

Re-regulating a Failed Market:

The Tanzanian Cotton Sector 1999-2002

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Abstract

This paper considers developments in the Tanzanian cotton sector during a second, re-regulative phase of its liberalisation. When Tanzania embarked on market liberalisation in the early 1990s, the private sector rapidly came to dominate the country's cotton sector. Until 1999, hardly any mechanism was developed to coordinate and control the activities of the large number of cotton buyers and ginneries that entered the market. This not only prevented any attempt at providing inputs to smallholders on credit or cash terms, but might also have affected the quality of cotton lint. Since 1999, however, the Cotton Board has re-entered the fields of quality control and input distribution to farmers, financed by levies imposed on the private sector. Yet, the impact of the resulting range of new, non-market institutions has been circumscribed by the underlying legacy of the early years of 'free market'.

Introduction

During the 1990s, most cotton producing countries in Eastern and Southern Africa came under pressure to liberalise their sectors. Parastatal marketing boards or cooperatives which previously had effective monopolies in primary purchase, ginning and sales of lint have been dismantled and private companies now dominate input supply, ginning and marketing activities. Changes in the regulatory framework have led to considerably greater competition at the farm-gate level and to more efficient flows within the seed cotton marketing channel. This has in general resulted in a higher share of the export market price for lint being passed through to farmers and increases in national cotton production. However, transfer of export quality control and input supply from public institutions to the private sector has proven problematic in most post-liberalised markets. In the earlier regulatory framework, parastatals or cooperatives imposed relatively homogeneous quality standards and paid quality premiums at primary marketing level (Shepherd and Farolfi, 1999). With the dismantling of parastatals states no longer play a significant role in the national system of quality control, while the private sector has been either unable or reluctant to perform this function. In addition, competition has placed considerable constraints on links between input supply on credit and output marketing, contributing to decreasing input consumption and consequently lower yields and crop quality. Thus, as liberalisation has enhanced the performance of crop marketing operations, efficient quality control procedures and provision of inputs (on credit) to smallholders remain major challenges in almost all countries.

This paper explores developments in the Tanzanian cotton sector since it was liberalised in 1994 and, especially during the period 1999-2002¹. In particular, it focuses on input provision and quality control issues in the post-liberalised era. The paper is divided in three main sections: The first starts with a brief description of the sector prior to liberalisation, followed by an outline of the sector after liberalisation, characterised by entrance of a large number of cotton buyers and ginners. Fierce competition between numerous players improved farmers' share of the world market prices and there was a major production response. After a pronounced increase in national cotton production the first few seasons, however, production declined. Moreover, evidence seems to point towards deteriorating quality since the mid-1990s. The second section discusses the last of these issues in more detail. The question whether the quality of cotton has deteriorated is highly complex and indicators seem to point in different directions. The third section examines measures taken since 1999, when the (parastatal) Cotton Board and the private sector 'jointly' sought to address some of the prevailing problems in the sector. Here, the impact of the Cotton Development Fund's activities and enforcement of quality regulations at the ginnery level will be considered. In conclusion the paper considers some general reflections on market development and the role of the state. The paper is based on a fieldwork conducted in the 2001/02 cotton buying season² in Mwanza, Shinyanga and Mara regions, the main cotton growing regions in the Western Cotton Growing Area³ (WCGA).

The Tanzanian cotton sector - from a single to a multi-channel marketing system

Cotton was introduced to Tanzania by the Germans in the end of the 19th century, but production remained marginal until the British administration turned to the promotion of peasant export crop production in the 1950s. As a result of resettlement programmes (bringing virgin land into cash crop production), increased delivery of agricultural extension services and stable and high seed cotton producer prices, cotton production grew more than tenfold during the 1950s and cotton became Tanzania's most important export commodity, after coffee. This boom in cotton production lasted only until the early 1970s, however, when the sector witnessed a serious

¹ I am grateful to Peter Gibbon, Niels Fold, Colin Poulton and Henry Bernstein for helpful comments on earlier drafts of this paper. I am also indebted to the following research assistants for their help with the study in Tanzania: Mr. C. Ngosso (Misungwi), Mr. J. Makoy (Shinyanga), Mr. Kileo (Maswa), Mr. C. Degelelu (Magu), Mr. H. Kanyangemu (Musoma) and Mr. C. Masawa (Bunda).

² The marketing season in Tanzania begins around July 1st. Thus, crops sold in the 2001/02 season would have been planted between November 2000 and January 2001.

³ More than 90 percent of the national seed cotton production emanates from WCGA (covering Mara, Mwanza, Shinyanga, Tabora, Kigoma, Kagera and Singida regions), particularly from Mara, Mwanza and Shinyanga (TCB, 2002). Interviews were conducted with 17 private buyers (with own or leased ginneries) and staff at 5 ginneries owned by the Regional Cooperative Unions (general managers, ginnery operation managers). These interviews were complemented by 23 interviews conducted with staff at private buying posts as well as staff at 23 Primary Society buying posts. Additionally, 33 interviews were carried out with government staff at various levels and two with private companies engaged in inspection at ginnery level. Interviews with 68 farmers were also carried out in five districts.

decline in production associated with the linked phenomena of villagisation and top-down reforms of the single-channel marketing system (Gibbon, 1998a:6; Ellis, 1988). Cotton production regained its former importance in the second half of the 1980s, to some extent because of increases in producer prices (in 1985-87 producer prices increased to levels above world prices). Production increased from a low of 140,000 tons seed cotton in 1981-85 to average 200,000 tons per year between 1986-90, peaking in the 1992/93 season with a national crop of approximately 303,984 tons, just before the marketing system was liberalised (see table 2, appendix).

Until the onset of economic reforms in the early 1990s, the sector was characterised by widespread state regulation and intervention, although the instruments and agents used changed from time to time. Until the mid-1970s, cotton marketing was organised through a three-tier system consisting of primary cooperative societies, regional cooperatives unions and the parastatal Cotton Board (CB). The latter performed overall regulatory functions and was responsible for sale of cotton lint on domestic and export markets. Regional cooperative unions (RCUs) had a legal monopoly in purchasing and ginning all seed cotton while primary societies purchased seed cotton on behalf of the RCUs. The RCUs were formally abolished in 1976, however, and primary purchase and ginning came under direct management by the Tanzanian Cotton Authority until the former system was reintroduced in 1982. This lasted until the cooperative reforms in 1991-92⁴. Throughout this period, pan-territorial and pan-seasonal prices were announced in advance of each season.

Liberalisation of the cotton sector began in the 1992/93 season. In 1993 the government removed the fixed producer price system, while the monopolies of the RCU and the CB were abolished through amendment of the Cotton Act. The Cotton Board's role was redefined in terms of managing quality control of cotton lint and other by-products⁵. A new statutory instrument, the Cotton Regulations of 1995, specified that private agents were allowed to enter the market in every stage from primary purchase to export of lint, provided that licenses were obtained from the Cotton Board and other authorities (Gibbon, 1998a).

Following the cooperative reforms in 1991-92, regional unions were reconstituted on economic viability criteria, i.e. they could (re-)register under the Act provided that they were solvent. On these grounds one RCU in the WCGA (Mara Cooperative Union) was liquidated, while two others (Shirecu and NCU in Shinyanga and Mwanza respectively) continued. In addition, six new district-based Cooperative Unions engaged in cotton purchase were established in the wake of the reforms; four as breakaways from functioning RCUs and two in the wake of the liquidation of Mara Cooperative Union. In the early years of liberalisation the RCUs still remained major players

⁴ For a detailed discussion of changes in the role of the cooperative unions in Tanzania see e.g. Banturaki, 2000; Gibbon, 1998c; Ellis, 1988.

⁵ During the last four decades the Tanzania Cotton Board has changed name frequently (the last time in 2001). In order to avoid confusion it will be referred to as 'the Cotton Board' (CB) throughout the whole period under consideration.

despite the inroads of the private sector, mainly because they controlled almost half of the total ginning capacity and operated the largest seed cotton buying network, where the PSs still purchased seed cotton on their behalf. In 1998, four seasons after liberalisation, the cooperative unions obtained a combined market share of 43 percent (Gibbon, 1998a). By the 2001/02 season, the two main regional cooperative unions still competed with private buyers and ginners, but from a very weak competitive position. Seed cotton prices offered by the RCUs were mostly inferior to those offered by private buyers. Moreover, lack of creditworthiness and thereby a serious lack of working capital meant that the Unions were only able to pay farmers in cash the first few weeks of each marketing season. As a result, the Regional Cooperative Unions obtained a combined market share of less than 9 percent in 2001, while all but one of the district-based cooperative unions had stopped purchasing seed cotton due to lack of liquidity.

Most of the new private buyers constructed their own ginneries, partly because the cooperatives refused to permit new entrants to gin their seed cotton on a contract or toll basis. Entrance into ginning was apparently also encouraged by the availability of cheap loans from donor agencies (see Gibbon, 1998a for details). In Mwanza, Shinyanga and Mara regions alone, 27 companies were engaged in primary purchase and ginning in 2001, and the number of ginneries in the WCGA had increased to 48, as opposed to around 24 a decade earlier. Additionally, several of former RCU ginneries were now leased to private companies⁶; hence the situation in the early years of liberalisation, where private buyers had to beg the unions to gin their cotton, had been reversed.

One result of this development is that total ginning capacity has now expanded to around three times the level of the highest seed cotton crop since liberalisation. Based on a six-month ginning year rated capacity is approximately 265,000 tons lint (equivalent to throughput of around 874,500 tons seed cotton). Actual (effective) ginning capacity, however, may be considerably lower due to variations in numbers of ginneries and gin stands operational in a particular season. For instance, the Cooperative Unions have been unable to obtain working capital to run all their ginneries, while some private ginneries were under renovation or only operating a few gin stands in 2001. On the other hand, one ginnery had invested in 24 new gin stands (on top of 40 operating stands) thereby increasing its capacity substantially.

Actual ginning capacity is also characterised by inter-seasonal variation. One international trading company (operating two ginneries in Tanzania) withdrew from the market in 1998, mainly due to very low crop production and quality that season, but entered it again in 2001⁷. The imbalance between ginning capacity and raw material output has meanwhile increased sharply as a result of falling seed cotton production. After a peak harvest of 251,700 tons seed

⁶ At least half of Nyanza's ten ginneries were leased to private buyers, in addition to at least one of Shirecu's seven ginneries (own survey).

⁷ Apparently, this company withdrew again in 2002 on the grounds that prices being paid by buyers made ginning uneconomic at the current world market prices (Maro and Poulton, 2002).

cotton in the 1996/97 season, production has since declined and average national production has been no higher than 110,000 tons during the last three seasons⁸. Increasing levels of over-capacity have created a 'scramble for cotton' among ginners in order to minimise their unit ginning costs and fulfil forward supply contracts (most ginners depend on pre-finance from customers for their purchases).

Competition between cotton buyers and ginners to obtain market share included competing on geographical coverage and availability of cash during the season as well as on price, although the main emphasis varied from district to district according to the number of competitors. Smaller companies tend to operate less than 50 buying posts, concentrated within a few districts in the main cotton growing regions, and the average market share they obtain is less than one percent (in 2001). At the other end of the scale, the largest private ginners have more than 130 buying posts divided between several districts. The largest ginner obtained a market share of 10 percent in 2001, having operated 260 buying posts in 8 districts.

In districts (and villages) with low numbers of buyers, seed cotton prices were relatively low and availability of cash seemed to be the main competitive asset. To a large extent, ability to compete in the seed cotton market depends on availability and volume of working capital. As noted above, the RCUs lost a substantial share of the market largely because they were only able to pay farmers in cash the first few weeks of each marketing season. Likewise, smaller cotton buyers and ginners were severely restricted by their financial weakness and tended to run out of cash for a few days each week and stayed in the market for a shorter period than the larger counterparts. In other districts with numerous buyers competition was mainly over price. In general, all buying and ginning companies raised their prices several times during the season. At the beginning of the 2001/02 marketing season, the average seed cotton price offered was Tsh 50/kg⁹ but it rose to around Tsh 200/kg in early August. Tsh 220/kg could be obtained at that time if the farmer delivered seed cotton at the ginnery gate (own survey).

Strong competition at the primary purchase stage has resulted in a higher share of the export market price for lint being passed through to the farmer since the mid-1990s. As table 1 (appendix) suggests, farmers' share of the world market price was on average 38 percent in the six seasons prior to liberalisation while the average for the six seasons since the reform has been 51 percent. Yet, price gains are far below what for instance Zimbabwean producers received after their cotton sectors were opened for private participation¹⁰. In addition, with the abandonment of pan-territorial and pan-seasonal prices, the proportion of the export price

⁸ El Niño caused considerable damage to cotton crops during the 1997/98 and the 1998/99 seasons.

⁹ Prices have been determined by prevailing market conditions but the Cotton Board announce a floor price before the marketing season starts (Tsh 130/kg in 2001).

¹⁰ The market structure in Zimbabwe is currently much more concentrated than in Tanzania and Uganda but farmers receive a much higher share of the lint export prices (e.g. 75 percent in 2000), although there are year-to-year variations and in recent seasons farmers' real share of the lint export price has fallen significantly due to emerging parallel currency market in Zimbabwe (Larsen, 2002).

received by a farmer depends critically on time of selling and geographical location. For instance, the farmer selling in the beginning of the 2002 season would receive 40 percent of the world market price, whereas one selling at the end of the season would receive 60 percent (Maro and Poulton, 2002). At the same time farmers in remote areas and/or in areas with low cotton production received lower than average prices.

As indicated previously, there was a major production response during the first couple of years after liberalisation, but output has declined sharply in more recent years. The percentage contribution of cotton to total export value of traditional export crops declined correspondingly, from above 20 percent in the early 1990s to less than 8 percent in 2000 (EUI, 2001). Moreover, the relative unit price commanded by Tanzanian cotton exports on the world market seems to have declined (Townsend, 1999, cited in Friis-Hansen, 2000). Hence, at the same time as the introduction of private sector management and competition removed some of the problems entailed in the former single-channel marketing system - notably inefficiency within marketing and low producer prices – the multi-channel marketing system seems to be associated with another set of problems, in particular declining production and quality. The next section examines the issue of deteriorating cotton quality in Tanzania since the onset of market liberalisation.

Deteriorating cotton quality?

Several recent studies in Sub-Saharan Africa of previously regulated crops conclude that quality has deteriorated as a result of market liberalisation¹¹. In analysing lint quality, price differentials above or below the Cotlook A Index are normally used as a key indicator. The A Index is an index of the level of offering prices on the international cotton market¹². Lint traded on the international markets (and the quotations reported by the A Index) is differentiated on three variables: it is classified according to national origin (variety) and by grade (according to colour, trash content and gin preparation) and length (Cotton Outlook, 2002). Premiums and discounts above or below the A Index are obtained in relation to various ‘components’. For instance, higher or lower grades originate from different aspects of preparation of lint (from crop management practices and agro-climatic conditions to type of gin technology), whereas other premiums are obtained as a result of inherited characteristics of the fibre (e.g. seed variety). This matrix is further complicated by

¹¹ e.g. Ponte, 2002 (coffee in Uganda, Kenya, Tanzania and Ethiopia); Fold, 2002 (cocoa in Ghana); Shepherd and Farolfi, 1999 (covering coffee in Cameroon, Ethiopia, Tanzania and Uganda; cocoa in Ghana, Nigeria, Cameroon; and cotton in Tanzania, Zambia, Uganda and Mali).

¹² The A Index is based on the average of the cheapest five quotations from a selection of sixteen upland cottons traded internationally. According to Cotton Outlook, ‘offering prices are monitored and published each UK business day. Prices are expressed in US cents per lb, c.i.f. (cleared, insured and forwarded) cash against documents on arrival of vessel at a Northern European port, including profit and agent’s commission. Since the quotations are intended to reflect the competitive level of offering prices, and not the level at which business has been arranged, a mill buyer would normally expect to succeed with bids that were slightly lower’ (Cotton Outlook, 2002).

timing of sales and forms of sales; for instance, price premium attached to forward sale agreements. It should further be noticed that premiums and discounts are not fixed but change according to overall supply and demand changes (Heijbroek and Husken, 1996). The latter may increase or diminish the spreads between specific premiums/discounts, as well as the overall price spread. This makes it highly complicated to distinguish at any one time between purely 'quality components' and other components of price (see Larsen (forthcoming) for an elaboration on this). Inconsistency in published price data in the Tanzanian context adds a further critical aspect to interpretation. Therefore, comparison of price differentials prior to and after liberalisation in Tanzania should be treated with great caution.

Still, according to several sources, including the Tanzania Cotton Board's own estimates, there appears to be evidence pointing towards declining cotton quality based on the magnitude of premiums obtained on the world market¹³. Prior to liberalisation, two different quality premiums were attached to Tanzanian lint. A quality premium of up to 5-6 US cents/lb above the A Index was achieved due to the cleanness of the cotton. As in most other African cotton producing countries, Tanzanian cotton is hand-picked, which should significantly reduce the incidence of for instance stain. Secondly, Tanzanian lint qualified for a premium of 5-7 US cents/lb for being roller ginned (TCB, 2002; Gibbon, 1999). In general, a premium is attached to roller ginned as opposed to saw ginned cotton because roller gins are superior in terms of maintaining the fibre length during the ginning process (i.e. they are gentler on cotton fibres, an attribute spinners are inclined to pay a premium for). According to the Cotton Board's own estimates, Tanzanian lint has lost all premiums since liberalisation and is discounted some 10 US cents/lb due to lower quality (TCB 2002, cited in Baffes, 2002). Gibbon (1999) suggests that the first of these premiums (derived from the cleanness of cotton) was lost sometime in the 1980s and was never recovered, and that the quality premium in some instances has been replaced by a quality discount of 1-2 US cents/lb, although it was unclear whether this was general to all ginners.

Regarding the premium attached to roller ginned cotton, the great majority of the ginning capacity in Tanzania prior to liberalisation was in the form of roller gins and Tanzanian lint had a unique position in the world market as one of few countries exporting roller ginned lint globally¹⁴. At least half of the new private ginneries are of the saw type, which conventionally produce lower quality cotton (or in other words, cotton to which no premium is attached *per se*). Thus, as a certain proportion of Tanzanian lint is saw ginned, Tanzania has lost part of its 'original' roller ginned premium since liberalisation. Interviews with ginners in Tanzania and international traders¹⁵ revealed that some roller ginneries still obtain 1-2 US cents/lb above the A

¹³ The Tanzania Cotton Board (2002); Gibbon (1999); Shepherd and Farolfi (1999).

¹⁴ More than 80 percent of internationally traded lint is saw ginned. Apparently, there are only a few countries worldwide exporting roller ginned cotton (international traders, *pers. comm.* 2003). Thus, Tanzania (and to a lesser extent Uganda) has occupied a special niche-market position by supplying roller ginned lint (Turkey and India, the other major roller ginners, consume a majority of roller ginned cotton domestically).

¹⁵ In January 2003, interviews were conducted with Liverpool-based international traders engaged in cotton purchase in Tanzania and other African cotton producing countries.

Index but others (both roller and saw ginneries) are discounted 1-5 US cents/lb (on the traditional quality premium) due to high level of contamination (e.g. yellow spots, leaf residues and other foreign matters).

Apart from these estimations, several observations point towards a likelihood of deteriorating cotton quality following liberalisation:

First, the transition process from a single-channel (parastatal) to a multi-channel (private) marketing system was generally poorly handled. Rules and regulations regarding the operations of the private sector took a long time to prepare and the industry functioned for around two years without approved regulations (Shepherd and Farolfi, 1999:16-17). Meanwhile, many of the first generation of private companies lacked any experience in ginning and marketing cotton lint, were attracted by the prospect of 'easy money' and were uninterested in quality. The Cotton Board remained with regulative functions, for instance licensing of buying and ginning operations, ensuring segregation of seed by type at the ginnery, ensuring grading, and organising the return of planting seed to villages in specified quantities, but it has hardly been in a position to fulfil these roles since 1994 because of lack of human and financial resources. The number of the Board's staff was reduced significantly with the dismantling of the former marketing system. In the 1997/98 season there were only five ginnery inspectors and a slightly higher number of buying post inspectors covering more than 35 ginneries and around 2000 buying posts in the WCGA. While there was a high degree of enforcement of the regulation on licensing of buying posts and ginneries, enforcement of for example grading at buying posts or segregation of seed by variety at ginneries never occurred¹⁶, not only due to lack of resources (e.g. lack of means of transport), but also because of resistance from the village authorities¹⁷. Moreover, the new cotton act provided no legal power to prosecute in court those who breached the regulations (Maro and Poulton, 2002).

Since the early years of liberalisation, however, the nature and composition of cotton buyers and ginneries have not changed notably, although the number of players has increased significantly, and it is still increasing (Maro and Poulton, 2002). Based on a survey conducted in the 1997/98 season Gibbon identifies a clear pattern of three different strata of ginneries (Gibbon, 1998a:27-28; 1999)¹⁸. The pattern consists of a lower stratum containing a large group of smaller roller ginneries with low fixed investments (the average fixed investment in ginneries was US\$0.5 m) and with an average daily capacity of 101 bales (18,281 kg), combined with very low capacity utilisation levels (average 20.2 percent). Secondly, a smaller middle stratum comprises larger roller ginneries and smaller saw ginneries. These companies had higher levels of capacity utilisation and fixed investments. The upper stratum includes a few larger saw ginneries with investment levels roughly

¹⁶ Although some grading occurred at the ginnery level, this usually entailed only excluding worst quality cotton.

¹⁷ Village governments have become highly dependent on cotton levy as a component of revenue since implementation of economic reforms in the mid-1990s and grading was seen as slowing down levy collection.

¹⁸ The ginneries were differentiated with respect to their capacity, fixed investment and capacity utilisation levels.

four times those of the lower stratum. The capacity utilisation levels of these ginners were significantly higher than the others (on average 36 percent).

As noted above, 27 companies were involved in cotton trade and ginning in 2001 - more than eight of these entered the market after 1997/98. During 1999-2001, at least three new ginneries were built in the WCGA: two upper/middle stratum saw ginners started operating in 1999 and 2000 respectively, while a third lower stratum roller ginnery was established in 2001. In the meantime, the number of lower stratum ginners has increased, largely because the RCUs decided to rent out some of their ginneries to private operators recently (hence, this has reduced entry barriers into ginning further). In the 2001/02 season, eleven ginneries had a daily rated capacity of less 170 bales (average), six of these companies were engaged in leasing arrangements on a seasonal basis. Only one of the companies has been in the market for several seasons and has a background in the cotton sector. This company was formed as a joint-venture between one of the first generation of ginners and his partner and it leased two of NCUs (roller) ginneries. The company had the highest capacity utilisation level of the six companies engaged in leasing arrangements and obtained a market share of 6.25 percent in 2001.

In contrast, the majority of the new entrants in 2001 diversified from for instance grain or maize trade and had no previous experiences with cotton trade or ginning. They were all lower stratum ginners with very low capacity utilisation levels partly because the (roller) ginneries were very old (most of the leased ginneries were built before 1960 and only a few has been renovated since) and partly because of lack of working capital. In many cases the companies depended on own funds for seed cotton purchase and it allowed them to stay in the market only temporarily. Most of these ginners tend to sell on ex-ginnery or free on board on the spot market both of which involve payment on delivery, in order for the ginner to replenish his purchasing capital in the shortest possible time. The most striking feature of those companies is their very tiny market shares (the average market share was 0.65 percent in 2001).

Thus, the sector is still characterised by a large number of smaller and under-capitalised companies with a short-term interest of maximising cash revenue and a small group of larger companies with higher fixed investments and *inter alia* a longer-term commitment. The latter group may have an interest in the existence and enforcement of effective quality control procedures, but the former may be tempted to circumvent such controls (as in the early years of liberalisation), undermining both the credibility of quality controls amongst farmers (see below), and the broader reputation of the national crop (see the next section).

Second, virtually no attention has been given to filling the (horizontally) coordinating role that the RCUs and the PSs traditionally performed regarding quality control. In the former system the Cooperative Unions and the PSs imposed relatively homogeneous quality standards at the primary marketing level. Seed cotton was segregated by grade AR and BR (first quality seed cotton, as opposed to duller, stained cotton) with a price premium attached to AR seed cotton. BR cotton

regularly accounted for between five and ten percent of total national crop prior to 1994, although some years it was not purchased or recorded at all (Gibbon, 1999). As noted above, ginning capacity increased tremendously after the sector was opened for private participation, creating fierce competition between players in the seed cotton market. Since a large number of buyers were purchasing seed cotton regardless of quality others were forced to use the same strategy. Thus, different grades were purchased and ginned together while the proportion of BR seed cotton was almost certainly increasing due to declining input use and mixing of cotton seed varieties after liberalisation (see below). The tendency to purchase seed cotton irrespective of quality continued unabated in the 2001/02 season - as explained by one ginner:

'Actually, the crop is not that low this season [2001/02] compared to the last couple of years, but the expectations were too high – and a lot of us ginner can't fulfil our contracts on lint sales. So, instead of loosing the customer, we all buy everything we can get (...) It's better to fulfil the contract and perhaps have to accept a discount price [because of lower quality] than to loose the customer' (ginner, pers. comm. 2001).

At the primary buying level, absence of price differentiation between grades removed important price-based incentives for farmers to improve seed cotton quality and to grade properly before selling their produce. Poor harvesting practices seem to have been a persistent problem since 1994, notably failure to remove debris, harvesting wet or immature cotton, and use of polyester bags for field handling and transport to the ginner (own survey, see also Maro and Poulton, 2002).

Third, the centralised seed propagation and distribution system has collapsed and this has had a critical impact on the quality of planting seed. Historically, seed varieties were developed and released by Ukiriguru Research Centre to suit two different sub-zones in the Western Cotton Growing Area. In 1971 UK71 was released for production in Mwanza, Mara and Kagera regions while UK82 was released in 1982 suitable for agro-climatic conditions in the districts of Shinyanga and Tabora (the southern zone). Each zone was further divided between ginneries. A system was created where seed cotton from different demarcated cotton areas was ginned only within that area (and where the resulting planting seed was re-distributed only to the PSs in the area). This prevented the spread of pests and diseases between zones (Undolle, 1997:14). As cotton buyers moved across former distinct ginning zones in order to increase market share, different seed varieties suitable only for specific agronomic zones were mixed, as were diseased and non-diseased seed. This contributed to the spread of pests and diseases and reduced yields at the same time as consumption of non-labour inputs has declined (Baffes, 2002). In the early 1990s a new and universal seed variety (UK91), suitable for the whole WCGA, was released for multiplication. UK91 should be superior to the two older varieties in terms of resistance to pests and diseases as well as yields obtained. Moreover, a universal seed variety could solve the problem of mixing geographical specific varieties (Ukiriguri Research Centre, *pers. comm.* 2001). But during the multiplication phase (still continuing in 2002) it proved difficult to avoid mixing of UK91 with the

two other varieties and the results still remain to be seen (for further discussion see e.g. Maro and Poulton, 2002; Gibbon, 1998c).

Fourth, use of chemicals declined after liberalisation due to increases in cost, lack of credit facilities and pronounced failure in the input market. After liberalisation, it was expected that Cooperative Unions and private cotton buyers would procure chemicals on their own account for redistribution to farmers (on credit or cash terms). In order to stimulate the private sector and Cooperative Unions' involvement in input procurement and distribution an Agricultural Input Trust Fund was set up by the Tanzanian government in 1995, where companies were able to obtain credit on subsidised terms. Still, only a few unions and private traders used the Fund to import insecticides in 1995-1996 and the Fund was closed down in 1997, apparently because of a very low rate of credit recovery (Gibbon, 1999). Consequently, in the run-up to the 1997/98 season no public assistance was available to import insecticides. On the other hand, the majority of private cotton companies were reluctant to procure and supply inputs to farmers because of low levels of liquidity in combination with high levels of competition, i.e. buyers avoided tying-up working capital that could have been used for purchasing seed cotton instead (Gibbon, 1998a; 1998b).

Perhaps more seriously, competition in the seed cotton market undermined or placed considerable constraints on links between input supply (on credit) and output marketing, by greatly increasing the scope for side-marketing by farmers¹⁹. Before liberalisation, chemicals, mainly insecticides, pesticides and seed dressers²⁰, were imported by the Cotton Board and advanced to the RCUs on credit against future lint sales and distributed to the farmers through the PSs on credit (Dercon, 1993; Undolle, 1997:9). Following the reforms the RCUs have been increasingly unable to obtain inputs on credit themselves. In addition, after the advent of competition, farmers started 'free-riding' on RCUs input provision and PSs showed very low credit recovery rates. Consequently, insecticide procured by RCUs dropped from 335,631 litres (1992/93) to 93,810 litres in 1997/98²¹ and in the latter season RCUs supplied insecticides only on cash terms for the first time. As the RCUs reduced their procurement levels and only a few private input traders entered the market, the availability of inputs was severely reduced. Based on extensive fieldwork in the 1997/98 season Gibbon (1998a:66) estimated that insecticide use in the WCGA had probably fallen by two-thirds since 1994-95. This almost certainly contributed to lower yields and to the general decline in average national production noted above.

Along with lower yields, declines in insecticide and pesticide use are associated with damage and downgrading of seed cotton caused by outbreaks of pests and insects. One of the main

¹⁹ This refers to farmers taking credit from one buyer but avoiding repayment by selling to another (Poulton et al, 1998).

²⁰ Historically, Tanzanian cotton has been produced without use of fertiliser. According to Undolle (1997) less than 10 percent of cotton producers applied fertiliser prior to liberalisation.

²¹ Note that these figures might overstate actual use.

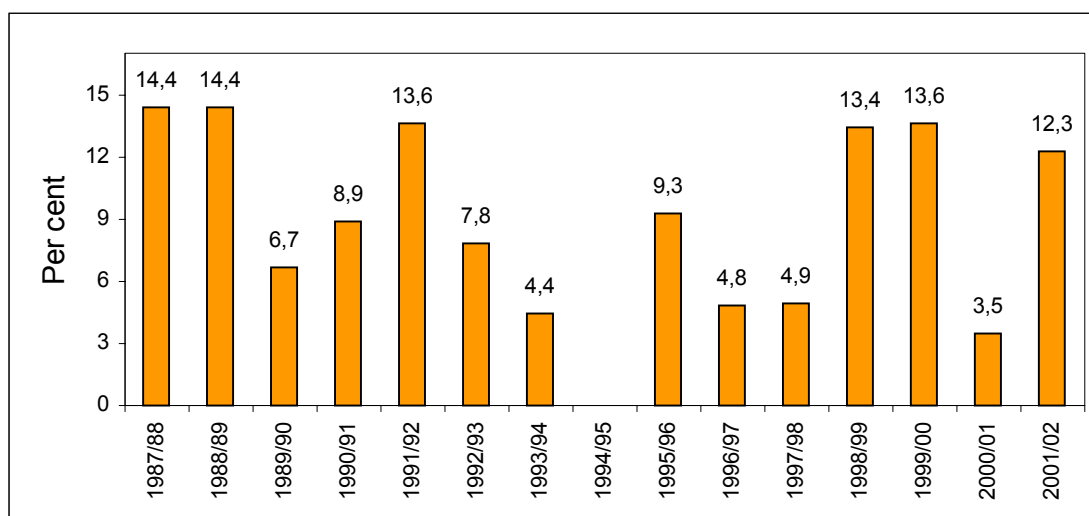
problems concerns the so-called cotton stainer²², which if not eliminated will increase the volume of dull stained cotton (historically graded as BR). According to several ginner interviewed, yellow spots have been one of the main reasons for quality discounts and claims from international customers. As stated by one ginner using roller gins:

'we used to get a quality premium of at least 1-2 US cents/lb, but now we get a discount ... we have had a lot of claims about yellow spots and we have been discounted 1-5 US cents on the world market. Although roller ginned cotton demands a premium of 1-5 US cents/lb the main problem with roller compared to saw gins is that yellow spots can still be seen in roller ginned lint, whereas saw gins make the lint more uniform in the colour' (ginner, pers. comm. 2001).

On the other hand, Baffes (2002) identifies some contrary indicators in respect of changes in cotton quality and although he acknowledges quality problems caused by seed mixing and declining insecticide use he suggests that quality may not have declined significantly overall since liberalisation (for a detailed discussion of the indicators see Baffes, 2002). Baffes' main argument is based on a comparison of average premiums attached to Tanzanian lint prior to and after liberalisation in 1994. This comparison apparently shows that Tanzanian lint commanded a premium of on average 10.1 percent (15 US cents/lb) above the Cotlook A index in the seven seasons prior to the reforms, while a premium of averaging 7.6 percent (12 US cents/lb) was obtained in the period between 1995/96 and 2001/02, excluding the 1994/95 season when Tanzanian cotton was not traded in sufficient volumes in Northern Europe for a price to have been recorded. It is worth noting that according to this same data the premium fell from 9.3 percent in 1995/96 to around 4.9 percent in 1997-1998 but recovered to a mean of 10.7 percent from 1998 to 2002²³ (ibid).

²² Stainers feed on seeds of the developing green bolls. Damaged bolls may not open fully and the viability of the seed will be impaired. Stainers transmit a fungus disease which stains the lint yellow and causes fibre weakness. This is a common cause of down-grading seed cotton in addition to lower yields through reduced seed weights (CCGA, 1998:VIII-4).

²³ In the 2001/02 marketing season the price premium averaged at 12.3 percent above the A Index (5 US cents/lb), an improvement from only 3.5 percent above in the previous marketing season.

Figure 1: Tanzania's premium over the A index (1990-2001)

Source: Baffes, 2002.

This data might support some of the observations regarding deteriorating quality noted during the first four seasons after liberalisation. But it also suggests a reversal of declining quality in more recent years (in which case, one reason could be increases in insecticide use due to supply of subsidised inputs since 1999, see below). On the other hand though, the quotations for Tanzanian lint reported above are based on offering prices at arrival at Northern European ports (see footnote 12), while the destination of the majority of Tanzanian lint is countries in Asia (notably Indonesia, Thailand, Taiwan and India). In fact, during the last decade the proportion of export destined to European markets has declined fairly consistently. As table 3 (appendix) shows, in the seven seasons prior to liberalisation 30 percent of Tanzania's total lint export (on average) was imported by European countries, while Europe imported 13 percent between 1994/95 and 2000/01, with a decreasing trend towards the last few years (by 2000/01 this proportion had decreased to 8 percent)²⁴. At the same time, Eurostat data also seems to suggest a declining premium attached to Tanzanian lint in the four seasons after liberalisation²⁵.

²⁴ This is based on total export of Tanzanian lint (TCB, 2002) and EU's import of Tanzanian lint (Eurostat, 2002) between 1987/88 and 2000/01. It is worth noting that (Tanzanian) export figures should be treated with great caution as there is a huge inconsistency in published figures. Nevertheless, a clear pattern is observable.

²⁵ According to Eurostat figures, Tanzania lint commanded on average 15.9 percent above the A index in the four seasons prior to liberalisation and 10.9 percent between 1995/96 and 1998/99. On the other hand, there was a steep rise in the unit value in 1999/00 and 2000/01 (see table 3). In the two seasons, Tanzanian lint commanded a premium of 61 and 48 percent respectively above the A index (note that these premiums were obtained on a minor share of total lint export; less than 3,000 tons lint in 1999-2001). There are a number of possible reasons for raising unit values in 1999-2001. The first relates to increased quality premiums in tight markets (Raikes and Gibbon, 2000). Price-spread between high and low grade cotton tends to widen in saturated markets, hence higher grade roller ginned Tanzanian lint may obtain a somewhat higher premium than otherwise. Secondly, marketing arrangements may also play a role (e.g. forward sale agreements). Thirdly, the characteristics of cotton lint emanating from specific origins are still important (see next section); thus spinners depended on e.g. roller ginned Tanzanian lint would be inclined to pay a high premium in order to meet specific blending formulas.

In addition, the A Index quotations refer to one particular grade and length traded (normally reported as 'AR type 2' based on Tanzania's national classification system); hence prices of saw ginned lint as well as Asian destined as opposed Northern Europe-destined lint are not taken into consideration in the premiums reported. Moreover, as indicated above, price premiums can be obtained according to a number of quality-neutral criteria including forms of sale and timing of sale. Regarding the latter the international marketing season begins in August and, in general, a premium is attached to sales of the crop in this month, as one of the first crops of the season²⁶. This 'time window' premium averaged around US cents 6/lb in the 1990s (Gibbon, 1999). Prior to the reforms in Tanzania, cotton had to wait in storage for as long as a year before it was sold, leading both to failure to qualify for the time premium window and to deterioration in quality. Since 1994, however, seed cotton and cotton lint are kept in storage for much shorter periods, which prevents quality deterioration and most lint seems to have been exported within four months of harvesting (TCB, 2002; own survey). More efficient flows to the export stage since liberalisation suggests that Tanzania benefits more from time premiums than before liberalisation, which may offset a fall in the quality premia. In other words, part of what Baffes might recognise as a quality premium may partly be explained by a price premium attached to sales of the crop within the first few months of a new international marketing season. But, this kind of price premium is highly volatile and influenced by the overall level of stocks-to-demand ratio. When the world market is saturated (as in the last couple of years) there will be oversupply of new lint in the beginning of the new international marketing season and as a consequence timing of appearance on the world market will be less important and the 'time window' premium will decrease (Cotlook, *pers. comm.* 2003). Where ginners talk about discounting, on the other hand, it is clear that they are referring to discounts on traditional quality premium rather than on aggregate prices. However, the nature of relationship between quality performance and aggregate price needs to be analysed further.

Difficulties with quality control and input supply have become widely recognised within the Tanzanian cotton sector and some first steps to address them have been taken since 1999. At the end of the 1990s, a 'Cotton Development Strategy' was formulated by the government of Tanzania in collaboration with the European Union and the Dutch government and several new measures were taken by the Cotton Board to address prevailing problems in the sector, notably 'declining premium and increases in the amount of claims by international traders as well as a persistent decline in cotton production' (CB, *pers. comm.* 2001). The next section examines the measures implemented by the Cotton Board in the last couple of years.

²⁶ According to Cotlook, the highest pressure on international lint prices appears when the Northern hemisphere's lint production comes to market around October, thus (as a rule of thumb) lint sold in the beginning of the new marketing season obtains a somewhat higher price than later on in the season (*pers. comm.* 2003).

New (state) measures taken to revive the cotton sector

As mentioned above, after liberalisation the Cotton Board still acted as the sector's overall regulatory body, although its capacity to enforce regulations was severely reduced. Meanwhile, hardly any other mechanisms (private or public) were developed to coordinate the activities of the large number of buyers and ginneries that entered the sector following liberalisation. In recent years, however, the Cotton Board has re-entered the sector and introduced a limited range of non-market institutions. Based on a 'Cotton Development Strategy 1998', three main objectives were identified:

1. to improve the income of the sector at large, but notably farmers' yearly income,
2. to increase the production of cotton to 750,000 bales (135,750 tons lint) by 2006,
3. to improve cotton quality (TCB, 2002).

Against this background, a new Cotton Industry Act was passed by parliament in 2001. Apart from providing a more formal regulatory framework, two new statutory levies were established by the Act and imposed on the sector, including the Cooperative Unions. A levy of USD 0.0363/kg lint produced is allocated to the Cotton Development Fund - created (partly) in order to finance input supply. In addition, a levy of USD 0.0121 per kg lint produced is allocated to the Cotton Board's promotional and regulatory functions, particularly enforcement of quality regulations and statistical records (TCB, 2002). The activities of the Cotton Development Fund, especially its input scheme, and the enforcement of quality regulations at the ginneries level will be considered successively in this section, followed by some broader reflections on the impacts of these interventions on input consumption and the quality of cotton.

The Cotton Development Fund's input scheme

The main activities of the Cotton Development Fund (CDF) include import and distribution of agro-chemicals to farmers, subsidising the cost of seed for planting²⁷, and support to cotton research activities and extension services. Apart from subsidisation of cotton seed for planting, import of agro-chemicals has accounted for most of its expenditure. Since 1999 chemicals have been imported by the Cotton Board, financed by CDF and distributed through district and village governments in the main cotton growing regions, with volumes based in principle on expected area devoted to cotton. In practice the actual amount distributed has been determined by CDF's capacity to finance imports (see below). Chemicals were sold on cash terms at subsidised prices for at least the first two years of operation. From 1999 to 2001 the Board charged Tsh 1500/litre whereas the prevailing open market price ranged between Tsh 4500-7000/litre (in 2001/02 season), depending on the type of chemical. In 2002/03, the cost of one litre had doubled to Tsh 3000/litre, but it was still below open market prices. The amount of chemicals imported and

²⁷ Cotton seed is distributed through the village government at subsidised rate. In the 2000/01 season farmers paid Tsh 15/kg cotton seed and it rose to Tsh 35 per kg in 2001/02. In the latter season seed was available at private stockists at a cost of Tsh 40-50 per kg (Shao, 2002).

distributed has increased substantially during the three years of the Fund's operation. In the first year CDF imported 100,000 litres; this increased to 320,000 litres in the 2001/02 season, while 1 million litres have been imported for the 2002/03 season (TCB, 2002; *pers. comm.* 2001).

During the 2001/02 season, a farmer survey was carried out in five districts in Mwanza, Shinyanga and Mara regions²⁸. Among other topics, respondents were questioned on their use and application of chemicals in the 2000/01 production season as well as their cost and where they had been purchased. Of 68 respondents 37 used chemicals that season (54.4 percent) and amongst those using chemicals the average number of sprays applied was 2.5. In a survey conducted by Gibbon in the 1997/98 season²⁹, around half of the respondents did not use chemicals in that season, while those actually using them sprayed 2.2 times on average (Gibbon, 1999). Against this background, it appears that the number of farmers using chemicals and the number of sprays they applied might have increased slightly from 1998 to 2001, although this is at best only indicative. Even current levels of use are still well below the recommended spraying regime of six sprays per season for the optimal effect, with three sprays per season seen as an absolute minimum³⁰. According to the Cotton Board, the chemicals imported and distributed by CFD still only accounted for 11 percent of theoretical demand in 2001/02, which might partly explain the only minimal increase in insecticide use in the farmer surveys reported above. The following further problems may be also noted:

- Availability (quantity and timing) of *different types of chemicals* during the season seems to remain a problem. Inputs seem only to be available at the beginning of the season and each district is allocated only one type of insecticide. Selection of types of chemicals is apparently not based on potential outbreaks of diseases and pests during the season (where one type of insecticide might be superior to another type). In any case, different types of insecticides should also be applied in a given sequence rather than the same type being used two-three times.
- Perhaps a more fundamental issue concerns lack of credit facilities. Chemicals are now only sold for cash; hence availability in itself does not solve the general problem of lack of cash immediately before and during the season. For that reason, better off-farmers would be the main beneficiaries of the scheme. At the time of Gibbon's survey, although RCUs were paying cash for inputs, the Primary Societies responsible for their distribution were often still distributing them on credit.
- In relation to the last point, although not all farmers are able to purchase chemicals (due to lack of cash or availability of the chemicals), all farmers still pay the levy. In other

²⁸ Bunda district in Mara region; Shinyanga rural and Maswa districts in Shinyanga region; Magu and Misungwi districts in Mwanza region

²⁹ Intentionally, the author conducted interviews with farmers residing in the same villages as those visited by Gibbon in the 1997/98 season.

³⁰ These figures are technical recommendations and might not represent an economic optimum.

words, ginner collect (and pay) the levy ‘on behalf of the farmers’ which might depress producer prices further in a context where they are already low.

- The Fund’s (and the Cotton Board) activities are solely based on levies paid by the private sector in proportion to the quantity of lint produced. Low cotton production one year might thus result in lower procurement of chemicals the following year, making the system unsustainable in the long term.
- Business may prevail over agronomic rationality in the decision-making process within CDF. Until 2002 the Cotton Board ordered and distributed oil-based chemicals but apparently these became heavily adulterated with diesel oil along the distribution chain or simply diverted into the open market (Shao, 2002; Baffes, 2002). Party in order to prevent this possibility recurring, the Board decided to import water-based chemicals for the 2002/03 season (1 million litres insecticides were imported and distributed to the districts). Yet, farmers were unfamiliar with and lacked pumps suitable to this type of chemical and the uptake was only 15 percent (Poulton et al., 2002). This situation raises some broader questions concerning decision-making processes within CDF. At least to some extent, the decision to order water-based instead of oil-based chemicals seems to be more a business than an agronomically determined one.

Enforcement of quality regulations

The second new measure implemented concerns enforcement of statutory quality regulations and data collection at ginnery level. The critical motivation for the Cotton Board to re-enter this field was declining premiums on the world market; ‘to reduce the number of quality claims/rejections from international customers’, as well as improving the reliability and timely collection of data (CB, *pers. comm.* 2001). Given the Board’s own manpower constraints, the monitoring and control activities at the ginnery level were contracted out to private companies from the 1999/00 season on (TCB, 2002). Two companies are currently engaged in inspecting ginneries, each covering a distinct area³¹. The companies are mandated to perform the following functions:

- To monitor the quality of seed cotton at the ginnery level (the quality of seed cotton ginned and the ginning facilities used).
- To collect and disseminate statistical data and information to the Board on a weekly and monthly basis including:
 - Seed cotton deliveries at the ginnery, i.e. weight and source
 - Quality of seed cotton (grades)
- To draw samples (lint) and forward them to the Board
- To control cotton seed for planting
- To monitor payment of various taxes before lint bales are transported from the ginnery (TCB, 2002).

³¹ The companies place 2-3 employees at every operating ginnery during the ginnery season.

In particular, collection of statistical data at the ginnery level has improved considerably in recent years, mainly as a result of enforcement of various levies and taxes based on seed cotton purchase and lint output. This was emphasised by almost all interviewed stakeholders in the sector (the Cotton Board, the two private inspection companies and the ginners), though from very different perceptions. Prior to this arrangement, under-declaration of purchases for tax avoidance appeared to be more the rule than the exception (Gibbon, 1998a; own survey). Consequently, by placing people ‘on the spot’, tax avoidance has been reduced significantly and the validity of officially recorded lint production data has improved.

On the other hand, another problem has apparently emerged in the wake of transferring the enforcement of regulations to private companies, namely corruption or ‘rent-seeking’ by these private companies. This problem was raised by almost all ginners interviewed here articulated by one ginner:

‘The guys [inspection company] are not strict and there is a lot of corruption... I thought they would stick more to their ethical profession [as ‘graders’] but they don’t, they are more interested in money. For instance, when our own employees come to unload a truck with seed cotton, the guys demand Tsh 30,000 – otherwise they reject the cotton – they would say it’s bad quality. We have had a lot of claims and problems with those people – we have tried to discuss it with the Board and we have claimed to the company itself but nothing happens. At the next meeting [the Tanzania Cotton Association] we are going to raise it – we have to find a better solution’ (ginner, pers. comm. 2001).

Thus, it is less evident, that the operation of inspection companies at the ginnery level has resulted in improved quality practices, although this arrangement has only run for a few seasons and the long term results still remain to be seen. While the companies were mandated to monitor (and grade) the quality of seed cotton prior to ginning and control cotton seed for planting the problem of seed mixing and infected seed still prevails. Only one of the two companies ensures that diseased and non-diseased seed are separated and this is too little and too late to undo the damage of the immediate post-liberalisation years. Until UK91 seed has been multiplied in sufficient quantities to replace UK71 and UK82 the problem of seed mixing will not be solved. At the same time, the objective of inspecting or monitoring of seed cotton prior to ginning has not been met through a re-introduction of systematic grading at the ginnery level. As before, grading in the sense of excluding seed cotton not suitable for ginning at all is carried out but this only entails excluding ‘worst’ quality cotton. In addition, this grading is based on a fairly causal visual assessment of yellow spots and foreign matter and does not involve, for instance, exclusion of cotton contaminated by polypropylene resulting from the use of unsuitable bags at picking time. Contaminated seed cotton may eventually ruin the lint produced from it and this is one of the main reasons for downgrading (or demanding discounts) by spinners³². Poor harvesting practices (see above) and storage facilities at farm and buying post level is still a prevailing problem and one

³² Yet, the quality companies are not even charged with this task.

which causes serious contamination of seed cotton. This is reflected in the lint quality and influences the broader reputation of Tanzanian lint and associated premiums and discounts. According to the latest ITMF survey³³ (2001) Tanzanian lint is ranked as the twelfth most contaminated out of thirty growth reported. The most serious sources of contamination in Tanzania appear to be fabrics (or strings) made of woven plastic, plastic film, jute/hessian, and by organic and inorganic matter such as leaves, feathers, paper, leather as well as sand and dust.

In general, the measures taken to enforce quality regulations are a positive step, but ones that on their own are insufficient to improve quality and reverse the reputation of Tanzanian lint on the world market, particularly in relation to level and sources of contamination. Controlling contamination has become increasingly important for spinners in recent years due to improvements in spinning technology and automation of the spinning process. Processing steps which previously were carried out by or required the intervention of manual labour are increasingly performed by machines, which are not able to detect contamination or foreign matter, let alone eliminate it. In the case of plastic material or very small fractions of leaves (referred to as pepper trash³⁴) the damage becomes visible only after dyeing or by the time the fabric leaves the final finishing process; a stage where it is too late to apply any remedy. In the case of plastic material, it is apparently not only affecting the quality and appearance of the final textile product, but may actually damage the processing machinery itself (ITMF, 2001). Thus, contaminated lint causes costly disruptions in yarn-spinning processes. Moreover, spinners normally favour blends of different national origins (and artificial fibres).

In incidents of defects in yarn and fabric, spinners' possibility to establish the source of contamination, isolate a particular batch of contaminated lint (and national origin), and subsequently make claims against international traders and/or exporters are limited³⁵. To an extent, certain kinds of contamination are 'experience quality attributes' which can only be assessed after purchase and often only turns up very late in the processing process. Against this background two interrelated tendencies can be observed: spinners increasingly demand accurate calibration of lint properties and trash content in advance and secondly, international traders and spinners are more reluctant to source lint in countries know to have high levels of contamination³⁶ (see Larsen (forthcoming) for an elaboration on these issues). In relation to the

³³ The International Textile Manufactures Federation has conducted regular surveys since 1982 on spinners' perception of the problem of cotton contamination and foreign matter.

³⁴ Pepper trash significantly lowers the value of the lint to the spinner, and is more difficult and expensive to remove than the larger pieces of trash (Bradow & Davidonis, 2000).

³⁵ According to the Liverpool Cotton Association and international traders, claims (and arbitration) about contamination are very rare, reflecting difficulties in identifying the exact source (and national origin) of contaminated lint (*pers. comm.* 2003).

³⁶ For instance, Bradow & Davidonis (2000:55) state that 'the cost of clearing and cleaning processing equipment halted by for instance sticky cotton is so high that some international buyers (on behalf of the spinners) have included honeydew free clauses in purchase contracts and have refused cotton from regions known to have insect-control problems'.

last point, although improvements in spinning technology and development of High Volume Instrument to calibrate fibre properties and trash content have increased flexibility and scope for blending bales of different average fibre properties and qualities, the degree of inter-substitution and flexibility in blend formulas is apparently lower relatively to for instance blends of coffee or cocoa³⁷.

In other words, the characteristics of cotton lint emanating from specific origins are still very important in order to meet processing requirements and to obtain desired yarn properties. This was frequently referred to by international traders in terms of '*spinners are conservative – they don't want to change their blend*'. To some degree, however, this not only implies no reductions in 'barriers to entry' in different (spinning) end-markets but it also implies difficulties in regaining or re-entering a specific market once the reputation for a 'national' crop has suffered and (former) customers have changed their blend. The last point was stressed by several companies in relation to the prospects of Tanzanian lint:

Eventually, if a particular growth has been out of the market for a while - or if the reputation has suffered [because of high levels of contamination] spinners are forced to change their blend. Once a country has lost its good reputation it becomes very difficult to re-enter the specific market segment because the spinner has changed the blend ... and it takes a long time to re-establish a good reputation' (international trader, pers. comm. 2003).

Against this background, and in relation to the current Tanzanian context, this raises the question of 'appropriate' corrective efforts or measures as well as the role of the private and public agencies in implementing them. In terms of quality control procedures, action needs not only be taken at the ginnery level (for instance by using proper lightning and equipment to eliminate polypropylene contamination), but also at the primary marketing level and in the cotton field. Particularly, some kind of quality feed-back mechanism (in the form of price punishment/incentives) needs to be instituted at the primary marketing level by all seed cotton buyers, so that the farmer can respond directly to quality-inducing price incentives. In addition, efforts to eliminate the problem of polypropylene contamination should be taken by all stakeholders in the sector. This could be addressed in a variety of ways, one being that all ginning and buying companies agree to discount by the same amount seed cotton contaminated by plastic fibres; another would be to distribute polypropylene-free bags at every buying post, regardless of ownership.

Given that the capacity of the state (and the Cotton Board) to enforce quality control regulations and procedures remains weak, this requires some form of coordination between the numerous small buyers and ginners. As argued elsewhere (Larsen, 2002) coordination requires that players

³⁷ In the coffee chain, more flexibility in developing blending has made roasters less vulnerable to shortages of particular types of coffee in recent years (see Ponte, 2002). In the cocoa-chocolate chain, grinders are able to compensate for quality unevenness and lower level of quality through new processing technology (Fold, 2002).

recognize an advantage in entering agreements with competitors and this is more likely to occur in more concentrated sectors, where fewer players need to agree on measures to assist market development and where they have a greater chance of capturing the returns from investment in such measures. Contrary to the private sector in e.g. Zimbabwe, the new private companies in Tanzania were apparently too divided to support initiatives which could provide a basis for self-regulation in the early years of liberalisation (Gibbon, 1999). The Tanzania Cotton Association (representing private sector interests) was proposed and initiated by the Cotton Board in 1997, but apart from a single meeting nothing further transpired from the association until 1999. The association was 'revived' in 1999 as a forum for discussion and mutual exchange of information among stakeholders. A new chairman was elected and regular meetings among ginners, cotton buyers and the Cotton Board, presided over by the President or the Chief Minister (the Minister of Agriculture) have been held since 2000. At least on paper the role of the association was further strengthened in 2001, where the parliament passed a new Cotton Act, stipulating that in order to obtain a ginning and/or buying license the applicant should be a member of the Tanzania Cotton Association. It still remains to be seen whether the Association will provide a forum for collective private action. At least until 2001, private traders were still more eager to increase volumes and fulfil forward sales contracts than to reverse the slide of the quality reputation of Tanzanian lint on the world market.

Concluding remarks

Liberalisation of the Tanzanian cotton sector has succeeded in creating a high level of competition in primary marketing, ginning and exporting. One of the predicted positive impacts of liberalisation - a higher share of the world price for farmers - was attained at the outset and this has remained the case. But, as this paper has highlighted, production increases have not been sustained and the sector faces a number of serious problems introduced by liberalisation and the 'free market'. The quality control system collapsed after liberalisation, as a result of the entrance of a large number of private ginning companies and a resulting tremendous ginning overcapacity. This created a 'scramble for cotton' among ginners in order to minimise their unit ginning costs and meet contractual obligations as rapidly as possible, and forced all buyers to follow a strategy of buying seed cotton regardless of quality. With the collapse of the grading system (and of a price premium attached to better quality seed cotton) there is no feed-back mechanism on quality and therefore no direct incentive for farmers to deliver better quality cotton. The capacity of the Cotton Board to regulate trade continues to be extremely weak and recent steps taken towards enforcement of quality regulations at the ginnery level (by private inspection companies) have not solved the problem of absence of grading at the ginning or primary buying level.

In addition, with the introduction of competition, provision of inputs on credit stopped. Competition between a large number of cotton buyers and ginners undermined the link between input supply and output marketing by greatly increasing the scope for side-marketing by farmers. The Unions had to tighten up on inputs distributed on credit and since the 1997/98 season

insecticides have been only available on cash terms, officially at least. At the same time, the availability of insecticides was severely reduced as private traders (and cotton companies) showed no interest in supplying insecticides on cash terms. Thus, until 1999, free competition seems to have impacted on reduced insecticide consumption both directly through affecting insecticide availability and indirectly through reduced incentives to produce good quality cotton. Against this background the Cotton Development Fund was created and within the last three seasons the availability of insecticides in the main cotton growing areas has increased significantly. But, since smallholder farmers still lack cash during the season utilisation levels still appear to be low. In general terms, Tanzanian cotton production will remain constrained if no viable mechanism for input credit facilities is developed.

The introduction of a limited range of new, non-market institutions to address some of the prevailing problems emerging in the sector after liberalisation has also to a large extent been ineffective, not because of re-entry by the state/Cotton Board *per se* (via problems ‘naturally’ associated with state intervention as some of the more pro-liberalisation literature would suggest) but more fundamentally by the level of the problems created by the free market. This was particularly intense in the Tanzanian cotton sector, where liberalisation occurred at the same time as easy access to donor funds for investment in ginneries, which introduced a large number of players with a short-term interest of maximising cash revenue, who otherwise might not have participated. Recently, entry barriers into ginning have been further reduced as Regional Unions started renting out some of their ginneries.

Thus, the establishment of the Fund and the ‘out-sourcing’ of new statutory inspection services have to a large extent not changed the system which still exclusively rewards quantity of output and which systematically tolerates deficiencies in output quality. The establishment of a strong coordinating institution remains a key requirement if the Tanzanian sector is to overcome the challenges posed by liberalisation. Otherwise, given the current constraints which are further exacerbated by long-term decline in world cotton prices, the long-term sustainability of the sector is questionable.

Although it is difficult to draw general conclusions based on only one case, the results of the study in the Tanzanian cotton sector point towards some of the central issues entailed in the current debate on the ‘post-liberalisation agenda’ and more broadly to the literature on the role of the state in promoting (agricultural) development. During the last decade, both proponents and critics of market liberalisation have increasingly recognised that a solution to the problems emerging after the implementation of market reforms requires a new set of interventions and institutional developments. To some extent, a consensus on post-liberalisation (re)regulation has emerged in some of the more pro-liberalisation literature (e.g. the World Bank). This is most clearly reflected in the 1997 World Development Report (World Bank, 1997), where emphasis has shifted from an advocacy of market liberalisation and state withdrawal to one with a more active state to support markets and agricultural development.

Two general observations may be pointed out in relation to the ‘emerging orthodoxy’ (Poulton et al, 1998). Firstly, regulatory interventions and more general system coordination tend to occur only if they are based on a consensus within the private sector. To a large extent, this requires that all players recognize an advantage in entering agreements with competitors. As the experience in Tanzania suggests, it is highly unlikely that e.g. the re-introduction and enforcement of quality-based price premiums will become institutionalised unless it is based on a joint public/private initiative. Secondly, successful forms of (re-)regulation to overcome market failures and to address problems associated with market liberalisation are more likely to occur in more concentrated sectors, where fewer agents need to agree on measures to assist market development. At the same time, the features of many post-liberalised market systems actually make regulatory interventions more difficult. At least in the case of the Tanzanian cotton sector, the combination of state withdrawal and low barrier to entry into trade and ginning has resulted in a market which comes closest to the liberal ideal of numerous small and medium-sized companies. After more than a decade of private sector management, however, the most pressing issue appears to be how to re-regulate and coordinate a dispersed market comprising multiple small players in a context of generally low state capacity.

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Appendix

Table 1: Producer prices and shares of export market prices, 1989-2001

Year	Producer price (Tsh/kg) [1]	Lint equivalent (Tsh/kg)*	Exchange rate (Tsh/\$) [2]	Export price in US\$/kg of lint [3]	Producer share of export price (percent)
1989/90 [2]	28	84	174	1.65	29.1
1990/91	41	123	207	1.66	35.5
1991/92	70	210	263	1.44	55.4
1992/93	60	180	351	1.22	42.0
1993/94	80	240	487	1.17	42.1
1994/95	120	359	539	1.69	39.6
1995/96	207	620	560	1.88	59.0
1996/97	170	509	600	1.59	53.5
1997/98	180	539	650	1.72	48.3
1998/99	183	548	750	1.32	55.3
1999/2000	123	368	800	0.99	46.6
2000/01	183	548	820	1.21	55.4

* Seed price converted to lint equivalent using a ginning outturn ratio of 0.33

Source: [1] [3]: TCB, 2002 (<http://www.tancotton.co.tz/export.html>). [2] Baffes, 2002 Table 2.

Table 2: Trends in seed cotton and cotton lint production in Tanzania 1980-2002 (metric tons)

Year	Total seed cotton (tons)	Total cotton lint (tons)
1980/81	174,577	57,151
1981/82	132,926	44,592
1982/83	127,910	42,902
1983/84	140,798	43,954
1984/85	156,845	52,012
1985/86	105,899	47,490
1986/87	214,569	57,446
1987/88	254,915	67,716
1988/89	189,244	63,432
1989/90	112,905	37,844
1990/91	149,141	49,221
1991/92	266,988	90,717
1992/93	303,984	85,784
1993/94	145,224	50,142
1994/95	123,663	42,695
1995/96	245,914	84,782
1996/97	249,444	85,187
1997/98	207,754	69,636
1998/99	106,747	36,453
1999/00	100,560	33,706
2000/01	123,558	41,415
2001/02	148,180	n/a

Source: TCB, 2002 (<http://www.tancotton.co.tz/production.html>).

The figures should be treated with great caution as there is a huge inconsistency in published cotton production figures both between and within different sources. (In addition, production figures since liberalisation have been certainly underestimated because ginners often underreport ginning throughput to keep the tax burden down (Baffes, 2002; Gibbon 1998a). This problem to some extent has been reduced recently with the introduction of private companies to monitor statistics at ginnery level).

Table 3: Trends in cotton lint export and EU's import of Tanzanian lint, 1987-2001

Year	Tanzania's total export (tons lint) [1]	EU's import of Tanzanian lint (tons) [2]	EU's import as a percentage of Tanzania's export (%)	Value (1000 ECU/Euro) [2]	Unit value (US\$/kg) [3]	Premium above the A index (%)
1987/88	35,000	16,943	48.8	24,838.1	n/a	
1988/89	40,999	14,693	35.9	22,452.7	n/a	
1989/90	32,920	11,120	33.8	16,803.3	2.07	15.6
1990/91	39,265	10,252	26.1	16,431.8	2.04	12.7
1991/92	62,724	12,016	19.2	16,506.8	1.65	23.1
1992/93	58,177	15,874	27.3	20,039.4	1.40	10.2
1993/94	43,893	11,382	25.9	16,022.7	1.73	17.7
1994/95	35,379	10,941	30.9	19,080.0	2.23	n/a
1995/96	56,291	8,220	14.6	14,261.3	2.15	10.8
1996/77	67,916	7,337	10.6	12,667.8	1.91	14.4
1997/98	60,940	6,334	10.0	10,655.7	1.96	11.4
1998/99	27,372	2,731	10.0	4,148.1	1.53	6.99
1999/00	31,397	2,949	9.4	5,461.0	1.74	61.1
2000/01	31,724	2,587	8.2	5,877.3	2.01	48.8

Source: [1] 1987-1990: Ministry of Agriculture, Crop Development Section (op.cit. Gibbon, 1998a). From 1990/91: Tanzanian Cotton Board, 2002. [2] Eurostat, 2002 (1988-1994 EU-12; 1995-2001 EU-15. [3] ECU/Euro:US\$ exchange rates based on rates for 31 December in relevant years.