

THE COTTON FARMING PIPELINE OF MALAWI AND SOUTH AFRICA: MANAGEMENT IMPLICATIONS

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Purpose of the study: The purpose this paper is to identify and describe the characteristics and influences of the cotton farming pipeline in Malawi and South Africa.

Problem Investigated: A broad based approach was followed to investigate the cotton farming pipeline to identify the major driving forces of the cotton pipeline in each of the respective countries.

Research Approach: A qualitative field research approach was followed to compile data on cotton farming in Malawi and South Africa. Data was compiled upstream from input suppliers, downstream from ginners, cotton transport conveyors, cotton marketing managers and agricultural government officials as well as from farmers and agricultural organizations.

Findings: In Malawi a family farming model is followed versus an industrial model of production in South Africa. Despite the differences in approach, the farmers in both countries are faced with similar problems. In this regard, an urgent rethinking of the technological conditions of production and the possibilities of technological change is needed.

Recommendations: The research proposes that these countries can benefit from establishing institutions like agricultural co-operatives and mechanisms like the development of a free traffic mechanism of seed-cotton.

Conclusion: The present research may assist in developing first layer managerial recommendations that could enhance the sustainability and co-existence of cotton farming in the two countries.

Key words and phrases: Cotton farming pipeline, driving forces, cooperatives

INTRODUCTION

Whilst trade has the potential to lift people out of poverty, the cotton farmers of Malawi and South Africa are faced with the challenging task of accommodating, overcoming and acting upon the free market dynamics and demands of global trade. Within this highly competitive global market the producers of cotton in the two respective countries need to secure stable and sufficient incomes for themselves and their families.

As an outlet for cotton lint, South Africa is of paramount importance for Malawi, having the biggest textile and garment industry in the region. In a domestic South African market in which cotton stock is gradually increasing and in which the South African cotton farmer has traditionally filled the remaining demand gap, clever managerial instruments need to be designed to ensure sustainable development of cotton farmers in both countries without threatening the survival of cotton farmers in South Africa.

This paper will address the following issues: a literature review to enhance understanding of the characteristics and influences of the cotton farming pipeline in Malawi and South Africa and the major driving forces of the cotton farming pipeline in the respective countries. Subsequent to the literature review, the research design and methodology followed in the present research is discussed and the paper concludes with the findings of the research before an integrated synthesis and evaluation of the cotton situation in the respective countries is presented.

PURPOSE OF THE RESEARCH

The purpose of the first phase of the research that is presented in this paper was to identify and describe the characteristics and influences of the cotton farming pipeline in Malawi and South Africa in order to

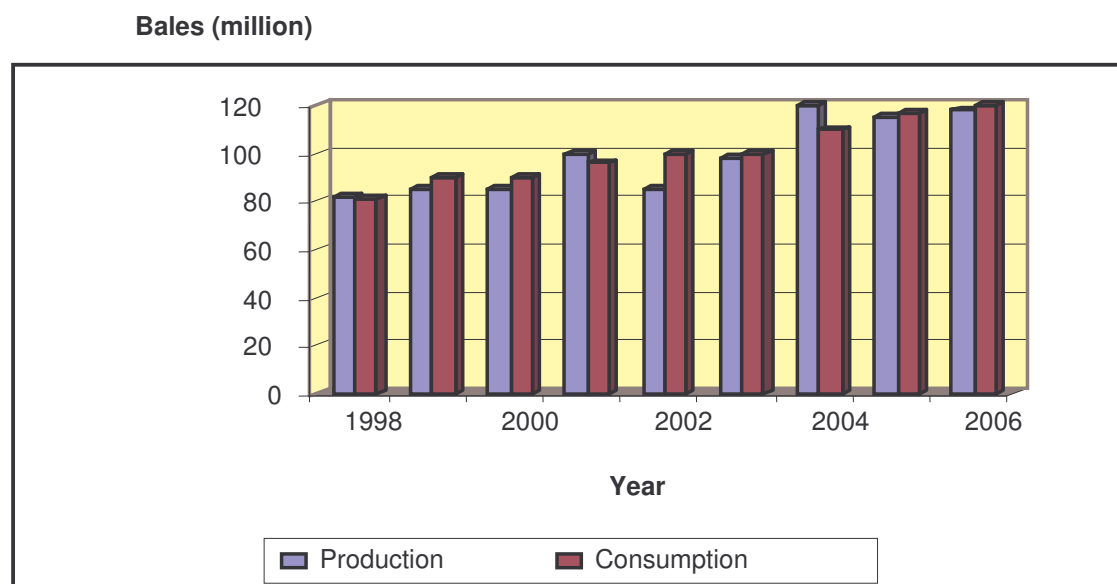
develop first layer managerial recommendations that could enhance the sustainability and co-existence of cotton farming in the two countries.

The purpose was formulated in the realization that the research conducted should firstly be approached through a broad based approach whereby the cotton farming pipeline is investigated with the viewpoint of identifying the major driving forces of the cotton farming pipeline in each of the respective countries and secondly that the research should be restricted to the first part of the cotton farming pipeline from farm to gin only, to those aspects in the cotton farming pipeline that have an impact on the strategic governance of the cotton commodity market and to questions implying a management implication.

LITERATURE REVIEW

The U.S. Department of Agriculture's forecast for 2006/2007 indicates a marginal increase of global cotton production reaching 117 million bales (480 lb bales), increasing with 3 million bales or 2.9%, up from 113.8 million bales in 2005/2006. At the same time it is envisaged that world cotton consumption will continue to expand to reach a consumption level of 122.5 million bales in 2006/2007, representing an increase of 4%. This growth in consumption will primarily occur outside the United States (Meyer *et al.*, 2006). The World Agricultural Supply and Demand Estimate Report (USDA as quoted by Meyer *et al.*, 2006) provided the following statistics regarding world production and consumption of cotton over the time period 1998 to 2006 as indicated by Figure 1.

Figure 1: World cotton production and consumption



With the exception of China and the Southern Hemisphere, the stock keeping trend was upwards over the last 15 years in contradiction with the rest of the world where a downward trend was visible (Meyer *et al.*, 2006). This clearly indicates a situation of over production in the Southern Hemisphere, and specifically in Malawi and South Africa, despite a decline in overall cotton production in each of the respective countries in recent years (Rates Center, 2003). In the case of Malawi the decline in cotton production is primarily attributed to a decline in profitability and sharply reduced international cotton prices. In the case of South Africa factors like dumping, productivity and transactional costs are often mentioned as possible reasons for not being able to compete in the global market. These factors can be defined as follows:

1. **Dumping of cotton on local markets** – This concept refers to the exportation of a product at a lower price than the production costs of the exporting country. The principal instrument by which this can be

achieved is through the introduction of subsidy mechanisms. Further, dumping may come in different forms and does not necessarily compete directly in the same form e.g. cotton dumping from abroad may come in the form of dumping of second hand clothes (Parmenter, 2005).

2. **Productivity of cotton producers** – This refers primarily to the ability of farmers to produce minimum required yields through amongst others the selection of the right cotton varieties, correct application of pesticides and insecticides, utilising appropriate technologies and accessing information and farming inputs which take into account the needs of producers. This factor also includes the contributions to productivity from the natural environment like rainfall (Keita, 2005).
3. **Transactional costs** – This refers to the state of transport networks, means of transport and other infrastructural facilities such as electricity, telecommunication and the availability of ports as well as the influence of direct production factors like labour that may have an influence on lower or higher transactional costs in the cotton trade. High transactional costs have a multiplying effect on the price of cotton at the farm gate and may partially explain low responses of cotton farmers to the movements of real exchange rates (Karshenas, 1999). Whilst the cost of farm labour in Malawi is low due to the existence of a family-oriented approach, labour costs per worker in South Africa are high compared to other countries resulting in significantly higher unit labour costs (labour costs as a percentage of value added). Clarke et al. (2004) indicated that in 2002 per worker labour costs in South Africa amounted to US\$7 300 in comparison to China's US\$2 000, Brazil's US\$2 700 and Malaysia's US\$4 000.

Whilst tourism, mining and industry primarily fuels South Africa's Gross Domestic Product (GDP), with agriculture playing a much lower role, Malawi's GDP is primarily generated by the agricultural sector which is constituted of an estate sector and a small scale agricultural sector. The intention of government was that the estate sector should promote export production, whilst the small scale sector would provide for food security in Malawi. However, even today the small scale sector dominates the agricultural sector in Malawi and is still the biggest earner of export revenue. After trade liberalisation and during 1995 the government realized that this sector was not able to secure self-sustainable food security without the provision of subsidised programmes. The subsidy came in the form of targeting input programmes whereby the government introduced "starter packs" programmes to reverse the decline in food production in Malawi. As this programme was meant only for food production, cotton production was excluded from this programme.

RESEARCH DESIGN AND METHODOLOGY

Research Design

A qualitative field research approach was followed during which the researchers, with the assistance of seven post-graduate students acting as fieldworkers, compiled data on the characteristics and factors influencing cotton farming in Malawi and South Africa respectively. The data was compiled over a period of 22 days of which 13 days were spent in Malawi during April 2006. In order to obtain an accurate perspective of the cotton farming pipeline, information was compiled upstream from input suppliers, downstream from ginneries, cotton transport conveyors, cotton marketing managers and agricultural government officials and horizontally from farmers and agricultural organizations (see Appendix for list of respondents).

Sampling Procedure

In this research the criteria-based sampling technique was employed to select respondents in the upstream, downstream and horizontal sectors of the cotton farming pipeline. These respondents were selected upon the following criteria:

- At least five years experience in the cotton farming pipeline;
- Occupying a senior position in the cotton farming pipeline; and

- Approved by Cotton South Africa as a reliable source of information.

Data Compilation and Analysis

Before the formal study commenced, a pilot study was conducted in which experts in the South African cotton industry were approached to provide perspectives on the characteristics and influences on cotton farming in Malawi and South Africa, as well as the problems associated with global trade. This information was used to compile the interview questions.

During the field research phase the research team brainstormed the information gathered from input suppliers, ginners, transport conveyors, cotton marketing managers, government officials, farmers and agricultural organizations on a daily basis, reflected on it, categorised the data into broader concepts and validated information by firstly using an accumulation interview approach and secondly, the Delphi-consensus seeking approach with the research respondents. Data figures obtained from the respondents were verified with objective trade figures. The findings are presented in narrative format. Finally, the primary field research data was integrated with secondary data obtained from scientific sources.

FINDINGS

The findings of the research are firstly discussed in terms of the individual countries before implications and recommendations for the cotton farming pipeline of Malawi and South Africa are presented.

Findings on Cotton Production in Malawi

Cotton is primarily grown in the lower regions of Malawi especially in the Southern region. Traditionally cotton was bought by the government, but since Malawi adopted the policy of trade liberalization in 1994 the production of cotton decreased. The decrease in production is mainly attributed to the fact that the private sector small scale farmers were neither ready nor prepared to enter these markets. Other factors that contributed to the decline in cotton production according to the Rates Center (2003) include decreasing productivity in the farming industry accompanied by a decline in the world prices of cotton.

The situation was further complicated due to the fact that small scale farmers could not access credit previously provided by the government. Further, at that stage the farmers experienced a problem to sell cotton on the market as the private sector did not own any gins in Malawi and the state owned gins closed down shortly after trade liberalization, whilst priority was given to maize and tobacco production. In all of this the farmers found it extremely difficult to make informed decisions regarding choice of crop production as the trade liberalization effort also caused the collapsing of farmers associations. Cotton production also declined due to the fact that cotton is not considered to be one of the principal crops to grow in Malawi. On average 54 000 hectares of cotton has been planted in Malawi since 1996. Although the planted area peaked in 1996/97 to 75 000 hectares the planted cotton area remains relatively stable. Cotton prices achieved by farmers are also low. In the 2005 season, prices of between 18 Malawi Kwacha and 22 Malawi Kwachas per kilogram were achieved. With an average cotton yield of 800 kg per hectare the incentive to grow cotton was poor and cotton could easily be substituted by other cash products like tea and tobacco.

The high input requirement for cotton growing, such as pesticides and herbicides, combined with the limited resources of smallholders and the lack of micro-credit availability constrained cotton growing in the past (Rates Center, 2003).

The problems experienced caused the establishment of the Cotton Development Association to stimulate the production of seed-cotton in Malawi through the establishment of an extension support programme. This is done by providing extensive input services to cotton farmers based upon loosely formulated loan contracts and through buying seed-cotton at agreed upon and guaranteed minimum prices. This was done in the realization that small scale sector farmers have insufficient means to adequately access cotton production inputs, technologies and information.

The cotton industry in Malawi is also dominated by small scale farmers planting between 0.5 – 1 hectare per farmer. Production costs, according to Grey (2006) amount to R97-00 (1798.2 Malawi Kwachas) per hectare during the 2005 season. This calculation is based upon calculations of the extensive support programme offered to farmers which includes the cost of seed, generic chemicals, and the renting of spray equipment.

Today, the cotton farmers are organized into clubs with the objectives of negotiating access to credit on behalf of individual farmers, establishing proper links with industry and serving as extensions for farmers to sell products. However, this movement is still in its infancy stage and is not able to act as a strong negotiating power in the cotton environment with the effect that the setting of minimum prices for cotton that was not really acceptable to individual farmers nor a big enough incentive to grow cotton was achieved. Further, as world prices changed, so did the cotton prices in Malawi causing mistrust between the Cotton Development Association and farmers. Another problem that was initially encountered was that the three principal stakeholders in the association were basically competing with one another in the sense that they were covertly offering competing prices to farmers. Thus, instead of co-operating with one another to the benefit of themselves and the farmers a certain level of disturbance was created necessitating the introduction of finance recovery plans.

Although a co-operative movement amongst farmers is emerging it is still in an infancy stage in which mistrust between leaders and farmers exists. It is still regarded as an outside initiative and viewed with suspicion and reservation. Progress in these farmer associations is slow as they follow a learn-by-doing approach characterized by being a co-operative without having the required infrastructures and resources. An urgent need exists to equip farmer associations with skills to negotiate prices with the Cotton Development Association and to promote quality enhancements amongst farmers.

A general perception exists amongst farmers that price fixing is not transparent enough. A further need exists to disseminate, to farmers, important information that is available in advance and when needed, and that is accurate in order to allow the farmers to make informed decisions. It was indicated that the minimum prices should be fixed before the next planting season commences. As the fixing of prices, in the opinion of the government, who is primarily responsible for social functions, is a commercial activity the government intends to provide broad guidelines on how price fixing for cotton should be arranged.

In general the quality of cotton produced in Malawi is as good as almost all cotton produced anywhere and almost 95% of the produced cotton achieved an A-grading in the previous season. This is primarily achieved due to the fact that only one variety of cotton is produced, ensuring uniformity in staple length, the cotton is hand-picked and then further cleaned by household labour before it is delivered to the gin. Cotton lint from Malawi is primarily exported to South Africa, the Far East (Singapore) and to the United Kingdom (Liverpool). The major challenges facing the production of cotton are considered to be price fluctuations, scarcity of quality production inputs, market access especially in the rural areas and the lack of a comprehensive extension service to farmers. Further, whilst excellent opportunities exist for Malawi to export cotton lint to South Africa, it is challenged with a structural disadvantage of higher transport costs into South Africa in comparison to Mozambique, Zambia and Zimbabwe which are all geographically closer to South Africa (Rates Center, 2003). To solve this problem, greater emphasis should be on lowering production costs and increasing productivity.

Marketing and Selling of Cotton

In Malawi three principal methods are used to sell seed-cotton to ginneries namely through traders, farmer organizations or directly to ginneries.

- ***Sales through traders***

Many smallholders sell to private traders due to geographical reasons. In Malawi the production of cotton is widely spread, whilst the buying hubs (depots) of ginneries are often too far away to deliver the cotton directly to the ginneries. The advantages for the smallholder are that the trader will take care of the

transport and will pay the farmer cash, for the cotton produced. This cash is often needed in the immediate post harvest period to meet outstanding loans and other cash expenditures (Rates Center, 2003).

- ***Sales through farmer organizations***

According to the Rates Center (2003) sales through Farmer Organisations like Balaka Smallholder Farmers Association (BASFA), affiliated to and supported by the National Smallholder Farmers Association of Malawi (NASFAM), are increasing. In 2002 BASFA for example had a membership of 3 000 smallholder cotton producers in the Balaka area producing about 1 350 000 kg Grade A seed-cotton of which 550 000 kg was purchased by BASFA and delivered to the Ginnners despite constraints experienced regarding cash.

- ***Sales directly to ginnners***

Sales directly to ginnners occur according to pre-negotiated prices per kilogram and volumes of seed cotton to be produced.

South Africa

Since the introduction of free trade, countries like China and India were able to flood the South African market with cotton lint. The strengthening of the rand against the dollar further allowed the Southern African Development Community's (SADC's) cotton producing countries to produce and deliver cotton lint below the production price onto the South African cotton commodity market.

Whereas the South African cotton producers were traditionally able to fill the remaining gap in a market where demand exceeds supply, this gap does not exist currently as the traditional market is shrinking on an annual basis as garments are directly imported, primarily from the far east countries. This caused a decline in the demand for cotton lint in South Africa. The resultant effect is that South African producers have difficulty in selling their cotton crops as they find it difficult to compete on price. The situation is further complicated in the sense that the international cotton price is also at a low level. With a strong rand the competitiveness of the cotton producer further deteriorates.

As South Africa has the biggest textile and garment industry in the Southern African region, South Africa offers excellent opportunities for export of cotton lint by countries like Zimbabwe, Zambia, Malawi and Mozambique (Rates Center, 2003). A typical marketing problem also exists in the sense that higher volumes need to be produced in order to remain competitive. Currently, volumes produced are too low. To counter this problem the industry reacted by limiting the number of cultivars produced in South Africa to a range of three cultivars and by engaging in activities to uplift the small scale cotton farmers.

The South African cotton industry however takes great pride in the ability to compete on quality with regards to staple length and high volume instrument testing. Producing only three cultivars in South Africa enabled the industry to ensure greater conformity and consistency in production which is regarded as a benefit to the industry as cotton lint is produced that possesses the same characteristics. The cotton industry in South Africa also takes great pride in the transparent manner in which trade is conducted. The opinion exists that if the industry were able to sell cotton with agreeable quality ranges, then the industry would be able to sell cotton lint at premium prices rather than at discount prices.

However, the same applies to the SADC cotton producing countries which also produce good quality cotton at lower prices based upon contract planting in which extension support in the form of extended services are provided to the cotton producer in the form of the provision of cotton seed, fertilizers and the introduction of pipeline fund reserves (reserve pools) to producers as well as the introduction of extension officers (also known as distributors) to take care of the mentoring needs of producers. A distinctive difference also exists with regard to small scale farmers. Whilst most of the small scale cotton farmers in South Africa can be considered "upcoming commercial farmers", planting between 4 and 16 hectares of

cotton, small scale cotton farmers in Malawi are primarily “subsistence farmers”. Whereas the latter group may rely solely on labour to produce a crop, the South African upcoming commercial farmer has to rely on technologies in the form of renting tractors, implements and labour to produce a crop due to the bigger size of land. This creates a higher production risk for the upcoming farmer than that experienced by the commercial farmer in South Africa or the subsistence farmers in Malawi.

IMPLICATIONS AND RECOMMENDATIONS

It can be deduced from the interviews that, in the case of Malawi, the production of cotton is achieved by small scale farmers able to grow crops without the possession and application of expensive technologies. The production model in Malawi is further characterised as a family farming model. The upcoming commercial cotton farmers in South Africa on the other hand follow a more industrial model of production due to the requirement of applying higher level technologies to produce seed-cotton due to the larger land sizes of 4 to 5 hectares planted as well as adhering to normal labour practices of the country.

Despite the differences in approach the farmers in both countries are faced with similar problems. The upcoming commercial farmer in South Africa finds it extremely difficult to farm profitably due to the cost of technology employed on land too small to afford these technologies, whilst farmers in Malawi remain on the subsistence level due to the size of the land and the necessity to grow cash crops using unsophisticated technology. This situation demands an urgent rethinking of the technological conditions of production and the possibilities of technological change. Without the development of appropriate new technologies and new technology packages that will ensure adequate and stable returns to these cotton farmers, other interventions may remain largely ineffective.

In a sense the cotton producers in Malawi are inherently more vulnerable to low cotton prices than their South African counterparts. This is explained by the fact that Malawi is primarily an exporter of raw cotton, whereas in South Africa downstream industries like weavers and spinners that can transform cotton into finished products are relatively well established. Greater emphasis should therefore be given to strengthening the added value in the local cotton sectors in each country, but especially in Malawi. An excellent opportunity exists to create jobs in both the formal and informal economic sectors if power-loom and hand-loom could be introduced. In a country like India seven times more people are employed in these sectors than in the whole milling (spinning and weaving) sector (Korgaokar, 2005). Adding additional value to raw cotton may also reduce the high transactional costs caused primarily due to the poor transport infrastructure available to Malawi for export, primarily to South Africa.

Although dumping of redundant cotton on the South African market exists, dumping is not considered to be the cause of the problem, but rather the result of chronically low world prices. Parmenter (2005) attributed these low cotton prices to a lack of supply management on the markets at the world and regional scales. A need therefore exists to balance supply and demand at world and regional levels. One mechanism to follow involves the end of export subsidies to all producers. This, however, will only partially solve the problem and other mechanisms to balance supply and demand should also be considered. Further, in order to strengthen the regional (Southern African) cotton industry and minimize risks in the local cotton sectors of individual countries like Malawi and South Africa, interventions at supra-national level are required. This could happen through the establishment of institutions like agricultural co-operatives and mechanisms like the development of a free traffic mechanism for seed-cotton in the region. The latter suggestion is also supported by Keita (2005).

Both cotton producing countries, Malawi and South Africa, whilst supporting the notion of trade liberalization are also crippled by the effects of trade liberalization in the realisation that the global market does not necessarily protect nor can it ensure that the rights of individual producers, like the right to produce crops or the right to protect own markets through for example import taxes, are sufficiently taken care off. Pozanski (2005) therefore emphasises the need for greater solidarity amongst stakeholders and consensus that the exports from one country should not lead to the destabilisation of domestic markets in other countries. Further, the establishment of agricultural co-operatives, properly managed, that span across national boundaries may also contribute to solving supply-demand problems, negotiating on behalf

of the farmers and ensuring that cotton farmers as providers of labour are valued, supported and protected as a strategic asset in the region.

CONCLUSION

The purpose of this paper was to identify and describe the characteristics and influences of the cotton farming pipeline in Malawi and South Africa. The findings revealed that the cotton farming pipeline of the two respective countries are struggling to adapt to the free market dynamics and demands imposed by global trade. Whilst both pipelines produce high quality cotton, the market demographics revealed that an over emphasis on supply management occur in both countries. This is in contradiction with the global picture which indicates that supply and demand is managed in a more balanced and stable manner. The results also revealed that it is essential that the launching of initiatives to investigate the adoption and procurement of technologies that are more suitable to the needs of small subsistence farmers and upcoming commercial farmers.

It was also indicated that trade liberalization crippled the cotton farming pipeline to the extent that it does not protect nor ensure the rights of individual producers, and that a need therefore exist to consider the establishment of agricultural co-operatives, that span across national boundaries and intervene at supra-national level to minimise risk in the cotton farming pipeline as well as to ensure effective management of cotton supply and demand.

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APPENDIX

Interviews 2006 (Notes in possession of authors).

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Buthelezi TJ. Chairperson. Ubongwa Farmers Association, South Africa. 11 April.

Chipeta W. Technical and Product Development Manager. Farmers Organisation Ltd, Blantyre, Malawi. 20 April.

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