

# **The impact of producer price instability on cotton production in Zimbabwe: a case for Makonde District in Mashonaland West Province,**

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## **ABSTRACT**

A study was carried out in the smallholder sector of Zimbabwe to assess the impact of producer price instability on cotton production. Two questionnaires were used to collect data from one hundred (100) cotton growers and eight (8) industry representatives respectively. The data was analysed using Smith's Statistical Package (SSP, 2011). Fluctuations in world lint prices on world market caused cotton producer price instability. This in turn negatively affected cotton production in the smallholder sector of Zimbabwe. All the participant cotton growers produced cotton under contract farming. Some 65% of the cotton growers reduced area under cotton crop during the 2006/7, 2007/8 and 2008/9 seasons. Eighteen (18%) neglected a cotton crop in the field. Five percent (5%) of the growers switched to other crops. All the interviewed growers cited the benefits of contract farming as market access, increased income, higher yields, credit and financial intermediation, timorous inputs disbursements and production market, reduction of production risk and introduction of appropriate technology, but felt that contract farming was not assisting them in managing the risk of producer price instability. All cotton stakeholders should actively participate in producer price setting so as to eliminate chances of influence from dominant players. The study recommends that the government of Zimbabwe should subsidize cotton production when world lint prices are low.

**Key words:** cotton production    price instability    contract farming  
price setting    price subsidies

## **1. BACKGROUND**

Zimbabwe is among the five largest cotton-growing countries in the sub-Saharan Africa and is renowned for its high quality handpicked cotton (Woodend, 2003, Larsen, 2002). Cotton is a major smallholder cash crop in Zimbabwe, employing over half a million households directly as farmers, and indirectly in the related agro-processing and input industries (Glover and Kusterer, 1990).

Indigenous people of Zimbabwe produced cotton, practiced spinning and weaving prior to colonial rule in the late 19<sup>th</sup> century (Beach, 1980; Weinmann, 1972). However, commercial cotton production began in the early 1920s. It was not until the mid 1960s that successful commercial cotton production began, after four decades of research in diseases, pest control and development of varieties suitable for the different agroecological zones of Zimbabwe (Mariga, 1994). Even then, smallholder cotton production remained low until 1980, when the country attained independence from the British colonial rule.

After 1980 the Zimbabwean government adopted supportive policies towards smallholder farmers in research, extension, input and credit provision (Rukuni, 1985). The then Cotton Marketing Board (CMB) of Zimbabwe spearheaded such efforts and is credited for the expansion of cotton production in the communal areas (Mariga, 1994). Consequently, a smallholder cotton revolution was experienced. By the year 2000, small-scale cotton production had increased from 170 000 tonnes of seed cotton in 1980 to a peak 298 000 tonnes in 2011, with planted area in this sector increasing from 59000 hectares to 376000 hectares during the same period (USDA, 2012)

Between 1980 and 1992 cotton producers in Zimbabwe were protected from adverse international price fluctuations through indirect government support (Rukuni, 1994). This support mechanism was not a permanent feature and only came into play when international

prices were low, or when returns did not keep up pace with costs of production. Producer prices were set yearly through negotiations among the government, CMB and growers' associations. These negotiations combined with an alliance between large-scale white and small-scale black farmers and the availability of credit through Agricultural Finance Corporation, helped high producer price and stimulate smallholder production until the 1990s.

The CMB remained a parastatal monopoly until 1994, at which point government ended its monopoly in purchasing, ginning, marketing and exporting of lint. Through a process of privatization, the Cotton Company of Zimbabwe (Cottco) was incorporated during the same year (1994) as the successor organization to the monopoly statutory body, CMB, with 25% shares held by the state until 2001. During that time, Cargill, a United States multinational, entered the market as competing gin and the years that followed saw the industry being entered by more and more players resulting in the ending of centralized cotton pricing.

From that effect, farmers have been price takers with little negotiating power, and bound to sell despite low market prices as they repay loans and inputs accessed on credit. Since then, there has been a lot of infighting between cotton merchants and growers due to high producer price fluctuation. There is lack of production policy in cotton industry and this has caused producer price instability. The cotton producer price has not been reviewed to match its production costs and, as a result farmers have been struggling to breakeven. On the other hand, cotton merchants prefer to offer an interim producer price during buying season that they term "seasonal pool price" which may be adjusted at the end of marketing season using average lint price offered on the international lint market.

This study seeks to investigate the impact of producer price instability on production of cotton in Zimbabwe, with specific reference to Makonde District of Mashonaland West Province. The study seeks to establish the change in area under cultivation, growers' response to price uncertainty and growers' overall perception to the current and dominant



system of cotton production in the small holder farming sector. In addition, the study also seeks to establish the cotton merchant's view of the solution to problems related to cotton price instability on the world market.

## 1. METHOD

This research was conducted in the major cotton growing areas of Makonde District namely Mhangura, Chifundi, Umboe Valley, Chitomborwizi, Magogi, and Kanyaga. One hundred cotton growers were randomly selected from the 2009/10 lists of contracted cotton growers from the project area (Table 1). These lists were requested from Cotton Company of Zimbabwe, Cargill, Olam, Alliance, Insing, Grafax and Cotton Zimbabwe, the cotton merchants that are operating in the area.

Eight special correspondents who work in the project area were also selected to participate. These included extension officers for both the government and the cotton merchants were contacted by mail, and telephone calls.

**Table 1: Quantitative Sample Breakdowns**

Area	Total
Mhangura	20
Chifundi	20
Umboe Valley	20
Magogi	20
Kanyaga	20
TOTAL	100

*Source: Data got from the questionnaire for this study.*

A producer questionnaire and an industry representative interview process were used as instruments to collect data for the study. An informal pilot study was conducted with a small group of farmers that were coming to register for 2010/11 cotton inputs credit scheme. Conducting a local pilot study allowed for suggestive feedback on the survey and also helped

eliminate bias. The pilot study also assessed the comprehension, estimated average completion time as well as identifying and eliminating potential problems. Based on the feedback some questions were modified to increase their clarity and understandability.

### **Data Collection**

The questionnaire survey was designed to capture producer and farm-specific demographics, years in industry, qualifications, farm size, production system, cotton crop area, relative farm income and perceptions and feelings of cotton producers on price. A sample of one hundred (100) cotton producers was obtained. The sample had been collated through direct contact with producers and merchants in the major five cotton growing areas of Makonde district.

The industry representative interviews were designed to facilitate an initial interrogation of the questionnaire-generated data, so as to identify any significant irregularities and to guide data analysis. A sample of eight (8) cotton industry professionals was identified. These representatives were drawn from cotton merchants who were actively involved in running cotton inputs credit scheme and cotton buying during 2009/10 season. The industry representative interviews were designed to test the credibility of, and help interpret, the data obtained from the producer questionnaire. A semi-structured interview format of approximately 40 minutes was conducted. Key interview questions were developed in line with the objectives of the study.

A statistical package for social sciences was used for analysing the data and graphs, pie charts, tables and maps were used to illustrate information more clearly. Thus conclusions could be drawn in chapter five basing on the analysis and interpretation in this chapter.

## 2. RESULTS

The respondents' age ranged 18 and 65 years. The age group 31-40 years and 41-50 years constituted 30 % and 34 % of the respondents respectively. The least age group was that for those below 20 years (2 %). The 20 – 30 and those above 50 years were 10 % and 24 % respectively. Of all the respondents, women were only 15 %

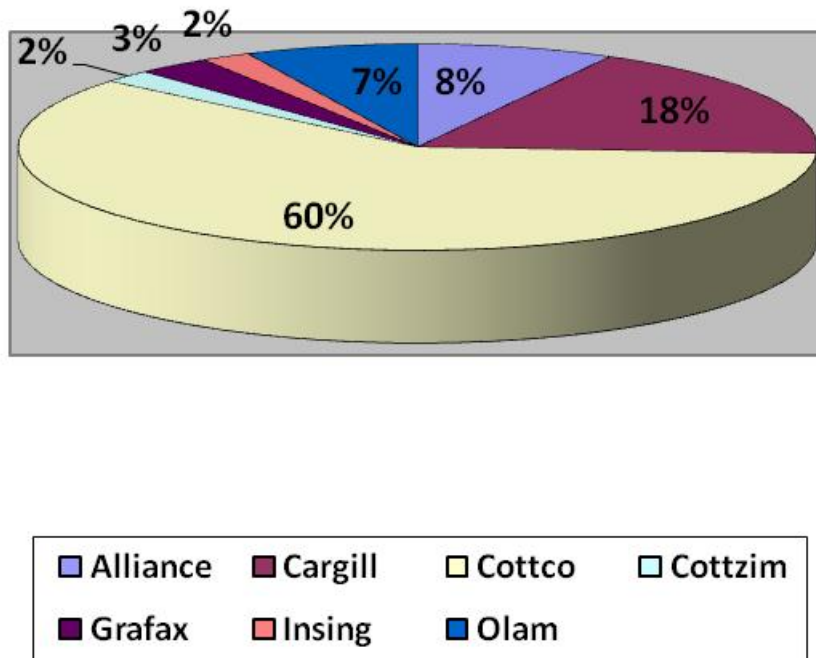
The modal educational qualification was Ordinary level (60 %). Other levels identified were Grade 7 (14 %), Zimbabwe Junior Certificate (17 %) and the Advanced Level (2 %) which s attained after 4 years of secondary education in Zimbabwe. Most of the sampled respondents (98 %) did not have any professional training.

**Table 2: Producer Questionnaire Respondents' Farm Category Distribution (N=100)**

	<b>A1</b>	<b>%</b>	<b>A2</b>	<b>%</b>	<b>Communal</b>	<b>%</b>	<b>Commercial</b>	<b>%</b>	<b>Totals N</b>	<b>Totals %</b>
Males	37	37	16	16	28	28	4	4	85	85
Females	3	3	2	2	10	10	-	0	15	15
<b>Total</b>	<b>40</b>	<b>40</b>	<b>18</b>	<b>18</b>	<b>38</b>	<b>38</b>	<b>4</b>	<b>4</b>	<b>100</b>	<b>100</b>

Most of the cotton growers were settled under the A1 and communal farming system in Mhangura, Chifundi and Umboe Valley whereas communal farmers were found in Chitomborwizi, Magogi and Kanyaga (Table 2). Commercial farmers constitute the least percentage of cotton producers in the study area and were found mainly in Mhangura.

All the respondents produced cotton under contract system (Figure 1). Cottco had the biggest share (60) and Cottzim and Insin were the least (2 %).



**Figure 1: Level of Contracting**

The contracting companies provided inputs like seed, fertilisers and chemicals (Table 3). In all the cases, the contracting companies supplied all the seed requirements and all the chemical requirements. On average the contracting companies provided on 29 % of the fertiliser requirements for cotton production (Table 3)



**Table 3: Inputs Benefited From The Contractors**

	<b>Planting Seed (%)</b>	<b>Fertilisers (%)</b>	<b>Pest control chemicals (%)</b>	<b>Tillage (%)</b>
Alliance	100	25	100	0
Cargill	100	25	100	0
Cottco	100	50	100	6
Cottzim	100	25	100	0
Grafax	100	25	100	0
Insing	100	25	100	0
Olam	100	25	100	0
<b>Overall</b>	<b>100</b>	<b>29</b>	<b>100</b>	<b>6</b>

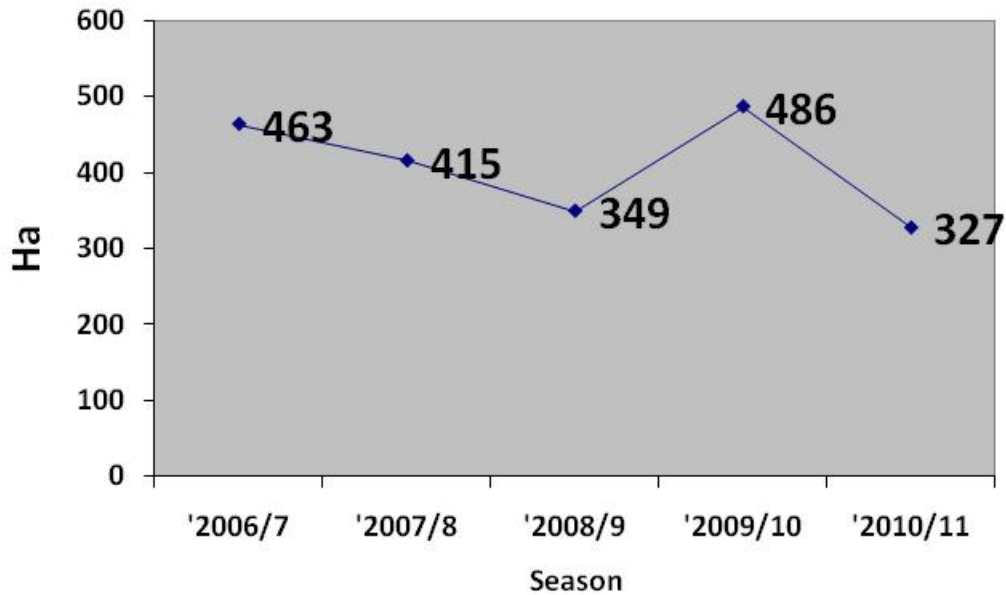
Only Cottco offered tillage assistance (6 %). From interviews it emerged that 70% of the respondents received cotton inputs late mid to late November. The late inputs disbursements were in most cases attributed to non availability of stocks and cash flow problems

**Table 4: Cotton Producers' Level of Satisfaction with Producer Prices**

	<b>Satisfied</b>	<b>%</b>	<b>Dissatisfied</b>
<b>Males</b>	2	2	83
<b>Females</b>	-	0	15
<b>Total</b>	<b>2</b>	<b>2</b>	<b>98</b>

Ninety-eight (98) percent of the growers expressed dissatisfaction with the producer prices offered by cotton merchants during the four seasons preceding the research (2007-2010) (Table 7). From the interviews, some of the reasons cited by all the respondents for the dissatisfaction included:

- a) Low profitability
- b) Low prices
- c) Expensive inputs
- d) Expensive Loan
- e) In late and adequate input supply
- f) Lack of technical backup
- g) Omission of full details in contract
- h) Lack of involvement in price setting



**Figure 2: Area under cotton from 2006 to 2011 Season**

Nearly two-thirds (65%) of the sampled cotton producers experienced a reduction in the land area under cotton crop during 2006/7, 2007/8 and 2008/9 seasons (Figure 1). During 2009/10 season, approximately half (53%) of the surveyed cotton producers increased their area under cotton crop by an average two (2) hectares each and five (5) percent of the growers were new to the industry.

**Table 5; Growers’ response to cotton price reduction**

<b>Response to price reduction</b>	<b>% age</b>
Change to other crops	14
Abandoned crop in the field	2.5
Held on the crop after harvesting	1.5

Approximately one-fifth (18%) of the sampled cotton growers neglected a cotton crop completely whilst nearly one-third of the same sample reduced their area under cotton crop by an average of two (2) hectares each (Table 4).

All industry representative questionnaire respondents identified shifts in the level of demand and supply of lint at world market as the major cause of producer price instability. Changes in government policies were cited as another factor that contributes to producer price instability, a finding that is also in consistent with what many authorities in the field of economics observed.

Both the interviewed producers and industry representatives proposed solutions to address the issue of producer price and the following solutions were proposed by the respondents.

- Forward contracting cotton producer to cushion the farmer on producer price risks.
- Subsidizing cotton production inputs when world lint prices are low so as to widen the difference between its income and its expenditure.
- Cotton merchants to owner up agreements and pay producer price adjustments timorously so as retain and attract traditional and new cotton growers respectively.
- Cotton merchants should reduce their profit margin when world lint prices are low.
- Cotton merchants to consider the producer’s cost of production in cotton producer price setting.

- Cotton merchants/contractors to offer standard recommended inputs hectare package on credit scheme so as to increase yield per unit area hence high returns.
- Government and cotton merchants to carry out extensive grower training and extension programs with the aim of increasing yield per hectare.
- Government and cotton stakeholders to invest in research and development in an effort to come up with low cost but yielding varieties.
- Marketers of various cotton merchants to carry out extensive market research with the aim of identifying markets that offer premium on quality since Zimbabwean cotton is ranked first in the world in terms of quality. Those premiums should then be passed on to the cotton producers as quality bonuses, hence high crop returns.

### **3. DISCUSSION**

Male farmers dominated cotton production in the small holder sector. This may imply that even in cases where both spouses are present; the husband normally registers as a cotton producer and participates in all aspects of extension. This is because mainly women living in the communal areas are treated as dependents of men, not as landholders or farmers in their own right (Human Rights Watch, 2003). Moreover, the gender disparity could have resulted from the increasing constraints in the production of the crop, which pushed more females who naturally have lower economy autonomy out of the industry, leaving males who are naturally resilient (Asian Development Bank, 2013).

The domination of the cotton industry by growers who are above 50 years could be an indication of departure from the industry by the young farmers who in the small holder sector may not possess important assets like cattle, implements and land resources. This may be attributed to resource endowments that are usually higher in the older age due to more time taken in attainment of assets and lower in younger people who still need time to acquire resources for a living (Mapfungautsi and Munhande, 2013).

As the profit from cotton production was becoming more marginal, those growers with assets would have more advantages in terms of draught power, manure and have ability to cushion themselves against increasing costs of crop production. On the other hand the smaller age group could still be energetic and could be trying luck in some energy demanding income generating activities like gold panning which is rife in the area.

The educational background of the interviewed growers was sound, with most having gone through ordinary level education. With such sound academic background the growers would compare present with past production records and would make well advised decisions on crop selection and viability analysis. This is supported by Weir (1999) who highlighted that education may enhance farm productivity directly by improving the quality of labour, by increasing the ability to adjust to disequilibria, and through its effect upon the propensity to successfully adopt innovations.

Given its bigger market share in terms of contracting, Cottco may have to play a role in cotton producer price setting by influencing other players as it seeks to protect its interests. The prices are to be set so as to provide producers with an attractive enough return to encourage them to invest in cotton production whilst at the same time maintaining viability of companies involved (Poulton and Hanyani- Mlambo (2009)). This could be a possible factor contributing to the exclusion of smallholder farmers in prices setting.

The input requirements for cotton production are based on agronomic trials and requirements for the cotton industry in Zimbabwe (Cotton Ginners Associations, 2009). With all seed and chemical requirements, growers may have been failing to breakeven due to fertiliser shortage as an underfertilised crop would not yield to the best of its potential. In general crop fertilisation should be in accordance to the soil and the crop yield potential, which in turn is related to the environment and management ability of the farmer (SeedCo, 2010).

The high frequency (98 %) of grower dissatisfaction with the prices offered by the cotton merchants was good indicator of potential reduction in cotton cropped land area. The cause of dissatisfaction could be the returns that farmers receive for their crops on the open market and which depended on the prevailing market prices, as well as the lack of ability to negotiate for prices with buyers, both of which are, according to Eaton and Shepherd (2001) are the perceived benefits of contract farming.

Frequently, sponsors could not indicate in advance the price (s) to be paid and these were not specified in the agreement. The contracts were not based on fixed prices but are related to the market prices at the time of delivery as recommended by Eaton and Shepherd (2001). However, it should be highlighted that, the given ratings could have could have been influenced more by grower emotions as the study was conducted when there was a price impasse between cotton growers and cotton at the time of conducting the interviews in 2010.

Although the fall in cotton crop area between 2006 and 2009 was wholly attributed to the fall in global market prices, the economy in Zimbabwe was also not performing well during that period (Coltart, 2008). The then local currency, the Zimbabwean dollar was depreciating and the country experienced inflation during the period in question. The peak month of hyperinflation occurred in mid-November 2008 with a rate estimated at 79,600,000,000% per month (Hanke, and Kwok, 2009), and this made investment in agriculture difficult.

The brief cotton crop area increase during the 2009 – 2010 growing season could be attributed to promulgation of Statutory Instrument of Zimbabwe (SI) 142 of 2009, which protected both cotton farmers and cotton buyers, through prohibiting marketing. The dollarization of the economy in 2009 could also be attributed to the increasing trend. This could have built in confidence in the sector, resulting, resulting in the return to business of contractors who had withdrawn earlier on.



The change to other crops was a natural response among growers and this on the national scale came simultaneously with a recorded fast growth in the number of registered tobacco growers in Zimbabwe and was recording high prices on the market (TIMB, 2012).

The suggested solution by both cotton growers and cotton merchants could be adopted in order to re-stimulate interest in the crop, as these were aired by the two parties affected (Ada et al, 2006). This becomes important for some low rainfall areas where cotton becomes the only commercial crop that can possibly be produced.



#### **4. CONCLUSIONS**

Cotton producer price instability has caused gender and age disparities among farmers, with more males than females, and with the higher age group dominating the industry.

The fall in the prices of cotton has also caused a reduction in the marketing share by contracting companies. Due to increasing constraints the cotton contracting companies were not providing all the cotton input requirements to cotton growers and often, they were disbursing inputs late into the season. With the late disbursement of inadequate inputs, growers would not be able to attain profitable yields.

Cotton producers were dissatisfied by the effects of declining market prices and responded to the price fall by abandoning the crop in the field or withheld the harvested crop anticipating an improvement in market prices. Some growers changed their interests to other crops which were fetching higher prices on the market. Cotton contract farming was not benefiting cotton producers to manage the risk of producer price instability.

#### **5. RECOMMENDATIONS**

The study recommends the training of cotton producers on risk management of producer price instability so as to improve their skills in negotiations on producer price setting. The Zimbabwean Government could also subsidize cotton production inputs when world lint prices are low so as to widen the difference between its income and its expenditure thereby retaining traditional cotton growers. Cotton merchants could also do forward contracting of cotton producers in order to cushion the farmer against producer price risks.

All cotton stakeholders should actively participate in producer price setting so as to eliminate chances of influence from dominant players and cotton inputs accessed on credit should be at cost price so as to motivate cotton producers. Cotton merchants/ contractors should offer

standard recommended inputs hectare package on credit scheme so that contracted growers could attain profitable crop yield.

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