

# Value Chain Analysis of the Cotton Market in Tanzania: Application of Structure-Conduct-Performance (SCP) Model

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## Abstract

Using field data from the western cotton growing areas, this discussion paper applies Structure-Conduct-Performance Model to assess the value chain of the crop with a view to identifying competition issues along the entire cotton value chain in Tanzania. Several actors in the cotton subsector were identified along each of the main five nodes of the value chain addition vis input supply, production, buying, processing/ginning and export marketing. The structure, conduct and performance of the cotton market are strongly regulated, and only partially liberalized. However, the assessment on the other hand analyzed a number of opportunities from the economies of scale that have shown that cotton production has a significant profit-margin to the market actors. There is equally ample room for improvement by capitalizing on the advantages pegged on the contract farming, organic cotton production and new low cotton producing areas.

**Keywords:** Tanzania cotton market, value chain analysis, S-C-P model

## 1. Introduction

A principal argument for policy reform in the cotton sector was the enormous gap between world prices and the prices received by Tanzanian producers. During the six seasons prior to the reforms, the average grower's share was 41 percent of the cotton export price (Baffes, 2002). In the six seasons after the reform, the share was 51 percent. While a considerable improvement, it remained far below what Ugandan and Zimbabwean producers received following their own cotton sector reforms. Payments were made more promptly as well. Before the reforms, Tanzanian growers often had to wait as long as two years for payment. With inflation running at 20–30 percent a year, that meant that the value of their payments was at least halved by the delay. The reforms also meant that input prices increased considerably. The average cost of pesticides, for instance, rose from 1,600 Tanzanian shillings (Tsh) a kilogram in 1993/94 to Tsh 5,000 in 1998/99, implying a more than 25 percent annual increase in nominal terms (Kabissa and Myaka 2000). A lack of reliable data makes it difficult to analyze the impact of reforms on supply. There is considerable variability in cotton production in Tanzania, where cotton is very price-responsive. A World Bank (1999) study found that cotton's short-run supply elasticity is unity, implying that cotton's price variability is fully translated into supply variability. This reflects the flexibility of farmers in switching back and forth between cotton and food crops. Before the reforms there were 34 ginneries in Tanzania, 31 of the roller type. During the first three years of the reforms 17 new private ginneries were built, 6 in Shinyanga, 6 in Mwanza, 4 in Mara, and 1 in Tanga.

The new ginneries (eight of them of the saw type) were built because the cooperatives unions refused to allow private traders to gin their cotton on a contract basis, according to Shepherd and Farolfi (1999), or because the charges were prohibitive, according to a government report (1999b).

The new private ginneries added some 16,967 tons of monthly capacity to the existing 19,148 tons of union capacity in the western cotton growing area. Capacity utilization was low in both the private and the union ginneries: 9,983 tons or 59 percent for the private ginneries and 6,471 tons or 34 percent for the union ginneries. A number of new cotton oil mills were also built. During the second year of reform the private sector took over more than a quarter of cotton marketing and as of 1997/98, the cotton board withdrew completely from cotton marketing. The private sector markets almost two-thirds of cotton, and unions the rest. Entry by private traders was not problem free. In the early years of the reforms cotton marketing was disrupted in many areas. Traders in remote areas, especially in the eastern cotton growing area, paid very little for cotton, in part because farmers were unaware of market prices and in part because of high transport costs. These problems have been rare in recent seasons but farmers are still receiving much lower than the indicative price hence farmers may view the indicative price as a guaranteed price and refuse to sell their cotton at the prevailing prices. The current market study is timely in that studies undertaken on cotton have focused rarely on the competition in the sector from the perspectives of market structure and conduct of cotton value chain. The broad objective of this paper is to study performance of the cotton sector with a view to identifying competition issues along the entire cotton value chain. Specifically the study was guided by the following three specific objectives:

- a) To examine the institutional arrangements of the market structure and conduct for cotton
- b) To identify market actors in the value chain of cotton

c) To identify barriers to entry by market actors into the cotton market

The introduction of the paper is followed by the conceptual framework of the SCP model, methodological issues of the study, institutional arrangements of the cotton market structure and conduct, principle market actors and their relationships and conclusion.

## 2.0 Market Structure-Conduct-Performance Model: A Conceptual Framework

The Structure-Conduct-Performance (S-C-P) Model was used whereby in *Structure*, the focus was on assessing number and concentration of farmers and traders in a locality and their features. In *Conduct* – Production and marketing institutions (rules) in the value added chain and in *Performance* - Cost benefit assessment of the existing production and marketing structure. A structured questionnaire was useful in exploring information especially for Structure and Performance. Market conduct was understood through FGDs, observations and interviews with key informants. In essence, with the SCPM we seek to find the answer to how firms interact and compete with each other in different situations, and the results of these interactions, and are these results consistent with an ideal competition or not. That way, an argument can be supported on whether or not action should be taken to alter the market structure or regulate market conduct. It is interesting there is such a debate on the emphasis on market structure vs. market conduct on the influence of performance since it is clear that structure and conduct are themselves influenced by each other. In industrial organization, real world, imperfect competition is studied, and there are so many different examples that show the way agricultural markets are evaluated and which indicate that study of market models is continually evolving and changing. The theory of structure-conduct-performance of market forms or structures was also used to understand different types of market forms for rice and maize from which behaviour of actors in the markets can be identified as shown in Table 1.

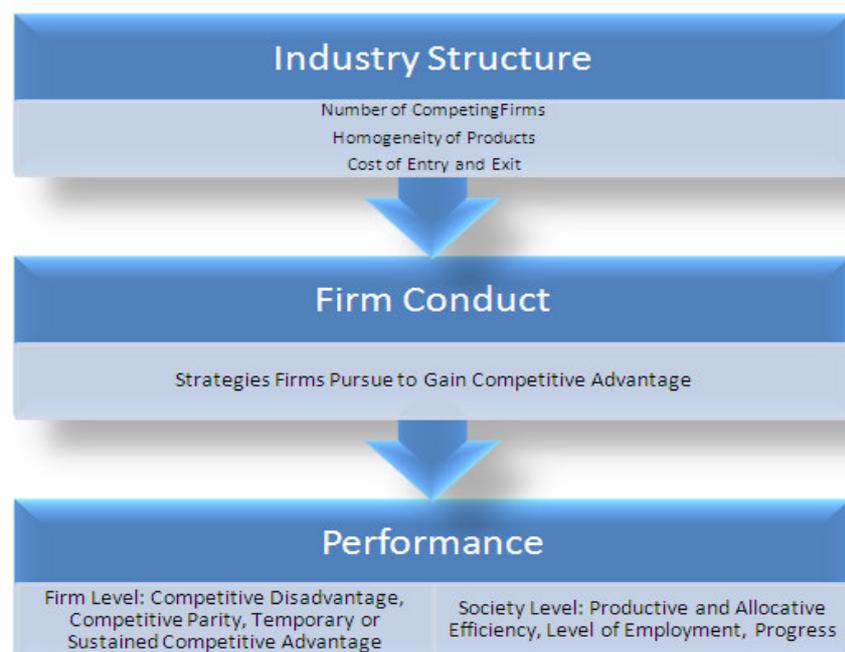


Figure 1. S-C-P Model

Table 1. Structure-Conduct-Performance Associated with Market Forms

Behaviour Attributes	Market Forms			
	Pure Competition	Monopolistic Competition	Oligopoly	Monopoly
<b>Market Structure</b>				
number of firms	Numerous	Numerous	Few	Few
Entry conditions	Easy	Easy	Moderate	Blocked
Product differentiation	Undifferentiated	Some differentiated	Variable	Unique product
<b>Market Conduct</b>				
Recognition of interdependence	Unrecognized	Unrecognized	Recognized	None
Optional strategies	No	No	Yes	Yes
<b>Market Performance</b>				
Technical efficiency	High	Moderate	Variable	Variable
Progressiveness	Low	Low	Variable	Variable
Earnings	Normal	Normal	Above normal	Above normal

Source: Ngaruko (2011)

### 3. Study methodological issues

Data used in this paper were gathered from village focus groups, structured interviews with producers and cotton ginners as well as interviews with stakeholders in the Western Cotton Growing Area (WCGA) of Tanzania mainly in Shinyang and Mwanza regions. Six villages in predominantly cotton growing areas in Shinyanga and Mwanza regions were selected to give a thorough and diverse experience of production and marketing of the crop. A total of four focus groups were interviewed in which emphasis was placed on diversity, encouraging focus groups to select producers from diverse backgrounds, of different size, wealth, gender; production technique and institutional access. A number of key stakeholders and private individuals involved in the cotton marketing system were interviewed. Managers of five private ginners and Nyanza Cooperative Union, executive officers of TCA, TACOGA, and CDTF were interviewed. Main questions here were posed to find out information including licensing and regulatory procedures, marketing of inputs and other services, quality standards of seed cotton, marketing and pricing of cotton and other byproducts, and role of government in the cotton sector. Secondary data were obtained from TCB offices (both at HQ in Dar e salaam and in Mwanza), CDTF, TCA, open sources on internet and also from the Statistics Unit in the MAFS. Data on production, productivity, prices and marketing systems for cotton was sought, although the availability and accuracy of this information were found to be limited. The initial use of focus groups and subsequent checking of producer interview results with extension officers helped to minimise qualitative data errors, although they could not be entirely avoided.

### 4. Main findings

#### 4.1 Institutional arrangements of the cotton market structure and conduct

Figure 1 illustrates a summary of 5 channels here termed as Cotton Transaction Arrangements (CTA 1-5) through which the seed cotton reaches the ginning factories. It can also be noted that the intensity of market competition varies with the transaction arrangement concerned, and each arrangement is efficient in its own ways. Fig 1 suggests that the ginning companies receive seed cotton for ginning from any of the five different sources and some may acquire seed cotton from more than one channel.

- ✚ CTA 1: Producer (**many**) – Buying post (**numerous**) – Middlemen (**numerous**) –Ginning Factory (**many**)
- ✚ CTA 2: Producer (**many**) – Cooperatives (**few**) – Ginner B (**few**) – Ginning Factory (**few**)
- ✚ CTA 3: Producer (**many**) – Commission agents (**few**) – Ginning Factory (**many**)
- ✚ CTA 4: Producer (**many**) – Ginner A (**very few**) – Ginning Factory (**few**)
- ✚ CTA 5: Producer (**many**) – Ginning Factory (**very few**)

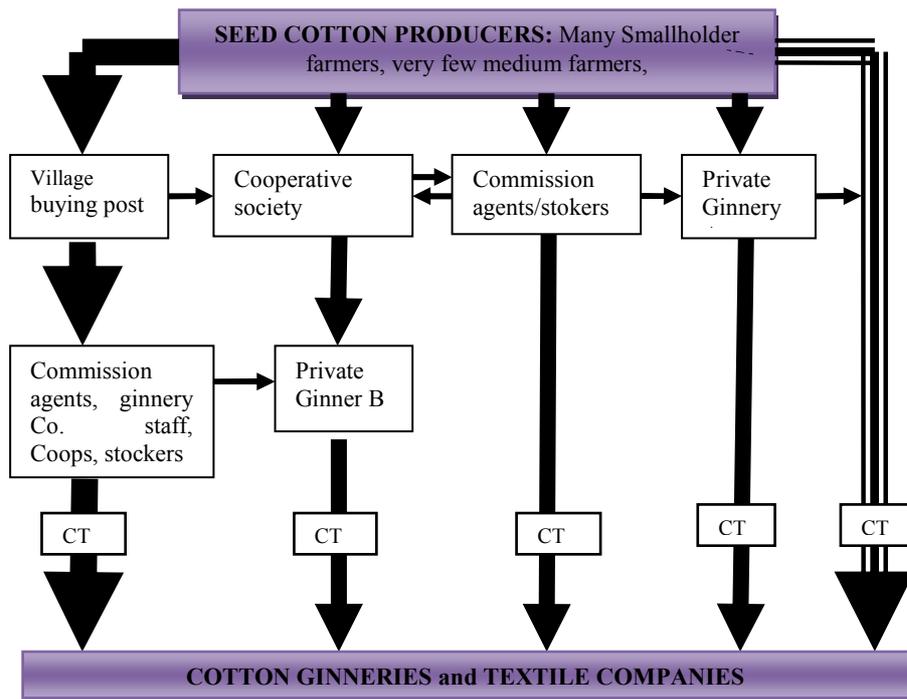


Figure 1. Transaction channels of seed cotton supply chain in Tanzania

In the subsequent sections we highlight qualitatively, the concentration of various actors for each CTA, which may give a bird's eye view of the current cotton market structure. It was rather difficult to establish the exact number of actors since the study was undertaken during the off season. The information used is therefore extracted from intensive interviews with the market actors themselves

#### 4.1.1 CTA 1: Many sellers and many buyers of seed cotton

In CTA there are many farmers selling their produce at numerous buying posts normally at village levels. At buying posts there are many middlemen such as commission agents and stockers and also ginning company employees, cooperative societies etc. The middlemen like other agents at the procurement stage sell or supply their seed cotton to registered ginning companies. This transaction arrangement is the most dominant especially in the WCGA. CTA 1 portrays majority of the qualities of a perfectly competitive market structure. However, market failures result from the rivalry among buyers and perceived influence/dominancy of the ginners over the activities at the buying posts. In addition the involvement of free unregistered buyers and commission agents is said to reduce quality of procured seed cotton since such agents are more interested in profit than quality of procured cotton. It is through this channel where farm gate prices may be floating.

#### 4.1.2 CTA 2: Coordinated Vertical Integration

The case in CTA 2 represent the fact that, some existing giant ginning company possesses branches which are being named, A and B after their names, example, Bilchand, (A and B), Afrisian A and B). The branch ginneries take orders and reports to parent ginnery through systems set by the company. However, in the eyes of the coordinating systems, such as TCB, they exist as independent ginners and are addressed individually in input supply and cotton buying systems. In-practice, these twin/sister ginners can not compete because they are managed vertically by one central management of a parent ginnery. This makes it possible for them as, buyers to communicate and collude on the fixed price and there will be no price differences/fluctuations between the existing villages buying posts producers' freedom of choice. This was equally reported in FGD by Lamadi B and Itega village farmers.

#### 4.1.3 CTA 3: Free outsourcing ginneries

In CTA 3, there is a case where existing ginner in a certain locality procures seed cotton from any source arising and stand a chance to be the solely buyers of seed cotton in that area. These normally are within the locality of the farm and it becomes actually difficult and costly for external ginners to operate in the locality-Common in some areas of Tabora and Kigoma regions. This inhibits external ginners to buy seed cotton in this area because all sources are already trapped by the local ginnery. The farmers have no option of selling their cotton and the ginner is assured of receiving seed cotton delivered by anyone being commission agents, farmers themselves, agro dealers, private traders etc. This is however very rare arrangement and exists only in areas where there is very low production of seed cotton. There are other agents who have storage facilities whereby they buy the seed

cotton and reserve them or sell them to big ginners later on.

#### 4.1.4 CTA 4: Monopolistic competition

Unlike CTA2, CTA3 which exists where there are many buyers and producers of seed cotton, in the CTA 4, seed cotton procured by smaller ginning companies are therefore managed by the parent ginning company. The smaller ginners can however sell their procured cotton to other ginners offering better prices. Both small and large are independently licensed to buy and procure seed cotton. Many of these small ginneries are strategically located near cotton farms but do not have sufficient capital to gin all the procured seed cotton as a result they are obliged to enter into agreement with other ginners to fully utilize their proximity potentials. This case therefore, presents a low rate of market competition between farmers but high competition for small ginners.

#### 4.1.5 CTA 5: Use of area monopoly

CTA 5 represents procurement channel where ginnery plants buy cotton directly from farmers or where farmers themselves supply their cotton to the factory without any middlemen involved. This channel is very commonly used in areas where ginnery factories are located within the proximities of the cotton farmers where transport cost is very minimal. There is less rivalry between ginneries and other middlemen as most of the ginneries do invest in other social relationships with local producers to maintain their loyalty to the factory. As seen in Fig 1, one ginner may also procure cotton through other ginneries (dominant in CTA4). This is similar to the case where the ginning factory receives seed cotton procured by various middle men including other ginners (CTA 2-3). From the qualitative findings of this study, it is evident that the most common channel is through village buying posts (CTA1) whereby there are many buyers involved (middlemen, ginning company staff, stockers and commission agents). This is where evident abuse of market openness is obvious. However we argue that such misuse of market power is also noticed along all the other four channels.

#### 4.2 Principal market actors and their relationships

The value added chain functions for cotton which are actually performed by various actors are influenced by many stakeholders both private and public. In this section we illustrate the five functions which range from cotton inputs to exports and in fact each of these functions form a specific market cantered on the exchange of goods and services within the specific market. Figure 2 presents cotton market competitors along each core function; input suppliers, producers, buyers, ginners and exporters (middle stratum). These actors are influenced by external influences from organizations and institutions supplying support services and also from those setting policies, rules and regulations across each core function. However, competition becomes more complicated when the actors can influence one another in performing core functions. The effective positioning of fair competition watchdogs such as Fair Competition Commission (FCC) of Tanzania has to be outside the three groups: those performing core functions, those supplying support services and those setting policies and rules. Each part may exercise multiple influences on competition in the cotton market. In the following sections we briefly describe competition at various levels of value chain.

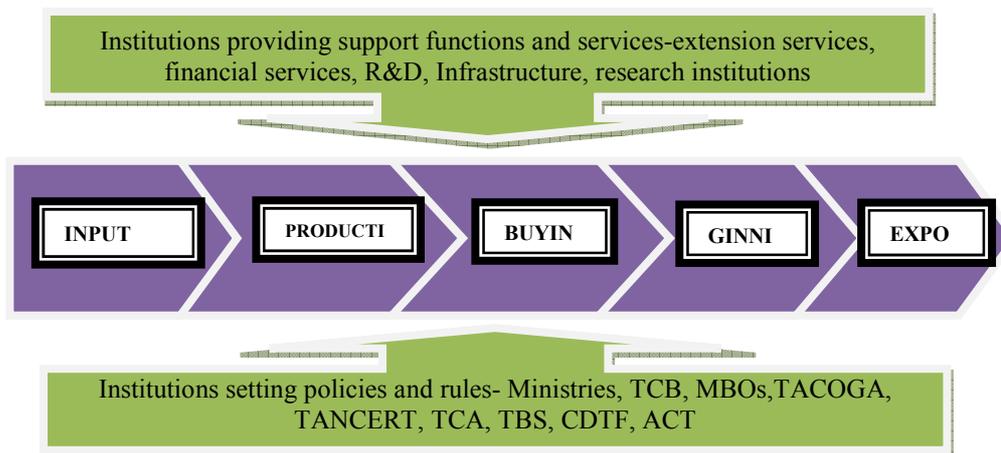


Figure 2. Business environment along Value Chain Nodes in the cotton market in Tanzania

##### 4.2.1 Market actors in the input supply chain

The main inputs in cotton where suppliers do compete are pesticides and seeds. Seed procurement and distribution is regulated by Tanzania Cotton Board (TCB). TCB predetermines district quota to ginners for seeds to be delivered. All operational ginneries are required to reserve a specified quantity of cotton seed for planting as prescribed by TCB every season based on the following indicators:

- Location where the seed cotton was bought from
- Disease infection status of seed cotton
- Proximity/availability of ginning capacity (seeds, chemicals)

- Type of gin in Tanzania

The reserved seeds are transported to ginneries or dusted as fuzzy seed by the individual ginner with Nordox 40%, packed into 10 kg or 25 kg bags and distributed to farmers under TCB supervision. TCB determines the requirement at the village level and allocates to ginneries. Distribution is organized by district councils in collaboration with the ginneries. Pesticide Distribution System in Tanzania on the other hand is coordinated by the Cotton Development Fund (CDTF). CDTF is a stakeholder body of TCB, Tanzania Cotton Association (TCA), cotton farmers and district local authorities. Most of the country's cotton pesticides are centrally procured by CDTF (by tender) and distributed through buyers and/or ginneries. Farmers and ginneries have to contribute to the CDTF. The delivery mechanism and monitoring of pesticides at grass root level engages district task force (district agricultural, extension and cooperative department and ginneries) which coordinates the whole distribution exercise in all cotton growing areas. Suppliers of cotton pesticides can therefore be subdivided into three major categories:

- Cotton Development Trust Fund (CDTF) through a network of some ginnery companies
- Local government authorities (District Cotton Development council) through ward and village extension officers. The extension officers act as agencies of the government but it was pointed out by farmers that the extension officers are very subjective in their input distribution.
- Private agro dealers. These are numerous and in most cases they are competing with ginnery companies for Input Vouchers.

It was found out that the District authorities are responsible for cashing input vouchers to both agrodealers and ginnery companies. This implies that although CDTF is mandated to control quality of these insecticides, it is not capacitated to oversee the quality of pesticides supplied by agrodealers. Competition in the input supply is also evidenced in cotton seeds supply whereby both the ginnery companies and agrodealers are competing for Input vouchers supplied to farmers by the District authorities. Like in agrochemicals, ginnery owners are sub contracted by CDTF to use their cotton buying networks to supply seeds prior to planting season. The ginning companies are by rule/regulations set by TCB supposed to retain a certain proportion of cotton seeds (Note 1). CDTF meets all the cost of treatment of the seeds, packaging and transportation to the farmers where each company is allocated to supply seed by TCB. However, like with chemicals, the ginning companies are obliged to sell the seed at a subsidized rate by collecting Input vouchers from farmers. However there are also agrodealers who buy seeds from other sources such as ginneries themselves, imports and sometimes some do have stocks and sell to same farmers through input vouchers. There are some agrodealers who do collect seed input vouchers from farmers in exchange for cash without seeds supplied. Though not openly said, some ginnery companies were competing for the locations where they were to supply inputs. This was mainly revealed repeatedly from various interviews with key informants.

#### 4.2.2 Market actors in cotton production

Cotton production in Tanzania is predominantly carried out by about half a million smallholder farmers at an average of 1.5 ha and yield of about 300 kg per acre (table2). The farmers use a limited amount of inputs and the majority use hand hoe and animal tracking for tillage. No large scale commercial cotton farming is carried out in Tanzania but tractors have been used in some areas where contract farming has been piloted. It can be observed from table 1 that Shinyanga supplies about 64% of seed cotton produced in the WCGA. Out of the cotton grown in Tanzania Mainland, more than 95% of the crop comes from WCGA. Shinyanga is the leading cotton region, producing in average around 60 % of Tanzania's cotton (Figure 1). The yields in Tanzania are the lowest worldwide with an average of approximately 270 kg per acre or 215 kg of lint/ha; against 280 of neighboring Zambia or Zimbabwe, in West Africa yields vary around 440. Organic cotton production in Tanzania is still very small, it is estimated to be approx. 4,000 tons. There are three known companies promoting organic cotton: BioRe, BOFA and Biosustain (T) Ltd. The first two are in Meatu district in Shinyanga while Biosustain (T) Ltd is active in Singida rural district. Tanzania accounts for around 0.5 % of world cotton production and a 6 to 7 % of Africa's production (Busi et al, 2008)

Table 2 Share by region of cotton production trend for seven seasons in WCGA

Region	Seasons (% of grand total)							
	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Shinyanga	63.6	60.82	62.48	64.01	64.16	62.81	65.29	64.73
Mwanza	22.54	26.37	24.51	22.5	20.91	20.94	22.36	20.53
Mara	8.17	7.2	7.55	3.66	6.54	6.16	4.12	6.56
Tabora	3.12	3.12	3.79	7.73	5.85	7.65	5.87	6.58
Kagera	2.5	2.19	1.36	1.54	2.13	1.86	1.76	1.11
Singida	0.03	0.14	0.19	0.39	0.29	0.47	0.5	0.46
Kigoma	0.04	0.16	0.13	0.16	0.12	0.11	0.11	0.03
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

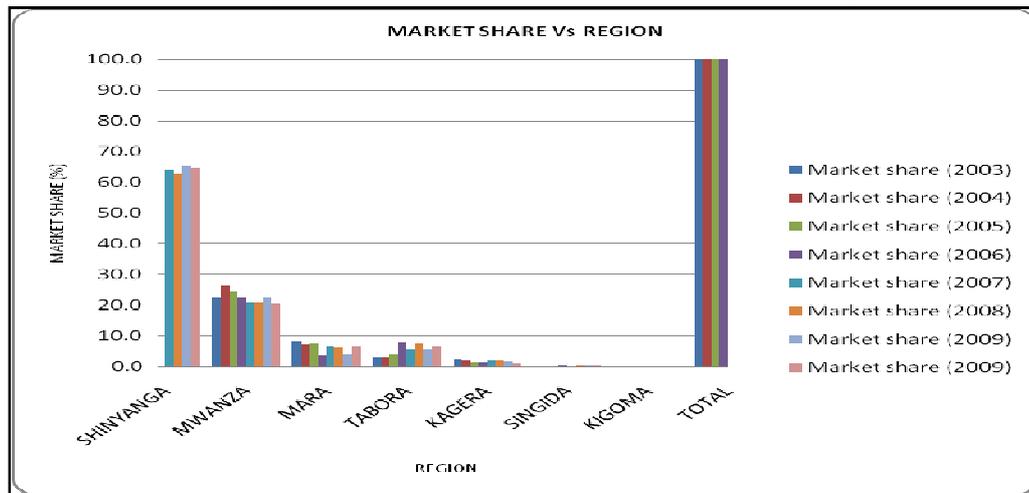


Figure 3. Share by region of Cotton produced in the WCGA

#### 4.2.3 Market actors in Seed Cotton Buying

Primary cotton marketing constitutes the transaction and movements of seed cotton from the farmers to the final ginnery. Cotton buying season starts in June in the WCGA and in August in the ECGA. There were about 60 cotton buyers registered with TCB and the district during the 2009/2010 season. TCB through a stakeholder consultation process sets the floor price at the beginning of each season basing on the prevailing world market price of lint (60%), estimates of prices of oil and cake (40%), agreed applicable levies, ginning and marketing costs (TCB, undated). During the 2009/10 season the floor price was set at Tsh 600/- per kg of seed cotton. Despite the set price for seed cotton at the beginning of the buying season, significant increase in prices for seed cotton has been observed in various buying posts.



Figure 4. Nominal domestic producer prices for seed cotton 2003-2011

Data Source: TCB, various reports from 2002-2012

Evidently, in the 2006/7 season prices increased by 50%, from Tsh 250/- (2005/6) to Tshs 450/- and in Shinyanga had observed higher prices than Tsh. 500/- due to competition by private buyers to meet their contracts. In 2010/2011 buying season by September seed cotton price had reached Tsh 1,200/- per kg in some buying posts in Shinyanga. An increased competition for seed cotton commonly evident towards the end of buying seasons is the reasons of increased price of seed cotton in respective villages. Figure 3 indicates that a nominal producer price of seed cotton in Tanzania has been increasing in the last 8 years from Tsh 240 to Tsh. 600. This is in response to the increasing price of lint in the world market together with increased cost of production and buying. In Tanzania seed cotton is purchased by private ginneries and agents (through commission agents), private buyers (independent middlemen); and primary cooperative societies. Stiff competition and malpractices are found at the grassroots procurement levels by these groups as here down explained:

- i) *Ginneries* – these are licensed ginneries for buying and ginning the seed cotton. They commonly possess permanent and temporary employees. They interchangeably utilize them in buying process depending on the capacity. Most large ginneries utilize permanent employees but small ginneries normally use temporary employees. Where farmers sell their cotton seed at the ginnery post, they sell direct to the respective ginnery weighing bridges. The number of permanent and temporary employees could not be established because it was not possible for the study to interview all existing ginneries in the country.
- ii) *Private ginneries' agents* – these are commission agents who receive seed cotton procurement funds directly from ginneries to purchase seed cotton directly from farmers at village level. They usually receive a commission per kilogram from the ginner. This is the most prevalent cotton trade method in Tanzania. Since the study was not conducted during the buying season, the estimated number of these was not possible. It was further observed that in practice, each ginner may have more than twice as many agents as there are buying posts since at each buying post one ginner may be represented by more than one buyer.
- iii) *Private buyers* – are independent middlemen who invest their own funds to purchase seed cotton from farmers and sell directly to ginneries at a profit. Their aim is profit maximization by striving to buy at comparatively lower farm gate prices and sell at ex-ginnery prices. These usually use hired transport facility but others own their own trucks. In addition to the numerous small ginning companies in Tanzania, plus the few buyers who seek to toll gin, there are some small-scale cotton traders who do not gin raw cotton. These traders take truckloads of seed cotton to nearby ginneries and seek to sell it there (probably avoiding some taxes and levies in the process). Whilst their behavior becomes the topic of debate if regulation of ginneries or potential changes to the marketing system is discussed, we do not currently have any figures on which to base an estimate of their number nor their share of total seed cotton purchases. However, we suspect it to be small. There has been no household survey which has picked up evidence of sales to traders other than recognized buyers.
- iv) *Primary cooperative societies* – these were formed under the cooperative system with which each society was attached to a cooperative union to which they deliver their cotton. However, with liberalization, primary societies are not obliged to deliver all their cotton to unions. They can sell to any buyer at their own discretion. Additionally, several of former RCU ginneries were now leased to private companies; hence the situation in the early years of liberalisation, where private buyers had to beg the unions to gin their cotton, had been reversed. At least half of ten ginneries owned by the Nyanza Cooperative Unions (NCU) were leased to private buyers, in addition to at least one of SHIRECU's seven ginneries.

Competition between cotton buyers and ginneries 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. At the other end of the scale, the largest private ginneries have more than 130 buying posts divided between several districts. The largest ginnerier obtained a market share of 10 percent in 2009, having operated 302 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.

#### **4.2.4 Market actors at Processing/ginning stage**

Ginning is the process of removing lint from the seeds. There are two systems of ginning operating in Tanzania; the modern roller ginning and older saw ginning system. The ginning period would be at least 6 months. Currently, private individuals who are able to solicit sufficient crop finance from financial institutions and operate in economically viable modes are dominant in cotton ginning. A brief description of the ginneries/processors in this area is as follows:

- By the 2010/11 cotton marketing season there were about 62 ginneries registered with TCB; out of which 14 were saw ginneries and 48 were roller ginneries with an overall ginning capacity of 3,958 bales per day/shift.
- RCU own 50% of the ginneries mostly installed in the 1950s, however they are weak by production total of 750,000 bales only.
- About 17 new ginneries were built (16 in WCGA and 1 in ECGA) after the 1990s reforms.
- Out of the registered cotton ginneries (46 in the WCGA and 14 in the ECGA) only about 30 are operating each season.
- During the 2009/2010 season, about 161,514MT of seed cotton were ginned in WCGA with about 268,624 bales of ginned cotton were produced. These figures are a bit lower than the 2007/8 season where about 200,229 MT of seed cotton was purchased and delivered to various ginneries in WCGA

whereby 292,599 bales of cotton lint were ginned. In 2006/7 season – 127,693MT were purchased through 28 registered seed cotton buyers. In 2005/6 season – 374, 818MT were purchased ready for ginning through 29 registered seed cotton buyers.

Overall, however, by 2011/2012 season the total ginning capacity had expanded to around three times the level of the highest seed cotton crop since liberalisation. Based on a six-months, the 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 2009. 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 374 MT seed cotton in the 2004/2005 season, production has since declined although production did increase in 2008/2009 to 366 MT and by 2010/2011 production had gone down to 164MT which is less than half the 2008/2009 production level (Table 1). Increasing levels of overcapacity have created a 'scramble for cotton' among ginners in order to minimize their unit ginning costs and fulfill forward supply contracts (most ginners depend on pre-finance from customers for their purchases).

The market share by region and ginner presented in table 1 shows that Shinyanga had the largest number of ginners (25 ginners) occupying 60.2% of all ginned cotton in the WCGA, followed by Mwanza with 17 ginneries with a total share of 18.6% of ginned cotton. Although Mara had only 3 ginneries, about 17.1% of seed cotton was ginned in Mara. These figures suggest that there is more competition for seed cotton in Shinyanga and Mwanza as compared to other regions due to high concentration of ginneries in these regions. It was found that about half (48.2%) of seed cotton in Mwanza is procured and ginned by only 3 giant ginners: Afrisian-Sangu, Birchand Oilmill and KCCL-Bukoli. Each of these is having over 10% share. The other 14 ginners in Mwanza are sharing the left half whereby majority are ginning less than 5% of the total ginned cotton in the region. Unlike in Mwanza, in Shinyanga there were only 2 ginners each owning above 10% share with total share of about 22% i.e. Gaki Investment (10%). and Kahama Oilmill (11.9%). The remaining 80% of ginned cotton was shared by the remaining 23 ginners. In Mara region, the two ginners-S&C Bulama and Olam (T) ltd were ginning about 88.9% of cotton in Mara and about 11.1 % was ginned by Badugu Ginnery Co.Ltd. In Tabora the ginning business is dominated by only two companies and only one ginnery in Singida region. The names of top ten companies across all ginners in the WCGA in terms of market share companies hold is also indicated in the fifth column in table 3. It is indicated that the largest share of ginned seed cotton comes from S&C Bulama-Mara (8.0%) followed by Olam (T) Ltd-Mara (7.0%). This implies that about 15% of all seed cotton in the WCGA is ginned by these two companies located in Mara region. Given the fact that Mara produces only 17.1% of all seed cotton, it is unlikely that these two companies are competing with any ginner in procuring seed cotton from Mara region. In fact the two companies have procurement agencies all over the WCGA. The other ginneries in the top ten are indicated to have market shares ranging between 3.7% – 7.2% all from Shinyanga region.

It was further found out that the ginners can procure cotton from any region irrespective of the physical location of the ginnery plant. This has been described by many ginnery owners as the major source of foul plays in the procurement process. For instance Olam (T) Co LTD procures seed cotton from a network of its full time employees and transport capability all over the WCGA to purchase cotton that is ginned at the factory located in Mara. However, smaller ginners located in far areas such as Kahama, with no full time procurement staff and reliable transport network rely on locally produced cotton whereby they do compete with other external giant ginners from other regions. The impact on this is that many small ginners are closing down due to lack of seed cotton. Larger companies are capable of reducing their average cost by scaling up their procurement base whereas small ginners do operate at relatively higher operational costs. However, the smaller ginneries were found beneficial to some bigger companies since they are contracted by larger ginners to facilitate the marketing processes. Some ginneries are also financed by giant ginners and enter into some kind of vertically integrated contractual agreements whereby small firms act as franchisees of the giant ginners.

#### **4.2.5 Actors in cotton lint/seed sales and export**

Some forms of competition are likely to exist during the lint cotton export. Actors in this segment of the cotton supply chain are fewer than ginnery owners. The actual number of ginnery companies which do export cotton lint is very small. It was found out that firms that do export cotton are in stiff competition in that it is not predictable of the approved exporters. Due to the fact that production of cotton is highly fluctuating, some local ginners normally fail to attain contractual supplies with the importing commission agents leading to unnecessary penalties. This has forced many exporting firms to concentrate on ginning and hence only less than 5 ginners were involved in the export of cotton. These are facing competition from foreign companies which use local ginners to collect as many bales of cotton as possible but the foreign company buys the cotton lint bales at agreeable price. Exporters are not registered by the TCB nor can TCA intervene in the registration of the new entrant in the exporting firm. The exporting firms are registered in the country like any other exporting firm in

other sectors. Figure 5 shows that 80% of cotton purchased and ginned in the country is exported leaving 20% only for domestic textiles. 60% of total exported cotton lint is exported to Far East countries; including Bangladesh, China, India, Malaysia, Indonesia, Pakistan, Taiwan, Philippines, South Korea, Others are Portugal, Italy, United Kingdom, Germany, Spain, Turkey, Kenya, Rwanda and Democratic Republic of Congo. There are many challenges that face locally based export firms which have forced them avoid participate in the export market. These challenges can be summarized into three major categories:

- a) *Declining cotton quality*- Although cotton lint produced in Tanzania is among the best in the world market, Tanzanian cotton is leading worldwide in terms of poorly ginned cotton. This is due to the deliberate distortion of produced cotton by farmers and cotton procurement commission agents whereby seed cotton is splashed with moisture or sometimes sand is added in order to increase cotton weight.
- b) Cotton production is not stable leading to *supply fluctuations* but the exports on the other hand need to be certain and continuous.
- c) *Price determination* in the world market is to some extent a given phenomenon for majority of cotton exporting firms. The price of lint in Tanzania is pegged to the CIF Western Europe lint price. The Free on Board (FOB) Dar es Salaam price is USD cents 0.74 per pound less the Cost Insurance and Freight (CIF) of the Western Europe price while the Exginnery price is USD cents 1.91 per pound less the CIF Western Europe price. The reference price of lint used for formulation of the floor price in 2007 for instance was USD cents 72.9 per pound (ex – ginnery) based on the 'A' index (NE) Cotton Exchange in the year 2007 was US cents 75.13 per pound (Busi et al, *opt cit*). In 2008 the cotton prices drastically fell and were on a long term low 42 cents per pound. The repercussions on the local market can already be felt as buyers have reduced the quantity they buy or are waiting to see how the market develops further.

Most cotton buyers in Tanzania are inadequately equipped to deal with price shocks in the cotton industry. This is partially due to their limited access to capital, inability to access market information and intelligence leading to inability to reduce their transaction costs. Consequently, they may not be able to offer farmers good prices at times of price turbulences. The absence of a price stabilization mechanism also contributes to the price uncertainties. To alleviate these weaknesses, training on the use of market based instruments related to mitigation against price risks is necessary. For Tanzania, the focus has to be on how to achieve reduction in the cost of production, increase processing while reducing processing and marketing costs over time.

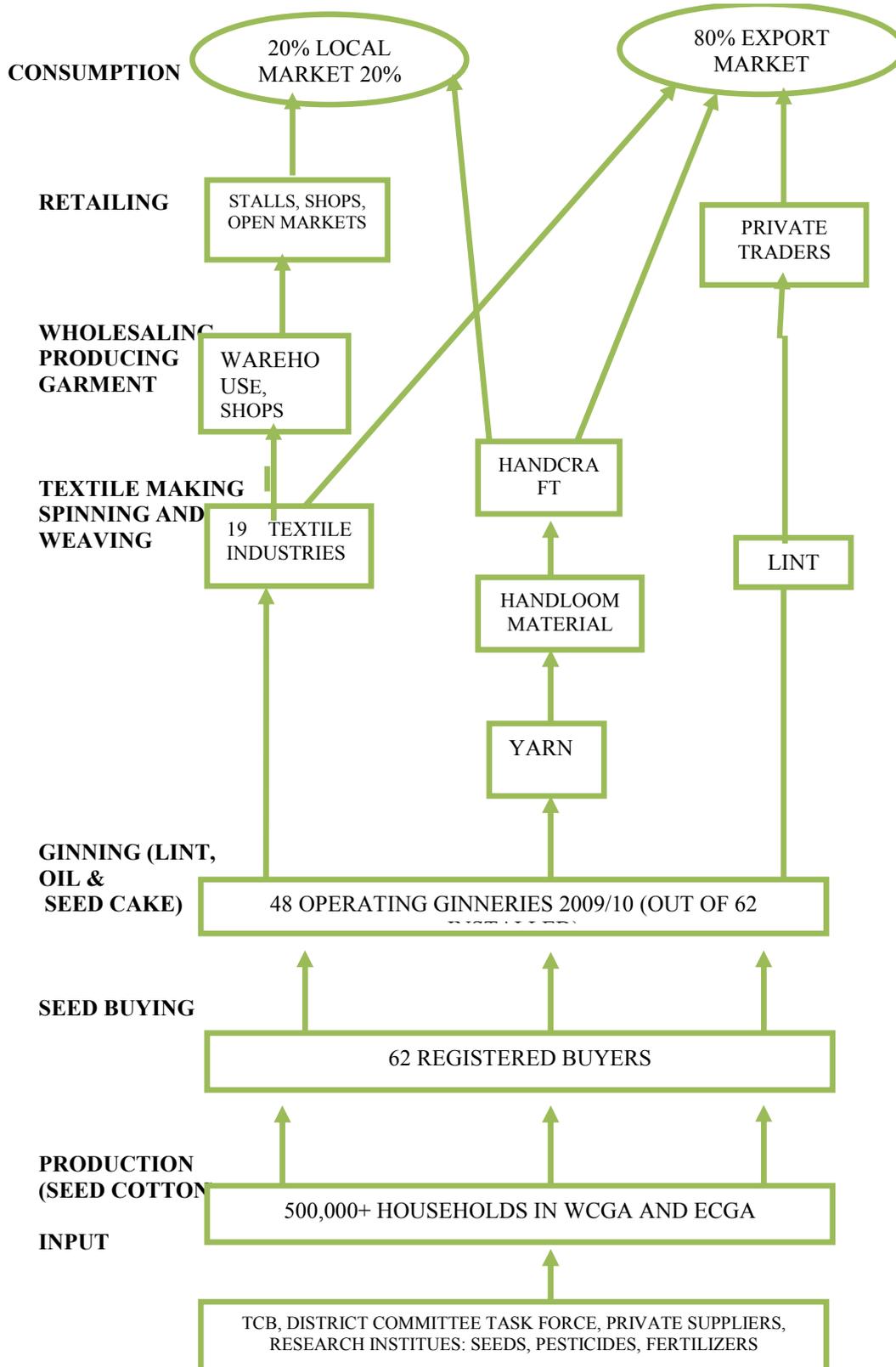


Figure 5. The Tanzanian Cotton/Textile Sector Map  
 Source: Modified from Busi et al, (2008)

**5. Conclusion**

The structure, conduct and performance of the cotton market is strongly regulated, and only partially liberalized. TCB still regulates the market at all value chain nodes from input market to lint exports. CDTF acting on behalf of TCB procures most of the country's cotton inputs mainly seeds and chemicals. TCB on the other hand sets the

floor price and issues in collaboration with the LGAs the cotton buyers' permits. There is a mismatch between ginning capacity and amount of seed cotton produced which leads to unfair competition and side selling. Cheating through tempering with weigh scales resulted to counter actions by farmers such as contamination of seed cotton by water, sand/soil or oil, in an attempt to increase weight while compensating the cheated one. This resulted to spoiled seeds for the next farming season and therefore low productivity, and poor quality cotton hence failure to meet international standards. However, the assessment on the other hand analyzed a number of opportunities from the economies of scale that have shown that cotton production has a significant profit-margin to the market actors. There is equally ample room for improvement by capitalizing on the advantages pegged on the contract farming, organic cotton production and new low cotton producing areas. We finally conclude our study by pointing out that the competition law must become an instrument for generating optimal outcomes by directly influencing cotton market structure (e.g. merger control) – through the relationship between market structure, market conduct and market results. If cotton prices decrease as a result of market concentration, then ginnery mergers must be closely scrutinized. Policy coherence, consistency and complementarities are thus important, as there is need for the competition policy to be an integral part of overall national policy framework. The newly institutionalised cotton contract farming needs to be “Competitive Contract Farming” where a good number of ginners have to be involved in the evaluation by farmers, a process during which various non actors in the market institutional arrangements such as FCC may be highly needed to safeguard interests of both cotton producers and buyers at all nodes of value chain.

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