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An Investigation on the Effects of World Market Cotton Prices on the Profitability of Cotton Production (The Case of Chiredzi Communal Farmers, Zimbabwe)

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Abstract:

The purpose of the study was to make a survey on the effects of world market cotton prices on the profitability of cotton production to communal cotton farmers in Chiredzi, Zimbabwe for the period from September 2012 to October 2013 in which there has been a wrangle between cotton farmers and cotton companies over lower returns on cotton production due to lower prices being offered by cotton companies to farmers. The objective of this study was to ascertain whether world market prices affect communal farmers' profitability of cotton production, to explore the benefits of continuing with cotton production, to assess the challenges faced by communal farmers in producing cotton, and to determine possible measures that need to be put in place in the cotton industry to mitigate losses resulting from the effect of world market prices. The researcher used a survey study as the research design. The population used to obtain information was from ten different villages around Chiredzi communal areas. Interviews and questionnaires were used for data collection. Sampling of the population was conducted using judgmental or purpose sampling method. The research found that world market cotton prices severely affect profitability in cotton production, it was also noted that with the current prevailing pricing system in the cotton industry, there are no substantial benefits in cotton production, cotton production is also lacking financial support and there are currently no measures put in place to reduce losses that may result from the effects of world market cotton prices. The researcher therefore concluded that there is a link between world market prices and profitability. The researcher recommends that cotton companies should also carry the burden of low world market cotton prices rather than passing it all to the farmers. Other financial institutions such as banks should take a leading role in providing farming loans to cotton farmers and government must intervene with the aid of providing subsidies in cotton prices in the event that prices are below production costs.

Key words: World market, world market price, lint, Bale and Loss

1. Introduction

Cotton is grown in the semi-arid regions of Zimbabwe and is the major cash crop for communal cotton farmers for sustainable development, education, accessing healthy facilities and livelihood. Distortions in the product producer price will have negative effects to the farmers and their communities at large while favourable producer prices enhance development and sustainability (Rukuni et al, 2006). However, the industry is susceptible to fluctuations in cotton prices which seem negatively skewed to farmers every season as the product prices are determined by the demand and supply of the world market hence the cotton merchants are reluctant to offer favourable producer prices. This has become a topical issue in the cotton industry year-in –year-out and has necessitated a controversy between cotton farmers and cotton companies during the buying season (Mutema, 2012). There is much pressure by farmers to be granted a higher producer price in respect of their crop (seed cotton) each year. As the prices offered by the

cotton merchants are guided by the current world market pricing index of lint governed by the prevailing demand and supply of the international market, the result of such pricing determination has several effects to both the cotton ginner and farmers (Cotlook, 2006).

Cotton is the major foreign currency earner in Zimbabwe's agricultural sector after tobacco and 90% of the product exports to the international market (Chizarura, 2006) with communal farmers contributing about 70% of the national cotton yield. Cotton is generally a capital and labour intensive crop and its production is based on the ability of a company to finance farmers throughout the production season since farmers can afford much of the field work (Wooded, 2003).

Despite being the second foreign currency earner, there is a loud outcry by farmers on lower producer prices being offered for the commodity which is below the farmers' expectations as postulated by (Rukuni et al, 2006). Esterhuizen (2012) asserts that the falling international cotton price is at present well below the aggregate overhead cost of production such that compelling growers to accept it is tantamount to impoverishing them or forcing them out of business. As reported by Rutsito (2013), some cotton growers countrywide have already resorted to growing other crops, with others, particularly in Mashonaland West, switching to soya beans and maize following a disastrous 2012 marketing season. Cotton fetched lower prices of US\$0.35/kg from US\$0.85/kg the previous season instead of the expected US\$1 to US\$1.50 at the start of the 2011/12 season resulting in farmers incurring huge losses as reported by the (Mutenga, 2012).

It is against this background that the researcher would like to carry out a survey research on the effects of world market cotton prices to profitability of cotton production as most farmers in the semi-arid regions of Zimbabwe (2009 to 2013) depend on cotton production.

1.1. Statement of the problem

The outcry of continuous net losses on earnings from cotton production fuelled by lower producer prices has been the major problem facing communal farmers in Zimbabwe. Some farmers are deserting cotton production due to unprofitability but others have no option as no other cash crop can be produced in their areas except cotton hence the need for the researcher to make a survey on the effects of world market cotton prices on profitability of cotton production in Zimbabwe.

1.2. Research questions

Do world market prices affect communal farmers' profitability on cotton production?, What are the benefits of cotton production to communal farmers?, What are the challenges faced by communal farmers in producing cotton?, What measures should be put forward to reduce losses emanating from the effects of world market prices to Zimbabwean cotton farmers?

2. Literature Review

2.1. Conceptual and Theoretical framework

The success of cotton profitability has been undermined by depressed and volatile world market cotton prices, partly as the result of uncurbed United States subsidies, and the ongoing downward trend of commodity prices as postulated by Esterhuizen (2012). Eaton and Shepherd (2007), observed that some countries like Mali, Burkina Faso and Chad has been battling at the World Trade Organisation (WTO) since 2003 to end trade-distorting cotton subsidies paid by industrialised countries to their farmers, which suppressed world cotton prices. In the context of these negotiations, some Africa's cotton exporting countries have sort financial support to offset the impact of world cotton price declines on their economies. This has led to a renewed debate around the role of African cotton sectors in economic development, sustainability of communal cotton farmers and poverty reduction in these countries, and the need for donor support to achieve these ends (Wooded, 2003).

While reform in the cotton industry has the potential to create market opportunities for cotton producers, transferring the risks of a highly volatile world market down to the bottom of the chain may benefit the ginning companies and traders, but only at the expense of poor farmers. At the very risk, Esterhuizen (2012) points out that, price risks should be shared between the farmers, ginning companies and the traders while the government and the donor community should intervene in cases of extreme or sustained risk, in line with public policy goals.

Norsidia (2010) argues that recent changes to cotton prices-setting mechanism particularly in Africa promoted by the World Bank have wider repercussions for the economies and likely to jeopardise the existing poverty in cotton growing areas and worsening food insecurity and indebtedness. The market is poised to post the most marked year-on-year price fall according to the International Cotton Advisory Committee (ICAC) during the 2012/2013 season. In light of the rising pressures on communal cotton farmers and the uncertainty of future favourable producer prices, Baumann (2011) suggest that support funds can play a critical role in ensuring a minimum price on cotton so that cotton farmers may sustain their income-earning activities and avoid sliding further into loss making and poverty. Eaton and Shepherd (2007) concurs with Baumann (2011) as he further points out that, in circumstances where the producer price of cotton is favourable and remains stable at the world market, communal cotton farmers profits increases thereby improving their standards of living.

2.2. Factors Affecting the World Market Price of Cotton

In its case against the United States at the WTO, Brazil asserted that world cotton prices would be 12.6 percent higher if certain U.S. farm programs were removed. The Food and Agriculture Organization of the United Nations (FAO) and the International Monetary

Fund (IMF) both estimate the potential increase to be around 2 percent (FAO, 2004). With the exceptions of 2003 and 2004, stocks over the past 10 years have remained relatively steady at more than 10 million tons. Over this same period the Cotlook Index has been declining and in 2006, was US\$0.56 cents per pound (Cotlook, 2006). Despite their demonstrated effects on cotton prices, subsidies are not the only external force at play concerning this issue. Additional factors having an adverse effect on global cotton prices include exchange rates, competition from less expensive synthetic fibers, China's decreasing consumption of and demand for cotton imports, the entrance of new producers in Brazil, Turkey, and Central Asia, and decreasing demand for commodities following the Asian economic crisis of 1997 (Oxfam, 2004).

2.3. Cost benefit analysis on cotton production

With reference to tillage, Chizarura (2006) found out that 7% of cotton farmers use tractors, 60% animal traction and 33% are dependent on hand tillage. Beginning the year 2004 and 2005 season, the percentage using tractors declined to 4% due to scarcity and sharp increase in the price of fuel and the high repair and maintenance costs of tractors. Animal traction appears to be increasing as more and more farmers are acquiring cattle abandoning due to ever increasing costs of using tractors. Around 60% of farmers use fertilisers in cultivating the cotton crop while the remaining proportion does not apply fertilisers because they cannot afford it and productivity is compromised (Wooded, 2003). Farmers with draught power and applying fertilisers realises around six bales per hectare and those who depend on tillage and averse to fertilisers only get two bales per hectare (Rukuni et al, 2006).

2.4. Perception on returns by Cotton merchants

While admitting that there is a global depression on cotton prices, cotton company's tend to view inefficiency of farmers as the primary factor for the reduced farm incomes (Minot and Daniels, 2002). According to Chizarura (2006), acceptable yield per hectare or an efficient farmer should produce about seven bales per hectare. Such a level of production would lower production costs and increase net profit per hectare. Eaton and Shepherd (2007) pointed out that farmers are realising low yields due to misuse of farming inputs loans disbursed to them, which were meant for cotton production to other crops, therefore productivity without doubt, is declining and consequently huge debts are incurred through abuse of the input credit scheme. Furthermore, more farmers exhibit disloyalty by side marketing, whereby beneficiaries of input credit schemes take business to competitors in search of better prices at the expense of the traditional buyers who financed cotton production in the first place. The announced prices are a direct response to market forces. Since 70% of the cotton lint is exported (Esterhuizen, 2012), the merchants believe that they would incur losses if they accept prices advocated by the farmers, which are well above the international prices.

Empirically, less than 5% of the farmers can achieve a yield of seven bales per hectare (Chizarura, 2006). The practise of procuring inputs on credit and then selling them below cost is a response to immediate cash needs especially during the summer season when most households run out of food. Side marketing is a desperate attempt to maximise earnings from one's produce as a result of the weak bargaining power position the structured adjustment programmes (SAPs) had brought to them and the declining world market prices (Wooded, 2003). Both practices arise out of depression.

2.5. Perception on returns by growers

Growers feel that they are being short-changed by the cotton merchants and they admit to abuse of the input credit facilities and side marketing, but view the producer price as the primary cause of the malpractice (Rukuni et al, 2006). Farmers want to have an input in price setting that they feel are being denied. The ultimate price should enable them to recoup in full the production costs incurred. As a way forward, cotton farmers like to see an increase in cotton prices in tandem with the increase in inputs costs (in which they have no control) through their effective participation in price setting (Rukuni et al, 2006). The farmers perceive the present system employed by cotton merchants is not taking into account the farmers production costs as prostituted by (Wooded, 2003)

While acknowledging the influence of the global price on local producer prices, the cotton merchants still regard the irresponsible behaviour of the farmers as the primary factor. On the other hand, farmers believe that their non-participation in price setting is responsible for ever-decreasing returns from cotton production (Larpar et al, 2011). Both sides are focusing on national factors without seriously considering the international dimension on the pricing factors. Farmers feel the pressure exerted on them by cotton company's while cotton company's feel the same from farmers (Larpar et al, 2011).

2.6. Benefits of cotton production

Cotton is one of the most important and widely produced agricultural crops in the world and it is produced for various purposes (Fortcucci, 2005). He generally pointed out the benefits of cotton production such as meeting basic consumption needs of communal farmer, exporting to earn foreign currency, providing the raw material for textile production to domestic markets and export, it is an important cash crop for millions of other people worldwide and the income it generates contributes to the rural household food security especially in developing countries and employment creation in manufacturing industries and rural people.

2.6.1. Economic benefits

Cotton production also contribute immensely in revenue with regards to agriculture and economy in 2000, world cotton production amounted to 19 million tonnes (Fortcucci, 2005). Based on export unit levels, the value of world cotton output in 2000 was estimated to about US\$26.66billion and for developing countries, cotton production is still the key on which large parts of the population are dependent (Fortcucci, 2005).

Cotton also contributes heavily to agriculture export revenue as it is one of the important commodities traded at the world market, both in terms of value and quantity. In absolute terms, cotton exports brought more than US\$100million in countries like Zimbabwe, Benin, Cote d'voire, Egypt and Mali in the year 2000 (Oxfam, 2004). In situations of heavy and often rising dependence on cotton export revenues, the falling prices over the recent years have a dramatic effect on economies concerned. According to Oxfam (2004), between 1997 and 2002, the average world market prices of cotton, as measured by the Cotlook Index, declined by nearly 50%. Over this period, many of the countries heavily dependent on cotton export, which saw the value of their export, shrink despite export volume which either grew or at least remained steady.

According to Forticucci (2005), cotton plays a major role in food security as food import bills of developing countries have been rising steadily, reflecting both higher consumption levels related to income and population growth, but also in many cases, there is need to supplement slow-growing domestic food production through greater imports. If trade flows are based on comparative advantage rather than limitations to diversification caused by technological or policy constraints, the use of resources to produce export commodities such as cotton rather than food for the domestic market should yield net benefits (Oxfam, 2004).

2.7. Challenges faced by communal farmers in cotton production

According to a study carried out in Zimbabwe by Dawes (2008), he noted challenges in cotton production such as resource limitations. Small holder cotton farmers are poor and do not have the resources to purchase the quantity of inputs required to produce commercially viable yields. Although many cotton companies provide farmers with material input support, the support is only designed to subsidize the farmers own resources. Therefore farmers do not apply sufficient quantity of inputs to produce commercially viable yields (Hanyani-Mlambo et al, 2002).

Labour shortages also continue to pose a major problem for smallholder farmers who require labour over and above that which can be supplied by the immediate family unit during certain crop stages, for instance, cultivation or harvesting (Minot and Daniels, 2002). Shortages of labour during these critical times will reduce yield and profitability.

There are also poor management practices as smallholder communal cotton production in Zimbabwe are generally characterised by a non-observance of good agricultural practices (Rukuni et al, 2006). For example, fields often do not have the correct plant populations, there is often poor pest, disease and weed control and farmers use retained seed of poor quality. The incorrect application of agrochemicals is not only ineffective in controlling the target pest, but can also be toxic to plants and hazardous to human health (Hanyani-Mlambo et al, 2002).

Timing of operations is again of major importance in ensuring maximum productivity (Hanyani-Mlambo et al, 2002). Crops must be planted at the right time and late application of pesticides and topdressing fertilizer including poor weeding can all negatively impact on yields and profitability in cotton production (Minot and Daniels, 2002).

Cotton companies often complain that farmers are over-reliant on the input credit schemes that are only designed to supplement the farmer's own resources (Rukuni et al, 2006). Farmers often do not use their own resources on contracted crops, but perhaps preferably apply their inputs to food crops. For example, farmers usually do not use their own resources (money) to buy chemicals to spray crops which are under insect attack.

Companies default is also a problem. Contract default is not the sole prerogative of farmers – it is also commonplace with companies (Hanyani-Mlambo et al, 2002). A common form of company default occurs when, for one reason or another, they are unable to supply the farmer with the promised inputs. Often the inputs are supplied too late, after a critical period in the crop cycle. As farmers are often particularly reliant on companies for inputs, this default reduces productivity and sometimes compromise the farmer's ability to repay input loans (Hanyani-Mlambo et al, 2002).

Poor pricing is one of the most challenging aspects of contract farming (Heinisch, 2006). Before embarking on cotton farming companies have a responsibility to conduct a profitability analysis to ensure profitability for both parties under a wide range of possible scenarios (Hanyani-Mlambo et al, 2002). In order to be sustainable, contract cotton farming must present both companies and farmers with a win-win outcome. In a stable economic environment it is possible to advise farmers of the price that they can expect at the end of the season. This is a good practice which enables farmers to calculate cash-flows and potential profitability (Oxfam, 2004). However, this is not happening in Zimbabwe and farmers are often left at the mercy of the contracting company and prevailing market prices. Companies base pricing formula on one or more factors including farmer production costs, prevailing market prices, international commodity prices or fixed premiums on prevailing market prices ((Hanyani-Mlambo et al, 2002). Many smallholder communal cotton farmers interviewed expressed disappointment over the prices they are paid for their produce. Sadly, the bottom line is that should the opportunity arise for farmers to side-market, they will often sell all or part of their crop to the highest bidder regardless of input support (Rukuni et al, 2006). This is true in cotton industry which is characterised by rampant side-marketing. Whilst it is important that farmers understand that companies cannot subsidize low productivity, prices must be high enough to make the contract profitable at a realistic level of production (Minot and Daniels, 2002).

2.8. Measures and ways to reduce losses emanating from the effects of World market cotton prices

Zimbabwe should adopt some of the measures put by other governments' in order to safeguard losses incurred by cotton farmers. For instance, according to the World Bank (2010), the United States government provides subsidies in the following way;

Marketing loan payments – Farmers use their crops as collateral for a loan from the U.S. Department of Agriculture's Commodity Credit Corporation (CCC). When the world price for cotton falls below the given loan rate, the borrower can repay the loan at the lower price and retain the difference.

Direct payments – These payments are generally tied to fixed, historical production levels and are an example of decoupled income support, meaning that they are not related to market price fluctuations or levels of production. They are therefore sometimes considered less trade distorting than other types of payments.

Countercyclical payments and emergency assistance – Countercyclical payments, based on historical production levels, are designed to protect farmers against a decline in prices and are triggered when the market price for cotton falls below a target price. They are decoupled from payments to offset low commodity prices.

Crop insurance – Insurance is provided through private insurers at a subsidized rate to protect farmers against losses caused by natural disasters. The USDA's Risk Management Agency pays more than 50 percent of the premiums and makes additional payments to the insurers for administrative costs. Any losses over the premiums are also paid by the government.

Other experts also suggest that the government should reduce operating costs of cotton companies by reducing import taxes relating to goods, materials or equipment imported specifically for cotton production.

3. Empirical Evidence

3.1. Case study: Mali

As has been recently studied in Mali by Larpar et al (2011), the global market is playing a major role in determining profitability of cotton farmers in Mali. It was discovered that prices during the year 2005/6 were not favourable as they fell below the average costs of production and farmers were producing at loss. The rising input costs and falling yields are increasingly weakening the profitability of cotton production. Oxfam (2012) also confirms that interviews carried out with cotton farmers in Mali revealed that declining household income resulting from the falling world market prices means that farmers have insufficient income to feed their families.

3.2. Case study: Central and Western Africa

According to World Bank (2010), reduced national price levels may exaggerate the net prices paid to farmers once cotton inputs and loan repayments are taken into account. This means that many households tend to have cotton which is least profitable, implying that the most impoverished households will be hurt the most. Recent reports from farmers in Central and Western Africa conducted by FAO (2008) confirms that falling cotton prices are making poverty and food insecurity worse due to unprofitability. On the other hand, the Pan African news (2012), pointed out that in Tanzania, despite falling prices leading to unprofitability and increasing poverty, many farmers express their intention to continue producing cotton since up to now cotton provides them with benefits such as a minimum guaranteed market prices with a known buyer which provides a predictable income, access to inputs and credit through the cotton production system, and a positive impact on yields of rotational crops via the effect of cotton inputs.

- Survey on Zimbabwe: The extent of farmers' dependency on cotton

In Zimbabwe, cotton farming is playing a major role in family livelihoods as most communal farmers who do not farm tobacco depend on cotton as their cash crop. A survey on farmer's dependency on cotton carried out by Chizarura (2006) shows that 70% of farmers in Mashonaland West and Midlands depend on cotton production, 75% in Mashonaland central, and 72% in the Lowveld region. This shows that cotton is an important cash crop for many rural households in Zimbabwe; however, farmers have to consider production costs involved in cotton production in order to do farming as a business.

3.3. Case study: United States Cotton prices and the world cotton market

A study by McDonald (2009) showed that economic changes have altered the market for U.S. cotton since the 1990s. Shifts in textile trade policy, combined with significant liberalization of China's cotton production policies, have overturned longstanding global consumption and trade patterns. The result has been to shift the United States into a nearly unprecedented dependence on global markets. While about 60 percent of U.S. cotton was consumed domestically for the last 60 years of the 20th century, exports have significantly surpassed the use of cotton within the United States since 2001/02. As a result, U.S. cotton prices are no longer determined solely by domestic supplies and stocks.

The study results suggest that a 1-percent increase in U.S. supply from the previous year will cause U.S. cotton prices to drop about 0.9 percent, in real terms. Changes in foreign supply affect U.S. prices on a nearly one-to-one basis: prices fall as foreign supply rises. United States of America commodity policy helps support U.S. cotton prices: a 1-percent increase in the end-of-season stocks covered by the loan program (with stocks measured as a proportion of U.S. cotton use) raises prices by 0.4 percent. Import demand by China continues to play an important role in determining prices: a 1-million-bale increase in China's net imports raises prices by 3.1 percent.

3.4. Case study: Benin – The Impact of global cotton markets on rural poverty in Benin

A study by Minot and Daniels (2002) showed that a 40 percent reduction in the farm-gate price of cotton reduces the income of cotton growers from 99,437 FCFA/person to 78,730 FCFA/person, a reduction of 21 percent. Taking into account the incomes of non-growers, which do not change in this simulation, the average income falls from 105,203 FCFA/person to 97,944 FCFA/person., or 7percent. Smaller reductions in the cotton price cause roughly proportionate changes in income. With a 40 percent fall in the cotton price, the incidence of poverty among cotton farmers rises from 37 percent to 59 percent. The average incidence of poverty, including

both cotton growers and other farmers rises 8 percentage points, from 40 percent to 48 percent. In absolute terms, about 334 thousand people would fall below the poverty line as a result of a 40 percent reduction in cotton prices. The results also indicated that there is a strong link between cotton prices and rural welfare in Benin. A 40 percent reduction in farm-level prices of cotton is likely to result in a reduction in rural per capita income of 7 percent in the short-run and 5-6 percent in the long-run. Furthermore, poverty rises 8 percentage points in the short-run, equivalent to an increase of 334 thousand in the number of individuals in families below the poverty line. In the long run, as household adjust to the new prices, the poverty rate settles down somewhat, remaining 6-7 percentage points higher than originally. Smaller reductions in the cotton price cause roughly proportionate changes in income.

However, for this research, the researcher tends to make a survey on the effects of world market prices of cotton on the profitability of communal farmers in Zimbabwe where there is no subsidies paid to the farmers as compared to other countries where cotton farmers are provided with incentives if the market is not favourable.

4. Research Methodology

The researcher used descriptive research design in the form a survey. A survey research is a research method involving the use of questionnaires and/or statistical surveys to gather data about a desired phenomenon (Zikmund, 2005). The survey study has the advantage that it is possible to collect data from a large population (Borg and Gall, 2001). The descriptive qualitative research was also preferred to other quantitative approach simply because data was collected through the use of questionnaires and interviews which were thought to be ideal for yielding the required data under study. Furthermore, it was important to be in direct contact and get firsthand information and assess the effect of price changes in the communities.

The population for the study was 500 Chiredzi communal cotton farmers from areas namely: Save forty, Vhelemu, Chisase, Crown range, Ditoi, Masapasi, Chikombedzi, Bangala, Engros and Nyikavanhu. Staff from the cotton industries such as The Cotton Company of Zimbabwe, Terrafin Investments, Olam Zimbabwe and other relevant experts in cotton production was also involved. The entire communal farmers in Chiredzi could not be used as the total population as that would be very difficult for the researcher to travel all over the areas. The sample used for the purpose of this research is 100 participants from ten different communal areas made up of ten farmers from each area. In addition, 10 experts in the cotton industry were interviewed.

- **Data Presentation, Analysis And Discussion**

4.1. Response rate analysis

The researcher distributed questionnaires to communal farmers and experts in cotton industry basing on the sample size of 100. The table below shows the response rate:

Questionnaire	Absolute frequency(n)	Relative frequency (%)
Returned	86	86
Not returned	14	14
Total	100	100

(Source: primary data)

Table 4.1: Response rate summary for cotton farmers (n=100)

The table 4.1 above shows a response rate of 86%. A high responds rate means that the data to be presented is more accurate and reliable since it represents views and opinions of the majority (86%) of the targeted population and generalisation can be made from the data. 14% of the responses were not obtained.

Questionnaire	Absolute Frequency(n)	Relative Frequency (%)
Returned	10	100
Total	10	100

(Source: primary data)

Table 4.2: Response rate summary for experts in cotton industry (n=10)

A 100% response rate was obtained from questionnaires distributed to experts in the cotton industry which improved the reliability and viability of the data collected.

4.2 Responses by Gender

The table below illustrates responses of questionnaire and interviews by gender.

Gender responses	Males	Females	Total
Cotton farmers	34%	66%	100%
Experts in cotton	80%	20%	100%

(Source: primary Data)

Table 4.3 Response rate by gender

From the table above, the research showed that 34% of the respondents were males and the majority (66%) of cotton farmers were females as their spouses are said to be working in local companies and others in South Africa while for experts in cotton industry, 80% were males and 20% females.

The diagram below shows the responses from farmers' household heads age groups;

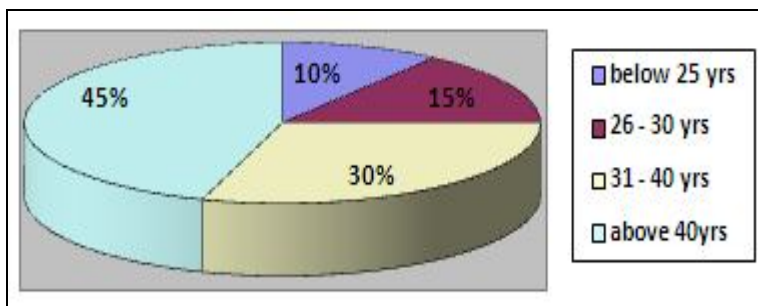


Figure 1: responses by household head age

(Source: primary data)

The figure above suggests that more of the young (below 40 years) are not into cotton production. More of those aged above 40 years are actively in cotton production. This concurs with a study carried out by Rukuni et al 2006 which showed that most elderly people are in cotton production due to unemployment resulting from early retirements from work and age retirements. On the other hand, this study found out that most young people have deserted farming to look for green pastures in the neighbouring countries citing unprofitability in cotton production. In addition, the survey showed that most of the respondents have been in cotton production for more than 10years as illustrated by the diagram below;



Figure 2: Period under cotton production

(Source: primary data)

The diagram above shows that 63% of the communal farmers in Chiredzi have been in cotton production for more than 10years and only 2% are new farmers. This means that most communal farmers in Chiredzi settlement depend on cotton production for a living. This is also true with cotton farmers in Benin, as shown by a survey carried out by Oxfam (2004) that most rural farmers depend on cotton production. However, it is a different situation as for communal farmers in Chiredzi as most of them are in cotton production for more than 10 years not because there is much profitability in cotton production as in Benin, but rather because the farmers has no other best alternatives to earn a living besides cotton production as it is a dry land region.

4.3 Analysis of qualitative data

From the interviews held by communal cotton farmers, the researcher discovered that 98% of cotton farmers are not happy with pricing of cotton since the year 2010 citing unprofitability of the crop due to continuous declining of the commodity selling price. This has caused many cotton farmers to reduce hectarage in cotton production hence reducing the national output of the crop for economic benefits arising from foreign exports national income. The survey discovered that about 80% of cotton farmers in Chiredzi are

incurring loss in cotton production due to the uncertainty of lower selling prices set by cotton merchants against the cost of production. Unlike in U.S, as shown by a study carried out by FAO (2006), farmers are not disgruntled with selling prices as the U.S government provides subsidies to their farmers when the world market cotton prices are lower to encourage them to continue with cotton production. To cotton farmers in U.S cotton production is always profitable as the farmers are always guaranteed with a favourable producer price. The diagram below shows the trend of cotton prices offered by cotton companies in Chiredzi area as from 2010 marketing season.

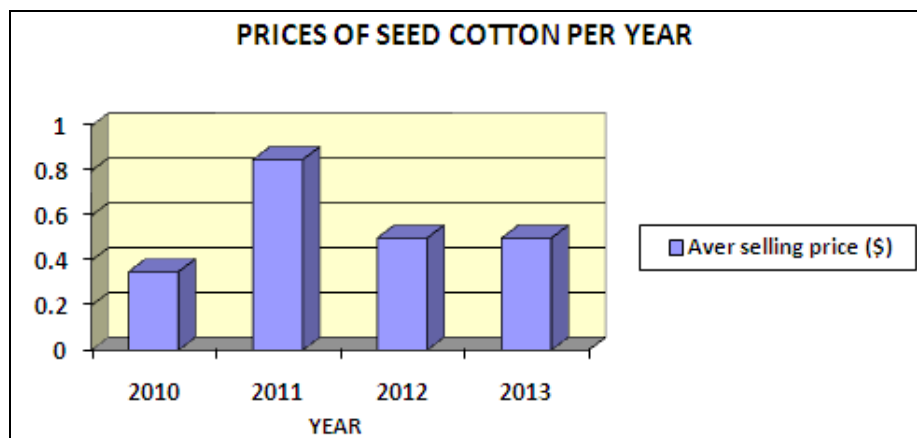


Figure 3: Trend of seed cotton price at the local market
(Source: secondary data)

The diagram above shows that there was an increase in seed cotton prices from 2010 to 2011. However, there was a sharp decrease of 35% (\$0.85/kg to \$0.50/kg) from 2011 to 2012 mainly due to reduced world market cotton prices hence affecting the local market. The selling price remained constant (\$0.50) in 2013 as the world also remained rigid on offering lower prices to local merchants. Interviews conducted with experts in the cotton industry suggests that lower world market prices are as a result of huge reserves of cotton lint by the world largest cotton producing countries such as China, United States, Pakistan, Brazil and India. Prices increases when there are no large reserves or low output in these largest producing countries. For instance, the prices were high in the year 2011 season due to massive floods that eroded the crop in some of the major producing countries like Pakistan and Brazil forcing the demand of the product at the world market. The experts in the cotton industry suggest that there is a direct link or effect of world market cotton prices to local prices. As world market prices decreases, local market also decreases and vice versa. The trend for seed cotton prices from 2011 indicates a downward trend which generally is negatively affecting profitability in cotton production. The survey conducted by the researcher found out that world market cotton prices therefore affect farmers' profitability in cotton production.

However, a study in Central Africa, particularly Tanzania, by World Bank (2010) showed that cotton prices were relatively stable for the past years in Tanzania and farmers were still eager to continue with cotton production as cotton is still profitable in the region unlike the case in Chiredzi, Zimbabwe where cotton farmers are not happy with the low prices being offered by cotton companies.

4.4. Challenges faced in cotton production

The survey by the researcher came up with two major challenges being faced by communal cotton farmers in Chiredzi through the interviews conducted. These are limited funding to produce the crop as it requires financial assistance in terms of farming inputs loans and subsequently lower selling prices as the farmers are price-takers who do not have input in coming up with selling prices of their crop. Currently no financial assistance is being provided by financial institutions like banks to support communal cotton farming in Chiredzi. Cotton farmers are getting such assistance from the cotton companies surrounding the area which subsequently contract them to produce and sell the crop to them. As such, a farmer is under contractual obligation to sell his produce to the company that financial assisted him by advancing credit farming inputs loans. Notably, the assistance by the cotton merchants is not sufficient for the production of the crop to harvesting period.

In some developed countries, as shown by a survey conducted by the World Bank (2010) in U.S, financial institutions and the government are playing a major role in financing cotton production unlike the case of Chiredzi communal farmers who only get farming loans from cotton companies by entering into contractual obligations to sell their crop to the only company that provides such assistance regardless of whether the contracted company is offering lower producer prices.

The diagram below shows financial assistance provided by each company to cotton farmers in Chiredzi communal lands:

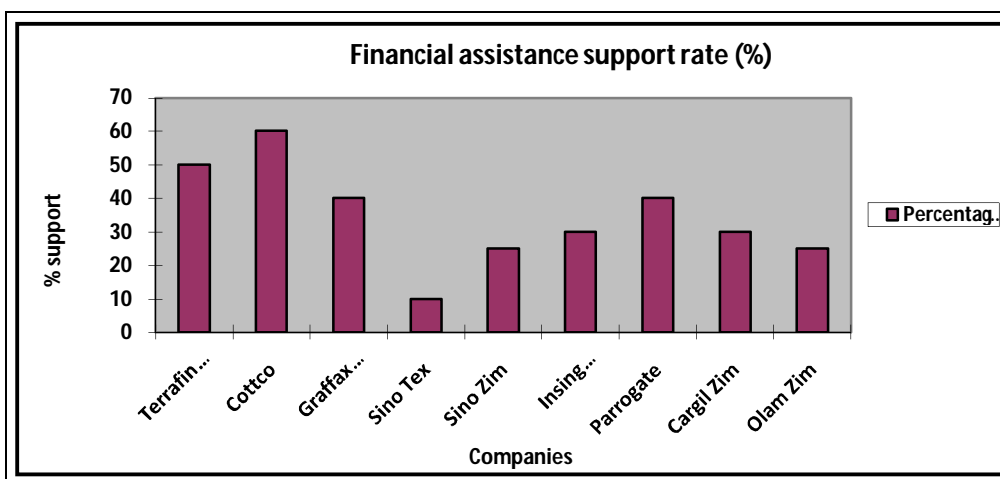


Figure 4: financial assistance by cotton merchants (Source: secondary data)

From the diagram above, all companies are not supporting 100% cotton production resulting in low production hence reduced profits. Limited funding in cotton production around Chiredzi communal farmers is adversely affecting profitability as the crop is being affected (lack of funds to buy pesticides) at a stage where financial assistance is still needed thereby reducing the projected output of seed cotton per hectare. Reduced yields means reduced net income as farmers will be also paying back farming inputs loans advanced to them.

As yields are reduced, profitability in cotton production is further reduced by lower selling prices offered at the market by local cotton merchants who also cry foul from the reduced world market cotton prices for the product. However, some experts pointed out that farmers should be educated on good farming practises that increase production on a small portion of land than farming very large hectares they cannot financially support.

Rukuni et al (2006) agrees that for sustainability and profitability, there is need for enough financial assistance to be granted to cotton farmers in Zimbabwe so as to manage the crop effectively and obtain higher yields.

4.5. Extent to which communal farmers incur losses

Information gathered by the researcher through questionnaires suggests that the extent to which communal cotton farmers incur losses in cotton production is very high. The diagram below indicates the extent of losses incurred in cotton production;

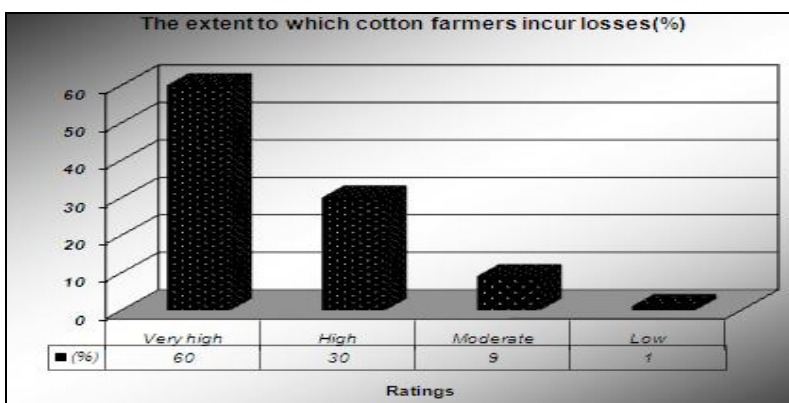


Figure 5: The extent to which farmers are incurring losses in cotton production (Source: primary data)

The diagram above shows the extent to which cotton farmers incur losses in cotton production. 60% of the interviewed farmers agree that there is very high losses being incurred in cotton production as from the year 2012 attributed by a sharp fall in seed cotton selling prices. On average, the research shows that more than 50% farmers are getting an average net return of us\$400 per each marketing season as reflected by the Cottco database, which is too little considering that this is the net income for the whole year.

However, Minot and Daniels, 2002 argues that a fall in prices is not the only valid reason for incurring losses in cotton production. Poor farming methods also contribute to incurring losses in cotton production as this result in low yields. Rukuni et al (2006) also agrees that farmers should concentrate on obtaining high yields per hectare in order to maximise profits rather farming a large portion of land while getting little output from it.

4.6. Measures and ways to reduce losses emanating from low world market cotton prices

The researcher gathered different views from both farmers and other experts in the cotton industry on measures and ways to reduce losses caused by low world market cotton prices which subsequently affect the local market. In order to reduce losses, most farmers are of the view that cotton merchants should reduce the cost of farming inputs loans advanced to them as they are perceived to be high than the market prices. However, most communal farmers pointed out that they have no cash to purchase cheaper farming inputs during the start of the season hence there is no other option to finance their business besides borrowing from the cotton companies. Farmers also insist that cotton merchants must offer competitive prices on the market and should take into consideration the cost of production incurred to produce the crop rather than offloading all the burden of low world market prices to them. Some other experts in the cotton industry suggest that farmers should concentrate on increasing the yield per hectare hence maximising their profits when market cotton prices are low. In addition, the government should intervene when cotton prices are very low by subsidising the cotton prices hence increasing profitability in cotton production.

4.7. The future behind cotton production in relation to profitability

The research found out that there is a bleak future in cotton production if cotton prices continue to fall. The diagram below shows the responses of cotton farmers in whether to continue with cotton production in the future;

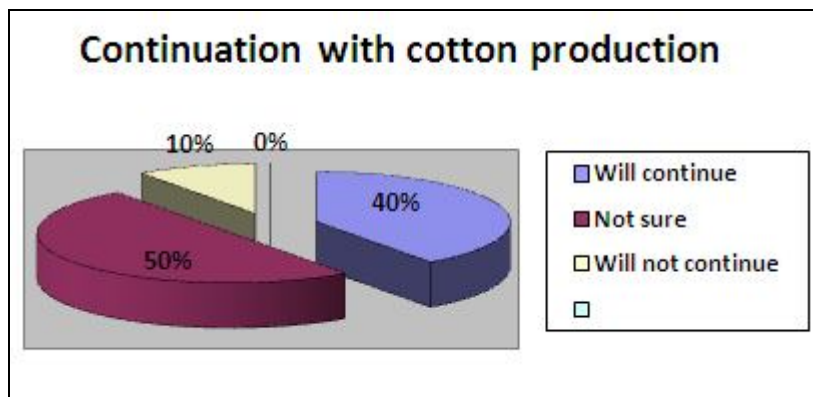


Figure 6: Responses showing whether to continue with cotton production in the future
(Source: primary data)

From the diagram above, there are mixed feelings from farmers on whether to continue with cotton production in the near future. The research shows that more than 50% of the cotton farmers are disgruntled and unwilling to continue with cotton production in the near future due to unprofitability of the crop. The analysis shows a reduction in cotton production in the future if seed cotton prices are to continue being affected by world market prices. However, this is a different scenario to cotton farmers from Central Africa according to Oxfam (2004) who expressed that they will continue with cotton production even if offered lower prices mainly due to other benefits they get such as guaranteed market for the crop as they do not go around looking for buyers, ready income and finance they get to produce the crop.

4.8. Benefits of cotton production to farmers in Chiredzi

Despite the negative effects being caused by low world market cotton prices in Chiredzi community, some cotton farmers recently found it beneficial to produce cotton as it helped them earn cash for their children school fees, buying necessary household foodstuffs, clothes and money to buy more cattle which also helps them earn a living in drought seasons. However, from this research, farmers are deriving no benefits in cotton production as they say they are getting worse off each season due to continuous decrease in producer price. From the interviews conducted, some young farmers are promising to quit cotton farming as a result of unprofitability. Oxfam (2012) also agrees with these sentiments citing low cotton prices in Africa as compared to the developed countries such as U.S and China where farmers are being given subsidies if producer prices are not favourable in a particular season.

5. Summary, Conclusions and Recommendations

5.1 Summary of the research findings

In an attempt to answer the research questions of this study, the research came up with the following findings in the research;

- World market cotton prices severely affect profitability in cotton production
- There are currently no benefits in cotton production with regards to the prevailing market forces
- Lack of enough financial assistance and lower producer prices are the major challenges being faced by communal cotton farmers.
- No measures have been put forward to reduce losses that emanates from the effects of world market prices.

5.2. Conclusion

The following conclusions were made from this research;

- A decline in world market prices results in decrease to local market prices hence affecting profitability in cotton production. This will result in farmers abandoning cotton production in the near future hence negatively affecting the economy
- As long as cotton prices remains very low, cotton farmers will still find no benefits in cotton production hence affecting their livelihoods in terms of cash to finances their requirements
- Lack of financial assistance and lower producer prices may result in reduced cotton production thereby affecting both farmers profitability and hampering the economy at large.
- If no measures are put forward to reduce losses that emanates from the effects of world market prices, communal cotton production will remain unprofitable in Zimbabwe.

5.3. Recommendations

Based upon the above results, the researcher recommends that;

Cotton companies should also carry the burden of low world market cotton prices rather than passing it all to the farmers hence all should make profits on cotton production.

Cotton prices should be gazetted taking into consideration the production costs incurred by farmers to produce the crop. This should be enforced through government agents such as the Zimbabwe Agricultural Marketing Authority in (ZAMA).

Other financial institutions such as banks should take a leading role in providing farming loans to cotton farmers while at the same time cotton companies should charge fair farming inputs prices on disbursing the inputs to reduce production costs hence increasing productivity and profitability in cotton production.

The government must intervene with the aid of providing subsidies in cotton prices in the event that prices are below production costs to encourage cotton production as it brings foreign currency to the economy.

6. Areas for Further Studies

Future studies can carry out further survey using different sampling methods as this researcher used judgemental or purposive sampling. Other researcher can also carry out the research in different areas as this researcher only made a survey on Chiredzi communal farmers only.

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