

Cotton Production and Price Trends in Tanzania

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SEACF-16/17 JUNE 2014-MAPUTO

1. Background

- Cotton is Currently one of the most important cash crops
- 2005/2006 it was a first foreign export cash earner
- Grown in WCGA & ECGA
- On average 400,000 hectares are sown
- 350,000 to 500,000 farmers are involved
- 100% rain fed
- Low inputs-output farming system
- 500 kilogram per hectare, yield
- Planting decision is based on previous season FGP
- FGP depends on prevailing international prices

2. Objective

- To investigate cotton production and prices trend in Tanzania from 1992 to 2014
- To identifying some attributes in markets such as foreign exchange, Fob prices and the farm gate prices
 - their relationships
 - their correlation with cotton production

3. Methodology

- Secondary data, was collected on seed-cotton and prices from 1992 to 2014 season
- From price information a percentage of farm gate prices on Fob, was calculated
- Quantitative and correlations between variables were obtained by a general linear model Procedure (SAS, 2000)
- searching was done
 - on indicative price setting model
 - farm get price comparison with other African countries
 - Tanzanian lint destinations
 - (during the 2013 marketing season)

4. RESULTS

Table 1. Simple statistics on cotton production and price variables

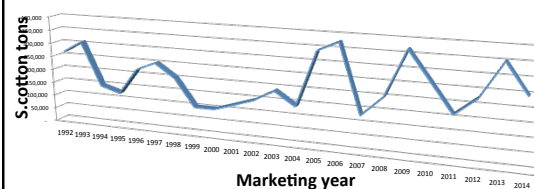
Variable	(n)	Mean	Std. Dev.	Min.	Max.
Cotton Production (T)	23	214,609	87,085	105,000	376,500
Average Farm Gate Prices – FGP (TZS/kg)	23	310	241	60	1000
Lint Export Prices in (USD/kg)	23	1.41	0.38	0.88	2.27
Lint Export Prices in (TZS/kg)	23	1365	847	315	3592
Seed Cotton Export Prices in (TZS/kg)	23	471	292	109	1239
Number of Seed Cotton Buyers in market	23	24	12	7	42
%age of Farm Gate Prices on Fob	23	61	14	38	84

Results.....

- Table 1 saliently showed large seasonal disparity in cotton production from 105,000 to 376,000 metric tons during a study period

- There was also high fluctuations in production, as shown in Fig.1

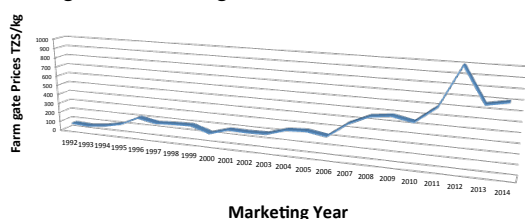
Figure 1: Cotton Production Trend



Results.....

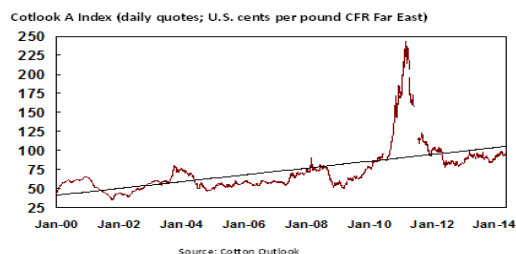
- Weather has been singled out to be the cause of the seasonal cotton fluctuations
- But, Farm Gate Price was an issues as shown in Fig 2.

Fig 2: Actual Average Farm Gate Prices Trend



- Tanzanian farm gate prices trend followed on the ever volatile (with comparatively higher amplitude) international prices as shown in Fig. 3 for the Cotlook A index trends.

International Cotton Prices



Results.....

- The similarity between domestic and international prices exhibited "export parity price" pattern
- Thus, local prices were equal to international prices less operating costs, typical of the fully commodity liberalized markets (Gerald, 2014)
- The production of cotton lint in Tanzania is small, relative to the overall lint global picture. Thus all stakeholders in the industry are price takers.
- Tanzanian Cotton is an export crop and the destinations were as in Table 2, for 2013 export season

Results....

Table 2: 2012/2013 Season lint destinations

COUNTRY	BALES	METRIC	USC/LBS	VALUE IN US\$
BANGLADESH	3,921	765	0.74	1,267,331.94
CHINA	137,281	26,770	0.69	43,845,583.60
CZECH	200	39	0.85	75,218.35
FRANCE	300	59	0.92	119,507.68
GERMANY	300	59	0.99	134,441.94
INDIA	45,053	8,785	0.73	13,709,166.95
INDONESIA	35,922	7,005	0.72	11,180,511.97
JAPAN	100	20	0.99	43,964.94
KENYA	10,260	2,001	0.72	3,271,122.56
MALAYSIA	13,400	2,613	0.79	4,194,807.79

Results.....

COUNTRY	BALES	METRIC	USC/LBS	VALUE IN US\$
MAURITIUS	7,017	1,368	0.72	2,315,384.00
NETHERLAND	100	20	0.86	38,254.60
PAKISTAN	5,660	1,104	0.76	2,019,304.00
PORTUGAL	100	20	0.99	43,848.77
SINGAPORE	1,100	215	0.68	149,600.00
TAIWAN	500	98	0.71	141,658.00
THAILAND	8,094	1,578	0.73	2,855,005.75
TURKEY	1,813	354	0.79	618,099.50
VIETNAM	23,038	4,492	0.73	7,722,782.66
TOTAL	294,159	57,361	0.72	93,745,595.00

Results....

- A Major destination was Far East
- In African were Kenya and Mauritius
- In Europe Tanzanian cotton was exported to Czech, Germany, France, Netherland, Portugal and Turkey, which imported mainly organic cotton
- Tanzanian organic cotton is highly regarded worldwide as the most authentic organic commodity
- due to its efficiency in production and certification setting

Variables	SCP	FGP	LEPUSD	LEPTZS	SCEPTZS	BUYERS	% FOB
Seed Cotton Production (SCP)	1.00	0.2496 ^{ns}	0.0538 ^{ns}	0.2493 ^{ns}	0.2491 ^{ns}	0.3021 ^{ns}	0.2047 ^{ns}
Farm Gate Prices (FGP)		1.00	0.5175*	0.9814***	0.9815***	0.7909***	0.7086***
Lint Export Prices USD/kg (LEPUSD)			1.00	0.5778***	0.5777***	0.1833***	-0.0176 ^{ns}
Lint Export Prices TZS/kg (LEPTZS)				1.00	1.00	0.7755***	0.5888***
Seed Cotton Export Prices TZS/kg (SCEPTZS)					1.00	0.7756***	0.5889***
Number of Buyers in the Market (BUYERS)						1.00	0.6891***
%age of Farm Gate Prices on Fob (%FOB)							1.00

Results...

- Table 3 results showed no correlation between cotton prices with cotton production
- This might be due to “*mirror hindsight view planning*” by farmers
- Farmers make decision to invests in cotton basing on historical (previous) season’s prices
- They are disadvantaged when the spot prices improves

Results....

- There were however, highly positive significant ($P \leq 0.001$) correlations among price variables
- This confirmed (statistically), the “*export price parity*” between the domestic and international prices
- As a result, decision made in developed world might affect local farmers (Mahofa, 2007)
- As ginners are more knowledgeable (informed) on market prices, the Board is more inclined to help the farmers, during indicative price setting,
- Indicative price setting is done before official marketing opening, as in Table 4 for 2013

Table 4: Indicative Farm Gate Price Setting Model in 2013/14

	TCB	TCA
Floating Variables		
Exchange Rate	1650	1640
Reference Prices		
- Lint	0.85	0.83
- Seeds	200	300
Pre-negotiated Variables		
- Tanzania Lint Discount	0.02	-
- Lint GOT	34.5	34.0
- Seed GOT	61.5	62.0
- Standard Ginning Costs	210	-
- Standard Overhead	38	-
- Standard Operating Costs	248	208
- Standard Margin %	8%	10%
- District Cess %	5%	5%

	TCB	TCA
Total Income		
- Lint Sales TZS	1,042	1,020
- Seed Sales TZS	123	124
- Total	1,165	1,144
Total Ginners' Costs		
- Ginning Costs	248	208
- District Cess	39	37
- Levy	0	36
- Ginners' Margin	93	114
- Total	380	396
Indicative Farm Gate Prices	785	748

Results....

- The volatility and the unpredictability of international cotton prices and exchange rates, increase the price risk for Tanzanian cotton stakeholders
- As lint is priced and sold in U.S. dollars on the world market, while costs are fixed in local currency, the currency risk affects ginners and the farmers
- However, the exchange rate has remained fairly stable around 1,600 TZS/USD since mid-2011

Results....

- Lint GOT is one of the most important parameters for the pre negotiated variables, during price model setting.
- In sensitivity variable test done on the model, a 1% increase in GOT, resulted in TZS 30/= increase in producer price
- But comparatively, the GOT of the Tanzanian current commercial varieties is one of the lowest as compared to peers in Africa. This is shown in Table 5 for the 2012/2013 marketing season.

Country	Local Currency	Price in USD/kg	GOT
Ethiopia	10 ETB	0.540	38.5
Nigeria	70 NGN	0.440	38.0
Uganda	1,100 UGX	0.430	35.0
Malawi	195 MWK	0.540	37.5
Mozambique	11.5 MZN	0.380	38.0
South Africa	4.5 ZAR	0.480	37.0
Tanzania	700 TZS	0.440	34.5
Zambia	2.23 ZMK	0.450	41.0
Zimbabwe	0.45 USD	0.450	41.0
Benin	265 XOF	0.525	43.0
Burkina Faso	235 XOF	0.465	42.0
Cameroon	265 XOF	0.525	42.5
Chad	215 XOF	0.430	40.5
Cote d'Ivoire	250 XOF	0.495	43.3
Ghana	95 GHS	0.480	41.0
Kenya	42 KES	0.510	33.0
Mali	250 XOF	0.495	42.0
Senegal	255 XOF	0.505	42.3

5. Conclusion

- A better understanding of the behavior of both the spot and the futures cotton prices is critical to enable producers to make more informed planting and marketing decisions.
- Improved prediction on the volatility on market conditions should help producers develop more efficient risk management strategy.
- For Tanzanian farmer price is but one, to improve incomes for better livelihood, cotton productivity levels has to be improved because prices are notoriously difficult to forecast due to the multiple factors involved.

• **Ahsante Sana!!!**

• **Karibuni Tanzania, *the Land of Kilimanjaro, Serengeti & Zanzibar***