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OUTCOMES OF THE NAIROBI WTO 10TH MINISTERIAL CONFERENCE:
IMPLICATIONS FOR THE EAC COTTON SECTOR DEVELOPMENT

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ABSTRACT

The paper examines the outcomes of the World Trade Organization (WTO) 10th Ministerial Conference (MC10) in Nairobi, what is termed the Nairobi package (WTO, 2015). Specifically, we investigate the implications of the package for the cotton sector development in the economy of the EAC as well as in the economies of member countries, with special focus on Uganda, Kenya and Tanzania. The paper employs a desk review and a quantitative approach to simulate the effects of removal of subsidies on cotton production, prices and export earnings in the EAC. The results indicate that the removal of subsidies would reduce cotton production among the top producing countries, reducing their export earnings while increasing both production and export earnings in the EAC. We conclude that EAC countries need to monitor the implementation of the decision on the elimination of export subsidies and increase cotton production to take advantage of these opportunities.

Key words: WTO; cotton subsidies; prices; production quantities; export earnings

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1. INTRODUCTION

At the close of the World Trade Organization (WTO) 10th Ministerial Conference (MC10), members secured what was termed the Nairobi package (WTO, 2015). The package included a commitment to abolish export subsidies for farm exports, i.e., export competition; the decision to maintain the Peace Clause[1] on public stockholding for food security purposes, which was agreed to in Bali in 2013; a Special Safeguard Mechanism (SSM) for developing countries; and measures related to cotton. The measures related to cotton include three agricultural elements: market access, domestic support and export competition. The decision, summarized in Annex 1, stresses the vital importance of the cotton sector to the Least Developed Countries (LDCs).

The Nairobi decision on cotton was fronted by Burkina Faso, Benin, Chad and Mali, the so-called "Cotton-4" countries that have been seeking a level playing field in the sector and calling upon developed countries to ensure that free trade rules are applied not only to products 'of interest to the rich and powerful' but also to those products wherein poor countries have a proven comparative advantage (Touré & Compaoré 2003). These countries made a proposal to the WTO in 2003 that described the damage that they believe has been caused to them by cotton subsidies in richer countries. In particular, subsidies distort world market prices, hurting cotton producers in developing countries. They called for the subsidies to be eliminated and for compensation to be made to all four countries while the subsidies remain, to cover economic losses caused by those subsidies. The East African Community (EAC) member countries, as part of the Africa Group, supported the proposal, given the importance of cotton to their economies. Subsidies by the major cotton producers, including the United States (US) and the European Union (EU), i.e., for Spain and Portugal, Brazil, India, China, etc., were estimated at US$6.5 billion in 2013-14, down from a record US$ 7.4

billion in 2012-13 (ICAC, 2014). The Nairobi package obliges rich countries to immediately abolish export subsidies, while developing countries have until 2022 to eliminate their own export subsidies.

East African countries have been engaging in cotton production, trade, and other activities since colonial times, and thus, the declaration may have significant implications for their economic development. The elimination of export subsidies facilitates the competitiveness of cotton producers in poor countries such as the EAC Partner States. This decision will allow prices to be determined by market forces and for a check on dumping, to the benefit of the EAC region. It is important to note that the textile industry in the EAC region faces numerous challenges, and thus, most of the cotton produced is exported as lint.

Table 1 presents the production trends of top cotton producers compared to the selected EAC Partner States. China and India are the top producers of cotton lint, with each producing more than 6 million tonnes and accounting for 19 percent of total global production over the past 2 years. The US is in third position at 3.5 million tonnes, although it was second to China by 2005, producing more than 5 million tonnes. Australia, is in fourth position. The US accounts for over 11 percent and Australia approximately 3 percent of global production. East Africa produces very little cotton when compared to the top global producers. Tanzania is the top producer in the EAC region, with a production peak of 124 thousand tonnes in 2008, standing at 81 thousand tonnes in 2014, although it registered more than 100 thousand tonnes per year previously. Uganda takes up second position with the highest registered production of 48 thousand tonnes in 2011, although this was reduced to 27 thousand tonnes in 2014. The entire EAC cotton producers account for less than 1 percent of global cotton lint production.

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1 This is a decision by WTO members, reached during the 9th Ministerial Conference in Bali, where members shall refrain from challenging through the WTO Dispute Settlement Mechanism, compliance of a developing member with its obligations under Articles 6.3 and 7.2 (b) of the Agreement on Agriculture (AoA) in relation to support provided for traditional staple food crops in pursuance of public stockholding programmes for food security purposes.

Table 1: Cotton lint production and production proportion (2003-2014)

Production in metric tonnes												
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
China	4,860	6,324	5,714	6,746	7,624	7,492	6,377	5,970	6,589	6,836	6,299	6,178
India	2,334	2,793	3,145	3,847	4,400	3,787	4,083	5,683	5,984	5,817	6,052	6,188
USA	3,975	5,060	5,199	4,498	4,182	2,790	2,654	3,942	3,413	3,770	2,842	3,593
Australia	387	349	645	597	301	133	329	387	926	1,225	1,017	885
Tanzania	50	114	126	44	71	124	88	88	54	75	118	81
Uganda	20	25	20	26	13	23	13	26	48	18	17	27
Kenya	7	7	7	7	8	5	5	4	7	4	4	4
Bulgaria	1	1	0	0	0	0	0	0	0	0	0	0
RoW	12666	16227	15344	15435	16101	15646	13751	13500	15879	16055	14751	15344
Total	24,300	30,900	30,200	31,200	32,700	30,000	27,300	29,600	32,900	33,800	31,100	32,300
Proportion												
China	20.0	20.5	18.9	21.6	23.3	25.0	23.4	20.2	20.0	20.2	20.3	19.1
India	9.6	9.0	10.4	12.3	13.5	12.6	15.0	19.2	18.2	17.2	19.5	19.2
USA	16.4	16.4	17.2	14.4	12.8	9.3	9.7	13.3	10.4	11.2	9.1	11.1
Australia	1.6	1.1	2.1	1.9	0.9	0.4	1.2	1.3	2.8	3.6	3.3	2.7
Tanzania	0.2	0.4	0.4	0.1	0.2	0.4	0.3	0.3	0.2	0.2	0.4	0.3
Uganda	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Kenya	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bulgaria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: authors' computation from FAO, 2016

The US is the world's top exporter of cotton, and this explains why its removal of export subsidies is expected to positively impact cotton producers in the EAC in terms of prices. As depicted in Table 2, with the exception of India, the top exporters, i.e., the US, Australia, Bulgaria, Spain and Portugal, all benefit from subsidies. The US accounted for 28 percent of exports in 2013, although in previous years, it accounted on average for 35 percent. This is followed by India at 24 percent and Australia at 12 percent in 2013. Uganda, Kenya and Tanzania export minimal quantities, and this is explained by their low production levels. An important fact to observe here is that China, despite being the top producer, is not a major exporter (even Tanzania exports more cotton). China thus consumes most of its cotton domestically through its thriving textile industry.

Table 2: Export quantity and export proportion (2003-2013)

Area	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Export in metric tonnes											
USA	2,687.60	2,897.90	3,400.30	3,506.40	3,259.40	3,012.10	2,553.20	2,962.30	2,774.20	2,760.40	2,789.30
Australia	459.7	445.9	599.1	578.1	327.6	225.6	317.2	474.1	796.6	1,212.00	1,172.70
Bulgaria	0.3	0.1	0.1	0	0	-	0	-	0.1	1.3	0.1
Spain	28.4	66.5	52.7	73	31.5	24.9	13.3	31.7	42	58.7	47.7
Portugal	0.4	0.4	0.6	0.4	0.4	0.3	0.3	0.3	0.3	0.7	0.8
Kenya	0.3	0.5	0.3	0.1	0.1	-	0	0.1	0.7	1	0
Uganda	1.7	3.2	1	0.2	0	0.2	0.4	0.6	1.6	3.9	2.4
Tanzania	40.3	47.3	66.3	46.5	34	54.1	78	55.3	30.3	92.8	68.3
China	112	9.1	5	13	21	16.4	8.2	6.5	25.7	17.5	6.6
India	159.4	67.4	598.2	1,143.90	1,532.00	439.6	1,328.20	1,565.50	1,871.20	1,918.30	2,367.70
RoW	3,506.50	3,854.90	4,102.70	3,770.00	6,126.10	2,669.20	2,417.20	2,715.20	2,694.40	3,664.10	3,217.10
Total	6,996.60	7,393.20	8,826.30	9,131.60	11,332.10	6,442.40	6,716.00	7,811.60	8,237.10	9,730.70	9,672.70
Export quantity proportion											
USA	38.4	39.2	38.5	38.4	28.8	46.8	38	37.9	33.7	28.4	28.8
Australia	6.6	6	6.8	6.3	2.9	3.5	4.7	6.1	9.7	12.5	12.1
Bulgaria	0	0	0	0	0	0	0	0	0	0	0
Spain	0.4	0.9	0.6	0.8	0.3	0.4	0.2	0.4	0.5	0.6	0.5
Portugal	0	0	0	0	0	0	0	0	0	0	0
Kenya	0	0	0	0	0	0	0	0	0	0	0
Uganda	0	0	0	0	0	0	0	0	0	0	0
Tanzania	0.6	0.6	0.8	0.5	0.3	0.8	1.2	0.7	0.4	1	0.7
China	1.6	0.1	0.1	0.1	0.2	0.3	0.1	0.1	0.3	0.2	0.1
India	2.3	0.9	6.8	12.5	13.5	6.8	19.8	20	22.7	19.7	24.5

Source: authors' computation from FAO, 2016

Table 3 highlights the import quantity of cotton lint and its proportion among major producers. China and India are major importers of cotton lint, followed by Bulgaria and Portugal. East African countries import negligible quantities of cotton lint and are instead net exporters who are vulnerable to price fluctuation. China's import quantity proportion has especially grown, from 7 percent in 2000 to 30 percent in 2013, while that of the US decreased from 10 percent in 2000 to 2.2 percent in 2013. This demonstrates that the textile industry is moving away from the US to China, and with the growing demand for cotton lint in China, East African cotton producers can be assured of markets for their product, hence the need to increase production.

Table 3: Import quantity (cotton lint '000) and Import quantity Proportion (2003-2013)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Import in metric tonnes											
USA	13.9	6.3	6.6	6.1	3.7	1.8	0.1	0.4	3.6	2.2	2.2
Australia	0	0.2	0	-	-	0	0	-	0.2	0	0
Bulgaria	18.1	20.1	17.9	25.1	16.6	10.4	6.1	6.2	2	4.1	4.7
Spain	20.4	15.4	13.8	4.8	3.6	1.8	4.9	3.5	5	4.1	3
Portugal	96.6	78.5	67.7	61.5	59.4	47.1	34.3	34.7	28	24.8	37.9
Kenya	1.8	2.5	2.2	1.8	1.9	2.2	2.5	1.5	0.6	0.2	0.1
Uganda	0.1	0	0	0	0	0.2	0.1	0.1	0.1	0	0
Tanzania	0	0.4	0.2	-	-	0.4	0.1	0	0	0	0
China	870.1	1,901.10	2,567	3,640.00	2,458	2,110	1,526.00	2,836.10	3,362.60	5,134.70	4,147.00
India	241.8	171.2	82.6	61.3	112.4	194.7	152.4	32.6	41.4	228.9	172.4
RoW	6,101.80	7,040.50	9,004.30	10,904.30	8,051.30	7,693.30	5,704.70	8,704.30	9,204.30	13,004.30	11,604.30
Total	7,364.60	9,236.20	11,200	13,100	10,247	9,889	7,900.40	10,900	11,400	15,200.00	13,800.00
Import quantity Proportion											
USA	0.2	0.1	0.1	0	0	0	0	0	0	0	0
Australia	0	0	0	-	-	0	0	-	0	0	0
Bulgaria	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0	0	0
Spain	0.3	0.2	0.1	0	0	0	0.1	0	0	0	0
Portugal	1.3	0.8	0.6	0.5	0.6	0.5	0.4	0.3	0.2	0.2	0.3
Kenya	0	0	0	0	0	0	0	0	0	0	0
Uganda	0	0	0	0	0	0	0	0	0	0	0
Tanzania	0	0	0	-	-	0	0	0	0	0	0
China	11.8	20.6	22.9	27.8	24	21.3	19.3	26	29.5	33.8	30.1
India	3.3	1.9	0.7	0.5	1.1	2	1.9	0.3	0.4	1.5	1.2

Source: authors' computation from FAO, 2016

It is estimated that removal of subsidies will reduce production and export by major producing countries (China, the US, India, etc), hence providing room for EAC countries to increase production and export. Thus, the study seeks to estimate the extent of production and export changes for EAC countries as a result, in order to offer advice on how to plan effectively to benefit from these changes.

1.1   Objectives

The paper seeks to examine the implications of the removal of export subsidies, as part of the Nairobi package, on the development of the cotton sector in the EAC. It investigates the effects of removal of subsidies among the major cotton producing and subsidizing countries on cotton sector development among the EAC Partner States. Specifically, the paper seeks to:

1. Estimate the likely decrease in production and export of cotton lint by the major producing and subsidizing countries; and
2. Estimate the likely increase in production and export of cotton lint by the EAC countries.

1.2   Scope

In investigating these effects, the paper focuses on cotton production and expert earnings, brought about by the expected change in the international cotton prices. Special focus is directed on Uganda, Kenya and Tanzania, which have traditionally produced cotton and have put in place institutions to manage and promote that sector. The cotton sector is rather small in Rwanda. On the other hand, Burundi and South Sudan are experiencing political instabilities. Moreover, South Sudan has just been admitted into the EAC. The analysis therefore does not cover these two countries.

2. LITERATURE REVIEW

A number of scholars have written extensively on protectionism and free trade. According to Coughlin *et al.* (1995), protectionism in the form of imposing tariffs, quotas, regulatory barriers, subsidies and exchange rate controls is assumed by countries as a measure to protect industries, producers and employment in their nations. Free trade proponents, on the other hand, argue that government interference in production and markets is counterproductive (Ricardo, 1891, Smith, 1976). As such, the issues of subsidies, tariffs and regulatory barriers in sectors of agriculture undermine trade, which hinders nations from progressing. In other words, products become less competitive in terms of prices in world markets, thereby discouraging some from production. As such, the role of subsidies in export industries has attracted considerable interest among economists over the years (Itoh, & Kiyono, 1987; Quirke, 2001; Tokarick, 2003; Goreux, 2003 and Ian *et al.* (2004).

The theoretical literature on subsidies and their effects has been well captured by, among others, Bjørnskov (2005), who notes that subsidies make it possible for producers to take lower prices while remaining competitive, since the subsidy covers what would otherwise be profit loss. This gives domestic producers an unfair advantage. In other words, export subsidy enables domestic firms to export up to the point where the domestic price exceeds the foreign price by the amount of the subsidy. The export supply curve shifts to the right, leading to a reduction in prices (international). However, deadweight losses come in as less efficient producers in the exporting country take over a proportion of global production, leading to overall welfare losses. The implementation of export subsidies by large economies leads to an increase in prices domestically but substantially reduces prices in world markets. This is because the large economies become price setters while small economies become price takers, since their output is too small to determine prices.

Brander & Spencer (1985) note that the terms of trade move against the subsidizing country but that its welfare can increase because, with imperfect competition, price exceeds the marginal cost of exports.

This assertion is supported by Itoh & Kiyono (1987), who argue that concentration of export subsidies on marginal goods improves the economic welfare of the country imposing the subsidy. Subsidies by developed countries result in loss of the comparative advantage of developing nations, who are small countries and price takers due to their low production levels.

Cotton subsidy policy is concentrated among a few rich countries, especially the US and the EU. Although some developing countries also provide little domestic support, they do apply agricultural domestic boarder barriers (Sumner, 2006). Since cotton textile manufacturing has of late moved to developing countries, the US has become a big player in world cotton exports to emerging textile manufacturing countries. In addition to subsidies, these countries also impose cotton import tariffs, which fall in the range of 10 percent, and some countries also impose import tariff rate quotas. Cotton production in the EU is concentrated in Spain and Greece, and these two countries witnessed a rapid increase in production upon joining the EU and thus becoming eligible for Common Agricultural Policy Subsidies (Karagianis 2004 and Baffes 2004). In the US, on the other hand, the political lobby for cotton is one of the strongest in the agricultural sector, as witnessed by the 2002 Farm Security and Rural Investment Act, which was passed by Congress amidst heavy influence by lobbyists (Watkins, 2002). The Act increased subsidies for farmers up to 80 percent for commodities such as cotton. This could be considered unfair for free trade, since developing countries cannot afford to subsidize their farmers as generously.

Considerable empirical research has been undertaken in an attempt to estimate the extent to which subsidies destabilize world cotton prices. Sumner (2003) estimates that the world price of cotton would have been almost 13 percent higher had there been no US cotton subsidies during the marketing years 1999–2002. Tokarick (2003), using the partial equilibrium model, finds that multilateral trade liberalization in all agricultural markets (including cotton) would induce a 2.8 percent increase in the world price of cotton and a $95 million annual increase in welfare.

The ICAC (2002) conclude that average cotton prices would have been 30 percent higher without direct subsidies during the 2000/01 season. The study, based on a short-run partial equilibrium model, acknowledged that although removal of subsidies would result in lower production in the countries that provided them (and hence higher prices in the short term), the impact would be partially offset by production shifts to non-subsidizing countries in the medium to longer term.

Goreux (2003) extended the ICAC model by replacing the base year with 1998–2002 average subsidies. The results estimate that without support, the world price of cotton would have been 3–13 percent higher in those five years, depending on demand-and-supply elasticities. On the other hand, Gillson *et al.* (2004), using subsidy data for 1999 and a model similar to Goreux's, estimate that removal of subsidies by the US, EU, and China would raise the world price of cotton by 18 percent. Using a simple computable general equilibrium model, Reeves *et al.* (2001) find that removal of US and EU production and export subsidies would induce a 20 percent reduction in US cotton production and a 50 percent reduction in US cotton exports, with much higher reductions for the EU. They also estimate that without support, world cotton prices would have been 10.7 percent higher during the 2001/02 season.

Poonyth *et al.* (2004) observe that the two main policy parameters reflecting distortions in world cotton markets are tariffs and domestic subsidies, of which an analysis of recent import policies of all major cotton importing countries showed that import tariffs are negligible. This validates the assertion that what makes the overall level of US subsidies so important for world markets is that a very large share of US domestic cotton production is exported. Consequently, they estimate that removal of cotton subsidies (as reported in the WTO notifications) would increase the world price of cotton between 3.1 percent and 4.8 percent, depending on assumptions about demand-and-supply elasticities. Therefore, export prices set by the US have a huge influence on world cotton prices, and this has far-reaching implications for farmers in developing countries who are competing against US exporters in international and domestic markets

(Watkins, 2002). In contrast, Shepherd *et al.* (2004) find a negligible impact of subsidies on the world price of cotton.

The most significant subsidy programme is that of the US, as they export most of the cotton produced. Countercyclical payments, introduced in 1998 (called emergency payments), seek to compensate farmers for the losses they incur due to low commodity prices. However, these became permanent under the 2002 Farm Bill. When domestic prices exceed world prices, cotton exporters and domestic end-users receive payments (also known as export subsidies or Step 2 payments) so that US exporters can maintain their competitiveness. Implicitly, cotton exporters receive another subsidy through the export credit guarantee programme, which insures importers of US cotton against potential defaults.

China intervenes in its cotton sector through price support measures (a reference price typically set above world prices), subsidies to transportation and marketing, and public stockholding. China also imposes a 3 percent tariff on cotton imports up to 0.86 million tons (and 90 percent for volumes above that amount). ICAC estimates that support to the cotton sector from 1998 to 2003 ranged from US$0.8 billion to US$2.6 billion (Baffes, 2005), while Huang *et al.* (2004) estimate that in 2001, the nominal rate of protection for cotton averaged 17 percent.

While numerous studies have been undertaken on subsidies, as summarized in Annex 2, there is limited literature on subsidies and their implications on the EAC cotton sector development, and moreover, there is limited literature taking the Nairobi package into account. This paper seeks to make a contribution towards filling this gap.

3.   METHODS

3.1   Introduction

The paper uses a desk review and quantitative research approach to investigate the dynamics of the cotton sub-sector with a focus on market access and export competition, which are the emphases of the Nairobi package. The specific area of focus is on the elimination of export subsidies and how it is expected to impact production and export earnings of cotton producers in the EAC. In this section, we discuss the framework used to analyse the effect of subsidies on cotton production and trade. We basically analyse the effect of subsidy on the quantity of cotton produced and exported by both major subsidizing countries and EAC countries. In addition, we simulate the effects of price changes by assuming price increases at different rates with the removal of subsidies. Lastly, we present the sources of data used for analysis.

3.2   Conceptual framework

The analysis is rooted in the theories of international trade that centre on the economics of protectionism vis-à-vis free trade. Protectionism in the form of subsidies leads to unfair competition, since the subsidizing countries are able to export their products at lower prices. Moreover, subsidizing countries are big producers who determine world prices, while those that do not subsidize are small producers who are price takers. This results in the poor performance of the affected sectors, which impacts trade, welfare and economic development. The free trade doctrine informs the drive by the Global North, including the US and the EU, to push for openness in international trade. The available literature as reviewed shows a clear linkage between subsidies and low export earnings in developing countries and LDCs. We elaborate on these by examining the implications of subsidies on the EAC cotton sector, including the implementation of the Nairobi decision on cotton. The conceptual framework is a modified version of Ian *et al.* (2004) and Goreux (2003) and uses a partial equilibrium model to estimate the impact of cotton subsidies on export earnings in West and Central Africa. We model cotton prices and quantities produced after eliminating subsidies as follows:

### *Prices and quantities produced after eliminating subsidies*

Ian *et al.* (2004) reproduce the model used by Goreux (2003) in terms of demand-and-supply curves as illustrated in Figure 1 (a, b and c). Figure 1 (a) is the producer country *i* that implements a cotton subsidy programme; Figure 1 (b) represents the world cotton market, *w*; and Figure 1 (c) is the producer country *k* where cotton is not subsidized (EAC countries). The world market for cotton, with subsidies, is illustrated in Figure 1 (b). The equilibrium point *M'* is at the intersection of the world demand curve (D_w) and the supply curve to the world with subsidies. This defines the price P_w and the size of cotton production with subsidies. Figure 1 (a) shows the supply curve (S_{iw}) of cotton-subsidizing country *i* to the world market. With subsidy σ_i, equilibrium point *I* corresponds to price $P_w + \sigma_i$ and quantity Q_{iw}. Without subsidy, producers in country *i* only receive P_w and produce Q'_{iw}. The equilibrium point moves left from *I* to *I'*, and production for the world market is reduced by $Q'_{iw} Q_{iw}$. This shift to the left is what affects producers in non-subsidizing countries, in this case negatively affecting the EAC in terms of quantities supplied on the world market.

From Figure 1 (b), for the case of no subsidy in country *i,* the supply curve faces the world market, which shifts left from equilibrium Q_w to Q'_w, with the size of *MM'* corresponding to the quantity of cotton that would have been withdrawn from the market due to the removal of subsidies in country *i*. Since the world demand curve D_w remains unchanged, the new equilibrium point is *MM"*, corresponding to price P_w' *and quantity* Q''_w. In this case, the shaded part represents welfare losses incurred by producers in non-subsidizing countries.

As shown in Figure 1 (a), the new equilibrium is point *I"* since the new price P_w' is higher than P_w but lower than $P_w + \sigma_i$. This leads to an increase in production from Q''_{iw} to Q'_{iw} by the subsiding countries.

In Figure 1 (c), production from a non-subsidizing country to the world market increases from Q'_{kw} to Q''_{kw}. The shaded part indicates the welfare gains. The income increase for the cotton sector of non-subsidizing

Figure 1: The effect of an export subsidy
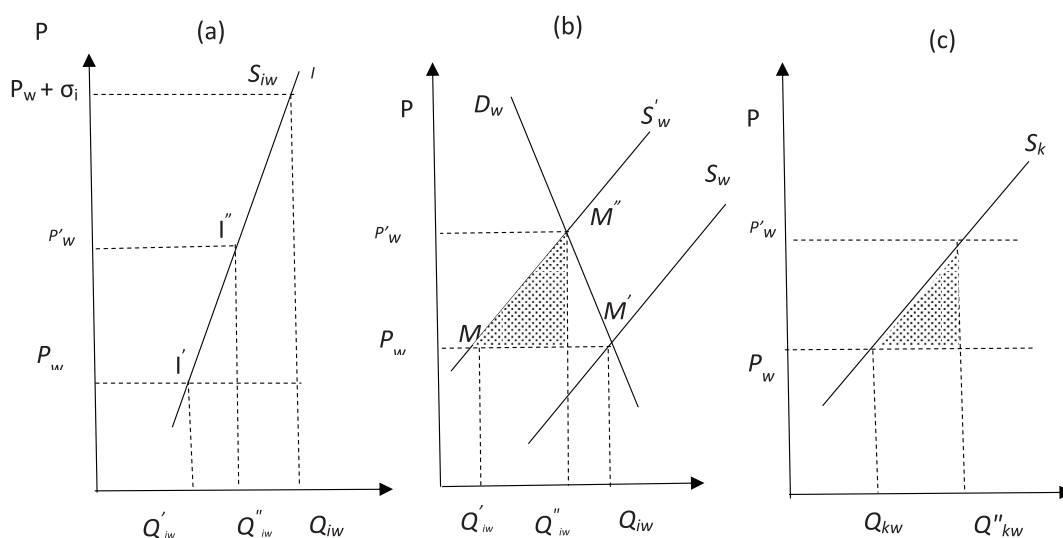
country *k* results from two components. First, country *k* now sells the quantity Q_{kw} at price P_w' instead of P_w. Second, the country now sells $Q_{kw}'' Q_{kw}$ and price P_w'.

3.3   Simulation

Since changes in production volumes have an effect on prices, we compute how the changes affect the export earnings of cotton producers, i.e., the top global producers and the EAC countries. This analysis contributes to a new body of knowledge on subsidies and their effect on cotton production since most of the previous studies on the same topic were conducted more than a decade ago.

In estimating the effects of subsidies on the selected cotton producing countries in the EAC, we simulate the effects of price changes by assuming an increment in existing prices by 15 percent, 20 percent and 25 percent, based on the previous studies on the effects of subsidies (Quirke, 2001; Goreux, 2003; FAPRI, 2002; and Ian *et al.* (2004) as detailed in Annex 2). The three simulations are explained as follows:

Baseline
We base our estimations of the effect of subsidies on the assumption that prices remain the same under subsidies, exports and imports as well as the production levels. This is business as usual under export subsidies.

Simulation 1
Here, we assume a price increment of 15 percent with the elimination of subsidies. This is based on the estimates by Goreux (2003), which point to a 15.2 percent increment in prices if subsidies are eliminated, earning West and Central African countries US$ 250 million for 2001/02. This figure (15 percent) allows us to benchmark these estimates, which were used by the "Cotton-4" countries to raise the urgent issues of addressing subsidies at the WTO.

Simulation 2
In this second scenario, we assume a price increment of 20 percent with the elimination of subsidies. This is done to take into account different studies (Quirke, 2001; FABRI, 2002; Tokarick, 2003 and ICAC, 2002), which estimate price increments ranging from 2.8 percent to 30 percent if subsidies are removed.

Simulation 3
In a third simulation, we assume a price increment of 25 percent with the elimination of subsidies. This is based on the estimates by Ian *et al.* (2004), which indicate that without subsidies, cotton process would rise substantially by 18-28 percent.

3.3   Data sources

The analysis is supplemented by secondary data from the COMTRADE database, FAO STAT and Index Mundi, as well as country survey statistics where

available. Using data from Index Mundi, we compute cotton price changes over the years and analyse the impact of subsidies on international cotton prices. The analysis compares cotton production among the top producing countries and international cotton prices by introducing two scenarios, i.e., production with subsidies and production without subsidies.

4 RESULTS AND DISCUSSION

4.1 Introduction

The decision to remove export subsidies in Nairobi was meant to address the imbalances in the agricultural trade among WTO members as advocated by the "Cotton-4". Cotton lint production is spread across Tanzania, Uganda and Kenya in the EAC. However, these countries produce less output when compared to the world's major producers. The presentation and discussion of the results obtained from this study are centred around simulating the effects of price changes resulting from the elimination of subsidies in section 4.2. With the implementation of the Nairobi package, cotton prices are expected to increase, as major producers such as the US reduce their export quantity when subsidies are eliminated. Small producers in the EAC, however, are expected to increase their export quantities, leading to increased incomes for cotton producers. This section discusses the effects of price changes, production levels and export quantities after dropping subsidies, as well as export earnings with the elimination of subsidies.

4.2 Simulating the effects of price changes due to the removal of subsidies

As depicted in Figure 2, actual cotton lint prices in international markets have been fluctuating over the years from US$1.3 per kilogram in 2000 to US$1.9 per kilogram in 2017. The most notable change in prices was registered from the period 2009 to 2011, during which time prices increased from US$1.4 per kilogram to US$3.4 per kilogram. Any increment in global cotton prices would directly benefit producers in East Africa. This supports the argument raised by the "Cotton-4" and demonstrates that subsidies are indeed affecting the export earnings of small countries, inclusive of producers in the EAC.

Simulation 1
From 2000, a 15 percent increment as a result of eliminating subsidies would have increased prices from an average of US$1.3 to US$1.5 per kilogram. The increment in prices would be consistent over the years despite fluctuations in prices. Looking at the average prices in 2017, a 15 percent increment in prices would increase prices to US$2.2 per kilogram. The highest price of US$3.4 per kilogram in 2011 would have been US$3.9 per kilogram.

Simulation 2
In the second simulation of a 20 percent increment in prices with the removal of subsidies, the 2000 prices of US$1.3 per kilogram would have been US$1.6 per kilogram, increasing to US$4.1 per kilogram in 2014. Lastly, the 2017 prices would go from US$1.9 per kilogram to US$ 2.4 per kilogram.

Simulation 3
In the third simulation, assuming a 25 percent increase in prices, the 2000 price of US$1.3 per kilogram would have been US$1.6 per kilogram, while the highest recorded price of US$3.4 in 2011 would have been as high as US$4.3 per kilogram, decreasing to US$2.4 in 2017.

The simulations of price changes with the 3 assumptions all indicated that producers in the EAC would have benefited more if subsidies had been removed by the major producers. This is consistent with previous work on the effects of subsidies on cotton prices (Quirke, 2001; ICAC, 2002, Goreux, 2003). Moreover, it is supported by the theories on the effects of subsidies on production and earnings as explained by Ian *et al.* (2004) and Goreux (2003). The Nairobi package, specifically the decision on cotton, is therefore helpful in terms of enabling cotton producers in the EAC to earn more from their product, which translates into the development of the cotton sector.

Figure 2: Simulation of price changes with the removal of subsidies

|	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Sim3-25%	1.6	1.3	1.3	1.7	1.7	1.5	1.6	1.7	2.0	1.7	2.9	4.3	2.5	2.5	2.3	1.9	2.0	2.4
Sim2-20%	1.6	1.3	1.2	1.7	1.6	1.5	1.5	1.7	1.9	1.7	2.7	4.1	2.4	2.4	2.2	1.9	2.0	2.3
Sim1-15%	1.5	1.2	1.2	1.6	1.6	1.4	1.5	1.6	1.8	1.6	2.6	3.9	2.3	2.3	2.1	1.8	1.9	2.2
Actual	1.3	1.1	1.0	1.4	1.4	1.2	1.3	1.4	1.6	1.4	2.3	3.4	2.0	2.0	1.8	1.6	1.6	1.9
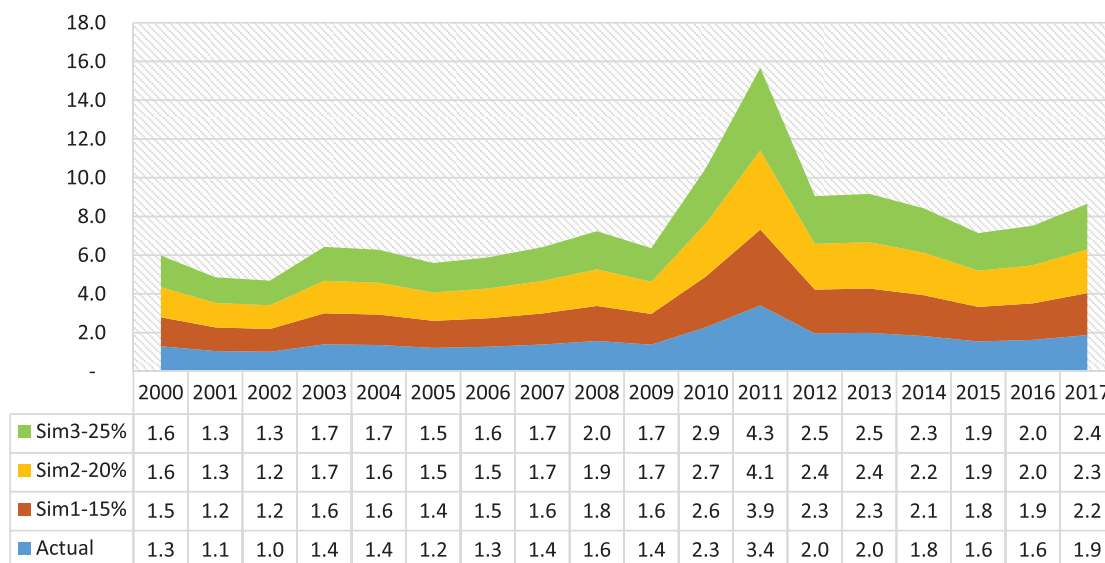
Source: Authors' computation from Index Mundi (2017)

Elimination of subsidies is expected to reduce production among top cotton producers while increasing production among other countries in the EAC. As depicted in Figure 3, representing 2014 production levels, China's cotton lint production would decrease from 6,178 thousand tonnes to 5,498 thousand tonnes, while that of India would decrease from 6,188 thousand tonnes to 5,507 thousand tonnes. The US, which is the leading subsidy-granting country, would decrease production from 3,593 thousand tonnes to 3,198 thousand tonnes. In Tanzania, production would increase from 81 thousand tonnes to 91 thousand tonnes, while in Uganda, it would increase from 27 thousand tonnes to 30 thousand tonnes. The increase in production in Kenya is negligible.

The reduction in production among the major producers as a result of eliminating subsidies is quite significant in terms of cotton supply to international markets. This is because of the big country effect, leading to a reduction in global cotton supply. This is consistent with the findings by FAPRI (2002), which indicated that US cotton production would decline by 11 percent with the removal of subsidies. A reduction in production levels by major producers corresponds to an increment in production levels by small producers in the EAC. Insofar as the increase in production by EAC producers is not significant at the global scale, it is still positive for producers in the region, as it corresponds with an increase in prices as per the simulations presented in Figure 2.
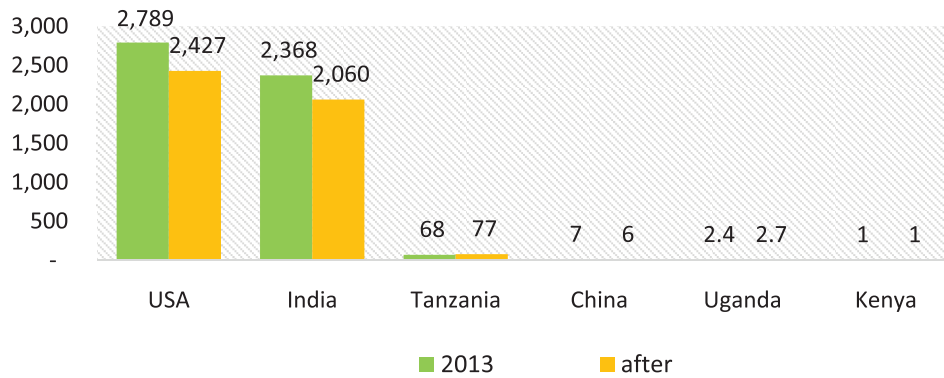
Figure 3: Cotton lint production after drop of subsidies - ('000) tonnes
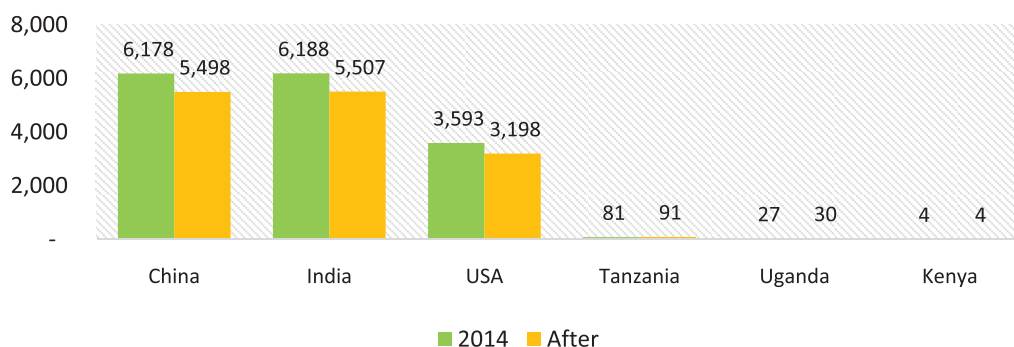
Source: authors' computation from FAO, 2016

Figure 4: Export quantity after drop of subsidies - (cotton lint '000)

Source: authors' computation from FAO, 2016

In addition to decreasing the production levels of cotton, a drop in subsidies would lead to a reduction in the amount of cotton exports among top producers and exporters while increasing the export quantity of non-subsidizing cotton producers in the EAC. Figure 4 shows that the US, the world's top exporter of cotton, would have its exports reduced from 2,789 thousand tonnes to 2,427 thousand tonnes, with India's export volumes decreasing from 2,368 thousand tonnes to 2,060 thousand tonnes. China's export quantities would not drop much, as most of the cotton produced in the country is consumed domestically. Export earnings drop with the elimination of subsidies, as theorized by Bjørnskov (2005). This could be because producers in subsidizing countries would experience an increase in the unit cost of production; hence the need for additional costs in terms of input if they are to maintain the same level of production.

This results in a drop in production levels, thus reducing export quantities as illustrated by Goreux (2003). In the EAC, on the other and, export quantities increase overall. In Tanzania, export quantities would increase from 68 thousand tonnes to 77 thousand tonnes, while in Uganda exports would increase from 2.4 thousand tonnes to 2.7 thousand tonnes. Kenya's exports would not change very much. This is consistent with FAPRI (2002), which discovered that with the elimination of subsidies, US cotton exports would decline by 13 percent and EU production by 79 percent, while exports from Africa would increase by 12.3 percent.

Our simulation in Table 4 also shows that cotton production per kilogram would increase in the EAC with the elimination of subsidies among developed countries. Export earnings would also increase at each assumed percentage increase in prices, i.e., 15 percent, 20 percent and 25 percent. In Tanzania, production would increase from 68 to approximately 77 million kilograms. Export earnings of US$125 million would increase to US$161 million, US$169 million and US$175 million with assumed increment in prices at 15 percent, 20 percent and 25 percent respectively. In Uganda, on the other hand, elimination of subsidies in developed countries would increase production from 2.7 to 3 million kilograms. Export earnings of US$5.5 million would increase to US$5.7 million, US$5.9 million and US$6.1 million with a respective price increment of 15 percent, 20 percent and 25 percent. In the case of Kenya, removal of subsidies would increase production from 1 million kilograms to 1.1 million kilograms, while export earnings would increase from US$1.8 million to US$2.3, US$2.4 and US$2.5 million with a respective price increment of 15 percent, 20 percent and 25 percent. The increase in production and export earnings for EAC countries with the removal of subsidies is more significant because it corresponds with a decrease in production and export earnings of major cotton producers and subsidizing countries. This would facilitate the development of the cotton sector in the region. EAC countries must therefore put in place additional measures to take advantage of this expected scenario with the implementation of the Nairobi package.

Table 4: cotton lint production and export earnings with the elimination of subsidies

	Production in Kilograms		Export earnings in 2014			
	With subsidy in developed economies	Without subsidy in developed economies	With subsidy in developed economies	Without subsidy and 15% increase in price	Without subsidy and 20% increase in price	Without subsidy and 25% increase in price
Tanzania	68,000,000	76,700,900	124,573,818	161,590,626	168,616,305	175,641,984
Uganda	2,695,200	3,000,000	5,495,904	5,678,148	5,925,024	6,171,900
Kenya	1,000,000	1,123,000	1,831,968	2,365,895	2,468,760	2,571,625

Source: Authors' computation from Index Mundi (2017)

5. CONCLUSION AND POLICY IMPLICATIONS

This paper aims to examine the outcomes of the WTO's 10th Ministerial Conference (MC10), particularly the decision to eliminate export subsidies, and its implications on the EAC cotton sector development. Our analysis compares cotton production and export earnings between the major cotton producing and subsidizing countries with production and export earnings of producers in the EAC countries. We compare this with a first scenario of existing subsidies and a second scenario with the elimination of subsidies.

The results, based on our simulation, suggest that the removal of subsidies would lead to an increase in cotton prices to the benefit for producers in the EAC. This is because the major cotton-producing and subsidizing countries would experience a drop in production and export quantities, while EAC countries would experience an increase in production and export quantities. Our findings are consistent with a theoretical understanding of subsidies and their effect on production. Moreover, they supports previous studies of the effect of subsidies showing that the elimination of subsidies would lead to an increase in

prices, as production levels among major producers would decrease.

Although cotton production in the EAC has fluctuated over the years, elimination of export subsidies presents a good opportunity for EAC cotton farmers, as this would increase both the prices and quantities produced. To develop the EAC cotton sector using the Nairobi package, the following measures should be considered:

i) The EAC countries need to monitor the implementation of the decision on the elimination of export subsidies by the WTO. This is because the removal of subsidies, as demonstrated by the study, leads to better cotton prices in world markets.

ii) There is a need to increase cotton production to take advantage of increased markets upon the elimination of subsidies. As the study demonstrates, major cotton exporters, notably the US, will experience a decline in exports after eliminating subsidies. This void could be filled by smaller countries in the EAC who should be able to increase their export quantities.

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ANNEX 1

Box 1. The Nairobi package

Agriculture

- Special Safeguard Mechanism for Developing Country Members. The developing country Members will have the right to have recourse to a special safeguard mechanism (SSM) as envisaged under paragraph 7 of the Hong Kong Ministerial Declaration. To pursue negotiations on an SSM for developing country Members in dedicated sessions of the Committee on Agriculture in Special Session ("CoA SS").

- Public Stockholding for Food Security Purposes. The 2013 Bali decision on the peace clause is reaffirmed. Members shall engage constructively to negotiate and make all concerted efforts to agree and adopt a permanent solution on the issue of public stockholding for food security purposes.

- Export Competition. Developed countries will immediately remove export subsidies, except for a handful of agriculture products, and developing countries will do so by 2018, with a longer time-frame in some limited cases. In addition, developing countries will keep the flexibility of covering marketing and transport costs for agriculture exports until the end of 2023, while the poorest and food-importing developing countries will enjoy additional time to cut export subsidies.

Cotton

- On export competition, the decision mandates developed countries to prohibit cotton export subsidies immediately while developing countries are required to do so no later than 1 January 2017.

- On market access, the decision calls for cotton from LDCs to be given duty-free and quota-free access to the markets of developed countries — and to those of developing countries declaring that they are able to do so — from 1 January 2016. Cotton imports from LDCs currently account for less than 10 percent of total cotton imports. The Nairobi decision aims to boost LDC exports of cotton and cotton by-products — including cotton oil and cotton seeds — and to increase the share of cotton imports from the poorest countries.

- On development assistance, the decision reaffirms the importance of the development assistance aspects of cotton. It recognizes that the Aid-for-Trade (AfT) initiative, including through the Enhanced Integrated Framework (EIF), should play a key role in strengthening the cotton sector in LDCs.

LDC issues

- Preferential Rules of Origin for Least Developed Countries. The decision directs preference-granting Members develop or build on their individual rules of origin arrangements applicable to imports from LDCs, allowing the use of non-originating materials up to 75% of the final value of the product, or an equivalent threshold in case another calculation method is used, to the extent to which it is appropriate and the benefits of preferential treatment are limited to LDCs

- Implementation of Preferential Treatment in Favour of Services and Service Suppliers of Least Developed Countries and Increasing LDC Participation in Services Trade

Source: WTO 10ᵗʰ Ministerial Conference, Nairobi 2015. Nairobi package

Annex 2: summary of literature reviewed

Author	Article	Method	Results
Centre for International Economics (2002)	Trade Distortions and Cotton Markets: Implications for Global Cotton Producers May.		They estimate that for 2000/01, the elimination of quotas and tariffs on yarns, textiles and clothing would raise cotton prices by 4.1 percent, while the elimination of subsidies would raise them by 10.7 percent.
Quirke (2001)	Quirke, D. (2001), *Trade Distortions and Cotton Markets: Implications for Australian Cotton Producers*, Centre for International Economics, Australia.	GTAP model	The model uses trade and production data for 1999 and assumes US assistance to the cotton sector equal to US$0.31 per kilogram and US$0.59 per kilogram for China. The effects are found to be as follows: 1) a drop in US (–15.9 percent) and Chinese (–19.5 percent) cotton production; 2) an increase in the world price of cotton (13.4 percent); and, 3) an increase in Australian cotton production of 44 percent and a 53 percent increase in the net income of the cotton industry.
The International Cotton Advisory Committee (2002)	ICAC (2002), 'Production and Trade Policies Affecting the Cotton Industry', International Cotton Advisory Committee, September.	Short-run partial equilibrium	The analysis (US) concludes that average cotton prices in the absence of subsidies would have been 30 percent and 71 percent higher in the 2000/01 and 2001/02 seasons respectively.
The Food and Agricultural Policy Research Institute (2002)	FAPRI (2002), 'The Doha Round of the World Trade Organization: Appraising Further Liberalisation of Agricultural Markets', Working Paper 02-WP 317, Food and Agricultural Policy Research Institute, Iowa State University and University of Missouri-Colombia.	FAPRI modelling system is a multi-market, world agricultural model	US cotton production, consumption and net cotton exports decline by 11 percent, 2 percent and 13 percent respectively. EU cotton production falls by approximately 79 percent and net cotton imports increase by 143.1 percent. As world prices rise, Africa increases its cotton exports by 12.3 percent above the baseline level.
Tokarick (2003)	Tokarick, S. (2003), 'Measuring the Impact of Distortions in Agricultural Trade in Partial and General Equilibrium', IMF Working Paper, WP/03/110.	Partial equilibrium	For cotton, the model predicts that removal of price support would lead to a 0.8 percent increase in world prices, and removal of production subsidies would lead to a 2.8 percent increase in world prices. No estimates are provided for the effect of removing input subsidies in the cotton sector.

Goreux (2003)	Goreux, L. (2003), 'Prejudice Caused by Industrialised Countries Subsidies to Cotton Sectors in Western and Central Africa', Background document to the submission made by Benin, Burkina Faso, Chad and Mali to the WTO (TN/AG/GEN/4), June.	Partial equilibrium model	The results from this model were used by Benin, Chad, Burkina Faso and Mali in their submission to the WTO, in which they argued that export subsidies in the cotton sector reduced world prices by 15.2 percent and West and Central African export earnings by US$250 million for 2001/02.
Ian Gillson, Colin Poulton, Kelvin Balcombe, and Sheila Page (2004)	Understanding the impact of Cotton Subsidies on developing countries	Partial equilibrium model	Using a partial equilibrium module, the results indicate that without subsidies the price of cotton rises substantially by 18-28%.

Annex 3
Cotton Production by Major producers compared to the EAC (cotton seed Tonnes '000) 2000-20014

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
China	8,834	10,647	9,832	9,719	12,647	11,400	13,492	15,248	14,984	12,754	11,940	13,178	13,680	12,620	12,320
India	3,333	3,452	2,978	4,741	5,673	6,388	7,815	8,938	7,692	8,294	11,544	12,466	11,817	12,293	12,300
USA	5,838	6,761	5,610	6,046	7,437	7,414	6,924	5,970	3,901	3,764	5,532	4,872	5,140	3,813	4,649
Australia	1,046	1,140	1,054	546	494	912	844	388	188	466	550	1,269	1,732	1,439	1,252
Tanzania	77.7	153.1	80.5	120.0	200.0	225.0	82.3	125.0	228.0	170.0	168.0	103.0	142.0	224.0	155.0
Uganda	50.0	40.0	38.0	54.0	48.0	38.0	48.0	24.0	45.0	32.0	50.1	86.6	32.3	30.0	46.0
Kenya	13.0	16.0	13.0	13.0	13.0	13.0	14.6	16.3	9.8	9.7	7.8	14.4	7.6	8.4	8.9
Bulgaria	4.3	6.6	6.4	2.7	1.4	0.8	0.7	0.6	0.5	0.3	0.6	0.3	0.2	0.2	0.2
Total	42,100	49,200	43,700	44,600	57,800	54,300	57,300	61,100	57,200	51,900	55,900	61,300	63,500	58,500	58,400

Proportion of cotton production

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
China	21.0	21.6	22.5	21.8	21.9	21.0	23.5	25.0	26.2	24.6	21.4	21.5	21.5	21.6	21.1
India	7.9	7.0	6.8	10.6	9.8	11.8	13.6	14.6	13.4	16.0	20.7	20.3	18.6	21.0	21.1
USA	13.9	13.7	12.8	13.6	12.9	13.7	12.1	9.8	6.8	7.3	9.9	7.9	8.1	6.5	8.0
Australia	2.5	2.3	2.4	1.2	0.9	1.7	1.5	0.6	0.3	0.9	1.0	2.1	2.7	2.5	2.1
Tanzania	0.2	0.3	0.2	0.3	0.3	0.4	0.1	0.2	0.4	0.3	0.3	0.2	0.2	0.4	0.3
Uganda	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Kenya	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bulgaria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Annex 4
Exports quantity (cotton seed '000)

Area	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
USA	224.4	259.1	325.2	311.2	369.5	390.6	560.1	574.9	424.5	213.2	290.0	218.2	178.1	211.2
Australia	621.2	656.1	471.4	156.0	169.8	240.5	162.3	39.5	17.6	97.7	138.5	556.7	763.6	521.3
Bulgaria	5.7	1.5	6.5	3.5	0.3	0.3	-	0.6	-	-	-	0.2	0.6	0.2
Spain	11.6	11.5	17.0	16.9	20.5	23.0	24.0	33.6	26.2	7.1	5.6	4.8	3.9	3.0
Portugal	-	-	-	-	-	-	-	-	-	-	0.1	0.1	-	-
Kenya	0.1	0.0	-	-	0.5	0.0	-	-	-	-	0.0	-	0.0	-
Uganda	0.1	0.1	0.2	0.2	1.1	2.5	1.6	2.6	0.2	0.1	1.1	1.7	4.1	14.9
Tanzania	0.8	2.2	5.0	3.2	3.7	2.6	3.2	3.9	0.9	11.8	4.1	2.5	0.7	0.0
China	3.5	3.3	6.1	5.8	8.4	6.1	2.1	0.8	4.7	6.1	1.2	3.6	6.6	0.6
India	0.8	0.3	0.3	0.6	0.7	0.4	0.4	0.7	10.4	0.8	5.0	7.0	2.1	1.9
RoW	586.20	442.00	584.40	546.80	609.50	673.90	543.40	10,843.40	422.90	404.90	367.00	346.00	476.70	535.60
Total	1,454.4	1,376.1	1,416.1	1,044.2	1,184.0	1,339.9	1,297.1	11,500.0	907.4	741.7	812.6	1,140.8	1,436.4	1,288.7
Exports quantity proportion														
USA	15.4	18.8	23.0	29.8	31.2	29.1	43.2	5.0	46.8	28.7	35.7	19.1	12.4	16.4
Australia	42.7	47.7	33.3	14.9	14.3	18.0	12.5	0.3	1.9	13.2	17.1	48.8	53.2	40.5
Bulgaria	0.4	0.1	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spain	0.8	0.8	1.2	1.6	1.7	1.7	1.9	0.3	2.9	1.0	0.7	0.4	0.3	0.2
Portugal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kenya	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Uganda	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.3	1.2
Tanzania	0.1	0.2	0.4	0.3	0.3	0.2	0.2	0.0	0.1	1.6	0.5	0.2	0.0	0.0
China	0.2	0.2	0.4	0.6	0.7	0.5	0.2	0.0	0.5	0.8	0.2	0.3	0.5	0.0
India	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	1.1	0.1	0.6	0.6	0.1	0.1

Annex 5
Import quantity (cotton seed)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
USA	337.1	325.6	265.8	7.6	4.5	4.2	0.8	3.4	1.1	22.9	1.6	44.9	127.0	181.1
Australia	-	-	-	-	-	-	-	-	-	1.0	-	0.0	0.6	0.1
Bulgaria	-	0.0	0.0	-	0.0	-	-	0.2	0.1	0.1	0.1	0.0	0.3	0.8
Spain	121.6	168.5	158.7	165.3	161.3	128.3	100.2	94.3	53.4	81.6	47.5	50.0	31.1	47.0
Portugal	11.3	9.2	14.5	14.7	15.9	17.2	17.1	5.1	3.1	4.5	3.7	2.0	2.4	2.4
Kenya	0.6	0.2	0.7	1.1	2.6	2.5	1.5	0.4	0.6	1.0	0.0	0.4	2.4	1.4
Uganda	0.2	3.2	3.3	-	1.6	0.0	4.5	-	2.0	10.2	0.3	2.2	0.0	0.1
Tanzania	-	0.0	-	-	-	-	-	0.1	0.0	0.0	0.0	1.1	120.3	0.1
China	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	15.6	376.8	393.6	142.5
India	-	-	-	0.0	-	-	-	0.0	-	-	-	0.0	-	0.1
RoW	964.4	875.4	872.90	812.0	961.0	1,173.0	1,158.3	15,396.5	768.0	608.5	777.8	1,022.8	1,188.9	990.8
Total	1,435.2	1,382.3	1,315.9	1,001.4	1,146.9	1,325.6	1,282.4	15,500	828.4	729.8	846.6	1,500.2	1,866.6	1,366.4
Import quantity Proportion														
USA	23.5	23.6	20.2	0.8	0.4	0.3	0.1	0.0	0.1	3.1	0.2	3.0	6.8	13.3
Australia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Bulgaria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Spain	8.5	12.2	12.1	16.5	14.1	9.7	7.8	0.6	6.4	11.2	5.6	3.3	1.7	3.4
Portugal	0.8	0.7	1.1	1.5	1.4	1.3	1.3	0.0	0.4	0.6	0.4	0.1	0.1	0.2
Kenya	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.1
Uganda	0.0	0.2	0.3	0.0	0.1	0.0	0.4	0.0	0.2	1.4	0.0	0.1	0.0	0.0
Tanzania	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	6.4	0.0
China	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	25.1	21.1	10.4
India	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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