	2.05

Costs and returns.—No acceptable data on cost of production, in the usual sense of the term, exist for cotton in Tanzania on the whole. Neither fertilizer nor insecticides are used on a broad scale. Some initial plowing by tractor or oxen may be hired, but neither is a major factor of cash outlay. Nor is hired labor an important cost.

However, Collinson's studies show that in the Kwimba district the average gross farm income from cotton in 1961-62 was \$118.02, the out-of-pocket costs were \$19.32, and the net farm income from the average 3.23 acres of cotton was \$98.70.

Table 6.—Costs and returns from major classes of farm enterprises in the Kwimba and Maswa districts

Item	Cotton		Foods ¹		Livestock ¹		Total	
	Kwimba	Maswa ²	Kwimba	Maswa ²	Kwimba	Maswa ²	Kwimba	Maswa ²
	<i>U.S. dol.</i>	<i>U.S. dol.</i>	<i>U.S. dol.</i>	<i>U.S. dol.</i>	<i>U.S. dol.</i>	<i>U.S. dol.</i>	<i>U.S. dol.</i>	<i>U.S. dol.</i>
Gross farm income . .	118.02	78.40	96.03	126.28	69.44	97.71	283.49	302.39
Costs	-19.32	-14.28	-4.48	-5.18	-23.24	-10.64	-47.04	-39.06
Net farm income . .	98.70	64.12	91.55	121.10	46.20	87.07	236.45	263.33

¹Food crops and livestock products consumed are valued at the buying price in the local market to give a measure of the opportunity cost of using resources in these ways.

²There are some arithmetic differences that are not sufficiently explained in Collinson's report to permit them to be eliminated.

In the following year the study in Maswa district showed a gross income from the average 2.78 acres of cotton to be \$78.40, costs were \$14.28, and net income was \$64.12. Data do not appear to be available on the amount of hired labor used on cotton, but it is reported for Maswa that the total labor requirements for cotton were 86.1 man-days per acre. (The work day averages about 7 hours for men and slightly less for women.) These data for the Maswa district give a gross return from cotton of \$28.20 per acre and a net return of \$23.06, or a gross return of 33 U.S. cents per day of labor and a net return of 27 U.S. cents.

The labor requirements, according to Collinson, for flat-planted cotton in the Maswa district cultivated by oxen, are as follows:

<i>Operation</i>	<i>Man-days per acre</i>	<i>Dominant months</i>
Plowing	3.5	December-January
Planting	3.0	December-January
First weeding	15.8	January-February
Second weeding	9.9	February-March
First picking	17.6	June-July
Second picking	11.1	July-August
Third picking	4.1	August
Grading	<u>21.1</u>	July-September
Total operations	86.1	

Data for hand-cultivated cotton show a lower labor use in seedbed preparation and a higher labor use in weeding due to the poorer control of weeds by flat cultivation compared with ridge cultivation. By hand methods land preparation and planting requires 17.82 man-days per acre compared with the 6.5 man-days shown above, and weeding requires 15.14 man-days compared with 25.7 man-days shown above.

A major input factor in cotton production is unpaid family labor. But it must be remembered that little or no alternative use of labor exists in farm areas that will give rise to a cash income equivalent to that gained by cultivating cotton.

GINNING AND MARKETING COTTON

Farm Marketing

The Tanzanian cotton-marketing system pays a producer a fixed price per pound for his bundles of seed cotton when they are delivered to a local cooperative buying station, which is normally within walking distance from his farm. The producer has previously picked the cotton, sorted it to remove most of the grass and leaves, and divided it into one or the other of the two grades. At the buying station the weight is determined, the grade verified, and payment made to the farmer according to the price in effect for the particular season.

Three individuals appointed by the local cooperative society are at each buying station to assist a permanent employee in grading, weighing, paying, and recording transactions.

Producer prices.—In 1969-70 the basic grower price was 7 U.S. cents per pound for AR cotton and 3.5 U.S. cents per pound for BR cotton. In recent years, however, farmers have been paid a premium of 0.3 U.S. cent per pound for AR cotton delivered during the first 4 weeks of the buying season.

This premium provides an incentive for farmers to start harvesting as early as possible and thereby increases the likelihood that the crop will average higher in grade. The premium for early delivery also enables the gins to obtain enough cotton to start ginning early. Not only is the work load better distributed at the gins and storage pressure relieved, but baled cotton flows into commerce at an earlier date. Officials of the Lint and Seed Marketing Board have been well pleased with the generally favorable response to the premium for early delivery of seed cotton to the local buying stations and believe that the premium is a wise policy.

The average prices paid to growers for seed cotton delivered to local buying stations for the crop years 1961 through 1970 are given in the tabulation below. Prices are given for both AR and BR cotton.

<i>Crop year</i>	<i>AR cotton, in U.S. cents per pound</i>	<i>BR cotton, in U.S. cents per pound</i>
1960-61	7.7	3.2
1961-62	7.7	3.2
1962-63	7.7	3.2
1963-64	7.0	3.2
1964-65	7.0	3.2
1965-66	6.7	2.9
1966-67	6.4	2.9
1967-68	6.4	2.9
1968-69	6.7	3.2
1969-70	7.0	3.5

Ginning

All ginning machinery in the 22 active gins in western Tanzania is roller equipment—mostly double stands, each capable of producing about 800 pounds of lint per 8-hour shift. Most gins are capable of handling from 17,000 to 21,000 bales per season, and total gin capacity in western Tanzania is around 420,000 bales per season. The ginning period is approximately June through December.

An analysis of all costs for 13 gins owned by the Victoria Federation of Cooperative Unions for an 8-month period ending December 31, 1967, showed that costs totaled \$12.94 per 480-pound bale. The 8-month period included the ginning season. The 13 gins received, on the average, \$11.69 per bale as a ginning fee plus an incentive bonus of 23 U.S. cents, or total ginning fees of about \$11.92 per bale. In addition, gins received about 80 U.S. cents per bale for handling and dusting planting seed and about 56 U.S. cents per bale of seed cotton for transporting planting seed. Other income amounted to 2 U.S. cents per bale. In total, gin receipts were \$13.30 per bale, leaving a net surplus over costs of 36 U.S. cents per bale.

The following tabulation is a detailed breakdown of ginning costs for the 13 gins owned by the Victoria Federation of Cooperative Unions for the 8-month period ending December 31, 1967.

<i>Item</i>	<i>Cost, in U.S. dollars per 480-pound bale</i>
Salaries	1.28
Wages	1.61
Medical care .....	.05
Provident fund .....	.13
Entertainment .....	.06
Head office charges .....	.24
Printing and stationery .....	.03
Baling material	1.93
Fuels and lubricants .....	.72
Maintenance and repairs	2.12
Vehicles, fuel, and maintenance .....	.57
Depreciation	2.32
Insurance .....	.18

<i>Item—Continued</i>	<i>Cost in U.S. dollars per 480-pound bale</i>
Audit and supervision . . . . .	.04
Interest . . . . .	.12
Storage	1.03
Other	<u>.51</u>
Total	12.94

The above was compiled from an unpublished manuscript, *Cotton Marketing in Tanzania*, by Charles K. Laurent. The item listed above as "storage" was reported by Laurent as "cottonseed shortage" but is presumed to be storage for seed cotton, baled cotton, and cottonseed.

Eighteen gins in western Tanzania are owned and operated by cooperatives, and negotiations are in process that may lead to cooperatives acquiring the other four gins in the area. Eighteen of the gins in western Tanzania have from 24 to 34 double roller stands. Of the three largest gins, two have 40 double roller stands, and one has 70.

In eastern Tanzania 12 gins are active. These gins also have roller equipment, but they are much smaller than those in western Tanzania. Most eastern Tanzanian gins are privately owned, but a number of them gin for the account of grower cooperatives.

Two sizes of bales are used. All are 41 inches long, but some bales are 27 inches wide and 26 inches deep while others are 32 inches wide and 21 inches deep. Bales range in weight from 375 pounds to 425 pounds; they average 410 pounds gross weight and about 400 pounds net weight. The density is 25 pounds per cubic foot. Heavy jute bagging (14 oz. per sq. yd.) is used on bales.

The Lint and Seed Marketing Board works closely with the gins in order to hold various ginning defects to a minimum. The Board also has certain financial incentives that are offered to ginners as a means of encouraging good ginning. The combination of inspection to detect ginning deficiencies, technical assistance to help gins overcome deficiencies, and payment of bonuses to gins doing a superior job of ginning helps to assure customers that considerable care has been exercised in ginning the bales of Tanzanian cotton they buy.

The Lint and Seed Marketing Board

The Lint and Seed Marketing Board was established by the Government in 1952. In it was vested the responsibility for the purchase and sale of all cotton lint and cottonseed produced in the country. The Board was also given the responsibility for the stability and development of the cotton industry and the proper administration of its funds in the interests of the national cotton industry as a whole. In 1957 the Board set up its own permanent organization.

Direct costs.—Table 7 shows the elements that affected the cost of baled cotton and cotton prices in 1969-70 to the Lint and Seed Marketing Board. The data in the table were released by the Ministry of Agriculture, Food and Cooperatives on June 11, 1969. Data in table 7 include the basic cost of the seed cotton upon delivery to the gin and the cost of the lint cotton at the time of leaving the gin. However, these basic allowances are subject to adjustments as detailed in the footnotes to the table. Except for the bonus for early delivery of the AR seed cotton to the buying station, the other adjustments recognize that a certain minimum volume of cotton must be handled by the particular primary society or gin to operate with low unit costs. The sliding scales that are in effect therefore are designed to help cover the higher costs of the existing small operations.

Table 7.—Costs per pound of 1969-70 AR and BR cotton in Tanzania by region to the Lint and Seed Marketing Board

Item	Mwanza, Mara, east Shinyanga		North Tabara, west Shinyanga		West Lake	
	AR	BR	AR	BR	AR	BR
Seed cotton:	<i>U.S. cents per pound</i>	<i>U.S. cents per pound</i>	<i>U.S. cents per pound</i>	<i>U.S. cents per pound</i>	<i>U.S. cents per pound</i>	<i>U.S. cents per pound</i>
Paid to growers ¹	7.00	3.50	7.00	3.50	7.00	3.50
District council cess . . . . .	.14	--	.14	--	.14	--
Society levy ² . . . . .	.42	.42	.42	.42	.42	.42
Union levy . . . . .	.14	.14	.14	.14	.14	.14
Union marketing expenses, transport, and finance . . . . .	.25	.25	.25	.25	.25	.25
Total cost of seed cotton at gin	7.95	4.31	7.95	4.31	7.95	4.31
Lint:						
Equivalent lint cost ³	23.74	13.27	24.47	14.58	23.74	13.27
Ginning fee ⁴	2.38	2.38	2.38	2.38	2.38	2.38
Insurance and interest . . . . .	.07	.07	.07	.07	.14	.14
Total cost of lint ex-ginnery	26.19	15.72	26.92	17.03	26.26	15.79
Ginneries Development Fund ⁵ . . . . .	.14	.14	.14	.14	.14	.14
Total cost of lint⁶	26.33	15.86	27.06	17.17	26.40	15.93
Outturn factor	<i>Percent</i> 33½	<i>Percent</i> 32½	<i>Percent</i> 32½	<i>Percent</i> 30¾	<i>Percent</i> 33½	<i>Percent</i> 32½

¹Excludes early delivery bonus. All growers who deliver their cotton during the first 4 weeks of the season received a bonus of 0.279 U.S. cent per lb. of AR cotton. Certified schedules showing purchases for the first 4 weeks are paid by the Lint and Seed Marketing Board on presentation.

²The society levy was initially placed at 0.419 U.S. cent per lb. of seed cotton; but a sliding scale is applied at the end of the season when final figures are known. This sliding scale, which is the same as that for the 1968-69 season, is as follows: For all crop up to 350,000 lb., 0.699 U.S. cent per lb.; for the next 250,000 lb. (i.e., between 350,001 and 600,000 lb.), 0.489 U.S. cent per lb.; and for the remainder of the crop (i.e., all crop above 600,000 lb.), 0.279 U.S. cent per lb.

³Any gain or loss in the ginning outturn is for the account of the Board, as in the past.

⁴The following sliding scale for ginning fees is the same as for the 1968-69 season: 10,000 bales (400 lb. gross weight) or over, 2.38 U.S. cents per lb.; 9,000 to 9,999 bales, 2.52 U.S. cents per lb.; 8,000 to 8,999 bales, 2.66 U.S. cents per lb.; 7,000 to 7,999 bales, 2.94 U.S. cents per lb.; 6,000 to 6,999 bales, 3.22 U.S. cents per lb.; and 5,000 to 5,999 bales, 3.36 U.S. cents per lb.

⁵The Ginneries Development Fund is retained by the Board for buying private ginneries. The fund will be released on instructions from the Ministry of Agriculture, Food and Cooperatives.

⁶Includes price paid to ginner plus contribution to Ginneries Development Fund by the Lint and Seed Marketing Board. Further, all costs relating to cottonseed except those for bagging and handling delivery of seed to crushers are allocated to lint, thus inflating lint cost.

Source: Derived from report *Cotton Prices, 1969-70*, Ministry for Agriculture, Food and Cooperatives, Dar es Salaam, June 11, 1969.

The following tabulation, the data for which were compiled from an unpublished manuscript, *Cotton Marketing in Tanzania*, by Charles K. Laurent, shows the various elements that contributed to the total cost, on a lint-cotton basis, for all cotton purchased by the Lint and Seed Marketing Board in the 1967-68 season. Seed cotton figures have been converted to lint cotton equivalent on the assumed basis of a 33.33-percent lint outturn.

<i>Item</i>	<i>Cost in U.S. dollars per bale¹</i>
1. Grower payment ²	87.76
2. Society remuneration	8.03
3. Union levies and marketing fees	6.49
4. Union development levy ³ . . . . .	.87
5. Ginnery fees and additional remuneration	12.74
6. District cess ³	1.81
7. Adjustment ⁴	1.47
8. Export tax ³	3.06
9. Transport, handling of bales	1.09
10. Transport, bagging of cottonseed ³	3.35
11. Value of planting seed distributed free ^{3,5}	5.28
12. Seed dusting, distribution ³	1.90
13. Quality claims . . . . .	.60
14. Bank charges and interest . . . . .	.12
15. Administration . . . . .	.85
16. Depreciation . . . . .	.30
17. Classification . . . . .	.08
18. International Cotton Advisory Committee . . . . .	.26
19. Income taxes ³ . . . . .	.26
20. Crop insurance . . . . .	.08
21. Roads ³ . . . . .	.62
22. Research ³ . . . . .	.73
23. Vermin control . . . . .	.06
24. Seed and bale stores handed over . . . . .	.79
25. Adjustment from previous year . . . . .	.06
Total	138.66

¹ Bales of 480 lb. net weight.

² Weighted average based on relative amounts of AR and BR cotton.

³ Nonmarketing expense.

⁴ Applicable to items 2. through 5.

⁵ Costs of seed not included in corresponding table in Tanzanian study.

Indirect costs.—The detailed breakdown of items in the tabulation reveals quite a different system of handling cotton in Tanzania than prevails in the United States.

The most obvious difference is that typically the U.S. farmer takes his cotton to the gin in multiple bale loads, has it ginned, and then has his own bales of cotton and cottonseed to sell. The Tanzanian farmer, however, takes but a small fraction of the seed cotton required to produce one bale to his local buying station and sells it as seed cotton.

Another difference is that the detailed breakdown of "costs" in Tanzania reveals that a number of categories represent items that in the United States would be covered by taxes levied against the farmer, the gin, or the cotton merchant by local, county, State, or national jurisdictions. In Tanzania these items are paid for by the Lint and Seed Marketing Board. The net effect is that in the United States the farmer receives more for his cotton but of course pays for such things as planting seed, ginning, storage, insurance, and certain transportation costs. And through taxes, the U.S. cotton farmer pays for the general administration of Government, for roads, for research, and for his country's assessment to the International Cotton Advisory Committee.

This report makes no attempt to evaluate the relative merits of the two systems. But it may be noted that the key officials and leaders in Tanzania are convinced that under the circumstances prevailing in that country it is better to follow the present system than to pay the farmer a higher price for his cotton and then to recover some portion of the revenue through taxation to pay for the various services that are reflected in the tabulation. Furthermore, most impartial observers would probably conclude that the Lint and Seed Marketing Board operates effectively and in a professional manner.

The marketing systems for various other crops cotton farmers now produce or might produce are less well developed. This means that the farmer who raises cotton for market has a far more effective marketing system at his disposal than he would have for any other crop or product that he might produce for market. This may well be one of the major reasons that cotton raising has expanded to become Tanzania's major export crop. Cotton provided nearly one-fifth of total exports by value in the period 1965-67.

The Lint and Seed Marketing Board has also had a marked effect on in-country transportation facilities and has sparked considerable improvement. Much of the country's seed cotton has to be hauled some miles from local buying stations to gins, and most bales of ginned cotton must be hauled many miles to ports or mills. The condition of highways and railroads was such in the past that delays were not unusual. But systematic efforts to overcome obstacles have been fruitful. The Lint and Seed Marketing Board has provided a considerable part of the leadership and financial assistance for these developments.

For example, in 1967-68 the Board paid the equivalent of 62 U.S. cents per bale (480 lb. net weight) to build and maintain roads, and the value of seed and bale stores along railroads turned over to the Government rail system was the equivalent of 79 U.S. cents per bale. Such investments have done much to facilitate improvements in the movement of the crop. But the continued expansion of the crop means that there are still seasonal transport problems to be dealt with, and all interested parties are trying to overcome them.

Marketing returns.—Once Tanzanian producer prices and the various fees and levies are established, the Lint and Seed Marketing Board has little, if any, control over costs so far as the particular season is concerned. The Board naturally attempts to recover as much as is feasible from the sale of lint and seed each year. But whether the Board shows a profit, breaks even, or dips into reserves is largely a function of the current world price of medium-staple cotton.

Table 8.—Prices received by the Lint and Seed Marketing Board for lake region
Tanzanian cotton lints by quality, year ending June 30, 1954 through 1968

Year	U.S. cents per pound		
	AR	BR	Average
1954	30.80	23.38	30.38
1955	35.98	28.98	35.00
1956	32.20	23.10	31.92
1957 ¹	28.00	19.60	27.16
1958	30.24	18.76	29.40
1959	27.02	18.76	26.46
1960	26.18	21.98	25.90
1961	28.28	23.38	27.86
1962	28.00	24.08	27.72
1963	26.60	21.84	26.04
1964	27.30	19.88	26.32
1965	27.02	19.74	26.18
1966	25.48	19.46	25.06
1967	24.08	18.34	23.52
1968	26.32	20.16	25.76

¹Estimated.

Source: Compiled from unpublished manuscript, *Cotton Marketing in Tanzania*, by Charles K. Laurent.

From year to year, fairly small changes may be made in the various allowances by the Lint and Seed Marketing Board, but these can seldom be great enough to eliminate the possibility of sizable losses or gains—depending on how the market moves in the months following the establishment of the price.

Bales of lint cotton are sold by the Lint and Seed Marketing Board to firms licensed to trade in Tanzanian cotton and to local mills. Sales are by auction and/or by private treaty. It is the responsibility of the Board to arrange for the transportation of cotton from the gin to the railroad or to the lake loading point.

In the past, buyers have taken possession f.o.r. at the nearest railroad shipping point or f.o.b. one of the lake boats if shipment was to be by lake boat and by rail through Mombasa. All sales are for cash at time of delivery by the Board. Starting in 1970-71 all cotton for export will go out through Dar es Salaam.

Cottonseed is handled in much the same way as the bales of lint except that a sizable amount of the higher quality seed is set aside for treatment with copper fungicides for use as planting seed. For the planting seed, the Board pays the total cost of seed, seed treatment, bagging, and distribution to the cooperative societies where the farmers ask for and receive free of charge the seed they say they will want for planting.

The seed not needed for planting is sold by the Board to the local cottonseed crushing mills. There are 15 mills in the lake area that are locally regarded as large mills, and they handle all but about 5 percent of the seed that is available for crushing. Cottonseed is normally sold on an ex-gin basis.

In most years, the local price for cottonseed for crushing has been sufficiently high that it was all crushed locally, and the oil has been consumed locally. Cottonseed cake is typically exported to Europe. The following table gives the prices received for cottonseed in western Tanzania.

Table 9.—Prices received by the Lint and Seed Marketing Board in western Tanzania for cottonseed by quality for crushing, year ending June 30, 1958 through 1968¹

Year	AR	BR	Average
	<i>U.S. dol. per short ton</i>	<i>U.S. dol. per short ton</i>	<i>U.S. dol. per short ton</i>
1958	41.53	18.03	39.50
1959	29.85	24.13	29.34
1960	46.86	37.72	45.98
1961	48.26	20.45	44.83
1962	53.47	28.45	51.18
1963	48.64	24.13	44.96
1964	41.78	29.21	39.75
1965	47.63	25.91	44.83
1966	69.22	40.01	66.55
1967	49.66	29.08	45.21
1968	64.52	37.34	61.72

¹Cottonseed produced in western Tanzania sells for about \$3.81 per short ton more than that produced in eastern Tanzania, mainly because of quality differences.

Source: Compiled from unpublished manuscript, *Cotton Marketing in Tanzania*, by Charles K. Laurent.

The accounting system used by the Lint and Seed Marketing Board tends to allocate practically all costs to the lint cotton rather than to apportion the combined costs to both the lint and the seed or to aggregate both the costs and the receipts for lint and seed combined. As a result, a casual observer may get the impression that lint is customarily sold at a substantial loss and seed at a substantial profit. Looking at the total operation, it appears that in most recent years the combined income from lint and seed is in excess of the total expenditures of the Lint and Seed Marketing Board for marketing and promotional purposes.

Summary.—The Lint and Seed Marketing Board operates in such a way that its role is perhaps much wider than its legal obligations imply. It is a major stabilizing influence both in the cotton economy of Tanzania and in the economy of cotton-producing areas. It has functioned importantly as a source of financing to local societies, cooperative gins, and cottonseed oil mills. It has helped build and maintain roads and assisted as necessary to insure

that trucks were available to provide for the effective movement of the crop to the gins. It has had a major role in the treatment and distribution of high-quality planting seed, in the financial support of the cotton research stations, and in providing adequate storage at gins, railroads, and ports. Each of these are important contributions to the growing cotton industry of Tanzania. But perhaps even more important has been the role of the Board in the effective financing of the movement of the annual cotton crop and the leadership the Board and the scientific personnel engaged in cotton research have given to the wholesome and aggressive growth of the cotton industry.

Exports

The Tanzanian cotton economy has always been oriented toward exports because only in recent years has the country had a cotton textile industry.

The last 15 years Hong Kong has consistently been the major foreign market. During the period 1955-59 the Hong Kong market led all others by taking an average of 39,000 bales per year out of a total average export of 130,000 bales per year. Hong Kong's takings increased to 145,000 bales out of a total of 312,000 bales in 1965-66, and in 1968-69 it took 81,000 out of a total of 208,000 bales. One explanation of the fact that Hong Kong has been such an important outlet for Tanzanian cotton is the fact that Hong Kong exports large quantities of cotton textiles to the United Kingdom. In order to gain the benefit of empire preference in the United Kingdom market, Hong Kong textiles must include at least 25 percent of raw cotton from empire sources.

In earlier years, West Germany was the second most important outlet and Japan the third. More recently, Mainland China has moved into second position with third position falling to West Germany in some years and to Japan in others. In 1968 Japan moved into second position, and Mainland China was third.

Table 10.—Cotton exports from Tanzania to specified countries, averages 1955-59 and 1960-64, annual 1965 through 1968¹

Country	Average		1965	1966	1967	1968
	1955-59	1960-64				
	<i>1,000 bales²</i>	<i>1,000 bales²</i>	<i>1,000 bales²</i>	<i>1,000 bales²</i>	<i>1,000 bales²</i>	<i>1,000 bales²</i>
Hong Kong	39	77	145	135	122	81
Japan	19	12	25	61	40	59
China, Mainland	1	27	64	60	49	25
United Kingdom	9	7	10	17	10	9
Germany, West	24	25	26	32	25	8
Netherlands	6	7	9	9	11	7
Belgium	3	2	7	7	2	4
India	15	11	0	18	1	3
Singapore	(³)	(⁴)	2	3	5	2
Ceylon	1	4	5	2	3	1
Other	13	13	19	6	15	9
Total	130	185	312	350	283	208

¹ Average 1955-59 is on a calendar year basis; 1960 through 1968 is on year beginning August 1.

² Bales of 480 lb. net weight.

³ If any, included in other countries.

⁴ Less than 500 bales.

Source: Compiled from official reports of the Foreign Agricultural Service.

THE TANZANIAN TEXTILE INDUSTRY

History and outlook

The cotton textile industry of Tanzania is small but growing. According to information supplied the International Cotton Advisory Committee in 1969, there are four cotton mills.



Cotton ready for picking in the Geita district in the Mwanza region, just south of Lake Victoria. These fields, surrounded by a gently rolling terrain, contain the cotton crops of several farmers. The cotton plants are one of the adapted varieties developed at the Ukiriguru research station.



Local buying station for cotton run by a farmers' cooperative society near Mwanza. A paid member of the cooperative and several volunteers verify the weight and grade (and therefore the price) of cotton brought in by sellers. After weighing, cotton is stored in the station, then transported by truck to a gin. Fence channels sellers to proper station officials.

The oldest is Tasini Textiles Co., Ltd., located a few miles outside Dar es Salaam. This mill started in 1961 as a weaving mill for which yarn was imported. It has since developed into a fully integrated mill and spins and weaves about 10,000 bales of Tanzanian cotton annually. Plans provide for this mill to be expanded, but probably it will be some years before consumption of cotton reaches the long-term goal of 25,000 bales per year.

Kilimanjaro Textile Corporation, Ltd., located at Arusha, commenced production in 1967. It started spinning and weaving, producing grey sheeting; in 1969 the mill was producing cotton twills and drills and plain spun rayon cloth. When this mill reaches full production, its output will be about 10 million square yards of cloth per year. About 60 percent will be cotton cloth and 40 percent yarn-dyed spun rayon cloth. Cotton consumption will be 2,500 to 3,000 bales of local cotton per year.

Friendship Textile Mill, Ltd., is a subsidiary of the National Development Corporation. It is located in the Ubungu industrial area near Dar es Salaam. This mill started operating in early 1969. When full capacity is reached, consumption of cotton will be about 25,000 bales per year.

Another mill, located near Mwanza, is a joint venture between the Nyanza Cooperative Union, Ltd., the National Development Corporation, and Amenital. At full production it is expected to consume about 20,000 bales of cotton per season.

These mills clearly represent a dynamic aspect of the economy of Tanzania. Cotton consumption within the country has increased from an initial level of about 5,000 bales in 1965-66 to 10,000 bales in 1966-67 to 15,000 bales in 1967-68 and was about 20,000 bales in 1968-69. From the above data on eventual expansion of the various mills, it is apparent that further growth in raw cotton consumption by the Tanzanian textile industry is in prospect. It seems unlikely, however, that consumption will rise as fast as production. Thus, both domestic cotton consumption and exports of raw cotton are likely to trend upward.

Table 11.—Production of textile fabrics in Tanzania by types, 1960-66

Year	Cotton					Rayon fabrics	All fabrics
	Grey	Bleached	Khaki drill	Piece dyed other	Total		
	<i>1,000 sq. yds.</i>	<i>1,000 sq. yds.</i>	<i>1,000 sq. yds.</i>	<i>1,000 sq. yds.</i>	<i>1,000 sq. yds.</i>	<i>1,000 sq. yds.</i>	<i>1,000 sq. yds.</i>
1960	1	--	--	--	1	994	995
1961	36	--	--	--	36	1,952	1,988
1962	819	--	--	500	1,319	3,151	4,470
1963	1,508	40	24	1,451	3,023	4,175	7,198
1964	1,797	35	24	2,625	4,481	6,842	11,323
1965	2,563	63	45	3,371	6,042	6,729	12,771
1966	5,005	--	100	4,681	9,786	5,660	15,446

Source: *A study of the Market for United States Textiles in East Africa*, Statistical Section, by A. Lee Parsons and Maurice Loewenthal, July 1969, p. 14.

Prior to the establishment of its own textile industry, Tanzania was entirely dependent upon imports for textile supplies. For the most part, these came from overseas; but since the late 1950's some also have come from Uganda. As their own domestic production has moved up in volume, there has been an effort made to reduce the imports of the types of textiles produced in Tanzania. This curtailment of Tanzanian imports has had an adverse effect upon mill activity in Uganda.

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