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**COTTON PRODUCTION
IN MOZAMBIQUE:
A SURVEY
1936 — 1979**

1981

projecto de estudo sobre a produção de algodão

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INTRODUCTION

The CEA Cotton Research Project (hereafter the Project) is a study of development problems and policies in a particularly crucial sector of the Mozambican economy. By cutting vertically through the economic, social and political aspects of cotton production, the Project's researchers were able to examine policy for industry as well as for agriculture. Cotton in Mozambique is grown by smallholders, by private farmers, by cooperatives, and by state farms. Such diversity among the producers presents a wide range of the type of problems involved in the transformation of the colonial economy through the development of collective forms of production. Mozambique cotton production is, moreover, central to the process of socialist accumulation, both because cotton is an export earner and because it is the basis for the expanding local textile industry, which will provide wage goods for peasants and workers.

The Project was not intended to develop an overall cotton strategy, or even to make proposals on particular problems. The objective was to provide information in certain specific areas, which could then be used in planning cotton production. The CEA considers the information that has been collected and analysed to be particularly relevant for the work of the Secretariat of State for Cotton and the National Cotton Institute. Nonetheless, since cotton is an element in a national strategy of transition, the series of studies produced by the Project clearly contains implications for other sectors too--especially Internal Trade, Cooperative Development, and the Ministry of Industry.

This document is a guide to the series of Project reports for persons from various state structures who are involved in agricultural or industrial planning, linked to cotton production. The text is organised into four chapters, with a statistical appendix and a guide to important documentary sources.

CHAPTER ONE outlines some general problems facing Mozambique's national cotton industry. These problems clearly conditioned the choice of areas of study for the Project to focus on.

CHAPTER TWO sketches the history of the development of Mozambique's cotton industry, attempting to explain how and why the general problems described in the first chapter emerged from the colonial organisation of production, and how the pattern was broken at Independence.

CHAPTER THREE looks at the implications of the series of Project reports for the development of a national strategy for cotton production.

CHAPTER FOUR presents a series of summaries of the actual reports produced by the Project. These summaries are not intended to replace the close study of the actual texts, but simply to indicate how they might be read by persons involved in cotton planning.

The STATISTICAL APPENDIX consists of the systematic presentation of existing data on the cotton sector, with an explanatory commentary.

The CEA's research has involved two rural research projects (Province of Nampula, 1979; Province of Zambézia, 1980) and two factory studies (Texmoque in Nampula; Texlôm in Matola-Maputo), as well as work with the documentary and statistical sources. The CEA's reports are complemented by a study conducted by the Norwegian Institute of International Affairs (NIIA) on international cotton marketing in relation to Mozambique.

CHAPTER I: GENERAL PROBLEMS CONFRONTING THE MOZAMBICAN COTTON INDUSTRY

During the course of this Project, the CEA's researchers identified five areas in which important problems exist. An understanding of the relationship between these problems and the historical evolution of the cotton industry is particularly important for Mozambique's national cotton policy.

Firstly, cotton production in colonial Mozambique was largely based on exhaustive exploitation of the soil and the use of a large amount of labour, with little concern for increased productivity. In order to understand some of the social and technical problems of the re-organization of cotton production in Mozambique, two sharply distinguishable methods of growing the crop can be counterposed. In the first method, cotton is grown as a dry crop, using hand labour for weeding and picking, and renewing the soil simply by the use of rotation crops and fallow periods. If labour costs can be held at a low level, cotton can be produced quite cheaply in this way; however, there are a number of disadvantages.

- The use of labour is seasonal, and workers must have alternative employment which will leave them free when they are needed to work on the cotton crop.
- Cotton is vulnerable to numerous pests and diseases, to drought, and to rain and lack of sun. As a result, levels of production vary widely from year to year, and producers must either have large funds in reserve, or not depend completely on the revenue from cotton.
- Continuous cotton cultivation exhausts the soil, and natural fertilizers and fallowing are not normally able to arrest the process.

All these disadvantages can be overcome by using various technical inputs and by high levels of mechanization. For example, since cotton is not a food crop weeds can be killed with herbi-

cides, and mechanical picking does not necessarily harm the quality of the fibre if defoliants are used. The use of fungicides, herbicides, and irrigation can prevent wide variations in cotton yields, but all of them imply the acceptance either of high costs of production or large-scale investment. In addition, since machinery and inputs must be imported, such high costs must be borne out of foreign exchange earnings.

Secondly, of the problems identified by the Project, cotton production normally requires a fast and efficient transport system, linking producers and processors, in order to keep costs low and to maintain the quality of fibre and seed. Seed cotton is cheap and bulky, and must either be moved quickly and in large quantities, or else it must be ginned and baled close to the point of production. An underdeveloped and inefficient transport system will add to costs, and allow rapid degeneration of both fibre and seed through processing delays or inadequate storage. Both productivity and quality will suffer.

The processing and marketing restrictions of cotton production present an underdeveloped economy with particular difficulties.

- In the absence of transport and storage facilities, ginning plants must be close to the point of production. Such plants will operate only immediately after the harvest, with the likelihood of very low productivity.
- Similarly, the marketing of cotton is both seasonal and highly specialised, and it is difficult to coordinate it with the development of an efficient regional marketing system.
- The development of an efficient cotton marketing infrastructure is a cumulative process which requires continuity over the years. A commitment to this process tends to make it hard to alter production patterns in response to varying market conditions.

Thirdly, national cotton production requires an efficient apparatus of research and agricultural extension, if the product is to compete effectively on the world market, and if farmers are to successfully combat new species of pests or blights. World cotton production is based on constant experiments with new strains which are more pest-resistant, of higher quality, and more suitable for varied local conditions. The cost of

maintaining a research network of this type is disproportionately high in an economy which lacks a general infrastructure of agricultural research and extension. Further, when cotton is primarily produced by small-holders rather than large units, extension systems tend to be both inefficient and expensive. Thus it is that research and extension units like Mozambique's National Cotton Institute find it hard to keep up with new technical developments; are costly to run; and tie the economy into cotton production, like the marketing system, regardless of market changes.

Fourthly, world cotton production and trade is so structured as to make it extremely difficult for the underdeveloped economies to influence price movements. Cotton is produced and exported by both the USA and the USSR (the world's most highly developed industrial economies), and by some of the world's poorest nations. For many of these latter countries, cotton is their major foreign exchange earner, although their share of the market is minimal, and they are therefore ill-equipped to establish favourable market controls. The US Government's policy of price-supports for domestic cotton limited price fluctuations on the world market for many years. Since the abolition of this price-support system, however, dramatic price fluctuations have prevented effective planning by those Third World countries which rely on cotton exports. The USSR's position as a major exporter limits the possibility of replacing the old colonial preference systems by new agreements with the socialist world.

Lastly, of the five problem areas identified by the Project: the dynamic role of cotton production in the national economy, through its connection with the development of the domestic textile industry, is often limited by excessively high production costs in the textile industry itself. One of the strongest arguments for maintaining cotton production in Mozambique, despite cotton's role as an almost entirely export crop in colonial times, is that it is an important raw material for the developing domestic textile industry. But the industry requires the continuous import of machinery and inputs, and if existing productive capacity is under-utilised, it can become costly and inefficient. In many Third World countries domestic textile industries have become a drain on the economy, rather than a dynamising force.

None of these problems is peculiar to Mozambique or its strategy of socialist transformation. Most Third World cotton producers, including those scrambling for a foothold on the

capitalist road, face the same difficulties. Indeed, even colonial producers in pre-Independence Mozambique found that cotton was not very profitable in terms of the labour, marketing, and ginning needed to produce it, as we shall see below. But the significance of these problems and the range of possible solutions must be located within Mozambique's overall strategy of socialist development. The following examples may suggest the way in which this works.

- Seasonal demand for labour creates economic problems in a capitalist economy. In colonial Mozambique two distinct solutions were adopted. The first was the forced culture of food crops like cassava, which interfered much less than millet or sorghum with the cotton calendar. The second was the recruitment of a special labour force of women and children for the colonial farms. But seasonal demand for labour in a socialist economy is a political problem, as well as an economic one, because it interferes with the building of a strong, stable labour force which is the organised base of social transformation.
- In a capitalist enterprise, the cheapest solution to the problem of recruiting low-cost labour may well be greater mechanisation. In the context of a socialist strategy, however, the decision to invest in machinery is made as part of a general calculation to determine the leading sectors of the economy, and also to ensure productive employment and a basic standard of living for workers.
- The orientation of extension work can determine which forms of production will enjoy competitive advantages. For instance, although existing cooperative farms are inefficient, a socialist strategy might suggest that they should benefit from extension work, rather than the currently more productive small capitalist farmers.
- By permitting the distribution of commercial profit in certain ways, the State can encourage some types of producers and discourage others. Small capitalist enterprises are allowed to sell their own cotton fibre; by permitting cooperatives, for example, to do the same, they would clearly gain an economic advantage over small-holders.

-- The existence of the worker-peasant alliance requires that incentives be used to stimulate the voluntary establishment of new forms of production among the peasantry, in order that, for instance, the trading of agricultural commodities for manufactures such as cloth will be to the peasants' advantage. If high production costs in the local textile industry are translated into high prices of cloth, then the failure of the trade-off presents a political as well as an economic problem.

The series of reports produced by the Project touch on these and other questions of the transformation of cotton production within a general socialist strategy. As background to the reading of the reports, it is also necessary to consider the general lines of development of the Mozambican cotton industry in colonial times, and the challenges which it faced at Independence.

The cotton industry in Mozambique was established by the Portuguese colonial government in the early 19th century. It was based on a system of forced labor, known as the *sesmarias*, which required the peasants to work the land for the colonial government in exchange for the right to cultivate their own plots. The industry was initially successful, but it began to decline in the late 19th century due to a combination of factors, including the discovery of diamonds in South Africa, which led to a shift in the colonial government's focus, and the rise of the cotton industry in the United States, which led to a decline in the price of cotton.

At Independence in 1975, the cotton industry was in a state of decline. The government nationalized the industry and implemented a series of reforms, including the abolition of the *sesmarias* and the introduction of a new system of land tenure. The government also implemented a series of measures to improve the productivity of the industry, including the introduction of modern agricultural machinery and the establishment of a cotton research and extension service.

Despite these reforms, the cotton industry continued to decline in the 1980s. This was due to a number of factors, including a decline in the price of cotton, a reduction in the amount of land available for cotton production, and a lack of investment in the industry. The government's policies, which focused on the development of other sectors of the economy, also contributed to the decline of the cotton industry. In the 1990s, the government implemented a series of reforms, including the privatization of the cotton industry and the introduction of a new system of land tenure. These reforms have led to a resurgence in the cotton industry, and it is now one of the main sources of foreign exchange for Mozambique.

CHAPTER II: THE EVOLUTION OF COTTON PRODUCTION IN MOZAMBIQUE

The purpose of this chapter is not to construct a history of cotton in Mozambique, but to trace the emergence of the central problems of the contemporary cotton industry. As a result, the treatment is schematic, organised around a periodisation of two phases of the colonial economy, (1936-1961, and 1962-1974), and the years since Independence (1975-1980). It is important to recognise that there was a sharp change of direction in 1962 both in the organisation of capital and in the forms of exploitation of the peasantry in cotton-producing areas. This break played a role in the development of the present structure of the industry. For each of these three periods, the following topics will be addressed: production of seed cotton, processing, commercialization, consumption of Mozambican cotton, and forms of state intervention.

First Period: 1936-1961

Summary:

The Portuguese state initiated cotton production in Mozambique in an attempt to reduce the dependence of the Portuguese textile industry on imported raw cotton. Capital, much of it foreign, was persuaded to invest in the construction of ginning factories in the colonies by means of special concessions to ensure profitability. These conditions were met even though colonial cotton was sold in Portugal below world market prices. Measures taken included forcing peasant small-holders to produce cotton; the granting of commercial monopolies within fixed zones of cultivation; fixing the price paid to peasant producers at the lowest level in Africa; reducing shipping rates for cotton; granting tax incentives; and credit and marketing facilities in Portugal via the state organisation Junta de Exportacao de Algodao (hereafter JEA). Although some of these steps had been taken in the 1920s, the real expansion

of cotton production in Mozambique occurred after 1936.

Production of Seed Cotton:

The peasantry were forced to grow cotton in nearly all those parts of Mozambique unoccupied by plantations or colonial farms, and where climate and soil permitted -- and occasionally in unfavorable areas as well. Cotton cultivation became the main means of exploiting the peasantry in the northern provinces of Nampula, Cabo Delgado and Niassa, which had previously acted principally as labour reserves for the plantations. In the central and southern provinces, men were either forced into contract labour on plantations, or migrated to South Africa or Rhodesia. Cotton was cultivated in these areas by women, or by men too old or infirm for wage-labour.

The map (Fig. 1) shows the principal cotton-growing areas of Mozambique and the chart (Fig. 2) shows how cotton production evolved in the regions over nearly forty years. The dominant position of Nampula Province reflects the existence of soils and climate suitable for cotton production over most of its area, as well as a large and agriculturally active population.

Cotton cultivation required constant surveillance and the use of force by the local administration, by the subordinate "traditional" authorities (cabos and regulos), and by the capatazes employed by the concessionary companies. These latter chose and measured out the new fields, monitored planting and weeding and beat the tardy or rebellious or reported them to political authorities for further punishment. To facilitate this kind of control as well as the marketing of the crop, peasants had to regroup their fields along roads (picadas) which they were obliged to cut through the bush and then to maintain.

Since cotton growing uses land both intensively and extensively, serious problems of soil exhaustion, especially in Nampula, began to emerge. To make matters worse, the peasants had been forced to cut back on food production, particularly of grains because they competed with cotton. There were several severe famines in the 1940s which can be linked directly to the expansion of cotton cultivation. The administration attempted to resolve the situation through forced cassava cultivation in many of the cotton areas. By the 1950s there were also some attempts to introduce systematic crop rotation in the concentrated settlements known as concentrações algodoeiras.

The attempt was made in the 1950s to eliminate cotton production in areas and among populations of low productivity. This was probably the most important factor in raising the productivity of the cotton sector during this period, and was based on a JEA soil survey of the entire country. Detailed recommendations were made for withdrawal in some areas and expansion in others. Such decisions must reflect economic interests as well as ecological conditions, of course: cotton growing was dropped in Alto Molocuë so that with the development of tea plantations in northern Zambézia, the area could realize its potential as a food-growing area.

The result was that peasant cotton production rose during the 1950s to a peak of 139,710 tonnes of seed-cotton in 1959-1960, even though the number of cultivators was lower and the area in use only slightly larger than in the 1940s. The following table (Fig. 3) shows production and productivity in the peasant sector for selected years from 1943 to 1962.

FIG.3: Production of Cotton in the Family Sector:
Selected Years

<u>Year</u>	<u>Producers</u> ('000)	<u>Hectares</u> ('000)	<u>Tonnes</u>	<u>Kg./Ha.</u>	<u>Kg./Producer</u>
1943	662	344	61,115	178	92
1948	633	233	61,920	279	102
1953	1,97	275	125,354	456	252
1958	518	301	91,510	304	176
1962	502	302	127,559	422	254

Note: For the more detailed figures, see Statistical Appendix.

Processing:

Until 1963 the ginning of seed-cotton, which is an industrial activity, was always organised alongside the marketing of peasant-produced seed-cotton. In other words, each ginning factory had a zone of influence within which the company owning it had an absolute monopoly on the purchase of seed-cotton. **Figure 1** (p. 52) shows the zones of each of the major cotton companies as they were in 1953. Of course, larger companies with several factories could shift seed-cotton from one plant to another as levels of production or storage conditions

changed.

The major ginner was the Companhia dos Algodões de Mocambique (number 8 on the map) which dominated cotton commercialization in Nampula and operated in Lambézia and Cabo Delgado. Some of the smaller companies were actually branches of major capitalist concerns. Both the Companhia Industrial Joao Ferreira dos Santos (no. 11) and the Sociedade Algodoeira de Niassa (no. 9) were part of the João Ferreira dos Santos group, which had major commercial and agro-industrial interests throughout the north, in export-import, sisal plantations, rice-polishing, and cotton-ginning.

The commercial monopolies enjoyed by ginners within their zones and the state-guaranteed supply of cheap raw cotton removed competitive pressure within the ginning industry itself. Since the real source of profit was commercialization, the State had great difficulty in persuading the companies to modernise their facilities. The ginners also failed to diversify into the production of cotton by-products, oil or pulp, although the growth of urban food markets in the 1950s had made cotton-seed a marketable product. Instead, the ginning companies sold their wastes to local capitalists, often Indian, who pressed the oil and exported the pulp.

Marketing:

One of the conditions of the cotton concession was that the company had to buy all the cotton produced by the peasantry in the zone of influence of its factory. This meant (and still means) that a large transport fleet had to be available to reach the series of small local markets to which peasants carried their cotton. Marketing has to be done quickly during the few months between the harvest and the rains. Cotton companies like JFS, with links to diversified commercial activity, could use their own lorries. Other companies sub-contracted the work to private truckers or used state vehicles.

The companies had to pay the peasants prices set by the state, which varied by province and by district according to complex calculations of different costs of commercialization. The price also varied according to the quality of the cotton, which had to be graded by the peasants themselves. This classification of quality was done at the market, and neither the peasants nor the state had much control over the process; the companies, of course, used the opportunity to squeeze a little extra profit from the peasantry by exaggerating the quantity of low-grade cotton.

In the first few years of cotton production, the state-controlled prices varied according to the market. In 1943, however, there were large-scale peasant protests against the very low price of 0/£77 per kilo set for that year, and the State decided to set up a fund, both to act as a hedge against price fluctuations and to support cotton programmes. The price paid to peasants was thus set even lower than before against the market price, and a share of the surplus was directly appropriated by the State.

The table below (Fig.4) shows average prices paid for first and second quality cotton in Zambézia for selected years after 1948, when the two-grade system was introduced. There was no single national price for cotton until 1962. Alongside the provincial average prices are shown the figures for the cost of living index in Lourenco Marques (Maputo) for the same years. This is admittedly an inadequate measure of living costs among the peasantry, but it does indicate general price movements for basic manufactured commodities. For the full run of prices and an alternative price calculation by N.S. Bravo (1963: 182-3), see the Statistical Appendix to this report.

FIG.4: The Evolution of Prices Paid to Peasant Producers (£ per Kg.)

Year	1st Quality (£ per Kg.)	Index	2nd Quality (£ per Kg.)	Index
1948	1/£57	100	1/£18	100
1953	2/£77	176	2/£08	176
1958	3/£06	194	2/£39	202
1963	3/£70	236	2/£30	194
1968	3/£80	242	2/£20	186
1973	8/£00	509	4/£00	339
1978	11/£00	701	4/£50	381

We shall discuss the evolution of prices further in the sections below on the 1960s and on the post-Independence period. It is enough to point out here that these prices are said to have been the lowest paid to peasant cultivators in the whole of Africa (Mapril Gouveia 1968: 24).

The Market for Mozambican Cotton:

The agreements between the concessionary companies and the Government stipulated that all cotton produced in Mozambique was to be offered for sale in Portugal at a price to be set by the Government. This was originally set well below the world market price, favouring the domestic textile industry and saving foreign exchange. In return the concessionary companies were guaranteed a secure market with assured profitability, through the measures already discussed. The most important of these was the depressed price paid to the peasant producers.

Mozambican cotton played an important role in the growth of the Portuguese textile industry, as a comparison of the sources of Portuguese cotton imports in 1940 and 1950 clearly shows. In 1940 Portugal imported about 24,000 metric tonnes of cotton fibre, of which 19 per cent was Mozambican, 16.5 per cent was from Angola, and 64.5 per cent from elsewhere. By 1950 Portugal was importing 33,437 metric tonnes. Only 4 per cent was produced outside her colonies, and much of that was of special quality; of the rest, 76 per cent came from Mozambique and 20 per cent from Angola (Valente 1951: 35-6).

The Portuguese textile industry continued to expand in the 1950s, and was eventually consuming much more cotton than the colonies could produce. The proportion of non-colonial cotton consumed by the industry began to rise again, and the price paid to the Mozambican concessionary companies also began to move up towards the world market level. Mozambique began to diversify its exports slightly, selling linter and lower grade cotton; by 1960 up to 10 per cent of Mozambican cotton product exports went to countries other than Portugal. The protective ban on the development of a Mozambican textile industry began to be lifted in the 1950s, when a mill was opened at Chimoio. By 1960 1,870 tonnes of Mozambican cotton -- a small proportion of production -- was used by the local industry. The consolidation of Portugal's textile industry, itself based on state subsidies made at the expense of Mozambican and Angolan peasant producers, was what made these changes possible.

Forms of State Intervention:

From 1938 to 1962 the colonial State acted primarily as a direct agent of the Portuguese textile industry and of the concessionary companies. The local administrations forced peasants to produce cotton and supervised them while they did so. The JEA extended credit, controlled exports, and conducted some basic research on production conditions. The Agronomic Institute began investigating new varieties and growing methods.

Of course, the State was forced to mediate certain contradictions, between buyers and sellers, for instance, or between companies battling to appropriate productive and accessible areas or to dump unproductive or inaccessible ones. The State was also more concerned with the long-term reproduction of the cotton system than the companies were. It showed some concern with such problems as soil exhaustion and malnutrition, and tried to push the companies to modernise their ginning factories. On balance it is fair to say, however, that all the peasant producer got from the State was surveillance.

Second Period: 1962-1974

Summary:

The organization of cotton production and marketing began to change in the early 1960s, to allow capitalist settler farms, employing peasants as seasonal wage-workers, to take over. The ginning companies lost their monopoly on the purchase of cotton; capitalist farms could export their cotton fibre directly; the newly-established Cotton Institute (IAM) designed active agricultural extension and credit programmes for capitalist farmers; and forced labour was nominally abolished. It was not until the end of the 1960s, however, that the full impact of these changes began to be felt. Their effect was particularly dramatic after 1972, when the world cotton price rose and many settlers moved into cotton from other crops. Nevertheless, throughout the 1960s the production of cotton continued to depend on the peasantry, and it was not until 1970/71 that settler production outweighed that of the peasants. Groups of peasants using advanced techniques and specialising in cotton had begun to emerge in certain areas in the 1960s; but in reality if not in law peasant cotton production was forced production until 1969/71.

Production of Seed Cotton:

The major structural change in cotton cultivation between 1962 and 1974 was the growth of capitalist settler farming, as the graph of national production trends shows (Fig.5). The first sharp increase in settler production began in 1968, and with the improvement of world market prices in the 1970s more and more settlers moved into cotton. By the end of the colonial period they dominated production. Settlers were able to appropriate prime cotton land, or to pay only nominal prices for it; often the land had been cleared by the peasantry for picadas or for the concentrações algodoeiras; and of course, the settlers clustered in areas where good roads provided the best access to the ginning factories.

Capitalist cotton farming developed differently from region to region. It was in Nampula that it found its strongest base. Although one of the largest cotton farm concentrations in the early 1960s was the Mugeba nucleus near Mocuba in Zambézia, the peasants still outweighed the settlers in the province as a whole, with little significant change, throughout the decade. In Nampula, on the other hand, the propor-

tion of settler production had increased sharply by the late 1960s, as Fig. 6 shows. The dominance of cotton capitalists in Nampula was not simply a result of suitable ecological conditions and plentiful labour; it was also a question of giving this group an economic stake in an area potentially under threat from FRELIMO. The cotton capitalists included a few Mozambican autonomos, experimenting with ploughs and renting tractors.

The size of the cotton enterprises varied considerably, including colonatos, middle-sized farms, and a number of plantations. In both Zambézia and Nampula some sisal plantations had introduced cotton as an intercrop in the 1960s, to hedge against the falling price of sisal on the world market. But in general, cotton holdings were small: at the end of the colonial period 44 per cent of the cotton farmers in Nampula were working less than 50 ha. Productivity in the capitalist sector rose steadily throughout the 1960s. In 1962/63 the average yield for the northern provinces was 461 kg. per hectare; by 1972/73 it was 1.025. Better management and the increasing use of insecticides were probably responsible for the improvement. Fertilizers were rarely used even though the same fields were under cultivation for prolonged periods. As a result the state farms and cooperatives formed on these lands after Independence inherited a legacy of exhausted soils.

The rapid growth of the settler farms meant, of course, a parallel rise in the demand for seasonal wage-labour. Some peasants who had been driven off good cotton land by the settlers turned to occasional wage-labour, and other workers were recruited by the use of administrative pressures, especially at harvest time. By the early 1970s upward pressure on wages had led to substantially increased daily rates of pay (although the piece-rate for the harvest was unaffected), threatening the profitability of the settler farms. The situation was resolved when the end of forced cultivation in the family sector released labour for recruitment, and when state extension services to the family sector in certain areas were cut back. The history of the settler farmers was thus inseparably bound up with that of the peasant cotton cultivators.

The formal abolition of forced labour in 1961 did not lead to any discernible changes in the structure of peasant cotton production, at least at the national level (see Fig. 4, page 55). The jagged highs and lows of the graph of production continue from year to year, but there is no evidence of an overall decline in the levels of production. The number of cultivators,

and the area of land under cultivation did not decrease; productivity measured by hectare or by producer does not rise appreciably. Throughout the 1960s the price of first-quality cotton remained at 3/80. There is thus no evidence that price incentives had replaced force as the motor of peasant production.

There are, however, certain changes in peasant patterns of production at the regional level (Fig. 2, p.53.) In the provinces south of the river Save, peasant cotton production declined in the 1960s, although the development of irrigated settler farms partly compensated for this. In contrast, peasant production in Nampula and Zambézia actually rose during the decade. It was in the 1960s that the peasants of Nampula produced over 40,000 tonnes for the first time; Zambesian peasant families consistently produced close to 30,000 tonnes per year in the second half of the decade. In both provinces some of the specialised peasant cotton farmers already mentioned, often hiring tractors and regularly using insecticides, were beginning to reach high levels of productivity.

In the 1970s, however, there was a basic change in the way that administrative pressures and the extension work of the Institute were used. This change, and the rapid growth of the settler sector, effectively abolished the forced cultivation of cotton in the major areas. In 1970/71 national production in the family sector fell to 41,000 tonnes from a previous level of 81,500 tonnes. The drop cannot be explained solely in terms of the bad weather of that season, particularly since the settler farms increased their output at the same time. Despite some improvement in production the following year, 1970/71 was a turning point for peasant cotton farming in Mozambique. The number of cultivators, the area under cotton production, and the total output all began to fall sharply. In 1967 some 545,000 peasants produced 125,000 tonnes of cotton; in 1973 the 284,000 producers still active grew only 57,000 tonnes.

The end of large-scale forced cotton cultivation and the reduction of the large numbers of small peasant producers were necessary if the settler farms, with their enormous appetite for seasonal labour, were to expand. But it was the reorganization of cotton marketing, and the abolition of the companies' monopolies, which made cotton profitable for the first time for the settler farmers.

Marketing:

The structural link between ginning and commercialization of cotton was broken for the first time in 1964. Although their factories retained their zones of influence, the former concessionary companies had to bid against other firms each year for the right to market cotton within a particular zone. More importantly, independent producers and cooperatives could export their cotton themselves. Capitalist farmers had previously been able to negotiate their own prices with the companies, and had received, on average, payments 20 per cent higher than those offered to the peasantry (Bravo 1963: 185). Nonetheless, their bargaining position had still been too weak for them to make a profit on cotton in most years.

Most of the ex-concessionary companies continued in practice to market peasant cotton produced in their factories' zones of influence. The new system even allowed them to withdraw from the market when conditions were unfavourable, since the newly-formed Instituto de Algodao (IAM) was charged with commercialization in any zone not bid for by a private firm. Most of the northern crop of 1964 was marketed by IAM in this manner, after CAM refused to bid in protest against the new system. Later on IAM marketed low-grade Zambesian cotton when private traders would not buy it.

As the settler sector and independent marketing expanded, the number of cotton traders registered with IAM proliferated, and the share of cotton production marketed by certain ginning companies lessened. CAM was particularly hard-hit, for its traditional zones of influence were in those very parts of Nampula where capitalist farmers and cooperatives were strongest. In the 1969/70 season CAM had exported 16,478 tonnes of ginned cotton; in 1970/71 the figure dropped to 5,590 tonnes. The real profits of the concessionary companies had always come from marketing, not from ginning. The evident post-Independence profit crisis of CAM can be seen, then, to have had its roots in the period of the rise of the independent settlers.

Although the marketing companies had to bid on the prices they proposed to pay for first and second grade cotton, the peasants did not necessarily receive those prices. After 1962 the State set a national price for each quality of cotton, and the difference between that price and the amount of the bid went to the budget of IAM. The price of first grade cotton

in Nampula had been increased from 3\$10 to 3\$70 in 1961, and in 1964 it went up further to 3\$80 per kilo. The ginning companies, outraged by these price rises, threatened to abandon their concessions. No further increases followed until 1971, and the major price hike to 8\$00 per kilo took place only in 1973.

Processing:

In the new marketing structure, the ex-concessionary companies had to gin the cotton being exported by groups of capitalist producers, as well as the cotton they purchased themselves. The IAM set the price that they could charge, and this was the subject of rancorous debate between the companies and the growers. The rate for most factories was set at 2,250\$00 per tonne of cotton fibre in 1968, but under pressure from the growers was subsequently lowered to 1,900\$00. It did not go up again until 1973/74.

The establishment of marketing cooperatives of cotton growers in some areas--CADAM of Nampula, Cooperativa Agricola de Caia, UNICOOP, and others--further undercut the ginning companies' position. Some of the cooperatives planned to build their own ginning factories so that they would retain the share of their profits that went to the company ginners. CADAM built such a factory in Nampula, cutting into CAM's area of influence. Simultaneously factories were closed in areas where cotton production had been cut back, either because of the progress of the Liberation Struggle or because forced labour had ended. Thus Jangamo in Inhambane province closed down after 1973, and Mahate stopped work in Cabo Delgado after the 1971/72 campaign.

Markets for Mozambican Cotton:

Domestic consumption of cotton, mostly by the Chimoio mill, remained steady through the 1960s, but rose sharply in 1973 when the new Texlom mill was opened in Maputo. Most of the cotton fibre produced in Mozambique was exported, reaching a figure of 44,000 tonnes in 1973 (see Fig. 7, in the Appendix, p.57).

The Mozambican classification system for cotton was reorganized in line with world specifications in the early 1960s, in theory so that Mozambican cotton could be marketed internationally. In practice, however, most of the output continued to go to Portugal. The ginning companies had direct links with Portuguese textile firms; the independent growers generally depended

on the IAM to find buyers, who were almost always Portuguese too. It was only by the very end of the colonial period that other markets began to be reached, with perhaps 15 per cent of baled cotton going elsewhere than Portugal (see Statistical Appendix).

Forms of State Intervention:"

As we have already seen, the Instituto de Algodao de Mocambique was founded in 1961. The existence of the IAM was in fact a pre-condition both for the abolition of forced cultivation in 1962, and the abolition of the concessionary companies' monopolies the following year. Before 1961 the role of the State had been primarily to act as the companies' agent in cotton production, and to resolve differences and curb abuses which threatened the system. State intervention through the IAM in the 1960s, however, was oriented towards the needs of the settler sector in relation to peasant production. The State's position was that of both agent of and intermediary between different sectors of capital. This is clear from the range of activities undertaken by the IAM during the decade.

- It took over the basic tasks of extension and of direct control of peasant production from the companies and the colonial administration. (Forced cultivation operates through general supervision, orientation of marketing, a supply of seeds, restriction of other cultures, and only occasional use of violence). The capatazes working for the companies were integrated into the IAM, and a better-organized national system melded extension and control with the introduction of new inputs and varieties.
- Basic research on rotation of crops, varieties, fertilizers and insecticides had formerly been undertaken in a desultory way by JEA and the Agronomic Institute. The IAM took this over and integrated it into experimental programmes aimed both at the development of settler farming and the improvement of peasant production in selected areas of particular promise.
- The IAM set the prices to be paid to the peasants and the ginning-rate charged by the factories. It supervised the marketing of peasant output, and acted as reserve buyer if there were no bids in a

- particular zone, or if a buyer could not fulfil the marketing plan.
- In new areas of settlement, especially colonatos, where cotton production was to be developed, the IAM invested in the necessary infrastructure. It dug wells in Cabo Delgado, Nampula, Inhambane, and Gaza; it opened ordamentos (settlement schemes) in Manica, Sofala, Tete, Zambézia and Maputo. These were particularly intended for the integration of demobilized colonial troops.
- Initially the IAM provided credit to capitalist cotton-growers and some small farms, and later, after demand had exceeded its own resources, acted as an intermediary for the growers with the Caixa de Credito Agrícola. Two kinds of credit were advanced: credit to cover production costs; and advances on actual production, to allow the farmers to survive the inevitable delay in payment if they sold baled fibre rather than seed cotton. Fig. 8 shows the steep increase in credit conceded to cotton farmers.
- The IAM acted as a commercial agent for groups of small capitalist producers, pooling their cotton and finding, for a fee, buyers in the Portuguese port of Leixões.
- The IAM classified and controlled the quality of cotton fibre and by-products, and generally supervised the export of cotton.

The role of the State shifted, with the foundation of the IAM, from mere enforcer to active participant in production management. The costs incurred were borne largely out of taxes on Mozambican cotton exports, out of subsidies from the colonial budget, and out of the difference between prices paid to the peasants and prices paid by the companies.

After Independence: 1975 to 1980

Summary:

The cotton industry was particularly hard hit by the flight of many of the Portuguese settlers and state employees after Independence. Most of the farmers who had dominated production in the early 1970s left in the first few years, abandoning unharvested crops, broken tractors and unpaid loans. Many employees of the IAM also left abruptly, often destroying their records before they went. The private truckers and merchants, without whom in many areas cotton could not be moved or marketed, also fled. The development of the new collective units, state farms and cooperatives was blocked by management problems, market disorganization and lack of inputs. Family production did actually begin to recover in 1975/76 from the low point of 1974/75, and private production also rose slightly in 1976/77. However, production fell in all sectors with the poor harvest of 1978/79. This crisis in production obliged the ginning factories to operate far below capacity, with correspondingly high costs, and further compromised their already declining profitability. Most of these factories were taken over by the State.

In short, the State has been forced to intervene in or to nationalise almost all of the cotton industry except family and cooperative production, because of the crisis of the colonial economy. Even the family and cooperative sectors are highly dependent on the State for extension, seed, and marketing services. Thus, although the Secretariat for Cotton has the monopolistic position to make an integrated cotton planning policy, it must undertake this task at a time of deep and continuing crisis in production.

Production:

The private sector was seriously affected by the post-Independence flight of the settlers. Those farms which had been concentrated in large groups, or which were close to ginning factories or commercial centers, were generally regrouped in the new State farm sector. Settler farms in outlying areas were unofficially occupied either by collective or cooperative machambas, or by individual families cultivating cotton.

The scattered blocks of the state farms, mainly in Nampula Province, were merged for administrative purposes into large

production units. This structure of highly centralised management combined with weak or even absent administration in the field, was reflected in the technical choices made for the state sector: monocropping of cotton and the mechanization of all field tasks except harvesting. This production pattern led to very high costs without corresponding increases in production -- calling, for example, for the spraying of insecticides and defoliants by aircraft. When neither the aircraft nor the defoliants arrived, workers had to be quickly recruited to weed by hand, but were sometimes unable to finish in time or to complete the work for the whole planted area. Managers at field level were inadequately trained for the techniques that were to be used: such errors as inappropriate methods of planting for use with defoliants were common. Lastly, since cotton picking could not itself be mechanised, the mechanization of the other field tasks magnified the problem of recruiting a seasonal labour force for the harvest only.

The magnitude of the difference in the demand for labour at the two periods can be seen in the plan of production below (Fig. 9), for the state cotton farms in Nampula, by the Provincial Directorate of Agriculture (DPA):

FIG.9: Plan for Cotton Production in State Farms, Nampula, 1977/78.

<u>Farm Unit</u>	<u>Total Area (ha.)</u>	<u>Area Planted (ha.)</u>	<u>Field Labour Planned from December to March</u>	<u>Estimated Production in Tonnes</u>	<u>No. of Work Days Required for Harvest</u>
UP I	1,500	1,100	980	1,600	80,000
UP II	5,945	5,375	4,230	6,200	310,000
UP IV	2,000	1,979	1,500	210	105,000
Imala I	825	500	550	850	42,500
Imala II	275	50	250	300	15,000
UP Muite	550	400	400	600	30,000
UP Corrane	2,000	1,050	1,500	2,100	105,000

One worker is supposed to pick 20 kg. of seed cotton per day.

Such an enormous difference between labour required for picking, and labour for other tasks, is clearly incompatible with stabilization of the work force as a necessary basis for socialist transformation. In Nampula it also proved technically inefficient. Reports speak constantly of delays in spraying by planes, as well as of problems in labour recruitment for cotton-picking. Both kinds of delay lowered productivity and raised costs disastrously. In 1977/78 the Nampula Provincial Directorate of Agriculture reported that the state sector produced only 10.714 tonnes of cotton on 11,664 ha., and national averages were even lower. In 1978/79, a season of bad weather, production in Nampula dropped to 6,797 tonnes. Poor productivity was not compensated for by mixed cropping, mainly of sunflower and maize, which was practised on only about 10 per cent of the cultivated area. The state sector has not, therefore, provided a dynamic base for the recovery of earlier levels of productivity in more progressive social and technical conditions.

Similarly, cooperative cotton production has so far been nationally insignificant, not even appearing on the graph in Fig.5. The actual figures for the last three seasons have been:

FIG. 10: Cooperative Cotton Production, 1976/77-1978/79

<u>Year</u>	<u>Tonnes</u>	<u>Percentage of National Production</u>
1976/77	95	0.18
1977/78	19	0.02
1978/79	414	1.38

There seems to have been some official discouragement of cotton production by cooperatives in Zambézia because of its heavy demand for labour, although cooperative members themselves have not rejected the crop. In Nampula, in fact, most cooperatives in former cotton areas chose to continue with cotton, whether they took over abandoned fields or began anew. Sunflower was the second most popular crop. The problems have been, rather, that the cooperative movement has developed slowly, and that those cooperatives that have grown cotton

have performed poorly. These are interrelated -- peasants do not voluntarily join cooperatives if production results are not clearly superior to those of the family sector.

Cotton cooperatives were generally formed on the least accessible of the abandoned settler farms; state farms have priority for the provision of essential services. Many cooperatives planted late because tractors and seed did not arrive in time; they did not receive insecticide; their cotton was marketed late or not at all. Most cooperative members chose to ensure their own food requirements in the family sector before supporting cooperatives in an early stage of formation and with weak state support.

Since Independence, private capitalist farmers and family agriculture have been the principal producers of cotton, despite the reduced levels of output. As we have seen, after the flight of the settlers private cotton production actually began to increase. Family production, on the other hand, had already slumped before Independence and began slowly to recover in 1975/76. In 1978/79 both sectors dropped again; family agriculture produced its smallest total since 1939/40, a mere 12,517 tonnes.

Although 1978/79 was a bad year for cotton, the problems cannot be reduced to the effects of poor weather conditions. Since Mozambique's cotton strategy does not include an enlarged role for private farmers, analysis must focus on family production, from which the new cotton cooperatives must grow.

In the family sector, the difficulties met by the cooperatives in obtaining inputs and in marketing the crop were magnified. Sterile or infected seed was distributed in some areas; in others, cotton was grown but never harvested. Although withdrawal of state services to family cotton producers had begun before Independence, the flight of the colonos heightened its impact through a general disorganisation of rural transport and marketing. There was, moreover, a shortage of such basic consumer items as cloth, salt, oil, sugar, and paraffin in the countryside. Money received for cotton could not always, therefore, be used to buy the things people needed. The crisis of cotton production in the family sector can be seen, therefore, to be only a part of a general crisis of peasant-produced marketed surpluses.

Marketing:

The flight of the settlers and the disorganisation of provincial services struck hardest at cotton marketing. Most cotton companies had contracted private truckers or state transport enterprises to supplement their own fleets of lorries, but after Independence the number of markets was reduced, cotton was only collected once from each market, and in some areas the lorries never arrived. Neither the IAM, DINECA (the state agricultural marketing agency which has since been disbanded), nor most private companies were able to solve the problem. The single exception, Joao Ferreira dos Santos, was able to expand into the North with its large transport fleet, beyond its traditional zones of influence. The JFS Group exported 13,836 tonnes of cotton fibre in 1977/78, about 82 per cent of total production. Control of transport gave the JFS Group a virtual stranglehold on commercial profit in cotton.

Since Independence private growers have kept the right to sell their cotton ginned rather than raw, a privilege also extended to some of the new cooperatives. Delays in payment for ginned cotton initially discouraged some cooperatives, but in Nampula at least a credit programme now allows payment to be made before the final sale of the cotton. Thus the sale of ginned (rather than raw) cotton, under conditions of prompt payment, can be used as an incentive to encourage collective forms of production.

In 1977 the price of first grade cotton to peasant producers rose from 8\$00 to 11\$00; second grade rose from 3\$00 to 4\$50. At these prices cotton became more lucrative than other cash crops, both in terms of return to labour and in terms of relative price increases since 1975. The only better return is provided by the minimum agricultural wage, recently raised to 62,50 MT per day. Clearly, then, low productivity in the family sector cannot be increased simply by changing pricing policy.

Processing:

The sharp decline in production of seed-cotton after Independence has meant that most ginning factories have been working far below capacity, with very high unit costs. Nevertheless, only one ginning factory, at Kai-Kai in Gaza Province, has actually been closed down. The following table compares production of baled cotton in selected factories in 1972/73 and in 1977/78.

FIG.11: Production of Ginned Cotton by Selected Factories, 1972/73 and 1977/78

<u>Factory</u>	<u>Province</u>	<u>Production ('000 tonnes)</u>	
		<u>1972/73</u>	<u>1977/78</u>
Montepuez	Cabo Delgado	5,779	1,963
Mutuali	Niassa	1,983	931
Manga	Sofala	4,983	2,436
Megaza	Zambézia	2,334	899
Namialo	Nampula	7,041	2,893

Despite their unprofitability, these factories cannot be closed unless cotton production in a particular zone is also brought to a halt, for Mozambique's transport network cannot move seed-cotton over long distances for ginning. Indeed, one of the reasons for the present high fixed costs is that frequent transport delays interrupt the arrival of cotton at the factories, and workers and machinery must stand idle during these waiting periods. The State has had to take over almost all the ginning factories. The single exception is the JFS Geba factory in Nampula, which is included in a proposed joint venture.

The State's policy towards the currently unproductive but necessary ginning factories has immediate consequences for other sectors of cotton production. If the ginning rate were to be raised to reflect current unit costs, for instance, cooperatives would lose the advantage gained from being able to sell their own ginned cotton. Not only have these costs gone up astronomically since Independence, but the actual quality of the cotton fibre produced has deteriorated (see Table 1 in the STATISTICAL APPENDIX), thus lowering its price on the world market. The decline in quality is a reflexion of poor conditions of production of seed-cotton, both in terms of actual quality and of the grading process, as well as of the inefficiency of the ginning factories. Either way, in field or factory, such a decline of quality presents the State with fundamental management decisions.

Markets for Mozambican Cotton:

Despite the fall in levels of cotton-fibre production, supplies to the domestic textile industry have been maintained since Independence. In the Appendix, Fig.7 shows the evolution of cotton exports and internal consumption from 1962 to 1979.

It is of course possible that cotton exports were actually higher than indicated by the official figures. As Table 11 in the Statistical Appendix shows, the proportion of total production which has remained unmarketed reached 20 per cent in 1978/79, and has been high ever since Independence. This figure includes losses, waste, and stocks held, but it also covers illegal exports. The system of exporting cotton was exceedingly complex by the end of the colonial period, with the IAM, ginning companies, and groups of producers all involved in marketing. Reorganizing this system and controlling exports have proved difficult, and there is evidence that unrecorded exporting has continued, allowing private companies both to evade taxes and, more importantly, to accumulate foreign exchange reserves outside Mozambique. Exporters have also manipulated the grading system, by classifying their cotton as low-grade for export purposes from Mozambique, but as high-grade for sale at higher prices in Portugal.

With productivity at its present low level, Mozambique has not had to confront problems of market diversification or pricing agreements. In 1978/79 all the cotton exported from Mozambique went to Portugal, a retreat from the broader market being reached at the end of the colonial period. The drop in the proportion of high-quality cotton produced since 1975 is a further potential cause of market weakness (see Table 11 in the Statistical Appendix). This problem is expected to resolve itself when productivity again reaches former levels. A new textile mill has already been opened in Nampula, and others are being built. In the future, it is clear that the allocation of optimum proportions of total output to domestic industry on one hand, and export earning on the other, will present a much more important problem to Mozambique's economic planners.

State Intervention:

The flight of the Portuguese settlers had a devastating effect on the IAM. At both national and provincial levels of the Institute, technical personnel fled, either destroying records or taking information with them. Research programmes were interrupted; administration was disrupted; Mozambican personnel, usually at the bottom level, were left to their own devices. In addition, the departing settlers often left unpaid credit balances with the IAM. Lastly, the IAM's activities had, in many provinces, depended on the availability of transport which was contracted from the private sector. But that sector too was decimated by the flight.

As an emergency measure all agricultural marketing and all seed provision was made the responsibility of a single state agency, DINECA, using the facilities of the IAM and of the former Instituto de Cereais (ICM). In 1978 the IAM was re-organized and renamed the Instituto Nacional de Algodão (INA), and in 1979 a national secretariat was formed to oversee and plan the integrated development of the cotton sector. Provincial firms have been formed in the major cotton-producing areas to replace the diffuse structure of ginning companies, private farms, cotton traders and peasant producers. They are intended both to coordinate state-farm development with improvements in family production as it is transformed into cooperative production, and to link the provincial ginning and textile industries with the organization of agriculture.

The most fundamental change, however, has been the absolute rejection of direct or indirect force as a motor of peasant cotton production. Asked to describe the lowest level cotton agents in contrast to the former capatazes, peasants uniformly replied: "They no longer beat us." Nevertheless, the training and information programmes that are to be the alternative to force are still largely in the planning phase: cooperatives, supported by state farms, are to be centers for technical information, and existing personnel are to be retrained in extension methods and in the grading of cotton.

Conclusion

The fundamental challenge to the colonial and capitalist state that was presented by FRELIMO resulted in a deep and continuing crisis for cotton production. In fact, the term "state intervention" as applied to the cotton sector is probably incorrect. The colonial state, despite changes in the organization of capital and forms of exploitation, was always deeply involved in control of cotton production; it was never outside it.

It is also clear that the deep crisis of colonial forms in the organization of cotton production at Independence did not wipe the slate clean, nor allow the new socialist Government to begin anew along progressive lines. Instead, the old forms of production and marketing, although severely disrupted, have tended to call forth new versions of old solutions in the absence of a systematic reorganization of the old patterns of state action. Such a reorganization is a lengthy process, especially since it involves a fundamental change in the relations of the state to the peasantry -- who were the major producers of cotton, either as wage-workers or as independent cultivators, in colonial times.

CHAPTER III: MOZAMBIQUE'S COTTON STRATEGY: CONSIDERATIONS RAISED BY THE CEA REPORTS

The Mozambican state faces deep and complicated problems in cotton production. It is clear, moreover, that any initiatives to resolve these problems must, and indeed can only come from the State, since it controls all the principle sectors of the industry. What, then, are the central elements of Mozambique's strategy for the transformation of cotton production?

- Expansion of the domestic textile industry as a central element in Mozambique's general industrial strategy: raw cotton production can be increased now, both to earn foreign exchange through exports and to meet the future needs of an expanding local industry.
- Opening up new areas of cultivation, and withdrawal from zones with exhausted soil and low output. For example, one large project will open up a broad area of Cabo Delgado and Niassa to cotton.
- Concentration of a range of different forms of production around a central ginning factory and/or textile mill. Cotton will be grown in different collective forms of production--large plantations, cooperatives--which will be integrated with industrial development.
- Development of a more productive and better integrated system of cotton cultivation in the family sector. Improving techniques in this sector, for food production as well as cotton, will constitute a first step towards introducing collective forms of production.

The general orientation of these elements is clear, but the way in which the strategy is to be implemented will, of course, depend on the concrete situation. The objective of the two-year CEA project has been to present some of the background

information necessary for future cotton planning. If we return to the list of general problems facing Third World countries engaged in transforming cotton production (see Chapter I), we can now consider the particular issues raised by Mozambique's own programme of transition in relation to those problems. In each of the five areas already identified, the relevant CEA cotton report is cited below; in Chapter IV we go on to provide brief summaries of each text in response to the questions raised.

- How to move from a backward, seasonal, and labour intensive form of production, without incurring foreign debts which would threaten cotton's own export earnings? The Mozambican strategy is to articulate state farms and cooperatives and to concentrate them around centers of industrial development. This in turn raises some other issues: how are the problems of seasonal wage-labour in the state sector to be resolved in the transitional period? How can family cotton producers be convinced that cooperative forms produce more and better? How are the concentrated poles of development to be linked to the hinterland areas so that the whole region develops? These questions are addressed in Reports 79/9, 80/3, 80/4, 81/2, 81/3 and 81/5.
- How to organize a fast, cheap marketing system to link the producers to the ginning factories? The strategy of grouping production units around an industrial center provides a longer-term solution. In the short term, however, the issue is how to reduce marketing costs and assure supply to the factories, without tying the state into inefficient marketing patterns and into subsidizing private commercial capital. This problem is addressed by Report 79/9.
- How to obtain favourable terms of trade in an unstable and competitive market, in which Mozambican cotton plays a minor part? In the long term, the expansion of cotton production in Mozambique will be absorbed by the local textile industry, so the question will lose its importance. In the short term, however, it is vital to know which kinds of producer-groups or long-term buying arrangements will most favour Mozambique. The NIIA report will tackle this question.

-- How to organize a system of research and extension in cotton production on a par with other producer countries? The Mozambican strategy of articulating forms of production provides a way of organizing research and extension through the production units themselves, leaving the INA to do basic research and coordination. Nonetheless, problems remain: what choice of technique in the state and cooperative sectors will provide a material basis for collaboration? How can technical improvements in the family sector, which are necessary for the recovery of high levels of productivity, be linked to the development of collective production forms? The questions are addressed in reports 80/3 and 81/3.

List of CEA Reports on Cotton

- 79/8 Salários, produtividade e participação: um estudo de três fábricas de vestuário. -- Maputo, 1979. 14p.
- 79/9 O descarcamento de algodão na Província de Nampula. -- Maputo, 1979. 60p.
- 80/2 Capital privado, produtividade e participação: um estudo da fábrica Texmoque. -- Maputo, 1980. 28p.
- 80/3 A transformação da agricultura familiar na Província de Nampula. -- Maputo, 1980. viii, 91p.
- 80/4 O sector estatal do algodão--força de trabalho e produtividade: um estudo da UPII Metochéria. -- Maputo, 1980. 55p.
- 81/2 Como melhorar as culturas alimentares? -- Maputo, 1981. In press.
- 81/3 Como construir cooperativas? -- Maputo, 1981. In press.
- 81/4 O trabalhador sazonal na transformação de uma economia de plantação -- Maputo 1981, in press.
- 81/5 "Já não batem": a transformação da produção algodoeira -- Maputo, 1981, in press.
- 81/6 Circuitos de troca e transporte -- Maputo, 1981, in preparation.
- 81/7 Capacidade produtiva e planificação na Texlom. -- Maputo, 1981. In preparation.

CHAPTER IV: READING THE CEA REPORTS

The state sector of cotton: Labour power and productivity
-- a study of Metochéria UPII (Report no. 80/1)

This report is concerned with the problem of low productivity in the state sector, primarily associated with delays caused by difficulties in labour recruitment. Metochéria is a particularly critical case: it is a large farm in a highly productive cotton-producing area which currently has low yields per ha. It has to resort to transporting seasonal labourers (including a high proportion of women and children) from far-off areas to pick the cotton.

The report shows that there are two distinct labour forces in Metochéria. The first is predominantly male, is stable and productive, and is employed on a day-wage basis in the sisal fields and during the cotton-growing season. The second labour force is largely composed of women and children, and has a high turnover rate and low productivity. It is paid piece-rates, namely 1,50 MT per kg. of cotton picked; it is only employed at harvest time. These two labour-forces are approximately the same size, and largely complement each other; the principal cutting period for sisal falls after the cotton harvest.

This sharp division in the labour force results from political mechanisms used in the 1970s to resolve labour shortages in the expanding settler sector. Competition was forcing the wages of regular farm workers higher, so the settlers, who needed cheap labour at harvest time to make a profit, turned to the state to recruit them. Thus, to some extent, the labour problems of Metochéria stem from the victories of Independence; the state is not willing systematically to organize cheap labour for picking cotton, but has been unable, as yet, to overcome the problems involved in a complete restructuring of the labour force.

In Metochéria there is an alternative solution, namely to employ a stable labour force for the entire agricultural year, paid the minimum daily wage. The report suggests that the consequent improvements in worker productivity, and the elimination of delays in accomplishing tasks, would yield much more in terms of higher cotton output than the higher wage bill would drain from production profits.

Beyond Metochéria, the analysis of this case raises two important issues of choice of technique. Firstly, the reduction of the cotton monoculture would flatten the curve of labour requirements. Secondly, patterns of mechanization must be chosen, not only for their immediate cost efficiency, but also for their effect on the distribution of demand for labour through the agricultural year. The evidence of Metochéria suggests that, in the present phase, the technique that is most profitable in cost and output terms, may also be the one with the most stabilizing effect on the state farm labour force.

The transformation of family agriculture in Nampula Province
(Report no. 80/3)

This report analyses conditions of cooperative production in Nampula, the most important cotton-growing province of Mozambique. Cotton was a forced crop for both men and women there during the colonial period, and in the 1960s peasants were expelled by settlers from some of the prime cotton land. The central question confronted by the study is this: how can peasants be convinced that they can produce more, produce better, and produce more profitably in cooperatives than they could in individual family fields? Of course, an underlying question is whether cotton is an appropriate crop for cooperatives in their initial phase, given its record as a forced crop, its heavy labour requirements, and the fluctuations in annual yield.

The CEA researchers investigated four cotton-growing cooperatives, each at a different level of development and with a different base. All shared a common dilemma, however: their productivity per ha. was not only lower than that of the earlier settlers on the same land, it was even lower than that of nearby peasants growing cotton. Since the cooperatives also had higher costs of production (for tractors, insecticides, fertilizers) than the peasants, the financial

results were disastrous. The work registers showed that low participation during critical periods was at least partially responsible for the poor economic performance. In the older cooperatives, moreover, participation had fallen off over time. Most peasant families simply cannot afford to work in cooperatives -- poor economic results meet the natural response of low participation, and the giving of priority to family production. How, then, is this circular problem to be resolved?

The report identifies two weaknesses of central cooperative planning in Nampula, which must be corrected. Firstly, cooperative members were not generally themselves responsible for their own production plans. Plans, often based on high fixed costs, were imposed from above. They were neither understood nor agreed to by the members who had, ultimately, to do the actual work laid out by the plan. Secondly, cooperative members could not plan accurately, because essential services contracted by the state (tractors, seed, marketing) could not be relied upon.

The CEA investigation concludes that the weakness of the cooperatives could not be attributed to cotton growing as such. Peasants in cooperatives chose to grow cotton, even though it had been a forced crop, and they hoped to equal the settlers' results. Peasant families must have some cash income, and in Nampula cotton is seen as a dependable source for that income. The question remains, whether the state structures for cotton and for cooperatives can respond to the needs of the growing movement, by providing reliable marketing, regular inputs, and the extension training that will enable cooperative members to plan for themselves.

Cotton and state planning in the transformation of family agriculture: the Lugela Project (Reports nos. 81/2, 81/3, 81/4, 81/5 and 81/6)

This sub-project was conceived in direct response to the findings of the Nampula research. The character and organization of state assistance is crucial to the economic success of the cooperatives and of cotton production. But the state's resources are limited, and are drawn upon in each region by other sectors, other types of production. The purpose of the research in Lugela was, therefore, to approach the problem of planning, not within the cooperatives as such, but in the context of the organizational patterns and levels

of investment needed for their development, given the priorities of the region.

The district of Lugela in Zambézia Province has good cotton-growing potential over one half of its area. In colonial times cotton cultivation was obligatory for women. Men were recruited for the tea and combined cotton/sisal plantations both within and outside Lugela. Cassava became the primary subsistence crop, and also, with the secure market of the plantations, developed a strong commercial role as a complement to cotton. By Independence family agriculture consisted of a large number of women carefully tending and conserving small plots which produced little surplus. In only a few isolated areas did men leave plantation labour in the 1960s to become major producers of the cash crops cotton, maize and cassava.

The two central economic tasks in the transformation of family agriculture in Lugela are, therefore, to stabilize the plantation workforce, and hence the peasant base; and to concentrate the scattered but well-tended parcels of land into more productive cooperative units. But this transformation has been hampered by Lugela's marginal position relative to other areas of the Province. The population is scattered, and the infrastructure of transport and commerce, associated with the development of the plantations, is very weak. At Independence there were some machambas colectivas in the district, but at present there are no strong, consolidated cooperatives; even the first new political administration was only installed in 1979.

Clearly, planners in such a district must take investment decisions in terms of their relationship to overall regional development, particularly the major poles of development. In Lugela, a new industrial textile complex is planned for Mocuba and the plantations. Each of the Lugela reports considers one part of this problem, and each one treats aspects of the reorganization of cotton production. This is precisely because cotton has been, and will continue to be, central to the development potential of Lugela. Although each report deals with the specific situation in the district, the series is organized so as to be, we hope, useful in the analysis of planning problems in other localities.

"How are cooperatives built" (Report no. 81/3)

This report argues that cooperatives must choose crops in the awareness that they are primarily units that produce marketed surpluses for sale. Hence the availability and security of markets and of transport count as much as soil quality and rainfall levels. Cotton is an appropriate crop in the low-land areas of Lugela because there is transport for rapid marketing. If certain roads were repaired, the network could be expanded. At the level of production, the most important task is to improve output and quality in the family fields. In this task too, centralization in cooperatives of technical training, of experimentation, and of the system of providing inputs, would give distinct advantages to cotton as a crop. To realize these advantages in cooperatives, however, EPAZ (the provincial cotton enterprise) and the INA must organize marketing and extension much more precisely and coherently.

"They don't beat us anymore: the transformation of cotton production" (Report no. 81/5)

The requirements for cotton production in the regional economy are examined in this report, which concludes that production in districts like Lugela must recuperate. The central problem in Lugela is that cotton must be made into a crop which can compete favourably with the marketing of cassava in the best cotton zones, and with wage-labour in the plantations. The report examines specific local technical problems, and proposes the development of extension and experimentation through cooperatives. Although marketing and the provision of inputs could presumably be organized through EPAZ, the report argues that it is necessary first to improve the commercial network in general, before expanding cotton production; the peasants cannot eat money.

"How can food production be improved?" (Report no. 81/2)

Two central nutritional problems of Lugela are addressed in this report. The peasantry, firstly, depends heavily on cassava, both as a vegetable and as their principle staple food; there are difficulties, secondly, in feeding workers on the plantations. The two problems are interconnected; both are the result of the forms of colonial exploitation in this district. Forced labour for men in the plantations opened new markets for cassava; the men's absence, together with forced

cotton cultivation for women, turned producers to cassava for security, and because of the even distribution of labour required to cultivate it.

The report concludes that cassava cultivation should not be discouraged. Rather, food-crop production should be restored and rationalized within Lugela, with cooperatives in areas next to plantations producing food-surpluses to sell to them. Secondly, experimentation and extension work must be done, in new rotations of varied food-crops, which will be introduced through cooperatives in cotton-growing areas.

"The seasonal worker in the transformation of a plantation economy" (Report no. 81/4)

This report looks at the structure of the market for semi-skilled agricultural day labourers in the sisal/cotton and tea plantations of Lugela. The crop pattern and the scale of production are such that there could be up to 4,000 permanent jobs, with a supplementary demand for an extra 2,000 workers during the tea harvest, which occurs at the same time as cotton weeding. Workers were originally recruited by force; after the abolition of the forced labour contract system, in the 1960s, wages rose rapidly, particularly in relation to cotton and other cash crop prices. Present-day wage levels are even more favourable, although work conditions and poor transport have kept recruitment levels on the plantations low.

At present plantation workers are recruited from all over the district. The relative stabilization of the plantation work force, and the development of forms of cotton production which secure a higher and more regular income for cultivators, are a necessary basis for the fulfilment of Lugela's tea and cotton potential.

"Marketing and transport in rural development" (Report no. 81/6).

The present structure of commerce and transport is examined in this report, in order to discover how reorganization might solve some of Lugela's most pressing problems. These include the food shortage on the plantations, poor marketing in the family sector, and the blocking of cooperative development. Road repair and the organization of transport are emphasized, since there is no shortage of private merchants

looking for profitable outlets; it is rather the marketing conditions which prevent them making that profit.

Marketing cotton is relatively simple. Lorries must get in and out during a single period only, during the dry season when the roads are most passable. Cotton does not need permanent commercial facilities. Nevertheless, the expansion of cotton production depends on a general improvement in the structure of marketing in Lugela, to ensure that commodities are available, and hence that commercial production will remain a fundamental characteristic of both the family and cooperative sectors.

The ginning of cotton in Nampula Province (Report no. 79/9)

This report examines the divergent fortunes of three different types of marketing and ginning company, faced with the crisis of the colonial economy. The first of the companies was CADAM, a ginning factory linked to a settler marketing cooperative which went bankrupt soon after the Portuguese fled. The second was CAM, a chain of ginning factories and some plantations, operating throughout the north, whose profit volume was severely cut by the fall in productivity. This made the unit costs of ginning too high. Profitability was also hit by the increase in prices paid to the producers; these factors led eventually to state intervention. The third company was the JFS Group, an aggregate of northern agro-industrial and commercial interests. Although JFS had only one factory in Nampula, it was able to maintain profitability and expand its share of cotton marketing during the crisis by deploying its large fleet of lorries.

The three companies were investigated in order to define the terms within which the INA and provincial firms must reorganize marketing and ginning. The most important areas are the following:

- The organization and ownership of the transport fleet. JFS was able to mobilize its fleet for cotton marketing precisely because it is commercially active the year round. A transport system for cotton marketing does not require a special fleet; rather, it should depend on cooperation between state marketing agencies.

- The favouring of collective forms of production through the distribution of commercial profit. Possible mechanisms to this end might be the formation of marketing cooperatives, or a differential system of rates for ginning which would favour production cooperatives.
- The setting of ginning rates. The report suggests that, since the present high rates are primarily caused by the production crisis, any decision about them should allow for future recuperation of output.
- Relations between state and private capital in commercial ventures. Here too the report argues that the present advantages of relying on private capital for marketing are related to the marketing and transport crisis. It is important, therefore, not to bind the state to present-day forms of cooperation through long-term agreements.

Profits and productivity in the textile and clothing industries (Reports nos. 79/8, 80/2 and 81/7)

Each of these reports analyzes the post-Independence difficulties of the textile and clothing industry in attempting to improve the supply of cheap wage-goods. Such an improvement is a fundamental element in Mozambique's strengthening of the worker-peasant alliance.

"Private capital, productivity and participation: a study of the Texmoque factory" (Report no. 80/2)

The operation of a new textile factory in Nampula was the subject of this report. Although it is owned and operated by private capital, it is presently funded almost entirely by state bank credit. The researchers identified certain powers and mechanisms of control needed by the state, if it is to push private capital into a dynamic role in a mixed economy.

Texmoque is spared competitive pressures because Mozambique has few textile producers, and currently demand is high and supply has decreased. Prices are set to ensure profitability, but there is little pressure to increase productivity. The firm's management, in fact, was unable to provide information

on production costs, which would serve as the basis for future planning.

Low productivity could not be attributed to an inexperienced work-force. Texmoque had experienced hands, some of them recruited from other textile factories. Relations between workers and management, however, were very poor. Complaints about illegal and unfair salary scales, incompetent administration, and management compromising political structures were common. Such issues are, of course, linked to the question of state control in the private sector.

"Productive capacity and planning in Texlom."
(Report no. 81/7)

Following the research at Texmoque, the CEA's industrial sub-project turned its attention to Texlom, an older cotton mill in Maputo. The factory is run by the state, and in contrast to Texmoque, has a well-structured management and active worker organization. Nonetheless, Texlom too has productivity problems; output declined sharply after Independence.

The primary cause of low output is the inadequacy of planning procedures, which lead to production stoppages owing to shortages of materials, poor machine maintenance, and lack of spare parts. Since these problems center around imported items, Mozambique's foreign exchange crisis after 1979 has made things much worse; raw cotton, on the other hand, has been regularly supplied to the factory. Even so, as early as 1976 there was evidence of poor coordination of factory and of sectoral planning, and of bureaucratic blockage.

Coordinated planning would seem to be the main issue, but there is also considerable room for improved planning at the level of the factory itself. Such improvement could be achieved through greater worker participation in everyday supervision of production figures, inventory, etc. This would pre-suppose the technical orientation of literacy programmes, and the transformation of planning itself from a seasonal to a daily activity.

"Wages, productivity and participation: a study of three clothing factories" (Report no. 79/8)

This sub-project dealt with the problem involved in turning a small textile industry producing high-quality clothing on a quasi-artisanal basis, into a sector producing cheap clothes in quantity. Special attention was paid to industrial relations within the factories.

The number of stoppages attributed to shortages of such imports as zips, buttons, or machine-parts make it difficult to look at aspects such as intensity of labour. Of course, stoppages in themselves damage worker discipline. Given these conditions, bonus-systems are largely ineffective in getting workers to raise productivity. More worker participation in planning might work better. By overseeing stocks, maintaining the machines, and suggesting alternatives to materials in short supply, workers can gain the knowledge of the labour process necessary if they are to contribute to reducing work stoppages.

Mozambique's position in the international cotton market
(NIIA Report)

This report will collate work done by the Norwegian Institute of International Affairs (NIIA) on three distinct topics. These are, an overview of world cotton consumption and trade, and of changes in the world division of labour in cotton production; an analysis of the international cotton trade; and an analysis of the cotton terms of the UNCTAD and Lomé agreements.

A NOTE ON SOURCES FOR THE CEA COTTON PROJECT

A bibliography listing the principle published sources and government documents consulted during the Project will be published separately. The CEA has also relied on unpublished reports, the analysis of financial accounts, statistical material, and various oral testimonies collected on the field trips to Zambézia and Nampula and at the INA in Maputo.

For the period 1936-1961 the Project used N.S. Bravo (1964), who deals with northern Mozambique up to 1962, but also includes some general information on colonial cotton production. Other useful sources included Mapril Gouveia (1968), Quintanilha (1954), the publications of the JEA (1951 and 1953), and production and marketing data drawn from the Mozambican Estatísticas Agrícolas. This data was interpreted in the light of consultation of local archives and of interviews with peasants, cotton agents, and the staff of the INA.

The principle sources for the period 1962-1974 were the IAM's annual Relatórios (1962-1975), and various unpublished reports consulted in the field at provincial or district level. Cotton legislation, CADAM's company reports, and other company records were particularly useful. The Estatísticas Agrícolas stop in 1967, making data on crops other than cotton, at the district level, difficult to locate for this period.

After Independence published sources are especially scarce, and quantitative data are often contradictory. The CEA used the records of CAM, Texmoque, Texlom, and most importantly, the IAM (later INA). At the provincial level the CEA's researchers used reports and raw data from INA and directly from Provincial Directorates of Agriculture. The information was supplemented and enriched by surveys and by interviews with producers, merchants and local administrators.

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- Gouveia, M. (1968). O Algodão na economia do Distrito de Moçambique. S.l. Mimeo.
- Instituto de Algodão de Moçambique (1962-1975). Actividades do I.A.M., Lourenço Marques, annual publication.
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- Quintanilha, A. (1954). O Problema Algodoeiro Português. Lourenço Marques, Junta da Exportação do Algodão..
- Valente, E. (1951). "Fomento da Cultura Algodoeira em Moçambique", in Junta de Exportação do Algodão, Acta da 1ª Reunião Anual Algodoeira (1951), S.l., pages 35-40.

STATISTICAL APPENDIX

Commentary:

The aim of this commentary is not to repeat the analysis made in the earlier sections but merely to point to certain basic trends indicated by the statistical tables which follow.

Production of Seed Cotton

Tables 1-6 refer to the production of seed cotton, in total, by quality, by forms of production and by Provinces. One thing that is immediately evident in each of these tables is the crisis in production after Independence. Table 1 shows that the total production of seed cotton in the 1978/9 campaign (the last year for which figures were available) was the lowest recorded since 1939/40. Put another way, the output in 1978/9 was less than 21% of the highest production recorded during the colonial period (the 144,000 tonnes produced in 1972/3). Even in the 'best' year of the post-Independence period, 1977/8, the level of output was roughly on a par with the levels of the 1940s and about half the output of 1972/3.

Table 2 shows production by forms of production. The table shows clearly that there is a fall in output from the family sector during the 1960s and 1970s (prior to Independence) and a growth in output during the same period from the settler capitalist sector. After Independence, however, there is an interesting reversal of the previous trend as the family sector comes to account for roughly half of the total output. This is not due to any expansion of output in this sector. On the contrary the output of this sector falls in absolute terms. Rather, the increasing relative importance of the family sector is due to the disproportionately large fall in output from the 'privado' sector, thus showing the effects of the flight of 'colonos' and the crisis of the colonial economy. Also important in Table 2 is the performance of the

new forms of production -- state farms and cooperatives -- which developed after Independence. By 1978/9 state farms accounted for a relatively large share of an albeit much reduced total output. This reflects the take-over of a number of abandoned privately-owned farms and their transformation into state farms. However, it is clear that this sector too was affected by the acute production crisis of 1978/9. The output of the sector in that year was well below that of the previous campaign. Finally, Table 2 shows that cooperative production has, as yet, not established a significant bridge-head in the cotton sector. The total production of the cooperative sector remains tiny both in absolute terms and as a percentage of total output.

Tables 3 and 4 show the provincial breakdown by sectors for the 1960s and 1970s. The dominance of Nampula Province throughout is shown clearly and in fact it can be seen that with declining production in the post-Independence period, Nampula's relative importance has increased. Of the other provinces the decline in production in Cabo Delgado and Zambézia are noticeable as is the virtual disappearance of cotton production in Tete and the three southern Provinces.

Tables 5 and 6 are mainly of historical interest. They show that there was a general improvement in quality (a rise in the proportion of first grade cotton produced) from the early 1960s onwards. This is observable both in the family and 'privado' sectors, but it is particularly noticeable in the case of the latter which was producing, on the average, lower quality cotton than the peasant sector during the 1950s. These figures suggest a) that the Instituto de Algodão's strategy was to favour higher quality production through providing various extension and technical services; b) that although these were provided to both sectors, the main effort was concentrated on the settler (privado) sector. This is clear from the dramatic rise in output and quality within one year of the establishment of the Institute (see figures for 1962/3 and 1963/4) and the steady rise both in output and quality in the years thereafter.

Finally, reference to Table 1 shows that the quality of the seed cotton produced seems to have been maintained in the post-Independence period despite falling output. Only in 1977/8 is there any indication of a possible fall in quality. This was probably the result of the inability of the state structures to provide insecticides, pesticides and other in-

puts due to the foreign exchange crisis which began in 1978.

Areas under cultivation

Tables 7 and 8 show the numbers of hectares cultivated by forms of production. Although incomplete, Table 7 shows that the trends in production discussed above were also reflected in the areas cultivated. There has been a sharp drop in the number of hectares under cultivation -- the total area cultivated by peasant producers in 1978/9 being 14% of that of 1966/7. Similarly the area cultivated by 'privados' and machambas estatais combined in 1978/9 was only 7% of the area cultivated by 'colonos' in 1966/7. Finally, the area under cooperative cultivation in 1978/9 was only 1.2% of the total area cultivated.

Table 8 again shows the dominance of Nampula Province. Of the 68,421 hectares cultivated in 1978/9 no less than 40,206 or 59% were in Nampula Province.

Prices Paid

Table 9 shows the prices paid for seed cotton sold direct to the ginning companies mainly by peasant producers. The most striking feature of the Table is the low level of prices paid over long periods of time. Even after the formal abolition of forced cotton cultivation in the early 1960s prices scarcely rose above those paid in the 1950s. Only in 1973 with the onset of the crisis of colonialism due to the advancing liberation struggle is there a significant rise in prices as there is again after Independence. The present price of 11,00 MT per quilo for first grade cotton and 4,50 MT for second grade cotton was established in 1977.

Ginned Cotton

Tables 10-12 refer to the production of ginned cotton. In terms of total output the production trends for ginned cotton are similar to those for seed cotton. Thus, the output in 1978/9 was approximately 25% of that of the highest year before Independence, 1972/3, whilst that in the 'best' year

of the post-Independence period was slightly less than half that of 1972/3. The slight differences in levels of output for seed and ginned cotton reflect the fact that ginning operations continue across seasons, that is, some of the seed cotton grown in one year is ginned in the next. In terms of quality, however, the position in the post-Independence period for seed and ginned cotton diverges appreciably. Whereas the quality of seed cotton, measured in terms of the proportion of First grade cotton produced seem, broadly speaking, to have been maintained, this does not appear to be the case for ginned cotton. Table II shows a noticeable fall in the proportion of higher grade fibres, Types: Extra, I and II after 1974/5.

Destination of Raw Cotton

Tables 13-17 deal with different aspects of the destination of the raw cotton produced. Table 13 shows the division of total production between the local textile industry and export. The most striking point to emerge from this Table is that the local textile industry has been given priority throughout the post-Independence period at least as far as the quality of cotton allocated to it is concerned. Thus, it can be seen that the quantity consumed by local industry has been no lower than, and in many cases somewhat higher than, the quantity consumed during the colonial period. In terms of quality too, Table 15 shows that a large part of the higher grade ginned cotton has gone to local industry with the possible exception of the last two years 1977/8 and 1978/9. In these years the absolute quantity and the percentages of the higher grades supplied to local industry, seem to have fallen. This accounts for the complaints made by some of the textile enterprises, for example, Texlom, that they were 'starved' of higher grade cotton over this period, although we were told by the Cotton Institute that the procedures for allocating cotton had now changed in a way which would benefit local industry.

The preference given to local industry, in terms of quantity if not also in terms of quality, means that export earnings from cotton have declined more sharply than the decline in cotton production. This emerges from a comparison between Tables 13 and 10. Thus, whereas Table 10 shows a decline in production of ginned cotton to approximately 25% of the 1972/3 level in 1978/9, Table 13 shows that the quantity exported in

1978/9 was only 41% of that exported in 1972/3.

Another factor affecting export earnings emerges from a study of Table 14. Column C, 'others', is a residual column representing the difference between the quantity of ginned cotton produced and that exported and assigned to local industry. The large figure for 1973/4 under this column was explained in the I.A.M. Report as the result of a decision to stockpile because of a relatively low world price for cotton. However, the high figures for the post-independence period cannot be explained in this way. On the contrary, they would appear to represent an illegal export, equal in 1978/9 to more than 20% of the total production of ginned cotton, which represents a considerable loss of foreign exchange earnings.

Two further factors, relevant both to the question of possible illegal exports and to the question of export earnings from cotton production in general, are highlighted in Tables 16 and 17. In Table 16 it can be seen that all exports in the last two years for which figures are available have been to Portugal. The sales on other markets, which took place on a limited scale in the earlier years, appear to take place no longer. In Table 17 it can be seen that a large number of privately owned concerns with associates in Portugal still dominated the cotton export trade in 1978/9. Together, these two factors would suggest, firstly, that Mozambique has probably been receiving less for its cotton exports than it could if it had the capacity to sell on other markets, and, secondly, that many 'loopholes' for illegal exporting and under-grading probably still exist.

FIGURES AND TABLES

Fig.1 - COTTON PRODUCING ZONES IN MOZAMBIQUE (1953)
(Provinces indicated as today)

REGIÕES ALGODOEIRAS EM MOÇAMBIQUE (1953)
(Indicação das Províncias segundo a actual designação)

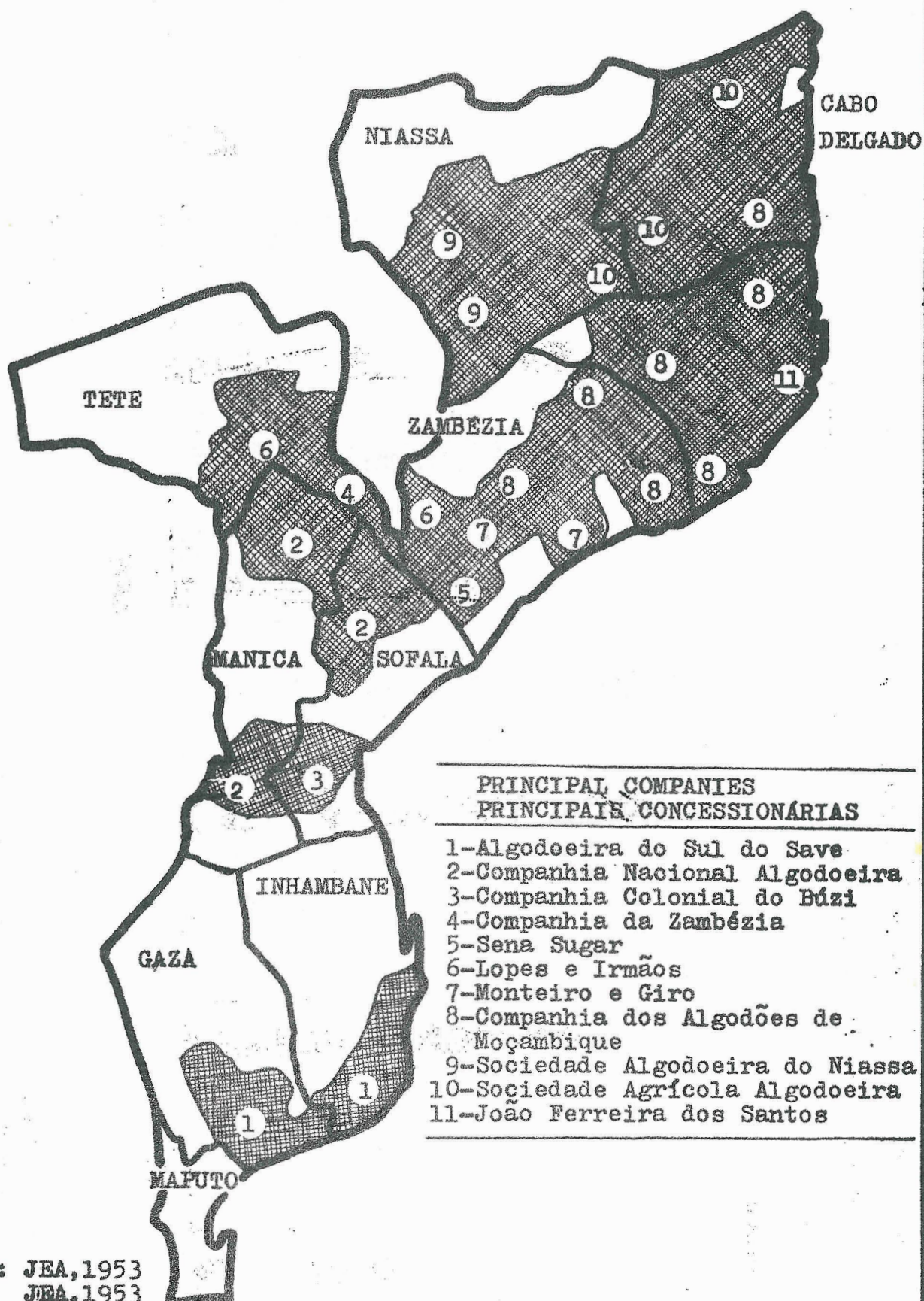
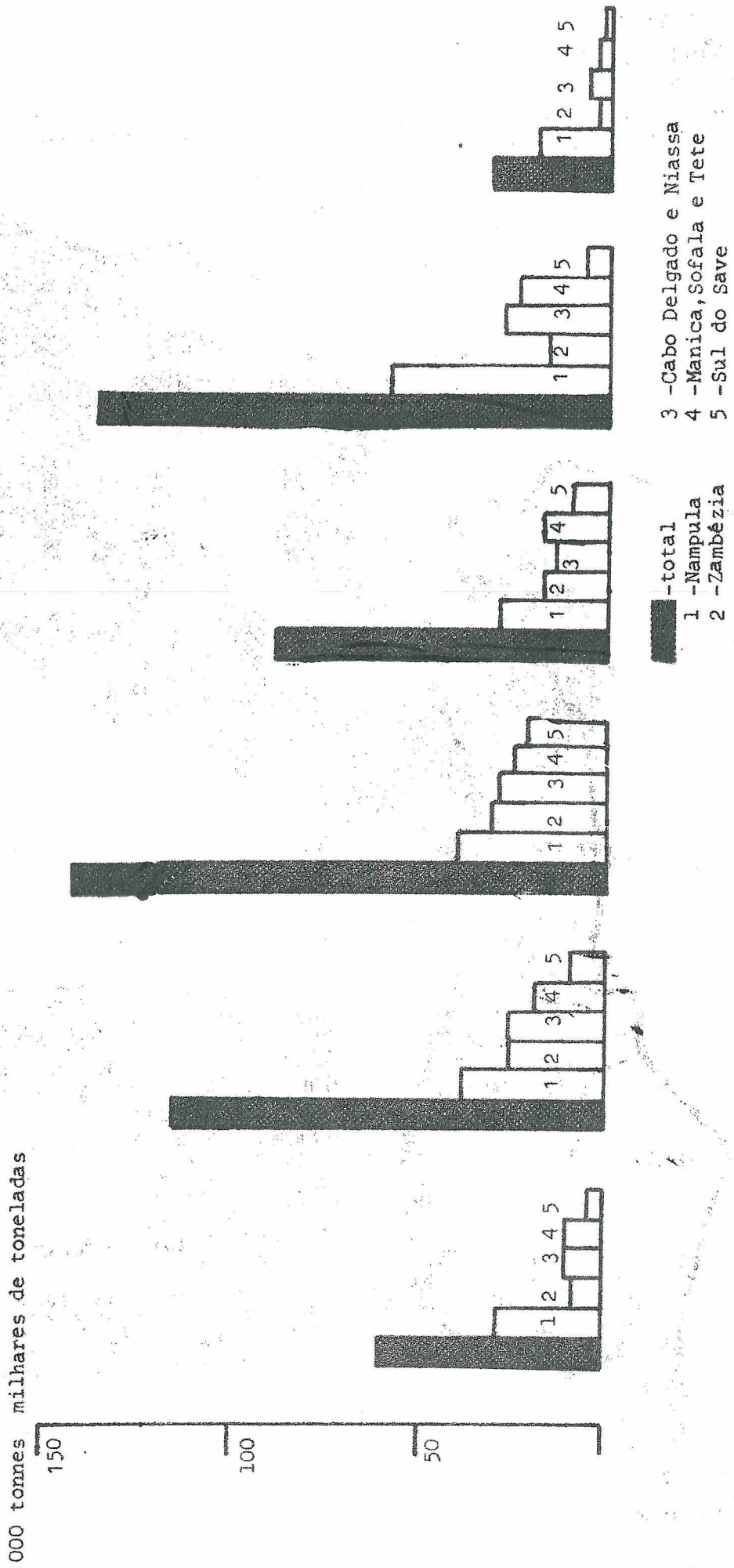
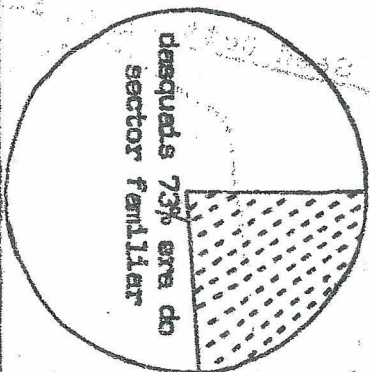


Fig.2- REGIONAL EVOLUTION OF COTTON PRODUCTION (selected years)
 EVOLUÇÃO REGIONAL DA PRODUÇÃO DE ALGODÃO CAROÇO (anos seleccionados)

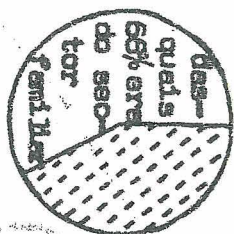
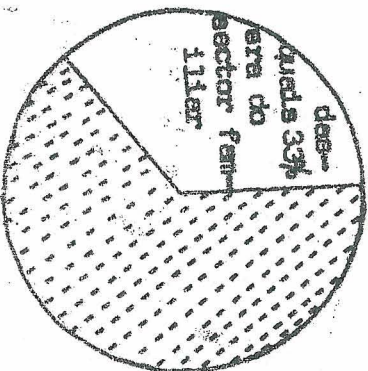


Source: IAM Reports and Agricultural Statistics
 Fonte: Relatórios do IAM e Estatísticas Agrícolas



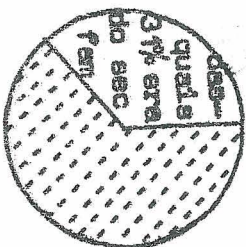
Em 1973/4 a Produção Nacional do Algodão Cerogo era

133 210 toneladas

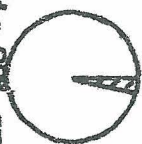


Em 1973/4 a Produção de Algodão Cerogo na Província de Namúbia era

59 751 toneladas



desaquels 98% era do sector familiar



Em 1973/4 a Produção de Algodão Cerogo na Província de Zimbábue era

14 218 toneladas

desaquels 40% era do sector familiar

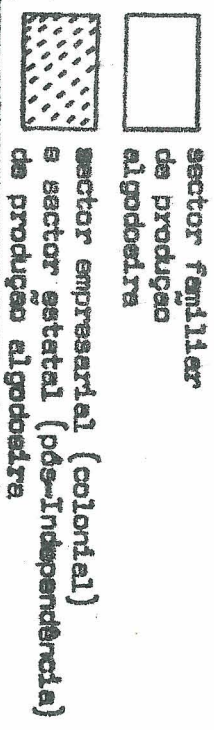


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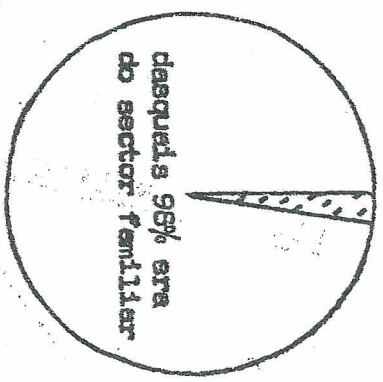
10

FIG.4. Changes in the Structure of Seed Cotton Production in Mozambique, Selected Years



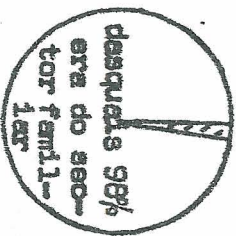
Em 1963/4 a Produção Nacional do Algodão Cerogo era

123 252 toneladas



Em 1963/4 a Produção de Algodão Cerogo na Província de Namúla era

46 680 toneladas



Em 1963/4 a Produção de Algodão Cerogo na Província de Zambézia

28 006 toneladas



Em 1968/9 a Produção Nacional do Algodão Cerogo era

136 850 toneladas

Em 1968/9 a Produção de Algodão Cerogo na Província de Namúla era

59 577 toneladas

Em 1968/9 a Produção de Algodão Cerogo na Província de Zambézia era

31 875 toneladas

Fig.5 - SEED COTTON EXPORTS AND SEED COTTON SUPPLIED TO LOCAL TEXTILE INDUSTRY, 1962-1979 (000 tonnes)

ALGODÃO EXPORTADO E ALGODÃO FORNECIDO A INDÚSTRIA LOCAL, 1962-1979 (em milhares de toneladas)

000

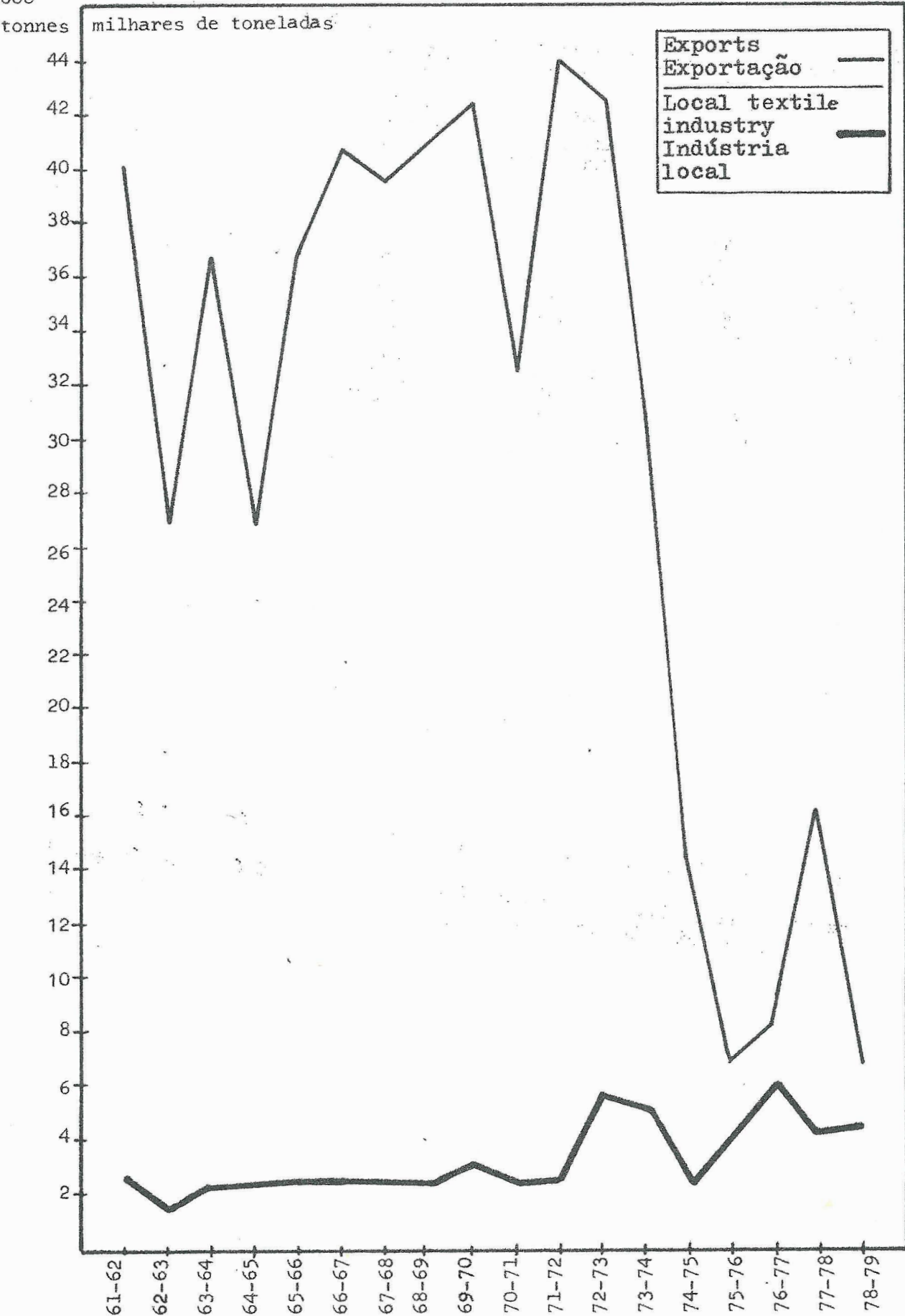


Fig 6 : Credit Advances made by the IAM to "autonomous" (capitalist) cotton-growers, 1962/3 - 1970/1 (000 escudos)

Year	Nº Cultivators	Credits used (000 esc.)	Credits repaid (000 esc.)
1962/3	112	614	204
1963/4	270	3.400	2.600
1964/5	423	9.700	2.700
1965/6	655	17.200	9.000
1966/7	956	11.900	11.700
1967/8	983	18.900	7.500
1968/9	1.320	15.000	9.900
1969/70	1.509	33.400	25.500*
1970/71	1.724	67.600	59.000**

* 1970 also includes repayments from the Caixa de Crédito Agrícola.

** 1971 also includes repayments from the Caixa de Crédito Agrícola, Banks and commercial institutions.

TABLE 1: SEED COTTON PRODUCTION BY GRADES
 (Tonnes and Percentages)
 QUADRO 1: PRODUÇÃO DE ALGODÃO CAROÇO POR QUALIDADES
 (Toneladas e porcentagens)

Campaign Campanha	1st Quality 1ª Qualidade	2nd Quality 2ª Qualidade	3rd Quality 3ª Qualidade	Total			
1938/9	9,359	63,39%	3,190	21,61%	2,215	15,00%	14,764
1939/40	12,527	61,32%	3,502	17,14%	4,401	21,54%	20,430
1940/1	39,062	76,53%	5,380	10,53%	6,565	12,87%	51,007
1941/2	50,795	72,38%	7,220	10,23%	12,162	11,33%	70,177
1942/3	43,949	71,91%	6,398	10,47%	10,769	17,62%	61,116
1943/4	44,156	69,19%	4,657	7,30%	15,002	23,51%	63,815
1944/5	36,046	66,18%	5,129	9,42%	13,292	24,40%	54,467
1945/6	44,619	71,10%	4,064	6,43%	14,075	22,42%	62,758
1946/7	63,534	84,65%	11,045	14,71%	478	-0,64%	75,057
1947/8	53,139	81,88%	11,762		18,12%	64,921	86,921
1948/9	68,797	79,71%	17,509		20,29%	86,306	86,306
1949/50	44,926	79,99%	11,236		20,01%	56,162	56,162
1950/1	74,209	83,08%	15,108		16,92%	89,319	89,319
1951/2	78,234	83,47%	15,487		16,53%	93,721	93,721
1952/3	101,944	81,32%	23,410		18,67%	125,354	125,354
1953/4	81,801	79,47%	21,135		20,53%	102,936	102,936
1954/5	63,511	73,21%	23,234		26,79%	86,745	86,745
1955/6	39,844	60,88%	25,601		39,12%	65,445	65,445
1956/7	75,944	69,36%	33,279		30,64%	108,623	108,623
1957/8	61,127	66,31%	31,055		33,69%	92,182	92,182
1958/9	104,746	77,06%	31,152		22,94%	135,898	135,898
1959/60	105,759	75,06%	35,121		24,94%	140,880	140,880
1960/1	92,743	82,84%	19,210		17,16%	111,953	111,953
1961/2	109,165	84,72%	19,696		15,28%	128,861	128,861
1962/3	76,523	87,67%	10,735		12,33%	87,258	87,258
1963/4	112,733	91,46%	10,519		8,54%	123,252	123,252
1964/5	78,173	88,12%	10,536		11,88%	88,714	88,714
1965/6	107,303	90,35%	11,446		9,65%	118,749	118,749
1966/7	110,888	83,35%	22,143		16,65%	133,031	133,031
1967/8	105,021	83,75%	20,373		16,25%	125,394	125,394
1968/9	120,767	88,25%	16,083		11,73%	136,850	136,850
1969/70	124,765	89,76%	14,234		10,24%	138,999	138,999
1970/1	94,421	89,40%	11,194		10,60%	105,615	105,615
1971/2	125,620	90,59%	13,047		9,41%	138,667	138,667
1972/3	133,373	92,58%	10,688		7,42%	144,061	144,061
1973/4	125,629	94,34%	7,581		5,69%	133,210	133,210
1974/5	45,956	91,89%	4,056		8,11%	50,210	50,210
1975/6	33,867	91,99%	2,948		8,01%	36,815	36,815
1976/7	48,867	92,42%	-4,005		-7,95%	52,872	52,872
1977/8	61,647	85,19%	10,715		14,81%	72,362	72,362
1978/9						29,932	29,932

TABLE 1 (Cont'd.)
Quadro 1

SOURCES:

FONTES: 1938/9 - 1953/4

1954/5 - 1974/5 Instituto de Algodão de Moçambique;
Cotton Institute of Mozambique:

Relatório 1962-1967 p. 155

Relatório 1972 p. 9 quadro/table 6

Relatório 1974 p. 4 quadro/table 4

Relatório 1975 p. 4 quadro/table 4

- * 1975/6 I. A. M. Mapas Estatísticas 1975/6 Quadro/table 3
- * 1976/7 " " " 1976/7 Quadro/table 3
- * 1977/8 " " " 1977/8 Quadro/table 2
- * 1978/9 " " 76/7, 77/8, 78/9.

* dados não publicados obtidos da Secção de Estatísticas, I. A. M.,
Machava.
unpublished data from the Statistics Section, I. A. M., Machava.

TABLE 2 : SEED COTTON PRODUCTION BY FORMS OF PRODUCTION
(Tonnes and percentages)

QUADRO 2 : PRODUÇÃO DE ALGODÃO CAROÇO POR FORMAS DE PRODUÇÃO
(Toneladas e percentagens)

Campaign Campanha	Family sector Sector Familiar	Private Farms Autônomos/privados	State Farms Macham. Estatais	Cooperatives Cooperativas	Total Total
1954/5	86:551 99,77%	194 0,23%			86:745
1955/6	65:188 99,61%	257 0,39%			65:445
1956/7	108:233 99,64%	390 0,36%			108:623
1957/8	91:510 99,27%	672 0,73%			92:182
1958/9	134:900 99,26%	998 0,74%			135:898
1959/60	139:748 99,19%	1:140 0,81%			140:880
1960/1	110:651 98,84%	1:302 1,16%			111:953
1961/2	127:559 98,99%	1:374 1,01%			128:933
1962/3	86:041 98,60%	1:217 1,40%			87:258
1963/4	120:474 97,75%	2:778 2,25%			123:252
1964/5	85:605 96,49%	3:109 3,51%			88:714
1965/6	113:422 95,51%	5:327 4,49%			118:749
1966/7	125:089 94,03%	7:942 5,97%			133:031
1967/8	111:338 88,79%	14:056 11,21%			125:394
1968/9	110:093 80,45%	26:757 19,55%			136:850
1969/70	92:589 66,61%	46:410 33,39%			138:999
1970/1	48:391 45,82%	57:224 54,18%			105:615
1971/2	61:092 44,06%	77:575 55,94%			138:667
1972/3	57:190 39,70%	86:870 60,30%			144:061
1973/4	43:400 32,58%	89:810 67,42%			133:210
1974/5	19:057 37,95%	30:955 62,05%			50:212
1975/6	23:736 64,47%	13:012 35,34%	67 0,19%		36:815
1976/7	30:359 57,42%	21:422 40,52%	995 1,88%	95 0,18%	52:872
1977/8	36:410 50,32%	22:771 31,47%	11:841 16,36%	19 0,02%	72:362
1978/9	12:517 41,79%	6:652 22,21%	10:639 35,52%	414 1,38%	29:952

SOURCES/

FONTES : I.A.M. Relatório 1962-1967 p. 156 Mapa III, p. 157 Mapa IV;

" Relatório 1972 p. 9 Quadro 6;

" Relatório 1974 p. 5 Quadro 5;

" Relatório 1975 p. 5 Quadro 5;

* I.A.M. 1975/6 Quadro 7

* " Mapa 1976/7, 1977/8, 1978/9.

TABLE 3 : SEED COTTON PRODUCTION BY PROVINCES AND FORMS OF PRODUCTION
(Tonnes)

QUADRO 3 : PRODUÇÃO DE ALGODÃO CAROÇO POR PROVINCIAS E FORMAS DE PRODUÇÃO
(Toneladas)

C A B O D E L G A D O						
Year	Family sector	Private Farms	State Farms	Cooperatives	Total	
Ano	Sector Familiar	Autónomos/privados	Macham. Estatais	Cooperativas	Total	
1961/2	20:631					
1962/3	13:866					
1963/4	13:988					
1964/5	9:506					
1965/6	14:728					
1966/7	17:691					
1967/8	14:258					
1968/9	17:248					
1969/70						
1970/1	17:467	9:878				27:345
1971/2	10:183	9:676				19:859
1972/3	11:227	9:328				20:547
1973/4	9:563	13:331				22:894
1974/5	3:303	3:540				6:843
1975/6	5:862	1:374	-	-		7:236
1976/7	2:296	1:840	-	-		4:136
1977/8	4:485	1:336	126	-		5:948
1978/9	396	1:030	412	34		1:872
N I A S S A						
1961/2	12:627					
1962/3	5:568					
1963/4	13:988					
1964/5	9:506					
1965/6	14:728					
1966/7	17:691					
1967/8	9:855					
1968/9	6:291					
1969/70						
1970/1	4:111	1:800				4:911
1971/2	4:201	1:370				5:571
1972/3	6:410	2:683				9:093
1973/4	3:069	3:117				6:186
1974/5	2:996	1:849				4:845
1975/6	2:005	209	-	-		2:214
1976/7	2:519	293	-	-		2:824
1977/8	3:402	111	-	-		3:514
1978/9	2:467	-	-	-		2:467

TABLE 3 (Cont'd)
QUADRO 3

NAMPU LA					
Year	Family sector	Private Farms	State Farms	Cooperatives	Total
Ano	Sector Familiar	Autónomos/privados	Macham,Estatais	Cooperativas	Total
1961/2	35,423				
1962/3	36,545				
1963/4	45,750				
1964/5	27,037				
1965/6	34,377				
1966/7	42,281				
1976/8	40,525				
1968/9	39,240				
1969/70			
1970/1	11,156	21,175			32,331
1971/2	21,672	32,892			54,564
1972/3	21,747	41,085			62,832
1973/4	18,524	41,227			59,751
1974/5	6,351	14,904			21,255
1975/6	6,861	6,493	16	--	13,370
1976/7	16,495	11,682	167	60	28,405
1977/8	18,683	11,397	8,566	--	38,646
1978/9	7,118	3,767	6,797	380	18,061

ZAMBÉZIA

1961/2	21,317				
1962/3	11,743				
1963/4	27,336				
1964/5	17,199				
1965/6	26,535				
1966/7	28,135				
1967/8	31,552				
1968/9	31,358				
1969/70			
1970/1	13,945	1,513			15,458
1971/2	16,747	4,276			21,023
1972/3	12,063	6,326			18,389
1973/4	5,665	8,558			14,223
1974/5	5,070	3,863			8,933
1975/6	4,688	2,047	--	--	6,735
1976/7	5,900	1,856	22	23	7,802
1977/8	4,089	4,718	1,480	19	10,307
1978/9	1,822	12	1,718	--	3,553

TABLE 3 (Cont'd)
QUADRO 3

T E T E					
Year	Family sector	Private Farms	State Farms	Cooperatives	Total
Ano	Sector Familiar	Autônomo/privados	Macham, Estatais	Cooperativas	Total
1961/2	6:149				
1962/3	2:032				
1963/4	2:740				
1964/5	3:620				
1965/6	2:074				
1966/7	3:026				
1967/8	2:283				
1968/9	2:978				
1969/70					
1970/1	1:103	2:844			3:947
1971/2	703	3:301			4:004
1972/3	294	5:393			5:687
1973/4	17	19:191			19:208
1974/5	59	1:667			1:726
1975/6	3:325	1:178	--	--	4:503
1976/7	3:000	1:251	--	--	4:251
1977/8	4:343	189	--	--	4:531
1978/9	--	--	--	--	--

MANICA E SOFALA

1961/2	15:791				
1962/3	7:188				
1963/4	12:632				
1964/5	13:940				
1965/6	10:542				
1966/7	11:361				
1967/8	9:008				
1968/9	6:320				
1969/70					
1970/1	3:909	20:366			24:275
1971/2	4:928	25:733			30:661
1972/3	2:845	21:801			24:646
1973/4	1:714	20:396			22:110
1974/5	212	4:876			5:088
1975/6	472	1:708	19	--	2:200
1976/7	53	4:499	796	--	5:347
1977/8	1:408	5:020	1:228	--	7:656
1978/9	705	1:843	1:442	--	3:992

TABLE 3 (Cont'd)
QUADRO 3

MAPUTO, GAZA E INHAMBANE					
Year Ano	Family sector Sector Familiar	Private Farms Autónomos/privados	State Farms Macham,Estatais	Cooperatives Cooperativas	Total Total
1961/2	15:621				
1962/3	9:100				
1963/4	9:743				
1964/5	9:003				
1965/6	17:690				
1966/7	14:604				
1967/8	3:858				
1968/9	6:658				
1969/70					
1970/1	6:705	648			7:353
1971/2	2:659	237			2:896
1972/3	2:664	262			2:926
1973/4	4:848	1.132			5:980
1974/5	1.049	256			1.305
1975/6	522	3	32	--	557
1976/7 *	97	--	--	--	97
1977/8	--	--	441	--	441
1978/9	9	--	--	--	9

Quadro 4 Seed Cotton Production : Contributions o Provinces. (Summary)
 Produção de Algodão Carvão : Contribuição das Províncias. (resumo - Toneladas e %)

	Nampulo	Zambézia	Cabo Delgado	Niasa	Tete	Manica e Sofala	Maputo, Gaza e Inhambane	Total (Tons)
1961/2								128.861
1962/3								87.258
1963/4								123.252
1964/5								88.714
1965/6								118.745
1966/7								133.031
1967/8								125.394
1968/9								136.850
1969/70								138.999
1970/1	32.331 (30,6%)	15.458 (14,6%)	17.345 (16,4%)	4.911 (4,6%)	3.947 (3,7%)	24.275 (23,0%)	7.353 (7,1%)	105.615
1971/2	54.564 (39,3%)	21.023 (15,2%)	19.859 (14,3%)	5.571 (4,0%)	4.094 (2,9%)	30.661 (22,1%)	2.896 (2,2%)	138.667
1972/3	62.832 (43,6%)	18.389 (12,8%)	20.547 (14,3%)	9.093 (6,3%)	5.687 (3,9%)	21.646 (17,1%)	2.926 (2,0%)	144.061
1973/4	59.751 (41,8%)	14.223 (10,7%)	22.894 (17,2%)	6.186 (4,6%)	19.208 (14,4%)	22.110 (16,6%)	5.980 (4,5%)	133.210
1974/5	21.255 (12,9%)	8.933 (17,8%)	6.843 (13,6%)	4.845 (9,6%)	1.726 (3,4%)	5.088 (10,1%)	1.305 (2,6%)	50.210
1975/6	13.370 (36,4%)	6.735 (18,3%)	7.236 (19,6%)	2.214 (6,0%)	4.503 (12,2%)	2.200 (6,0%)	557 (1,5%)	36.815
1976/7	28.405 (53,8%)	7.802 (14,8%)	4.136 (7,8%)	2.824 (5,3%)	4.251 (8,0%)	5.347 (10,1%)	97 (0,2%)	52.872
1977/8	38.646 (53,4%)	10.307 (14,2%)	5.968 (8,2%)	3.514 (4,8%)	4.531 (6,3%)	7.656 (10,6%)	441 (0,6%)	72.362
1978/9	18.061 (60,30%)	3.553 (11,9%)	1.872 (6,2%)	2.467 (8,2%)	--	3.952 (13,3%)	9 (0,1%)	29.952

Source: Data Calculations in Table 1 and 3

Fonte: Calculado dos dados nos Quadros 1 e 3

Table 5 : Seed Cotton Production by Grades (Kg and % of Total):
"Traditional" or "Indigenous" Sector, 1954/5 - 1974/5

Year	1st Quality		%	2nd Quality		%	Total
1954/5	63 391 366		73,24%	23 160 278		26,76%	88 551 644
1955/6	39 746 548,55		66,97	25 441 499,9		39,03	65 188 048,45
1956/7	75 084 882,5		69,37	33 148 679,5		30,63	108 233 352
1957/8	60 593 134		66,21	30 917 117		33,79	91 510 251
1958/9	103 922 651		77,04	30 977 505		24,70	134 900 156
1959/60	105 226 540		75,30	34 513 684		24,70	139 740 224
1960/1	91 837 618		83,-	18 813 560,5		17,-	110 651 170,5
1961/2	108 260 067		84,87	19 298 729		15,13	127 558 796
1962/3	75 550 522		87,81	10 490 863		12,19	86 041 385
1963/4	110 162 078		91,44	10 312 330		8,56	120 474 408
1964/5	75 364 047		88,04	10 241 129		11,96	85 605 176
1965/6	102 342 451		90,23	11 079 608		9,77	113 422 059
1966/7	104 067 098		83,19	21 022 179		16,81	125 089 277
1967/8	92 357 814		82,97	18 950 695		17,03	111 333 509
1968/9	96 398 145		87,56	13 694 975		12,44	110 093 121
1969/70	81 507 460		88,04	11 081 924		11,96	92 589 384
1970/1	41 077 389		84,89	7 313 300		15,11	48 390 689
1971/2	52 608 865		88,11	8 483 636		13,89	61 092 501
1972/3	51 112 579		89,37	6 077 875		10,63	57 190 454
1973/4	37 636 242		86,72	5 763 484		13,28	43 399 726
1974/5	16 662 000		87,43	2 395 000		12,57	19 057 000

Sources: IAM, Report for 1962-67, page 157, table IV

IAM, Report for 1972, page 9, table 6

" " " 1974, page 5 table 5

" " " 1975, page 5, table 5

Note: This table shows that, although its total production has declined, the quality of cotton produced by the mozambican peasantry was improved. Peasant production reached its peak in 1959/60, subsequently maintaining a high level of production until 1969/70, when its share of total production entered into a sustained decline. Given that 1960/61 was the year in which forced labour was formally abolished, we can see that the practice have continued in other forms until it effectively disappeared in the early 1970s. The advance of the armed struggle (particularly in Tete Province) also had a marked influence on levels of peasant (and other) cotton production.

Table 6 : Seed Cotton Production by Quality (Kg and % of total):
"Entrepreneurial" or "Autonomous" Sector, 1954/5 - 1974/5

Year	1st Quality		2nd Quality		Total
1954/5	119 804,8	61,75%	74 212,4	38,25%	194 017,2
1955/6	97 296,6	37,83	159 907,4	62,17	257 204
1956/7	259 121,2	66,47	130 758,9	33,53	389 880,1
1957/8	533 688,1	79,47	137 867,9	20,53	671 556,1
1958/9	823 910,3	82,55	174 191,9	17,45	998 102,2
1959/60	532 423,3	46,71	607 513,2	53,29	1 139 936,5
1960/1	505 167	69,52	396 890,3	30,48	1 302 057,3
1961/2	1 040 595,1	75,76	333 027,2	24,24	1 373 622,3
1962/3	972 588,7	79,89	244 755	20,11	1 217 340,7
1963/4	2 570 824,3	92,54	207 112,5	7,46	2 777 936,8
1964/5	2 814 029	90,52	294 513	9,48	3 108 542
1965/6	4 960 934,5	93,11	366 626	6,89	5 327 760,5
1966/7	6 821 484,5	85,89	1 121 017,6	14,11	7 942 502,1
1967/8	12 633 441	89,96	1 422 233	10,04	14 055 674
1968/9	24 369 263	91,30	2 368 073	8,70	26 757 336
1969/70	43 257 925	93,21	3 152 083	6,79	46 410 008
1970/1	53 343 182	93,22	3 880 974	6,78	57 224 156
1971/2	73 011 775	94,11	4 563 100	5,88	77 574 876
1972/3	82 260 368	94,69	4 609 951	5,31	86 870 319
1973/4	97 992 465	97,97	1 817 331	2,03	89 809 796
1974/5	29 296 000	94,64	1 659 000	5,36	30 955 000

Sources: IAM Report for 1962-67, p.156, table III

" " " 1972, p.9, table 6

" " " 1974, p.5, table 5

" " " 1975, p.5, table 5

Note: It can be seen from the above table that as soon as the obligatory cultivation of cotton was abolished, colonial capitalists began to actively compete in cotton production. If the 1960s are a period of stagnation and change for the cotton producing peasantry, those same years are ones of rapid growth for capitalist farmers. From 1971 the capitalist sector dominates the scene both in terms of quantity and quality produced.

TABLE 7 : CULTIVATED HECTARES BY FORMS OF PRODUCTION

QUADRO 7 : HECTARES CULTIVADAS POR FORMAS DE PRODUÇÃO

Year Ano	Family sector Sector Familiar	Private farms Autónomos/privados	State farms Macham,Estatais	Cooperatives Cooperativas	Total Total
1944/5	296,000				
1945/6	232,000				
1946/7	246,000				
1947/8	233,000				
1948/9	256,000				
1949/50	260,000				
1950/1	253,000				
1951/2	252,000				
1952/3	275,000				
1953/4	258,000				
1954/5	282,000				
1955/6	273,000				
1956/7	300,000				
1957/8	301,000				
1958/9	312,000				
1959/60	297,000	84,000			381,000
1960/1	309,000	82,000			391,000
1961/2	302,000	91,000			393,000
1962/3	253,000	87,000			345,000
1963/4	324,000	129,000			453,000
1964/5	358,000	135,000			493,000
1965/6	358,000	138,000			496,000
1966/7	358,000	175,000			533,000
1967/8	370,000	-			
1968/9	376,000	-			
1969/70					
1970/1					
1971/2					
1972/3					
1973/4					
1974/5					
1975/6	76,820	11,826	73	-	88,719
1976/7	121,434	19,475	1,094	190	142,193
1977/8	134,307	21,666	13,154	37	169,164
1978/9	50,027	6,045	11,520	829	68,421

SOURCES/

FONTES : N.S. Bravo : "A Cultura Algodoeira na Economia do Norte de Moçambique" Quadro XXII;

Table "

I.A.M. : Mapas Estatísticas. Quadro 1 1975/6, Quadro 1977-79

" Statistical Tables, Table 1 1975/6, Table 1977-79.

TABLE 8 : CULTIVATED HECTARES BY FORMS OF PRODUCTION AND BY PROVINCE

QUADRO 8 : HECTARES CULTIVADOS POR FORMAS DE PRODUÇÃO E PROVINCIAS

Year Ano	Private Privados	State Estatais	Cooperative Cooperativas	Family Familiar	Total Total
<u>C A B O D E L G A D O</u>					
75/6	1:249	-	-	5:329	6:578
76/7	1:673	-	-	9:183	10:856
77/8	1:215	140	-	11:482	12:837
78/9	936	458	69	1:582	3:045
79/80					
<u>N I A S S A</u>					
75/6	189	-	-	8:021	8:210
76/7	267	-	22	10:075	10:364
77/8	101	-	-	8:709	8:810
78/9	-	-	-	9:867	9:867
79/80					
<u>N A M P U L A</u>					
75/6	5:902	17	-	27:444	33:363
76/7	10:620	186	121	65:980	76:907
77/8	10:360	9:517	-	74:731	94:600
78/9	3:424	7:551	760	28:471	40:206
79/80					
<u>Z A M B E Z I A</u>					
75/6	1:860	-	-	18:752	20:612
76/7	1:688	24	47	23:600	25:359
77/8	4:289	1:644	37	16:358	23:328
78/9	10	1:909	-	7:288	9:207
79/80					
<u>T E T E</u>					
75/6	1:071	-	-	13:298	14:369
76/7	1:137	-	-	11:998	13:135
77/8	172	-	-	17:370	17:542
78/9	-	-	-	-	-
79/80					

TABLE 8 (Cont'd)
 QUADRO 8

Year Ano	Private Privados	State Estatais	Cooperatives Cooperativas	Family Familiar	Total Total
<u>S O F A L A</u>					
75/6	1,552	21	--	1,888	3,461
76/7	4,090	1,884	--	210	5,184
77/8	4,564	1,364	--	5,630	11,558
78/9	1,675	1,602	--	2,819	6,096
79/80					
<u>I N H A M B A N E</u>					
75/6	--	--	--	--	--
76/7	--	--	--	--	--
77/8	--	415	--	--	415
78/9	--	--	--	--	--
79/80					
<u>M A N I C A</u>					
75/6	--	--	--	--	--
76/7	--	--	--	--	--
77/8	--	--	--	--	--
78/9	--	--	--	--	--
79/80					
<u>G A Z A</u>					
75/6	3	35	--	2,088	2,126
76/7	--	--	--	388	388
77/8	--	74	--	--	74
78/9	--	--	--	37	--
79/80					
T O T A L					
75/6					88,719
76/7					141,995
77/8					169,164
78/9					68,421

SOURCES/

FONTES : 1975/6 I. A. M., Secção de Estatísticas - Quadro 1 - Produção de Algodão e sua Área por Província e Sector.
 1977-79 I. A. M., Secção de Estatística - Campanhas Agrícolas-

Table 9 : Prices paid to Peasant Producers for seed cotton, 1948-78

<u>Year</u>	<u>1st Quality</u>	<u>2nd Quality</u>
1948	1/57	1/18
1953	2/77	2/08
1958	3/06	2/39
1963	3/70	2/30
1968	3/80	2/20
1973	8/00	4/00
1978	11/00	4/50

Grado 40 Production of Ginned Cotton by Types (Kgs and Percentages)
Remas Produzidas por Tipos (Kgs e Percentagens)

	"Extra"						"Inferior"		Total
	I	II	III	IV	V	VI			
1961/2	31.159.314 (24,05%)	3.504.641 (8,53%)	553.656 (1,35%)	874.179 (2,08%)	1.600.417 (3,30%)	4.07 (9,68%)	551 (0,13%)	212.338 (0,52%)	42.056.096
1962/3	22.756.455 (75,91%)	1.920.733 (6,66%)	382.371 (1,35%)	347.744 (1,21%)	775.358 (2,69%)	2.551.725 (8,85%)	103.734 (0,35%)	28.841.120	
1963/4	34.248.405 (87,13%)	1.188.155 (3,02%)	167.855 (0,43%)	386.317 (0,98%)	1.345.302 (3,42%)	1.194.744 (4,87%)	58.647 (0,15%)	39.309.245	
1964/5	22.350.914 (77,26%)	2.455.096 (8,47%)	371.989 (1,28%)	255.379 (0,88%)	1.742.950 (6,03%)	1.685.813 (5,82%)	76.404 (0,26%)	28.968.545	
1965/6	24.123.463 (62,19%)	7.094.774 (18,96%)	1.536.751 (3,96%)	1.179.302 (3,05%)	1.342.137 (3,46%)	3.205.951 (8,26%)	306.121 (0,79%)	38.788.499	
1966/7	7.074.971 (15,82%)	18.820.080 (42,07%)	8.715.870 (19,48%)	1.722.587 (3,86%)	2.055.988 (4,66%)	5.288.497 (11,82%)	1.023.781 (2,29%)	44.731.774	
1967/8	24.554.601 (58,11%)	6.320.913 (14,96%)	3.792.620 (8,9%)	1.089.930 (2,58%)	2.309.537 (5,47%)	3.383.845 (8,07%)	803.403 (1,90%)	42.254.849	
1968/9	32.317.773 (72,62%)	1.054.333 (2,34%)	2.467.509 (5,54%)	1.206.409 (2,71%)	2.003.299 (4,50%)	2.434.187 (5,47%)	20.338 (0,05%)	44.503.548	
1969/70	8.103.907 (17,53%)	22.854.149 (59,45%)	7.457.842 (16,13%)	825.461 (1,79%)	1.191.375 (2,58%)	3.236.185 (7,00%)	24.521 (0,06%)	46.213.497	
1970/1	3.539.955 (10,08%)	12.179.916 (34,69%)	9.404.523 (26,77%)	5.371.344 (15,39%)	877.928 (2,50%)	2.846.306 (8,11%)	24.192 (0,07%)	35.106.674	
1971/2	3.472.410 (7,33%)	14.218.077 (30,03%)	13.000.812 (27,46%)	9.178.744 (19,39%)	1.165.705 (2,46%)	3.597.720 (7,60%)	315.861 (0,67%)	47.342.818	
1972/3	3.528.685 (7,25%)	15.953.501 (32,76%)	15.363.729 (31,51%)	5.333.195 (11,12%)	910.374 (1,87%)	2.527.539 (5,20%)	44.428 (0,09%)	48.665.084	
1973/4	1.198.848 (2,60%)	8.646.170 (18,95%)	16.518.856 (36,20%)	12.062.954 (26,44%)	1.267.619 (2,79%)	1.625.861 (3,56%)	301.294 (0,66%)	45.633.132	
1974/5	331.658 (1,93%)	3.329.466 (19,41%)	8.466.636 (49,36%)	3.413.812 (19,90%)	261.565 (1,52%)	645.637 (3,76%)	70.364 (0,42%)	17.153.830	
1975/6	62.706 (0,52%)	1.245.913 (10,26%)	5.281.136 (43,47%)	3.419.274 (28,14%)	1.167.149 (9,61%)	525.927 (4,35%)	31.019 (0,25%)	12.149.046	
1976/7	510.762 (2,93%)	3.210.964 (18,45%)	5.183.608 (29,60%)	5.510.303 (31,66%)	401.681 (2,31%)	719.714 (4,08%)	199.565 (1,14%)	17.447.771	
1967/8	485.233 (2%)	2.153.167 (9%)	6.472.269 (27,19%)	9.228.308 (38,6%)	999.320 (4,2%)	1.638.622 (6,8%)	898.084 (3,8%)	23.879.513	
1968/9	503.323 (4,09%)	1.892.497 (15,39%)	5.892.808 (45,48%)	2.782.246 (22,63%)	305.077 (2,40%)	331.695 (2,70%)	15.452 (0,12%)	12.295.951	

Sources: IAN Releatório, 1962-1967 p.162-167; 1968-63 1969 p.114-119; 1970 p.101-121; 1971 p.101-121; 1972 p.121-127; 1973 p.101-127; 1974 p.81-97 p.7

TABLE 11 : GINNED COTTON PRODUCED, 1961/2 - 1978/9.
 QUADRO 11 : RAMAS PRODUZIDAS

Campanha Campaign	Proporção dos tipos "Extra, I e II, % share of types "Extra, I and II,	Proporção dos tipos III, IV, V, VI e "inferior". % share of types III, IV, V, VI and inferior.
1961/2	82,62 %	17,38 %
1962/3	85,57 %	14,43 %
1963/4	90,15 %	9,85 %
1964/5	85,73 %	14,27 %
1965/6	80,48 %	19,52 %
1966/7	57,89 %	42,11 %
1967/8	76,51 %	23,49 %
1968/9	81,81 %	18,19 %
1969/70	83,11 %	16,89 %
1970/1	71,56 %	28,44 %
1971/2	64,82 %	35,18 %
1972/3	71,60 %	28,40 %
1973/4	57,75 %	42,25 %
1974/5	70,70 %	29,30 %
1975/6	54,25 %	45,75 %
1976/7	50,98 %	49,02 %
1977/8	38,19 %	61,81 %
1978/9	64,96 %	35,04 %

SOURCE/

FONTE : Calculated on the basis of data in table 6.

Calculado dos dados no quadro 6

TABLE 12 : PRODUCTION OF GINNEED COTTON BY FACTORY
(Tonnes)QUADRO 12 : RAMAS PRODUZIDAS POR INSTALAÇÕES
(tonelades)

Factories Fábricas	74/5	75/6	76/7	77/8	78/9
N-Cuamba	530	731	932	1.308	814
N-Mutuali	1.374	273	517	931	581
CD-Montepuez	1.901	2.388	1.365	1.963	606
N-Namapa	701	861	1.869	2.517	325
N-Geba	506	371	549	871	367
N-Monapo	1.781	588	402	2.048	1.763
N-Namialo	2.132	1.122	3.254	2.893	1.961
N-Nametil	354	-	-	965	270
N-Nampula	1.360	894	2.314	2.320	1.277
N-Ribaue	682	302	467	533	150
Z-Alto Molocue	453	601	275	487	477
Z-Mocuba	1.275	624	1.565	1.771	831
Z-Mocubela	488	206	307	219	83
Z-Mégaza	806	792	428	899	158
T-D. Aná	572	1.486	1.403	1.468	331
S-Manga	1.749	594	1.628	2.436	1.238
S-Vila Arriaga	21	128	136	105	177
G-Xai Xai	341	113	-	-	-
G-Chocué	107	70	32	22	33
Chemba	-	3	3	4	-
Tangamo	-	-	-	123	-

SOURCES/

FONTES: I.A.M., Relatório 1974/5, p.7, quadro 7.

I.A.M. Secção de Estatísticas, Ramos Produzidos por Instalações, quadro 4.

- N = Nampula
- CD = Cabo Delgado
- Z = Zambézia
- T = Tete
- S = Sofala
- G = Gaza

Table Destination of Canned Cotton by Grades (Tonnes)
 Quadro 13 Destino das Ramas por Grãos (Toneladas)

Campanha	A Exportação / Exports						B Indústria Nacional / National Industry											
	"Extra"	I	II	III	IV	V	VI	"Inferior"	Total	"Extra"	I	II	III	IV	V	VI	"Inferior"	Total
1961/2									40.080		961	166	24	195	439	253	86	2.124
1962/3								26.956		794	202	165	165	29	218	347	32	1.742
1963/4								37.041		1.143	26	1	1	65	269	281	60	2.124
1964/5								26.547		1.216	57	25	25	12	434	517	76	2.338
1965/6								36.505		586	783	211	211	48	114	735	284	2.762
1966/7								41.621		612	583	360	360	47	297	832	45	2.784
1967/8								39.362		1.452	391	89	89	335	362	81	150	2.860
1968/9								41.534		1.033	351	244	244	82	458	511	17	2.696
1969/70								42.973	29	690	1.105	218	218	141	392	538	24	3.138
1970/1								32.331	130	349	881	395	395	141	230	432	24	2.774
1971/2								43.977	19	354	694	1.487	1.487	404	74	138	78	3.248
1972/3								42.764	22	1.596	2.162	1.201	1.201	377	171	187	8	5.725
1973/4								30.861	176	1.018	1.840	1.780	1.780	577	110	77	13	5.592
1974/5	295	2.570	7.168	2.699	537	237	621	14.150	30	362	1.214	656	77	23	10			2.373
1975/6	28	590	2.747	2.056	1.040	279	447	7.188	23	621	2.518	1.336	1					4.502
1976/7	272	1.152	1.852	2.750	1.558	343	525	8.572	161	1.530	2.624	1.612	65	27	127			6.147
1977/8	414	2.005	4.673	6.643	1.046	532	1.100	16.865	-	-	1.941	2.540	239	4				4.724
1978/9	119	783	2.126	722	630	190	171	4.753	321	716	2.121	1.496	195	42	129			5.018

Sources: IAM Relatório 1962-1967 p.184 Mapa x; p.176-181; 1969 p.120-122; 1970 p.18; 1971 p.13; 1972 p.13 Quadro 10 e p.111; 1973 p.12; Fontes: 1974 p.10 Quadro 9; 1975 p.10; * IAM 1976-1979.

TABLE 14 : ABSORPTION OF GINNED COTTON : EXPORTS AND NATIONAL INDUSTRY

QUADRO 14 : EXPORTAÇÃO, E INDÚSTRIA NACIONAL : % ABSORÇÃO DAS RAMAS PRODUZIDAS.

Year	Exports	National Industry	Others (damaged, unused, balance, etc)	In tons
Ano	Exportação	Indústria Nacion.	Outros (ardido, inutilizado, saldo, etc)	Em toneladas.
1961/2	94,97%	5,03%	-	
1962/3	93,93%	6,07%	-	
1963/4	94,58%	5,42%	-	
1964/5	91,90%	8,09%	-	
1965/6	92,97%	7,03%	-	
1966/7	93,73%	6,27%	-	
1967/8	93,20%	6,77%	0,03%	13
1968/9	93,33%	6,06%	0,61%	264
1969/70	92,99%	6,79%	0,22%	102
1970/1	92,09%	7,90%	0,01%	2
1971/2	92,89%	6,86%	0,25%	118
1972/3	87,87%	11,76%	0,37%	117
1973/4	67,62%	12,25%	20,13%	9.188
1974/5	82,49%	13,25%	4,26%	631
1975/6	59,16%	37,06%	3,78%	459
1976/7	49,13%	35,23%	15,64%	2.729
1977/8	70,63%	19,78%	9,59%	2.290
1978/9	38,65%	40,81%	20,54%	2.525

SOURCE/

FONTE : Calculated from data in Figure 7.

Calculado dos dados no Figura 7.

TABLE 15. LOCAL INDUSTRY: % ABSORPTION OF TYPES "EXTRA", I AND II.

QUADRO 15 : INDUSTRIA NACIONAL: % ABSORÇÃO DAS RAMAS DE TIPO

	Extra, I & II used/utilizado (Tonnes/Tnds)	"EXTRA", I E II PRODUZIDAS All Grades used Todos graus utilizadas (tonnes)	Extra, I, II as % of total used/ %Absorbsão do Extra I e II.
1961/2	1,127	34,746	3,24%
1962/3	1,996	24,679	4,03%
1963/4	1,169	35,437	3,30%
1964/5	1,273	24,834	5,13%
1965/6	1,369	31,216	4,39%
1966/7	1,195	25,895	4,61%
1967/8	1,843	32,329	5,70%
1968/9	1,384	36,408	3,80%
1969/70	1,824	38,407	4,75%
1970/1	1,360	25,122	5,41%
1971/2	1,067	30,688	3,48%
1972/3	3,780	34,844	10,85%
1973/4	3,034	26,353	11,51%
1974/5	1,606	12,128	13,24%
1975/6	3,162	6,591	47,97%
1976/7	4,315	8,095	48,51%
1977/8	1,941	9,119	21,28%
1978/9	3,158	7,987	39,54%

SOURCE/

FONTE : Calculated from data in previous tables.

Calculado dos dados nos quadros anteriores.

TABLE 16 : GINNED COTTON EXPORTED BY DESTINATION.
(Tonnes and Percentage)

QUADRO 16 : RAMAS EXPORTADOS POR PAÍS
(Toneladas e percentagem)

Year	Portugal	Hong Kong	England	West G.	Antweip	Others and unspecified	Totals
Ano			Inglaterra	R.F.A.	Antueipia	Outros totais não especificados	Totais
1961/2	40:044	99,01%					
1962/3	26:956	100%				36 0,09%	40:080
1963/4	37:041	100%				--	26:956
1964/5	26:547	100%				--	37:041
1965/6	36:505	100%				--	26:547
1966/7	41:169	98,91%				452 1,08%	36:505
1967/8	38:709	98,34%				653 1,66%	41:621
1968/9	41:534	100%				--	39:362
1969/70	42:973	100%				--	41:534
1970/1	31:318	96,87%				1:013 3,13%	42:973
1971/2	37:030	84,20%				6:947 15,80%	31:318
1972/3	35:112	82,11%				7:652 17,89%	37:030
1973/4	29:713	96,28%				1:148 3,72%	35:112
1974/5	12:116	85,62%	1.655	279	99	2.034 14,38%	29:713
1975/6	6:688	93,04%	--	500	--	500 6,96%	12:116
1976/7	8:572	100%	--	--	--	--	6:688
1977/8	15:829	100%	--	--	--	--	8:572
1978/9							15:829

SOURCES/

FONTES : I.A.M., Relatório 1962 - 1967, p. 184, Mapa X;

1972 p: 13, quadro 10;

1974 p: 10, quadro 9;

1975 p: 10;

I.A.M. 1976 - 1979.

TABLE 17: GINNED COTTON EXPORTED BY EXPORTERS

QUADRO 17: RAMAS EXPORTADAS POR EXPORTADORES

Source: Table 12 IAM Report 1974/5 p. 12 (Kilogrammes)

Fonte: Quadro 12 IAM Relatório 1974/5 p.12 (Quilogramas)

Companies/ Empresas	1975/6	1976/7	1977/8	1978/9+	1979/80
Companhia Nacional Algodoeira	159.312	378.277	402.868		
Souedade Algodoeira do Zambeze	1.258.170	907.684			
Cia. dos Algodões de Moc.	56.114	1.632.340	2.284.216		
Cia. Ind. Joao. F. dos Santos	2.712.390	3.524.362	12.564.458	2.400.368	
SAN J.F.S. Soc. Agric. Algod. (SAGAL)	519.946 1.377.870	706.820 592.347	1.271.623	1.025.664	
Textimpex Metchéria Agrícola	26.108 248.898	73.825			
Quinta das Laranjeiras L. Carvae e Irmãos	59.407 33.479	220.988		8.568	
Banco de Moc. Autonomos diversos (Various Companies)	100.605 635.901	502.074	341.980		+Data until March 1979 (+dados até Marco 1979)

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