



MAFAP
SPAANA

Monitoring African Food and Agricultural Policies
Suivi des politiques agricoles et alimentaires en Afrique

**ANALYSYS OF INCENTIVES AND DISINCENTIVES
FOR TEA IN KENYA**

JULY 2013

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1. PURPOSE OF THE NOTE

This technical note aims to describe the market incentives and disincentives for tea production in Kenya. For this purpose, yearly averages of farm gate and ex-factory prices are compared with reference prices calculated on the basis of the price of the commodity in the international market. The price gaps between the reference prices and the prices along the value chain indicate to which extent incentives (positive gaps) or disincentives (negative gaps) are present at the farm gate and factory level. In relative terms, the price gaps are expressed as Nominal Rates of Protection (NRPs). These key indicators are used by MAFAP to highlight the effects of policy and market development gaps on prices.

The note starts with a brief review of the commodity's production and consumption as well as trade and policies affecting the commodity. It also provides a detailed description of how the key components of the price analysis have been obtained. Using this data, the MAFAP indicators are then calculated and interpreted in light of existing policies and market characteristics. The analysis is commodity and country specific and covers the period 2005/2010. The indicators have been calculated using available data from different sources for this period and are described in Chapter 3.

The results of this analysis can be used by those stakeholders involved in policy-making for the food and agricultural sector. They can also serve as input for evidence-based policy dialogue at the country or regional level.

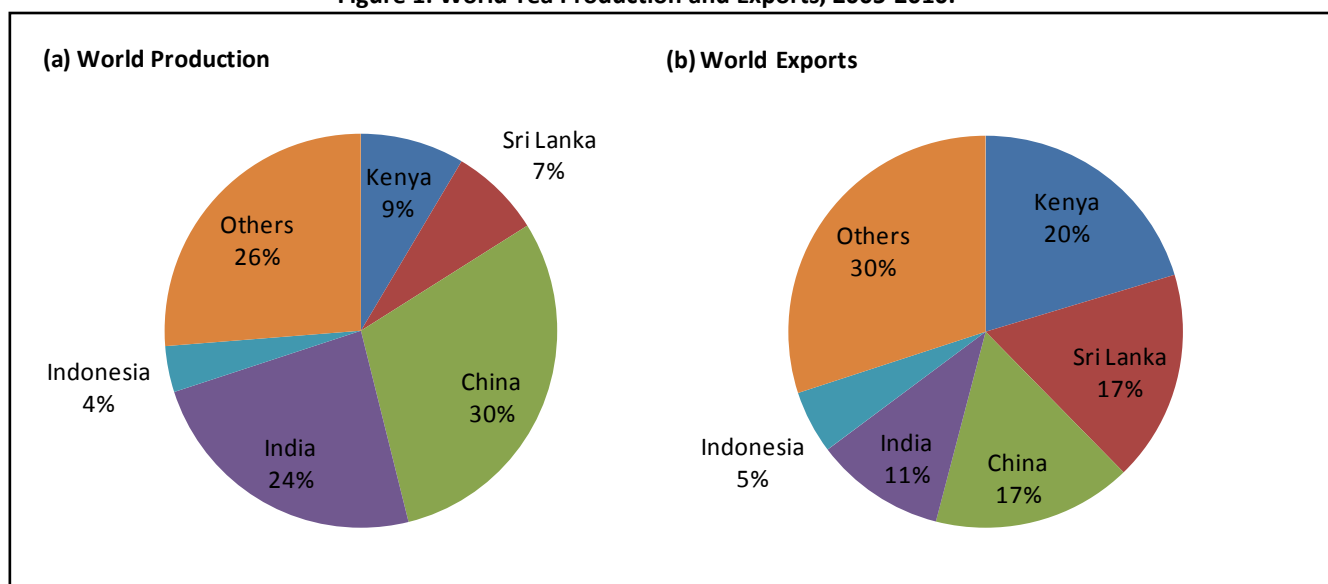
This technical note is not to be interpreted as an analysis of the value chain or detailed description of production, consumption or trade patterns. All information related to these areas is presented merely to provide background on the commodity under review, help understand major trends and facilitate the interpretation of the indicators. Additionally, all information presented in this note is preliminary and still subject to review and validation.

2. POLICY CONTEXT

The English settlers introduced tea to Kenya from India in 1903. At first, the colonial government restricted the agriculture of country's mayor cash crops, tea and coffee, exclusively to large-scale settlers farmers and multinationals (KHRC, 2008 and CPDA, 2008). It was after independence in 1963 that cultivation of tea was unbundled to local farmers that started buying small shares of tea estates land (KHRC, 2008). Since then, the cultivated area and tea production has remarkably increased. Passing from 21,500 hectares of tea harvested and 18,000 tonnes produced in 1963 to 120,000 hectares and almost 300,000 tonnes by the end of the century (FAOSTAT). Today, with a production that rounds the 350,000 tonnes per year, Kenya stands as the world third tea producer after China and India, and as the world's top black tea exporter (Figure 1).

Different from the other world leading tea-producing countries, Kenya only consumes around 5% of its production. As the rest is exported, Kenyan tea production represent around 20 percent of the world's tea exports. This make the Kenyan tea industry one of the mayor contributors to national income and the private sector main employer.

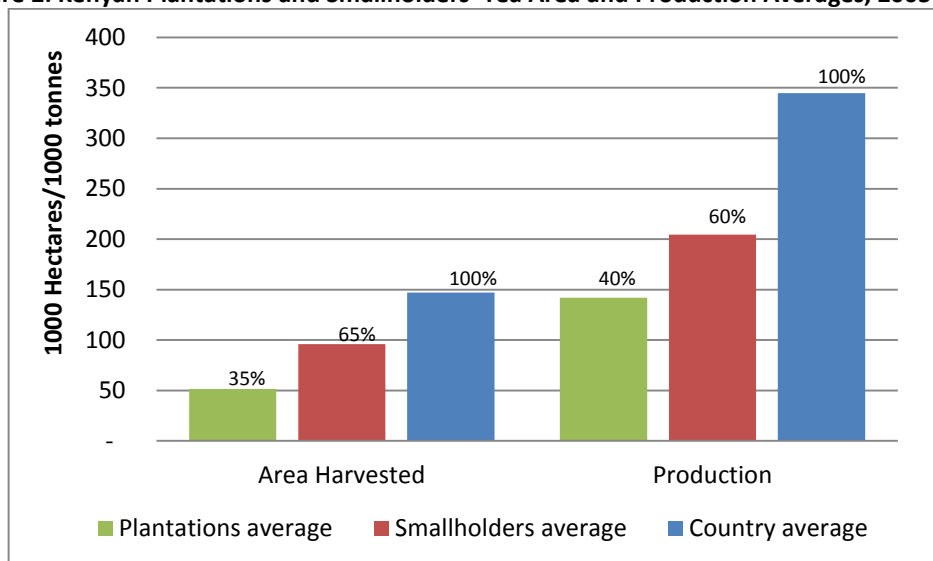
Figure 1: World Tea Production and Exports, 2005-2010.



Source: FAOSTAT, KTB and UN Comtrade.

In Kenya, the tea sector is divided in to production systems or sub-sectors: the smallholder farmers and the integrated multinationals with their own plantations and factories (estates or plantations). Since independence, the smallholders sector has gain and overturned importance in front of the extensive plantations, accounting for 60 percent of the national tea production and 65 percent of the area harvested during the period under revision (Figure 2).

Figure 2: Kenyan Plantations and Smallholders' Tea Area and Production Averages, 2005-2010.



Source: TBK, 2011

In front of the strongly integrated plantations process their own tea through 39 factories, the smallholders are integrated by law (CPDA, 2007) under the Kenya Tea Development Agency (KTDA)¹ that groups, coordinates, process and market the entire smallholders' production. The KTDA is the country's biggest private company with over 15,000 employees and 63 tea factories in 2010 (KTDA, 2012). Finally, both smallholders and plantations sell most of their tea through the Mombasa Tea Auction, the second biggest tea auction in the world, operated by the East African Tea Trade Association (EATTA).

During recent years, the industry has been facing several challenges that can be summarized as follow: (1) high dependence on a few export markets; (2) low yields of smallholder farmers, high costs of production and lack of credit facilities; (3) low participation of the stallholders in the upper segment of the value chain and in the regulatory bodies; (4) deficient governance and management by the KTDA, cess and levies paid by the farmers do not return to their benefit; (5) lack of innovation, research and extension service; and (6) weak local marketing and limited value adding.

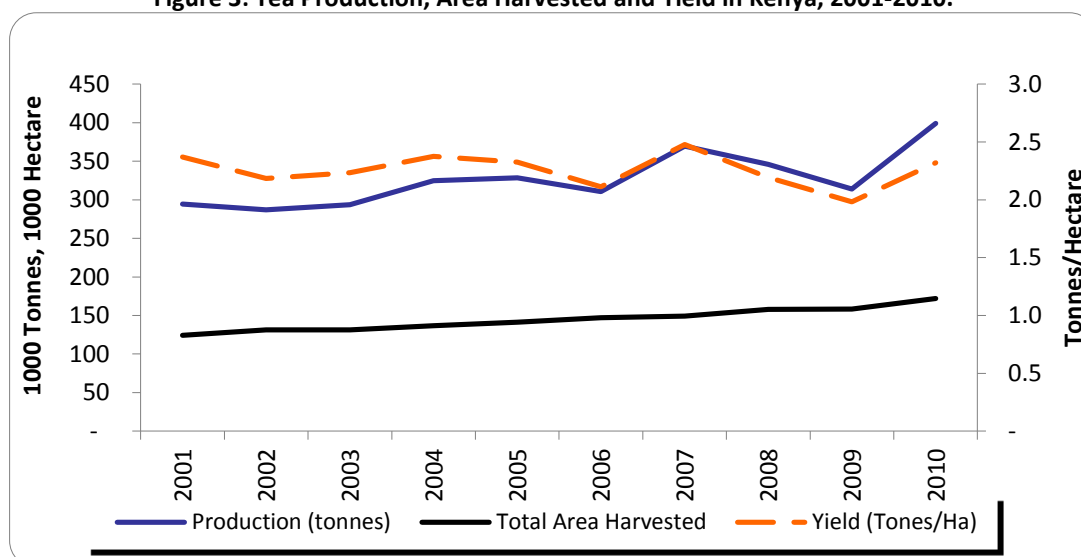
a. Production

Tea production in Kenya has been consistently increasing through the past decades mainly because of the constant increase in plantation area, primary by the smallholders. The specific annual up-and-downs in the production are due to changes in the production yields, as could be seen on Figure 3. During the 2001-2010 decade, the tea production in Kenya showed a general increasing trend, supported by the steadily increase in the harvested area. However, two drops in production in can be distinguish in 2006 and 2009², both due to a decrease in land productivity.

¹Formerly the Kenyan Tea Development Authority, privatized in the year 2000. Now Kenya's biggest black tea producer and exporter, and the second largest exporter in the world (SOMO, 2006).

²2009 decrease is explained by a drought that affected many countries in the region. In Kenya, it almost exclusively affected the smallholders production (decreasing more than 40, 000 tonnes). This might be due to the lack of irrigation infrastructure.

Figure 3: Tea Production, Area Harvested and Yield in Kenya, 2001-2010.



Source: FAOSTAT

Table 1 compares Kenya’s key tea industry indicators over the past decade with those of the top five world’ tea exporters³. In general, the Kenyan tea sector performance has been lower than those of the World Top Exporters (WTE). While average production and area harvested of the WTE increase 24 and 18 percent, respectively, between the two periods analyzed (2001/2005 and 2006/2010), in Kenya, production only increased 14 percent and the harvested area an 18 percent. However, Kenya’s production per hectare is significantly higher than the WTE’s yield average. Even though both showed a small decrease between periods. On the other hand, as Kenya, different from its major competitors, doesn’t have a big internal market, its exports increased a 40 percent between the two periods, while for the WTE’s average increase was only 14 percent.

Table 1: Average Annual Tea Statistics in Kenya and World Top 5 Exporters, 2001-2010.

	Average 2001-2005	Average 2006-2010	Change (%)
Production (tonnes)			
Top 5 Exporters	492,660	609,050	24%
Kenya	305,689	347,816	14%
Area harvested (ha)			
Top 5 Exporters	387,968	470,487	21%
Kenya	133,038	156,854	18%
Yield			
Top 5 Exporters	1.54	1.50	-2%
Kenya	2.30	2.22	-3%
Exports (tonnes)			
Top 5 Exporters	220,653	252,319	14%
Kenya	262,872	367,787	40%

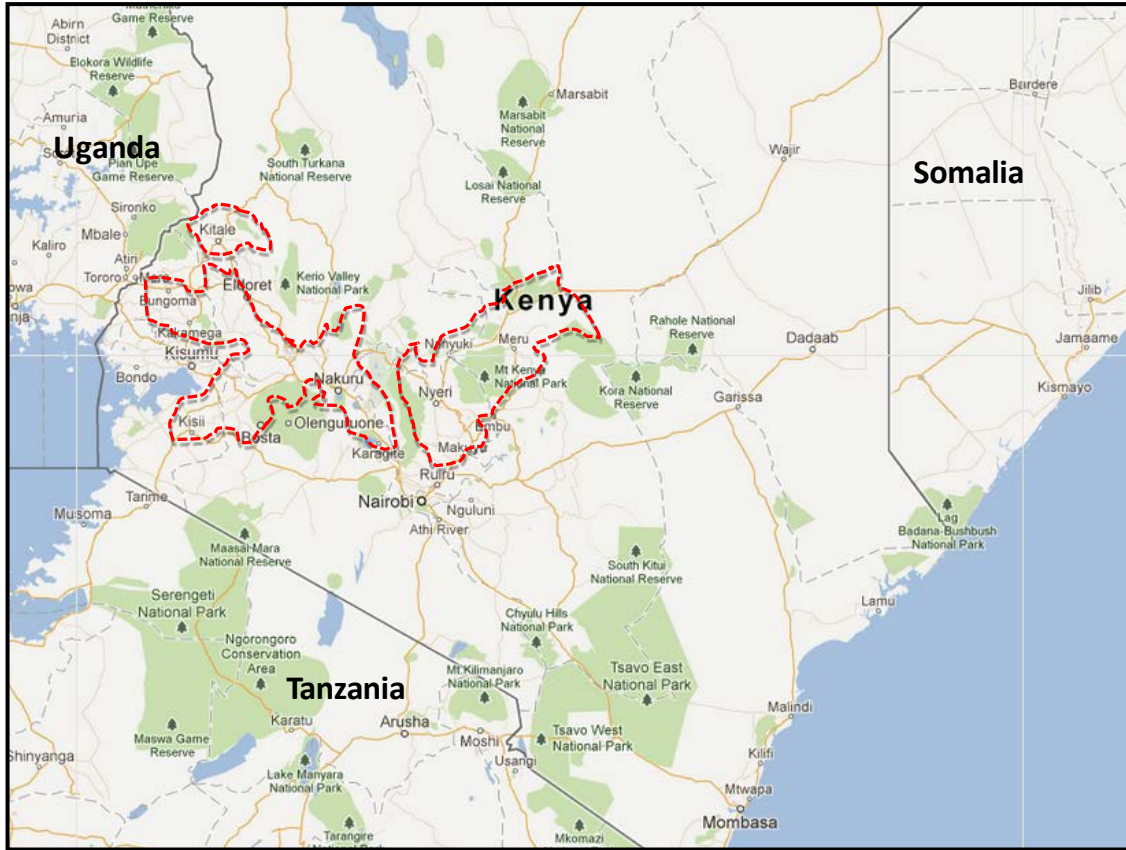
Source: FAOSTAT

As Figure 4 shows, there are two clearly identified tea productive zones in Kenya, denominated by the KTDA as: East of the Great Rift Valley Zone (East) and West of the Great Rift Valley Zone (West). Both zones present quite different characteristics of weather, geology, land use and socio-economic development (Fernández-Ares and Abdirizack, 2006). In the West there are heavy rainfalls, a wide variety of crops and

³ These are, in order of importance: Kenya, Sri Lanka, China, India and Indonesia. Together, these five countries accounted for more than 70% of the world’s tea exports (UN Comtrade).

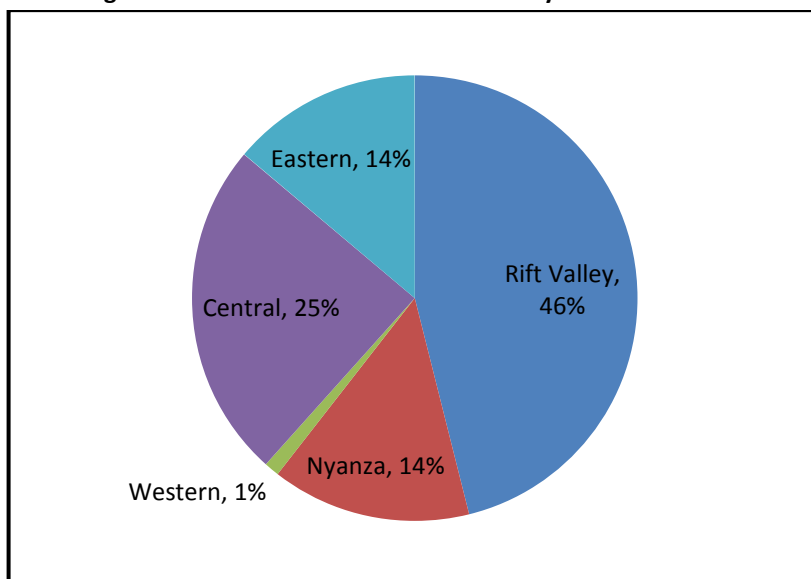
heavily populated areas. In the East, with a variable topography, weather conditions range from warm lowlands (1,500 meters amsl) to typical alpine regions (2,700 meters amsl). By province, Rift Valley accounted for 46 percent of national tea production, followed by Central, Nyanza and Eastern provinces (Figure 5).

Figure 4: Tea Production Areas in Kenya.



Source: KTDA

Figure 5: Distribution of Tea Production by Province in 2010

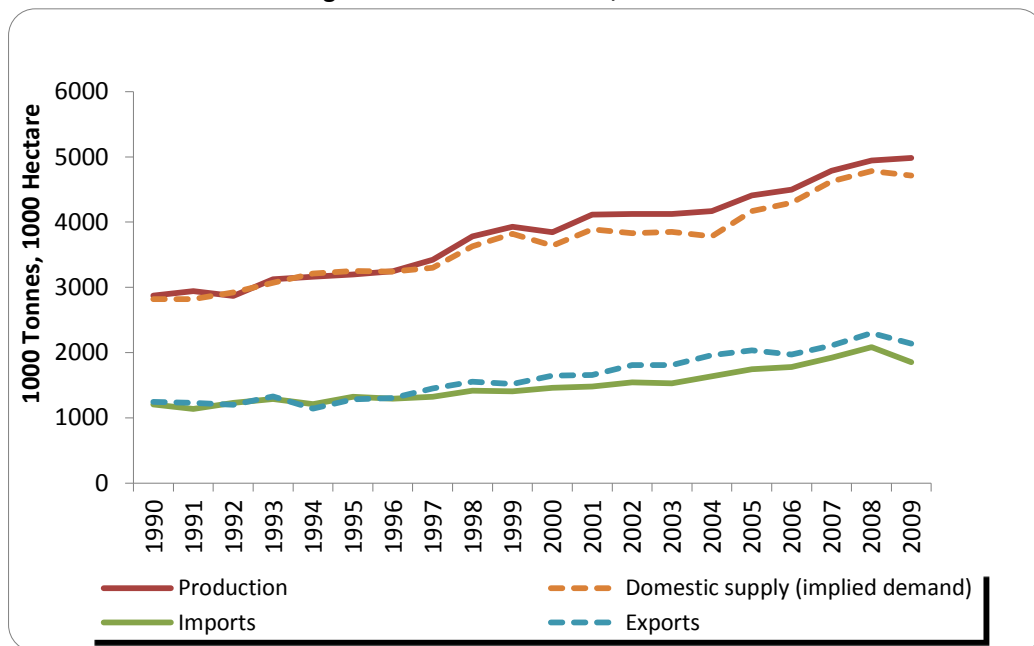


Source: KTDA

b. Consumption

Almost 60 percent of the tea produced in the world is consumed locally, being China and India the world's bigger producers but also the bigger consumers, respectively taking 73 and 81 percent of their total production (van der Wal, 2008). On the contrary, countries like Kenya, Vietnam or Sri Lanka, exports almost all of its national production. There is a wide variety of tea classes and qualities, being the green teas and the black teas the most common. In countries such as China and Indonesia, most people prefer green tea, however in almost all other markets black tea is the most popular (van der Wal, 2008). Global tea production has been increasingly steady over the past two decades. However, demand (implied demand) is lagging behind, creating a situation of oversupply (Figure 6), affecting world tea prices and competition dynamics (van der Wal, 2008; FAOSTAT).

Figure 6: Global Tea Market, 1990-2009.

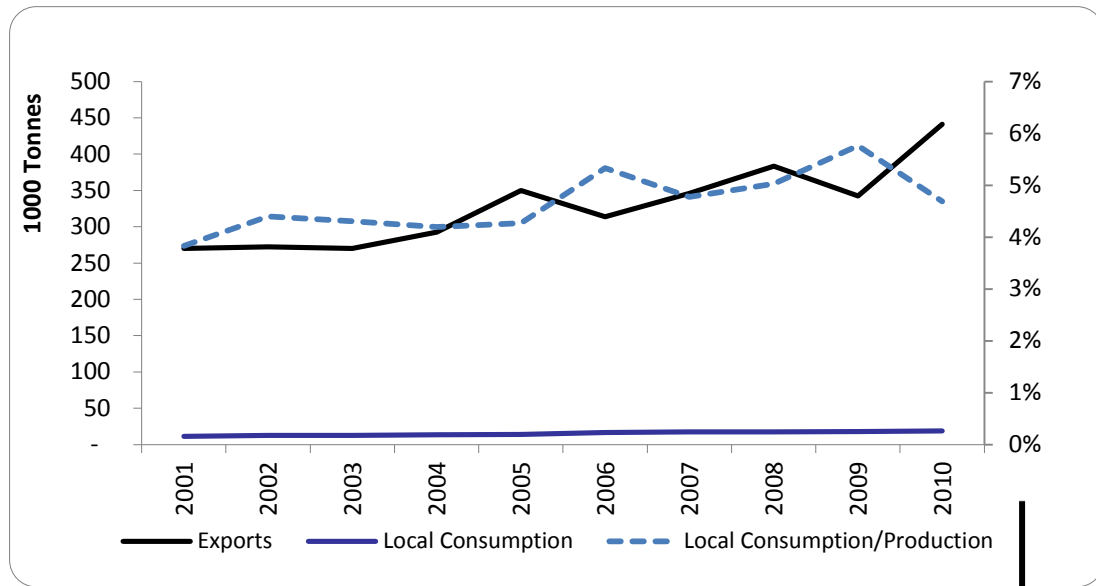


Source: FAOSTAT

Even though Kenya is not considered as a huge tea consumer country, local consumption has been growing at an average rate of 3 percent per annum over the last five years (TBK, 2011). Several initiatives to incentivize it, including the establishment of a local blending company for local marketing has been set up⁴, however, Kenya's local market continues to be marginal against the exporting sector, and during the analyzed period accounted for only an average of 5 percent of the total national production (Figure 7). The Tea Board of Kenya (TBK) is pushing to increase the local consumption of Kenyan Tea by intensive promotion campaigns, support to brand marketing by local tea packers and increase the factory gate sales (TBK, 2011).

⁴ The Tea Packers of Kenya Ltd. is a private company owned primarily by the KTDA and some plantations like Brook Bond Kenya Ltd. (Unilever Tea), which controls around 85 percent of the locally consumed product (GDS, 2004). The KTDA's smallholders that are mandated to provide an 8 percent of their production provide the input.

Figure 7: National Tea Exports and Consumption in Kenya, 2001-2010.



Source: TBK, 2011.

c. Marketing and Trade

Only seven companies control 85 percent of the tea output consumed in the world (van der Wals, 2008; Agritrade, 2011). Almost all are highly integrated multinationals with their own plantations and factories at the tea producing countries. The blending and packaging, two high adding value operations that represent up to 80 percent of the retail price, are undertaken mainly in their own processing plants situated in Europe or Western countries (Agritrade, 2011). The main players are Unilever (who produce Lipton, Brook Bond, Elephant, and PG Tips), Associated British Foods (Twinings), India’s Tata Tea (who produce Tetley), Van Rees (a tea trading company) and James Finlay (a tea packing company). Unilever (working in Kenya under Brook Bond Ltd. and Unilever Kenya Ltd.) is the largest, buying around 12 percent of the world’s commercialized black tea (FT, 2010; Agritrade, 2011). According to FAO (2005), the margin between value added export prices and auction prices had been widening, meaning, “tea growers are not fully benefiting from the consumer’s rising demand for value added products”. Export destination are also concentrated in only seven countries that in order of importance are: Russian Federation, the UK, Pakistan, USA, Egypt, Iraq, and the United Arab Emirates (van der Wals, 2008).

As said before, Kenya is a net exporter of tea during the entire period under review (Table, 2). Figure 8 illustrates the country’s trade balance variations throughout the years⁵. Tea is the country leading agriculture export, representing in 2010 a 25 percent of its agricultural export income (Agritrade, 2011).

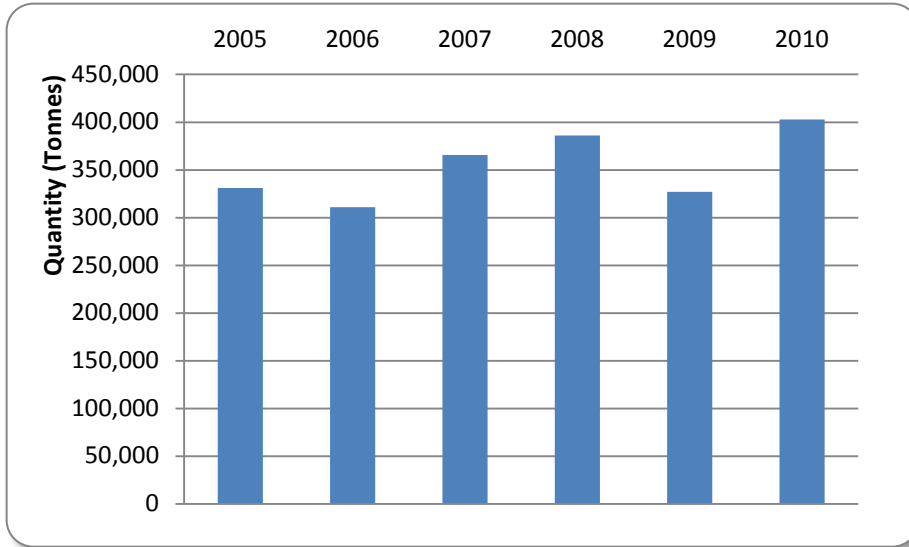
Table 2: Tea Production and Trade in Kenya, 2005-2010.

	2005	2006	2007	2008	2009	2010
Production (tones)	328,500.0	310,580.0	369,600.0	345,800.0	314,100.0	399,000.0
Imports (tones)	11,171.75	12,082.15	8,643.31	3,918.23	4,091.61	13,581.97
Exports (tones)	342,334.6	322,860.9	374,255.5	389,915.4	331,234.8	416,412.3
Trade Balance (X-M)	331,162.9	310,778.7	365,612.2	385,997.2	327,143.2	402,830.3

Source: FAOSTAT and UN Comtrade

⁵ 2006 and 2009 export declines goes together with the decline in national production for the same years.

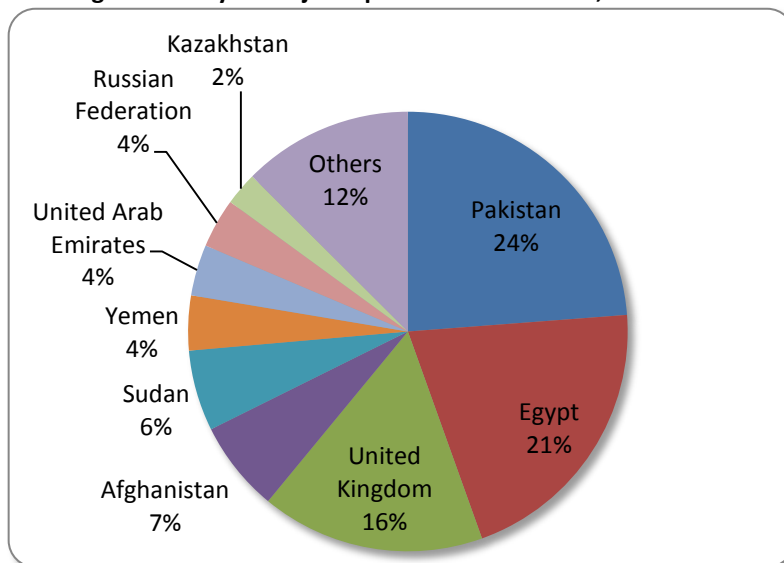
Figure 8: Tea Trade Balance (X-M) in Kenya, 2005-2010



Source: UN Comtrade

The main buyers of Kenyan tea are Pakistan, Egypt and the UK accounting more than 65 percent of national tea exports (Figure 9). Pakistan alone imports 24 percent of the total tea export. Over-reliance on a few export partners is identified as one of the mayor challenges for Kenyan tea industry (Made et al, 2009). This problem pump out when Pakistan begin to look out for other providing markets 6, reducing Kenyan tea imports from 91,000 tonnes in 2005 to 65,000 tonnes in 2006 (UN comtrade).

Figure 9: Kenya's Major Export Partners for Tea, 2005-2010.



Source: UN Comtrade

The small internal tea consumption relative to its production, added to the highly concentrated exports, make the Kenya tea sector extremely dependent on international markets. However, there is a set of possible alternatives in world' emerging markets. Kenya's tea exports to China and India, although still marginal, increased in a 65 and 46 percent, respectively, between 2009 and 2010. Russia could be another choice as it consumes good quality tea, paying higher prices, however none of the African tea producing

⁶ Pakistan entering into a Free Trade Agreement with India and Sri Lanka in the framework of the South Asian Association for Regional Cooperation (SAARC), Made et al, 2009).

countries cover this market (Agritrade, 2011). Finally, incentivize the local consumption, even though is low, in 2010, almost 60 percent of Kenyans said that tea is their favorite drink (Agritrade, 2010).

International trade agreements

Kenya is signatory to a number of multilateral and bilateral trade agreements as part of its trade policy. As member of the World Trade Organization (WTO) it's products have access to more than 90% of world markets at Most Favored Nation (MFN) treatment (KIA, 2012). In addition, it has several trade arrangements and trade-enhancing schemes:

1. **ACP-EU Trade Agreement.** Signed in 2000 between the European Community and the African, Caribbean and Pacific states (ACP), give Kenya no-reciprocal market access to the E.U.
2. **Common Market of Eastern and Southern Africa (COMESA).** The member states agreed to form a Free Trade Area and have been working in reducing the imports tariffs for goods produced within the 19 members.
3. **East African Community (EAC).** Kenya, Tanzania, Uganda, Rwanda and Burundi form the East African Community. The trading block is aimed achieve cooperation and regional harmonization on issues related to labor movement, work permits, education qualifications, standards, customs, rules of origin and common tariff nomenclature

d. Description of the Value Chain and Processing

A wide range of actors are involved in the Kenyan tealeaf to the cup value chain. The chain comprises those stakeholders involved in the production of green leaf tea and converting it into a bulk packaged product available for blending and sale to consumers.

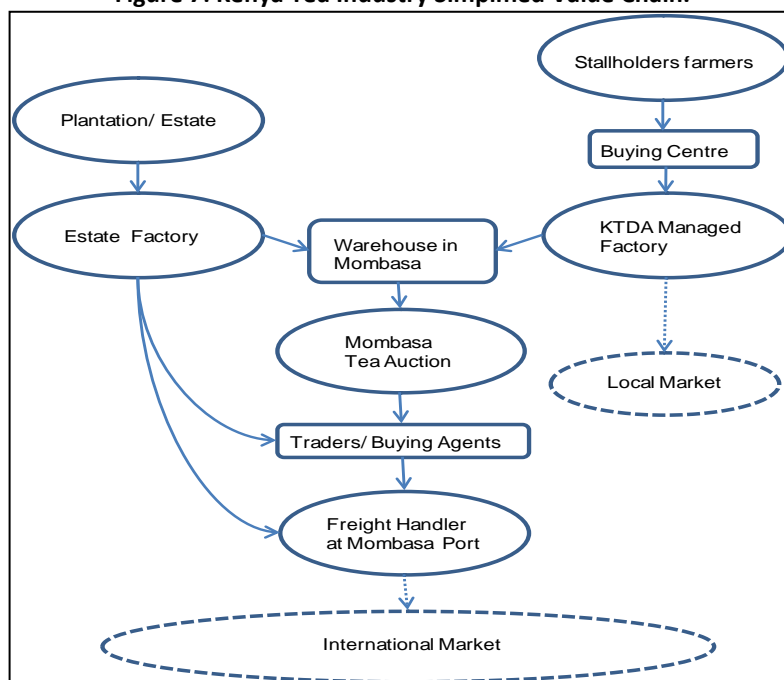
The chain could be characterized as a vertically integrated value chain, in which direct links between manufacturers and producers are common. The main tea packers have influence through all the value chain, from the farm input supply to the tea-bag retail. This characteristic is different from other similar commodities such as cocoa and coffee, in which multinational companies only operate in specific parts of the production chain (van der Wal, 2008).

The value addition of tea starts at the factory, where processing and grading are done. After grading, most of the tea is sold mainly through the Mombasa Tea Auction, some through direct contracted sales, and a little at factory gate (CPDA, 2008). Traditionally, tea out of Kenyan factories is known for its high quality, so it usually attracts good prices.

The second stage of the value addition is the blending and packaging stage. Although the Government of Kenya (GOK), the Tea Board of Kenya (TBK) and other stakeholders had made efforts so that this stage is carried at the country, it mainly occurs in the consumer countries and is controlled by the big multinational tea companies.

As shown in Figure 7, Kenya's tea value chain is completely divided for the smallholders, grouped under the KTDA, and the plantations. Both meet at the Mombasa Tea Auction, which sells around 80 percent of Kenyan Tea. The rest is traded through direct sales, or at factory gate, either for export or local consumption.

Figure 7: Kenya Tea Industry Simplified Value Chain.



Source: Author's own elaboration based on CPDA, 2008

Structure of the Kenyan Tea Trade

The Kenyan Tea supply is supported by a number of actors and organizations. This section identifies the key ones and their primary role in any of the value chain segment. (The information is based on KHRC, 2008 and Bedford et al, 2001)

1. **The Tea Board of Kenya.** A state corporation established in 1950 and operates under the Tea Act (Cap. 343 1979) whose' mandate is "to regulate tea growing, manufacture and trade and to carry out research and promotion of tea" (Tea (Amendment) Act Cap. 343. GOK officials and smallholder, plantation and trader's representatives compose it.
2. **The Kenya Tea Development Agency Ltd (KTDA).** Previously a government owned company, ... how many members... by law... Currently there are about 420,000 who have traditionally been under the KTDA "Kenya Tea Development Agency Limited was incorporated on 15th June 2000 as a private company under (CAP 486) of the laws of Kenya, becoming one of the largest private tea management agencies. The Agency currently manages 63 factories in the small-scale tea sub-sector in Kenya" (KTDA Webpage).
3. **Kenya Tea Growers Association (KTGA).** Was established in 1931 as a voluntary organization of large-scale tea growers and is based in Kericho. The association's principal aim is to address the common interests of the plantations. The role of KTGA includes lobbying and reinforcing linkages with and between stakeholders on matters affecting all their operations. (KHRC, 2008)
4. **East African Tea Trade Association (EATTA).** The EATTA was formed in 1957 by a group of tea producers, buyers and brokers in order to bring the trade of East Africa's tea to East Africa. Today, with over 240 members, the association hosts the weekly Mombasa Tea Auction.
5. **Tea Brokers.** There are 10 registered companies who operate as Tea Brokers at the Mombasa Tea Auction. They assist the sale of tea on behalf of producers. Applying broker companies should subscribe to producer principles and have good financial standing. The companies may also be required to provide bank guarantees as security for tea placed for sale. They are also required to

be independent and impartial. Their primary functions are: Taste tea for the purpose of quality verification; the evaluation of tea quality based on seasons and prevailing market conditions; determining the best price for respective qualities of tea, and to supervise the correct handling and market transactions of tea. They receive an agreed brokerage fee of 1.5 percent of the selling price (1 percent paid by the producer, the rest paid by the buyer).

6. **Tea Research Foundation of Kenya (TRFK).** The Tea Research Foundation of Kenya is the technical arm of TBK. It is mandated to carry out research on tea and advise growers on the control of pests and diseases, improvement of planting material, general husbandry, yields and quality.
7. **The Mombasa Tea Auction.** In November 1956, the Export Auction System was initiated under the management of the EATTA in Nairobi and most of the tea produced was consigned to the United Kingdom. In 1969, the auction centre was moved to the Port of Mombasa, which was the nerve centre of warehousing, handling and shipping. The Mombasa Tea Auction, consists of a main grades auction and secondary grades auction, and is held weekly on Mondays. The Mombasa Tea Auction has grown to be the second largest tea auction in the world after the Colombo Tea Auction in Sri Lanka. It charges a 2 percent operating commission based on the selling price (Africa Tea Brokers).

Tea production

Tea comes from an evergreen bush (the *Camellia sinensis*), which thrives at fairly high altitude in the more humid regions of the tropics and sub tropics. Tea bushes mature for commercial exploitation in 5-7 years after plantation and remain productive for over 100 years.

The work in tea fields is labor-intensive, with planting, maintenance and harvesting done by hand. In Kenya, the tea can be picked all year round. The leaves from the growing tips of the shrubs are plucked and collected into baskets. The full baskets are taken to a collection point, where they are weighed and then transported rapidly to the nearby processing plant.

The plucked green leaf must be processed within 12 hours after harvesting. The processing involves the crushing of leaves, which leads to controlled fermentation of the liquor present. The five different treatments carried out in the factory are largely mechanized and account for some 10 percent of total employment in the tea sector. The processed tea (referred to as "made tea" in the industry) is sold either loose or in packets.

There are two main methods of tea manufacture. The first is the orthodox type of manufacture; the other is the CTC (crushed-torn-curled) type. CTC grades are mostly granulated in appearance, while orthodox grades are long, the particle or whole leaf type. CTC gives higher 'cuppige' (almost twice) for the same quantity of tea and has stronger liquor, while orthodox tea is light and retains aroma. Tea quality and price are determined on the basis of liquor, aroma/ flavor and leaf appearance. Consumers perceive quality differences on the attributes of taste, pungency, strength, freshness, color and packaging. Kenya is known by its CTC processed tea.

Production in Kenya is divided in two clearly differentiated sectors, the big plantation sectors that account for around the 40 percent of the national production, and the smallholder farmers, which represent the other 60 percent of the national production. Productivity of tea farms varies widely between these two sectors. The major plantations enjoy a yield of 2.7 tonnes of tea per hectare: the smallholders just about 2

tonnes per hectare (TBK, 2011). While the Unilever-subsiary Brooke Bond Kenya Ltd, with 11 factories, owns the largest plantations in Kenya and is the country's largest single tea producer (GDS, 2004 and TBK, 2011), the small holders associated in the Kenya Tea Development Agency (KTDA), are the largest source of tea in the country. Formerly a government parastatal, the KTDA was privatized in June 2000 and is owned by around 450,000 small-scale tea growers that process their tea in its own 63 factories (TSB, 2011).

Smallholders

There are around 450,000 smallholders producing tea in Kenya, usually with plots between 4 and 8 hectares, not entirely destined to tea, but mixed with other staple crops as a risk management practice. Although smallholders account for the majority of tea produced in Kenya, their average yield per hectare is lower than that of the plantations. This is largely because of plantations' better use of technology, inputs, and economies of scale.

In the world, small farmers rarely own their processing factory (SOMO, 2006). However, Kenya is one of the few exceptions where smallholders operate co-operative processing plants⁷, managed by the KTDA, which by law runs most of the smallholders tea sector. The KTDA is the single largest exporter of processed tea in the world (Bowfield and Dolan, 2010). However, lack of effectiveness of its organization seems to be happening⁸.

Box 1: KENYA TEA DEVELOPMENT AGENCY

The Kenya Tea Development Authority was the successor of the Special Crops Development Authority (SCDA). Established in 1963, its objective was to provide services to smallholder tea farmers such as planting materials, fertilizers and extension services, inspecting and collecting green leaf from respective buying centers, processing and marketing of tea. At the beginning, the Commonwealth Development Corporation (CDC) and the World Bank provided the capital for the KTDA tea factories that were in the initial years managed by multinational tea corporations, like Brooke Bond and James Finlay, who own the competing large scale tea estates. It was some years after that smallholder representatives were allowed at the KTDA management board.

In the 1990s under the Kenyan market liberalization process, a first attempt was made to fully liberalize the KTDA. However, it was overhauled because it didn't fully benefit the smallholders interested, by then a powerful part of the tea sector. So, in the year 2000, and with the strong support of the GOK, the parastatal was transformed into the Kenya Tea Development Agency Ltd, a private company which was not answerable to the government, with shares exclusively purchased by the smallholders and where the government and management would be done by elected officials among all the Agency's stakeholders.

Today the KTDA is owned by 150,000 small-scale tea farmers shareholders, controls practically all the Kenya smallholders' tea production, and runs a total of 63 tea processing factories. The KTDA also has managed to produce a tea known for its' high quality, obtaining selling prices considerably above the

⁷ Tea Farmers are grouped in their corresponding factory. And they elect their factory manager. The KTDA commercialises all the factories tea and pays each one accordingly to their respective selling price at the auction, which highly depends on the product quality that they handle.

⁸ In a study carried out by the Christian Partners Development Agency in 2007, smallholders indicated that they are not well represented at the Tea Board of Kenya, the East African Tea Traders Association, nor the Mombasa tea auction. And they said that sometimes their representation at the KTDA through regional directors is ineffective or compromised.

average auction price. Prove of that is that the multinational companies buy KTDA to blend it with that of their own plantations to obtain a better grade tea.

The relative success of the KTDA was due to the “balance” resulting from the consensus of all the stakeholders resulting in: (1) the vertical integration of production chain from provision of inputs to manufacturing and marketing; and (2) the democratization through the gradual inclusion of smallholders at the KTDA until they obtained complete control over it.

The present requirement to become a KTDA grower is the planting of a minimum of 875 tea bushes that given an average of 8750 stumps per hectare requires a minimum of 0.16 hectare share. To make the delivery of green tea to KTDA attractive (apart from the legal obligation) farmers receive a regular monthly payment according to the quantity of green leaves delivered and an annual bonus according to the quality of the processed tea from the factory they are delivering to and the price it obtains at the world auctions, particularly in Mombasa.

Some of the main threats to the Kenyan smallholder sector under KTDA management are: (1) that it assumes over responsibility of the smallholders tea’ research and extension services, that should be supported by the government, diminishing the quality of service received by the farmers; (2) a potential bias in development between well off shareholders and the rest of the growers being only producers; (3) the prevalence of particular interests of a few over the majority and (4) opacity and corruption.

Source: KHRC, 2008; Ochieng, 2010; Buch-Hansen, 2012.

The specific smallholder value chain is detailed as follows.

1. After production small-scale farmers carry the green leaf to a tea collection center. There the tea is weighted and recorded by a factory employed clerk. Picking is done monthly through almost all the year.
2. The tea is collected by KTDA factory owned lorries to be delivered at the factory. The factory is owned by the farmers but managed by the KTDA on their behalf for a 2% selling price commission.
3. Each producer receives an initial payment agreed in advance for all factories by the KTDA general board. After selling, each company calculates a second payment depending on the selling price, loans payments, commissions and future investments. Depending on the profit margin obtained after that, the board of each factory determines the dividends to be paid for each small-scale shareholder of the factory.
4. Tea is transported to KTDA warehouses in Mombasa managed by its subsidiary Chai Trading Company Ltd. which is mandated to “carry out bulk packing, buying and selling of high quality tea to local and international destinations and customers”.
5. According to the KTDA webpage, the current existing market outlets for smallholders production are: 75 percent through the Mombasa Tea Auction, 7 percent goes to the Kenya Tea Packers Ltd. (KETAPA) -a KTDA owned company but also with plantation companies investments-, 15 percent are overseas and local direct sales, and a estimated 3 percent of factory gate sale.
6. The farmers are paid: (1) A fixed monthly payment during the hole year per green leaf kilogram and (2) a final bonus payment depending on the tea selling price.

The tea produced by the KTDA’ factories is considered an internationally high quality product. This is mainly due to three reasons: the environmental conditions (weather, soil, altitude), the promotion by the

KTDA of the plucking of two leaves and a bud⁹ and the Cut, Tear and Curl (CTC) processing technique. So, according to its website the KTDA offers four primary (around 85 percent of its production) and three secondary grades of black tea, namely:

- PRIMARY

Broken Pekoe 1 (BP1). Forms about 12-14% of KTDA's total production. The liquors are a bit light in body but with encouraging flavoring characteristics e.g. Briskness.

Pekoe Fanning 1 (PF1). This is about 58-60% and forms the bulk of KTDA's production. After processing it is made up of black grainy particles slightly smaller in size than the BP1 grade.

Pekoe Dust (PD). It forms 10-12% of the production, often black and finer than the PF1 often with thick liquors and aroma.

Dust 1 (D1) This is made up of the smallest particles and form about 4- 6% of the total production.

- SECONDARY

Fanning 1 (F1). The mixture has traces of black tea and large amount of smallish cut fibers often sifted out of the primary grades. F1 forms about 3-4% of the production and quite useful in tea bags due to its quick brewing, strong flavor and good color.

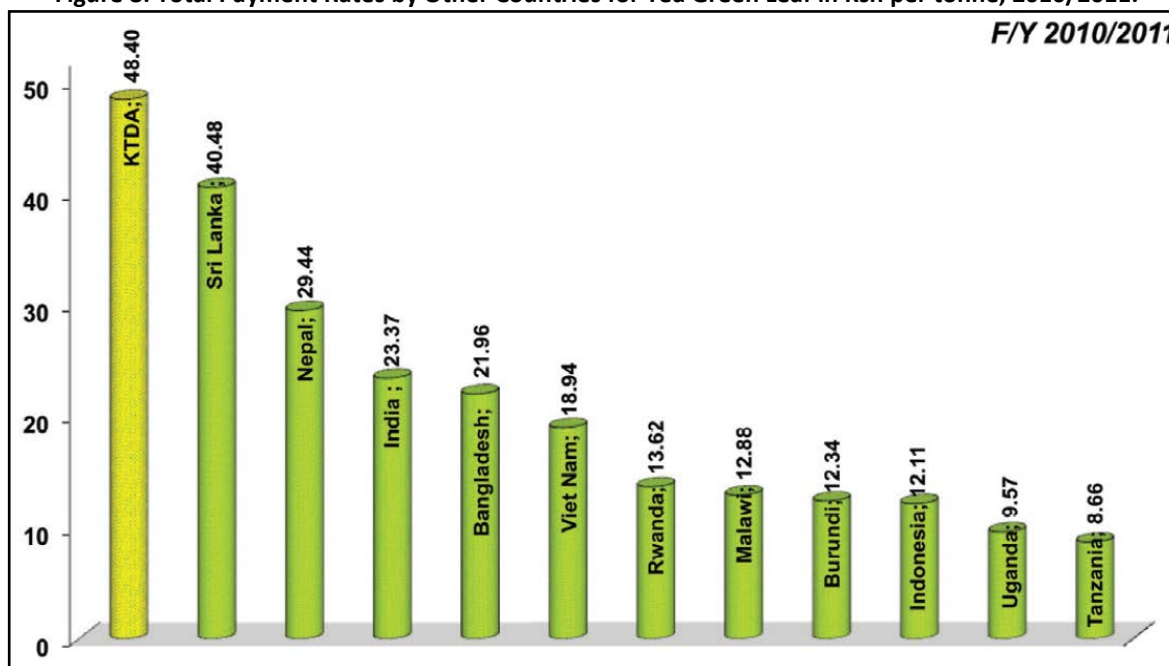
Dust (D) made up of tiny bits of broken leaf often used to brew strong tea quickly and popular for the tea bags.

Broken Mixed Fanning (BMF) mainly fibrous lots with very little trace of black tea.

The industry organization and the outstanding quality of the Kenyan smallholders' tea allow them to obtain higher prices than the auction average. According to an analysis of farm gate prices paid to farmer on other producing countries presented by the KTDA for the productive year 2010/2011, Kenyan farmers obtained the higher rates of the group (Figure 8). In fact, Kenyan stallholders received a 130 percent more than the world average paid to farmers (48.4 vs 20.9 Ksh/tonne of green leaf tea).

⁹ The result is better than what is produced by the plantations that employ other plucking techniques (CPDA, 2008).

Figure 8: Total Payment Rates by Other Countries for Tea Green Leaf in Ksh per tonne, 2010/2011.



Source: KTDA.

Although KTDA farmers are usually well paid off, there are several problems affecting them identified in the literature revised. Among them, one of the main is the distance the tea farmers are from decisions that directly affect them. For example, there was a factory building program before 2007 that involved a great deal of investment carried out by the KTDA on behalf of the farmers, but they were kept out of the process even though they have to carry the burden of the loans payment (CPDA, 2007). Another example is the commission paid to the tea brokers. The rates are decided by the KTDA but the costs are deducted from tea payments to the farmers.

The study carried out by the Christian Partners Development Agency (CPDA) commissioned by the Center for Research on Multinational Corporations (SOMO¹⁰) in 2007, listed some issues affecting the small-scale farmers, which are summarized below:

- a) **Management and representation.** Slow flow of information throughout the value chain, KTDA inefficiency and alleged corruption, lack or poor farmer representation in the main regulating boards, bad relationship between the factory and the farmers, the fees paid by the farmers to the KTDA is not returned as services and unclear dividend distribution as a result of lack of trade and auction information to farmers. This means that farmers are often unaware of auction prices.
- b) **Production.** There are high costs of production primarily due to high labor demand, high cost of fertilizers, high cost of energy needed for the processing, and high cost of transport due to poor infrastructure. There is a lack of extension services identified particularly from the KTDA. The CPDA identified a loss of product due to miss weighting or abuse in the tea collection centers by the KTDA' clerks (faulty weighting scales, a mandatory 2 kg deduction for every tea bag weighted, and the weighted tea is recorded as round downwards figures).
- c) **Legal issues.** Legal ownership of KTDA by farmers is not clear; either if all the farmers are shareholders. By law, the KTDA is a private company operated independently but owned by the

¹⁰ <http://somo.nl/>

farmers. Yet, there is no involvement in the decisions and dividends sharing. Profits from other property and business investments by the KTDA are not clearly disclosed.

- d) **Trade and marketing.** Global overproduction of tea is affecting the prices of the Kenyan tea. Trading commissions are paid by the farmers but not negotiated by them. There is not enough information about the prices and quantities of direct sales. Other issue is the lack of control over factory gate sales. Other problem is the low value addition of the Kenyan tea sector. Almost all of its production is exported with just the basic transformation process obtaining lower prices. There is a need to identify alternative and emerging tea markets in the world, particularly in the USA, Australia, Dubai and Sudan.

Plantations

Almost 90 percent of the world tea trade is controlled by seven multinationals (van der Wal, 2008). These companies not only control the most profitable activities in the tea value chain (blending and packing), activities conducted mainly at the consumer country, but the entire global market (Bowfield and Dolan, 2010). This means that some have direct control from the bush to the cup, through the owning and management of tea plantation, freight companies, trading companies, processing, blending and packaging companies, and retail marketing subsidiaries. In Kenya, there are 39 private processing factories operating. The same as for the smallholders, their value adding in the country ends at the sale of bulked tea at the Mombasa auction or through direct sales. No more processing is done after the first transformation from green leaf to made tea.

In Kenya, the case example is the Brook Bond Ltd. owned by the British-Dutch company, Unilever. The company employs more than 20,000 people, around 90% working on the 8,250 hectares under tea production owned by the company (KHRC, 2008). The company also manages 8 factories, producing an average of 32,000 tonnes of black tea annually.

The main costs for plantations is labor, representing about 55 to 73 percent of made tea at factory gate (van der Wals, 2008). The wage to tea pickers is fixed to kilogram delivered. Secondary labor provision such as education, food, accommodation and health care are also included in the total wage of some plantation workers.

Even though the plantations have better management, organization, and processing quality standards, the tea they produce is usually of lower quality than the one produced by the smallholders. This is mainly because a big part of tea quality depends on the collection process (plucking technique) and the plantations, as they pay per weight, find difficulties to control the technique used by the temporal workers in the extensive fields (CPDA, 2007). On the other side, international struggle for market shares by the multinational have focused on the supply of relatively low-quality bulk tea. This gives the packing companies flexibility by deliberately reducing difference in qualities by blending different kind of teas (van del Wal, 2008). A typical "English tea" could be the product of the blending of teas from six different countries.

Marketing and distribution Mombasa Tea Auction and Retailers

An important part of the global production of tea is traded at auctions. Nowadays, the main auction centers are in India (Kolkata and Kochi), Sri Lanka (Colombo) and Kenya (Mombasa). Around 85 percent of Kenyan tea is supplied through the Mombasa Tea Auction (MTA), the second largest tea auction in the world, which handles the marketing of tea from ten countries in Africa to over 45 different global markets (Kariuki, 2007).

The tea auction system brings the buyers and sellers together to determine the price through interactive competitive bidding on the basis of prior assessment of quality of the tea. Manufactured tea is dispatched from various gardens/estates to the auction centers, for sale through the appointed auctioneers. On receipt of the tea, the warehouse keeper sends a 'weighment report', showing the date of arrival and other details pertaining to the tea, including any possible damage or short receipt from the carriers.

The tea is catalogued on the basis of its arrival date at the auctions. Within the framework of the respective Tea Trade Associations, the quantities of tea for auction are determined according to the rate of arrival at a particular auction centre. Registered buyers, representing both the domestic trade and exporters, receive samples of each lot of tea catalogued. These samples are normally distributed a week ahead of each sale, enabling the buyers to taste, inform their principals and receive their buying orders in good time for the auction sales. The auctioneers taste and value the tea for sale, and these valuations are released to the traders. Guidelines for the price levels likely to be established at the auction sale are formulated on the basis of these valuations and the previous sale prices (SOMO, 2006).

Generally, brokers must be registered with the appropriate tea board in order to operate, which limits the number of auction houses where tea can be sold. The following are the only registered tea brokers found in Kenya: Africa Tea Brokers Ltd, Anjeli Limited, Bicorn Exim Ltd, CentreLine Tea Brokers Ltd, Choice Tea Brokers Ltd, Combok Ltd, Prudential Tea Brokers (E.A.) Ltd, Tea Brokers East Africa Ltd, Union Tea Brokers Ltd and Venus Tea Brokers Ltd (TBK, 2012).

Usually in the tea world market, each important auction sales are controlled by a small number of buyers. New buyers are discriminated against and their bids are not easily accepted. Smaller buyers have difficulties facing up to the bigger buyers who also have stakes in blending and packaging. Unknown buyers are not allowed into the auctions at all (SOMO, 2006). In Mombasa, only six multinational companies account for two-thirds of the tea traded through the auction (van der Wal, 2008). It is clear that the buying behavior of the big companies could have a major impact on the price paid at the auction.

The large tea companies have a considerable influence on the supply and demand of tea, and thus on the price-fixing process. Their market power is a major determinant at tea auctions. With their buying policy, these corporations strongly influence both price movements and the demand for certain qualities of tea. Their ownership of both plantations and processing factories -horizontal integration- is essential. Vertical integration - companies having a strong influence on transport companies and shipping agencies and so on - adds to the powerful position of the large tea companies. This concentration of power, with corporations sometimes controlling the entire production process from tea shrub to tea bag, offers ample scope for manipulation. (SOMO, 2006)

Currently, the Mombasa tea auction is facing another challenge. In 2005 a new tea auction was set up in Dubai. The Dubai Tea Trading Centre trades teas from 13 producing countries, including Kenya, Malawi, Rwanda, Tanzania, Zimbabwe, Ethiopia, as well as India, Sri Lanka, Indonesia, Vietnam, Nepal, China and

Iran. More than 70 companies, including Unilever, have joined. The centre is reported to be considering the launch of a tea futures market (Agritrade, 2010). The KTB also reported a sharp rise in sales to the United Arab Emirates, which increased by 73% to 22,000 tonnes. The hub provided by the Dubai Tea Trading Centre saw a record year in 2010, trading 10,600 tonnes of tea, a 41% increase on 2009. This is partly due to good harvests in the countries such as Kenya and Sri Lanka. But it is also linked to a continuing rise in demand from the countries of the Near East and the Community of Independent States (CIS), geographically close to Dubai, which now represent 27% of global exports. Dubai is pursuing an aggressive strategy, offering up to 60 days’ free storage, and is developing its activities in packaging and labeling locally processed tea. (Agritrade, 2011).

Apart from these, auction centers around the world could become redundant with technological advances. At present almost all tea fields are located in regions where land-phone lines intermittently fail or do not exist. With the development of the internet through mobile phones, however, and given that many plantations are financed by large companies, tea estates will in the future be able to post real-time data daily onto the internet, enabling a viable futures market. (Agritrade, 2010). The global process for bringing buyers and sellers more directly together is already taking place with catalogue sales of premium tea (Agritrade, 2010).

Advantages and disadvantages of the dominance of the auction system for the tea industry (SOMO, 2006):

Advantage	Disadvantage
The auction system is praised for allowing the highest price possible to be paid for the tea in a way that balances market demand and supply.	There has in the past been some evidence of collusion among brokers to influence prices. Such collusion, if it occurred, would tend to reduce the price at which producers could sell tea at the auctions, and would also affect prices of direct sales.
The cost of going through the system is also fairly low. In India, auctioning costs less than 2% of the merchandise, including free sampling to prospective buyers, while in Kenya the commission to the broker is 1% from the producer and 0.5% from the buyer.	Auction houses are usually seen as ‘middlemen’ that soak up cost.
It is a transparent trading forum.	It is alleged that, when the situation is to their advantage, they increase price uncertainty, delay and speculation.
Because buyers must buy the tea in its physical form rather than just on paper, it is protected from destabilizing speculators.	

Source: SOMO, 2006.

e. Policy Decisions and Measures

Kenyan economic policies are generally based on open market principles that encourage investment and promote free trade. Kenya’s open FDI policy allows foreign tea companies to own businesses in Kenya. This openness permits inflow of skilled people, investments, and new technology into the economy and tea cluster. Kenya has also put in place a new IP law with strengthened enforcement measures. Kenya’s Competition regulation encourages competition by prohibiting restrictive trade practices (Made et al, 2009).

The Kenya government has taken a number of steps to improve the competitiveness of the economy and the tea sector. The “Kenya Vision 2030”, unveiled in 2007, set the goal in transforming Kenya into an industrialized middle-income nation by the year 2030. At the sector level, two policy strategies have

significant impact on the tea sector. The first is the Strategy for Revitalizing Agriculture (SRA) 2004-14 unveiled in 2008. Its objective is to transform agriculture into a profitable, commercially oriented, and competitive sector. The second is related to Kenya's the 2003-2008 National Export Strategy (NES). The Strategy aims to improve Kenya's export performance by deepening existing export markets, opening new markets, diversifying the export base away from reliance on traditional exports, enhancing market access, and strengthening institutional support networks through trade facilitation and enhancing competitiveness. The tea sector is among the fourteen priority sectors identified in the NES

Regarding the tea industry, Kenya maintains generous incentives for local value addition by processing and packaging tea locally in the country. The incentives include VAT exemption, a ten year corporate, income and withholding tax holiday and equipment. Kenya's Export Processing Zones (EPZ) offers additional incentives particularly to export oriented investors (Made et al, 2009). However despite these incentives, major players in the global tea sector such as Unilever had shown no intention to relocate their packaging of tea to Kenya (van der Wal, 2008).

Another policy promoted by the GOK is the search for new emerging markets. The TBK has identified some emerging markets with strong potential, such as China and the countries of Eastern Europe, the Near East and North America (TBK, 2011). In June 2010, the TBK and other stakeholders set out to develop a stamp of origin to consolidate the identity of Kenyan tea on the international market. Almost 94 percent of its output is exported in bulk for use in blends; only 6 percent of its tea reaches the market in the form of "100 percent Kenyan". (Agritrade, 2011).

Another trend that could have impact in Kenyas tea sector is the increase demand of tea produced from sustainable sources, which worldwide trade was more than 50 times greater in 2009 than it was in 2004. Marketed principally under the Fairtrade label, this tea represented 7.7 percent of global tea exports in 2009 (Agritrade, 2011) There has been a increasing interest and pressure, mainly by the consumer countries, for the production of sustainable and fair-trade tea. Some Kenyan smallholder farms have been certificated (Buch-Hansen, 2012), however a general practice seems difficult without support. Even more if the efforts made by the government in favor of research and extension services represented only about 0.01 percent of the governmental budget in 2008 (Made et al, 2009). This is a policy that could diminish Kenyan smallholders' comparative quality advantage towards that of the big plantations owned by the same companies promoting the certifications.

Marketing and price policies

There is no single world price for tea but rather differing prices at different auctions. Between 1970 and 2002 the price trend was downward, with supply rising more quickly than demand. The World Bank figures suggesting that tea prices fell by 44 percent in real terms over these years. Prices have since bounced back, more than doubling between 2002 and September 2009 (Agritrade, 2010). This price explosion was the result of four years when the growth in global demand outstripped production, of political events in Kenya, and of a general drought, that affected East Africa, India and Sri Lanka. Output then fell by 0.64% between 2007 and 2009, while consumption showed a rise of only 0.21 percent.(Agritrade, 2011). The UN Food and Agriculture Organization (FAO) states that the unprecedented rise seen generally in food commodity prices in 2008 had only a limited impact on tea. On the supply side, very few producers abandoned tea in favor of the food staples which would have proved more profitable; on the demand side, almost no substitution effect was observed (Agritrade, 2011). This was especially true to Kenya' farmers, which find that under the KTDA scheme risk is lower than changing to a more profitable crop such as sugarcane (Buch-Hansen, 2012).

In the world tea industry, usually smallholder farmers are price-takers, with little relationship to buyers and little choice about who they sell to (FT, 2010). Due to the industry organization, in Kenya this is partially true. Smallholders are far from the tea auction, but control a highly integrated value chain under the KTDA. Quality is an important issue and each bulk sold is traced to its corresponding factory, and paid accordingly to its achieved price.

International trade policy measures

Apart from the governmental efforts to increase the added value of tea before export, the GOK didn't apply any specific tax or quota to tea exports. However, in February of 2012, the Ministry of Agriculture introduced a levy of 1 percent over the auction selling price on all Kenyan tea exports. The levy is supposed to fund national tea regulators –the Tea Research Foundation of Kenya and the Tea Board of Kenya- and programs to improve sector infrastructure (allAfrica, 2012).

Taxes and Subsidies to Production

No special tax or subsidy to production was identified during the period under study.

3. DATA REQUIREMENTS, DESCRIPTION AND CALCULATION OF INDICATORS

To calculate the indicators needed to estimate incentives or disincentives to production (NRPs) as well as Market Development Gaps (MDGs), several types of data are needed. They were collected and are presented and explained hereafter.

TRADE STATUS OF PRODUCTS AND MARKETING FLOW ANALYZED

As stated before, Kenya is one of the mayor tea producers worldwide, exporting almost 95 percent of its production, mainly to Pakistan, Egypt and the United Kingdom. Almost all the tea' exports are first quality black made tea¹¹ that most of the time is blended by the buyer with other qualities' tea at the country of destination.

Around 85 percent of Kenyan Tea is traded at the Mombasa weekly tea auction supervised by the East African Tea Trade Association (KTDA, 2012). The national point of exportation, and also an international reference for tea trade, is the port of Mombasa almost 500 km southeast Nairobi. This analysis assumes the Mombasa border as the point of competition.

Due to the lack of complete data from the plantations, this analysis focus on the smallholder farmers, whom represent the 60 percent of Kenya's tea production and are organized under the KTDA.

BENCHMARK PRICES

Observed

The basis for calculating a reference parity price to determine whether tea producers receive market incentives or disincentives is to establish a benchmark (border) price, which represents the market price for tea that would prevail in the absence of domestic policy interventions. Since Kenya is clearly an exporter of tea, a nominal FOB price was taken as the benchmark price.

Black made tea comprised 99 percent of Kenya's tea exports during the years under review, so its nominal FOB price was used for this analysis. UN Comtrade data was the reference to calculate the unit value of exported tea for years 2005-2010 (shown in Table 5) after been compared with FAOSTAT and Global Trade Atlas databases. This FOB is the weighted average of all tea exported from Kenya, including that produced by the plantations.

The tea produced by the plantations and the KTDA differed significantly and constantly in its quality, being the produced by the later of a higher quality, therefore receiving a better price. A quality conversion factor based on the proportion of tea traded by each one throughout the analyzed period was used to obtain the reference FOB price specific to the KTDA' tea. The detailed explanation of this procedure is presented afterward in this chapter.

¹¹ HS: 090230 and 090240

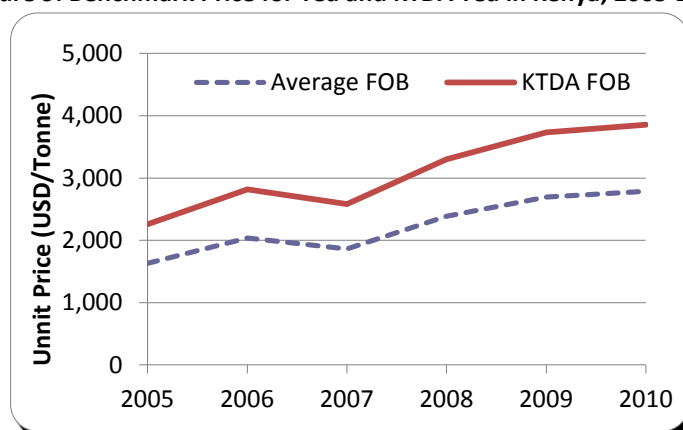
Table 3: FOB price for Kenyan exported tea in USD per tonne, 2005-2010

	2005	2006	2007	2008	2009	2010
Average FOB	1,630.10	2,035.62	1,864.73	2,386.13	2,694.92	2,785.28
Quality conversion Factor (average)	1.38	1.38	1.38	1.38	1.38	1.38
KTDA reference FOB	2,256.14	2,817.39	2,580.88	3,302.53	3,729.90	3,854.96

Source: UN Comtrade. Weighted average for the exported tea under 090230 and 090240 HS nomenclature.

Despite a small decrease in export price in 2007, Figure 10 shows the constant increase in Kenya's benchmark price of exported black tea, reaching prices of almost 3,000 USD per tonne.

Figure 9: Benchmark Price for Tea and KTDA Tea in Kenya, 2005-2010



Source: UN Comtrade

Adjusted

No adjustments to benchmark prices were made.

DOMESTIC PRICES

Two domestic prices are required for this analysis – the tea price at wholesale and the price for green leaf tea at the farm gate.

Wholesale price

In order to determine domestic tea reference prices it is important to define the point of competition, where national tea production actually competes with international production. As stated before, Mombasa auction was selected as the point of competition, since more than 75 percent of national tea production is traded through the auction and because specifically in this place is where the national and international buyers choose between Kenyan or international produced tea.

The average selling price in the auction was provided by the Kenya Tea Development Agency. This prices exclude transactions from other sellers that also operate in the Mombasa weekly auction. This way, we assure that the prices used in the analysis represent only prices offered for Kenyan tea traded by the KTDA (Table 6).

Table 4: Annual Average Prices for KTDA's Black Tea at Mombasa Auction, 2005-2010.

	2005	2006	2007	2008	2009	2010
KSh/Tonne	140,550	131,970	138,700	185,340	233,720	250,330

Source: KTDA.

Farm Gate

As detailed before, most of Kenyan tea production concentrates in a big area extension covering mainly the province of Rift Valley, and that goes on through Central, Eastern and Nyanza provinces. For this analysis we used annual average farm gate prices for green leaf tea paid to all KTDA's farmers (shown on Table 7).

Table 5: Domestic Farm Gate Prices for Green Leaf Tea received by KTDA Farmers in Kenya, 2005-2010

	2005	2006	2007	2008	2009	2010 (e)
KSh/Tonne	24,270.0	21,350.0	24,630.0	35,160.0	43,020.0	48,400.0

Source: KTDA

EXCHANGE RATES

Observed

Average nominal exchange rates between the Kenya Shilling and the US Dollar were used in this analysis. The average rates for each year under review (shown in Table 11) were obtained from the World Bank's World Development Indicators database.

Table 6: Average Nominal Exchange Rates, 2005-2010.

	2005	2006	2007	2008	2009	2010
KShs/USD	75.55	72.10	67.32	69.18	77.35	79.23

Source: World Bank

Adjusted

No adjustments to exchange rates were made.

ACCESS COSTS

Observed

Access costs include all the costs associated with bringing the commodity from the farm gate to the wholesale at Mombasa Auction, as well as from the auction, after it is sold, to the shipment at Mombasa port. These costs mainly include transaction costs, processing, storage, handling, transport and the different margins applied by economic agents along the value chain.

The access costs obtained for this analysis are national annual averages reflected in Kenyan Shillings per tonne of green leaf tea before the wholesale, and in made tea after it. The data was provided by the KTDA and Africa Tea Brokers Limited, corroborated with access costs from Kenyan tea VCA literature (van der Wal, 2008; CPDA, 2008).

The costs are expressed in terms of Green Leaf tea use a conversion ratio of 4.25 kg GL: 1 kg MT.

Farm Gate to Wholesale

The observed access costs provided refer to the average costs in KSh per tonne for taking the green leaf tea from the farm gate to its sell in Mombasa auction as made tea.

As detailed on Table 9, access costs from Farm Gate to the point of competition include all the production collection, the green leaf to made tea processing, all the license fees from the regulatory authorities, the transport from the factory to the auction warehouse, the first packaging costs and the KTDA marketing margin.

Table 7: Observed Access Costs from Tea Production Zones to Mombasa Auction (Ksh/Tonne of green leaf), 2005-2010.

Concept	2005	2006	2007	2008	2009	2010
Leaf Collection Cost	1,232.94	1,087.06	1,216.47	1,287.06	1,084.71	1,204.71
Manufacturing Cost (Without buying costs)	1,730.00	1,807.65	299.41	1,298.82	3,455.29	3,543.53
License Fees (Statutory) K.B.S Levy TBK Cess	145.88	131.76	120.00	157.65	134.12	136.47
Inland Transport & Insurance Cost	611.76	600.00	621.18	689.41	790.59	807.06
Packaging Cost	1,136.47	1,108.24	1,160.00	1,287.06	1,400.00	1,498.82
(a)Total processing costs	4,857.06	4,734.71	3,417.06	4,720.00	6,864.71	7,190.59
(b)KTDA marketing margin (auction selling price – a)	3,943.53	4,967.06	4,588.24	3,729.41	5,108.24	3,310.59
Total Access Costs (a + b)	8,800.59	9,701.76	8,005.29	8,449.41	11,972.94	10,501.18

Source: KTDA

Wholesale to Border

The observed access costs after the point of competition refer mainly to fees, commissions, transport to the border and port handling and storage. The Mombasa auction charges a 1.5 percent of the sale as a brokerage fee, which is paid in part by the buyer (0.5%) and by the producer (1%)¹². Additionally, each authorized trader charges a 2% commission on the sale plus 0.1 USD per kilogram sold to cover transport, warehousing and port handling costs. The calculation of these costs based on the observed selling price are shown in Table 10.

Table 8: Observed Access Costs from Mombasa Auction to Mombasa Port (Ksh/tonne of made tea), 2005-2010

Concept	2005	2006	2007	2008	2009	2010
KTDA auction selling price	140,550.0	131,970.0	138,700.0	185,340.0	233,720.0	250,330.0
Mombasa auction 2% commission over selling price	2,811.0	2,639.4	2,774.0	3,706.8	4,674.4	5,006.6
Transport, warehousing and port handling costs-100 Usd/tonne	7,555.4	7,210.1	6,731.8	6,917.5	7,735.2	7,923.3
0.5% over selling price brokerage fee paid by the buyer	702.8	659.9	693.5	926.7	1,168.6	1,251.7
Total in Ksh per tonne of made tea	11,069.2	10,509.3	10,199.3	11,551.0	13,578.2	14,181.6

Source: Africa Tea Brokers Limited

¹² The fee paid by the producer is not included as it is already been subtracted from the paid farm gate prices.

Adjusted

Adjusted access costs represent the costs of transporting the commodity in an efficient, well-functioning market. Thus, all taxes, fees (excluding fees for services), subsidies and non-tariff measures are omitted. Additionally, all excessive costs and profit margins are adjusted.

Farm Gate to Point of Competition

The KTDA showed excessive margins for the years 2005, 2006, 2007 and 2009. A profit margin is considered excessive by the MAFAP methodology when it represents more than 10 percent of the agent's investment cost (processing costs + raw material). The excessive margins are then adjusted to the respective limit. Calculations are shown in Table 9.

Table 9: Adjusted Access Costs from Tea Production Zones to Mombasa Auction (Ksh/Tonne of green leaf), 2005-2010.

Concept	2005	2006	2007	2008	2009	2010
(a)Total processing costs	4,857.1	4,734.7	3,417.1	4,720.0	6,864.7	7,190.6
(b)KTDA marketing margin (auction selling price – a)	3,943.5	4,967.1	4,588.2	3,729.4	5,108.2	3,310.6
KTDA marketing margin (% of investment costs)	14%	19%	16%	9%	10%	6%
(c)Adjusted KTDA Profit Margin (Max 10% of investment cost)	2,912.7	2,608.5	2,804.7	3,729.4	4,988.5	3,310.6
Adjusted KTDA marketing margin (% of investment costs)	10%	10%	10%	9%	10%	6%
Total Access Costs (a + b)	8,800.6	9,701.8	8,005.3	8,449.4	11,972.9	10,501.2
Total Adjusted Access Costs (a + c)	7,769.8	7,343.2	6,221.8	8,449.4	11,853.2	10,501.2

Source: KTDA

Point of Competition to Border

The access costs from the Mombasa auction to Mombasa port (Border) were not adjusted.

EXTERNALITIES

No externalities were taken into account in this analysis.

BUDGET AND OTHER TRANSFERS

There were no specific budget or other transfer to the producers identified.

QUALITY AND QUANTITY ADJUSTMENTS

Quantity

The Kenyan Tea Development Agency provided a conversion ratio for their factories of 4.25 kilograms of Green Leaf tea for each kilogram of Made tea. As our farm gate prices were for green leaf, a quantity coefficient of 0.24 was applied to all data in Made tea terms.

Quantity

As this analysis is focused only on the KTDA's smallholder farmers, which produce a higher quality tea than that of the plantations, obtaining in consequence a higher price, a quality conversion factor had to be applied to the observed FOB price obtained as an average both sub-sector exports. To do this, using the average auction price (which includes both quality teas), the annual share of national production of both sectors and the selling price of KTDA' tea at the auction, the selling price of the plantations was estimated, as detailed in the following expression:

$$\text{Plantations' Auction Price} = \frac{[\text{Average auction price} - (\text{KTDA' auction price} * \text{KTDA' production share})]}{\text{Plantations' production share}}$$

After obtaining the Plantations' Auction Price for each year, the quality conversion was estimated as the average ratio between the KTDA's auction price and the Plantations' auction price for the entire period under analysis, resulting in 1.38. The average auction ratio was used to diminish significant influences on price fluctuations not related to quality differences. The results are detailed in Table 10.

Table 10: Average tea price to KTDA tea price conversion factor calculation for the period 2005-2010.

	2005	2006	2007	2008	2009	2010
(A) KTDA share of production	60%	62%	62%	61%	55%	56%
(B) KTDA Auction selling prices (USD/kg of made tea)	1.86	1.83	2.06	2.68	3.02	3.16
(C) Average Auction prices (USD/kg of made tea)	1.56	2.02	1.76	2.33	2.72	2.75
(D) Estimated "Others' Auction prices" $[(C-(A*B))/(1-A)]$	1.11	2.32	1.27	1.78	2.35	2.22
Quality Factor (B/D)	1.68	0.79	1.63	1.50	1.28	1.42
Average conversion factor	1.38					

Source: KTDA, FAOSTAT, MOA.

Following the discussion above, a summary of the main data sources and methodological decisions taken for this analysis of price incentives and disincentives is provided below.

Concept	Description		
	Observed	Adjusted	
Benchmark price	1. <i>Weighted FOB price for made black tea, under 090230 and 090240 HS nomenclature. Source: UNcomtrade. Reviewed with FAOSTAT and Global Trade Atlas data.</i>	N.A.	
Domestic Wholesale	2. <i>Annual average selling price obtained by the KTDA at the Mombasa tea auction. Source KTDA.</i>	N.A.	
Domestic price at farm gate	3. <i>National average prices for green leaf tea paid to KTDAs' farmers .Include first and second payment.</i>	N.A.	
Exchange rate	4. <i>Annual average nominal exchange rates reported by the World Bank.</i>	N.A.	
Access cost from farm gate to wholesale.	5. <i>Itemized costs from farm gate (national average for each year) to the wholesale (Mombasa auction) were based on data provided by the KTDA.</i>	6. <i>Itemized costs from farm gate (national average for each year) to the wholesale (Mombasa auction adjusted for excessive marketing profit margins. Data provided by the KTDA.</i>	
Access costs from wholesale to point of competition	7. <i>From wholesale to point of competition (Border), the data was calculated using information provided by Africa Tea Brokers Ltd.</i>	N.A.	
QT adjustment	Bor-whl	4. <i>25 tonnes of green leaf tea for each tonne of made tea. Data provided by the KTDA.</i>	N.A.
	POC-FG		N.A.
QL adjustment	Bor-whl	<i>Estimated quality conversion factor between KTDA tea and Plantations tea.</i>	N.A.
	POC-FG	N.A.	N.A.

CALCULATION OF INDICATORS

The indicators and methodology applied in this analysis are described in Box 1. A detailed description of the calculations and data requirements is available on the MAFAP website.

Box 1: MAFAP POLICY INDICATORS

MAFAP uses four measures of market price incentives or disincentives. *First*, it uses two observed nominal rates of protection (NRPs), one at the wholesale and one at the farm gate level. These compare observed domestic prices to reference prices, which represent the market price for the commodity that would prevail in the absence of domestic policy interventions and structural inefficiencies along the commodity's marketing chain.

Reference prices are calculated from a benchmark price, such as an import or export price expressed in local currency and brought to the wholesale and farm gate levels with adjustments for quality, quantity, market access costs, shrinkage and loss.

The **Nominal Rate of Protection - observed (NRPo)** is the price gap between the domestic market price and the reference price divided by the reference price at both the farm gate and wholesale levels:

$$NRPO_{fg} = (P_{fg} - RPO_{fg})/RPO_{fg}; \quad NRPO_{wh} = (P_{wh} - RPO_{wh})/RPO_{wh};$$

The $NRPO_{fg}$ captures all trade and domestic policies, as well as other structural factors affecting incentives and disincentives for the farmer, while the $NRPO_{wh}$ helps identify where incentives and disincentives may be distributed along the commodity's marketing chain.

Second, MAFAP uses the **Nominal Rate of Protection - adjusted (NRPa)** at the wholesale and farm gate level, in which the reference prices are adjusted to eliminate excessive access costs and other distortions found in developing country market supply chains. The equations to estimate the adjusted rates of protection, however, follow the same general pattern:

$$NRPa_{fg} = (P_{fg} - RPa_{fg})/RPa_{fg}; \quad NRPa_{wh} = (P_{wh} - RPa_{wh})/RPa_{wh};$$

MAFAP also analyzes market development gaps (MDGs) caused by market power, exchange rate misalignments, externalities and excessive access costs, which when added to the observed reference prices generate the adjusted reference prices and NRPa indicators. A comparison of the different rates of protection identifies where market development gaps can be found and reduced.

Nominal Rates of Protection were calculated and the results are presented in Tables 11-13.

Table 11: MAFAP Price Gaps for Tea in Kenya (KSh/tonne), 2005-2011

	2005	2006	2007	2008	2009	2010
Trade status for the year	x	x	x	x	x	x
Observed price gap at wholesale	(18,841.55)	(60,657.02)	(24,839.23)	(31,562.21)	(41,216.94)	(40,929.06)
Adjusted price gap at wholesale	(18,841.55)	(60,657.02)	(24,839.23)	(31,562.21)	(41,216.94)	(40,929.06)
Observed price gap at farm gate	(4,433.31)	(14,272.24)	(5,844.52)	(7,426.40)	(9,698.10)	(9,630.37)
Adjusted price gap at farm gate	(5,464.13)	(16,630.83)	(7,628.05)	(7,426.40)	(9,817.87)	(9,630.37)

Table 12: MAFAP Nominal Rates of Protection (NRPs) for Tea in Kenya, 2005-2011

	2005	2006	2007	2008	2009	2010
Trade status for the year	x	x	x	x	x	x
Observed NRP at wholesale	-11.82%	-31.49%	-15.19%	-14.55%	-14.99%	-14.05%
Adjusted NRP at wholesale	-11.82%	-31.49%	-15.19%	-14.55%	-14.99%	-14.05%
Observed NRP at farm gate	-15.45%	-40.07%	-19.18%	-17.44%	-18.40%	-16.60%
Adjusted NRP at farm gate	-18.38%	-43.79%	-23.65%	-17.44%	-18.58%	-16.60%

Table 13: MAFAP Market Development Gaps for Tea in Kenya (KSh/Tonne), 2005-2010

	2005	2006	2007	2008	2009	2010
Trade status for the year	x	x	x	x	x	x
International markets gap (IRG)	-	-	-	-	-	-
Exchange policy gap (ERPG)	-	-	-	-	-	-
Access costs gap to wholesale (ACG _{wh})	-	-	-	-	-	-
Access costs gap to farm gate (ACG _{fg})	(1,030.82)	(2,358.59)	(1,783.53)	-	(119.76)	-
Externality gap	-	-	-	-	-	-

4. INTERPRETATION OF INDICATORS

Figures 10-12 show the results for the set of MAFAP indicators generated, which include price gaps and Nominal Rates of Protection (NRPs) at the point of competition and farm gate --Market Development Gaps (MDGs) were not calculated, as there were no adjustments in the access costs--. Price gaps are market price differentials between the commodity domestic and reference parity prices in each respective year. More conceptually, they provide an absolute measure of the extent to which producers are protected under the existing market conditions and structure; NRPs express this measure of protection as ratios that are comparable across countries and commodities.

Price Gaps and Nominal Rates of Protection (NRPs) at Wholesale

At wholesale (Mombasa tea auction), the average observed NRP throughout the period under review was -17.2 percent. As shown in Figures 10-11, the observed price gaps and NRPs were negative in all years, indicating that the KTDA is receiving market disincentives for its traded tea. Apart from the 2006 decrease in the NRP and increase in the price gap, the NRP is quite stable throughout the period. The lower NRP during the period was due to the increase of average selling price of the Mombasa auction and FOBs, that wasn't reflected in the price received by the KTDA.

Price Gaps and Nominal Rates of Protection (NRPs) at Farm Gate

At the farm gate level, the average observed and adjusted NRP throughout the period under review were -21.19 and -23 percent, respectively. As shown in Figures 10-11, the price gaps and NRPs were negative in all years, indicating that tea farmers are receiving constant and high market disincentives. The trend, except for the year 2006, show a constant increase, although still negative, in the NRP at the farm gate. This related trend is a logical result of the farm gate payment system, as the second payment received depends directly on the selling price achieved by the tea each factory produced.

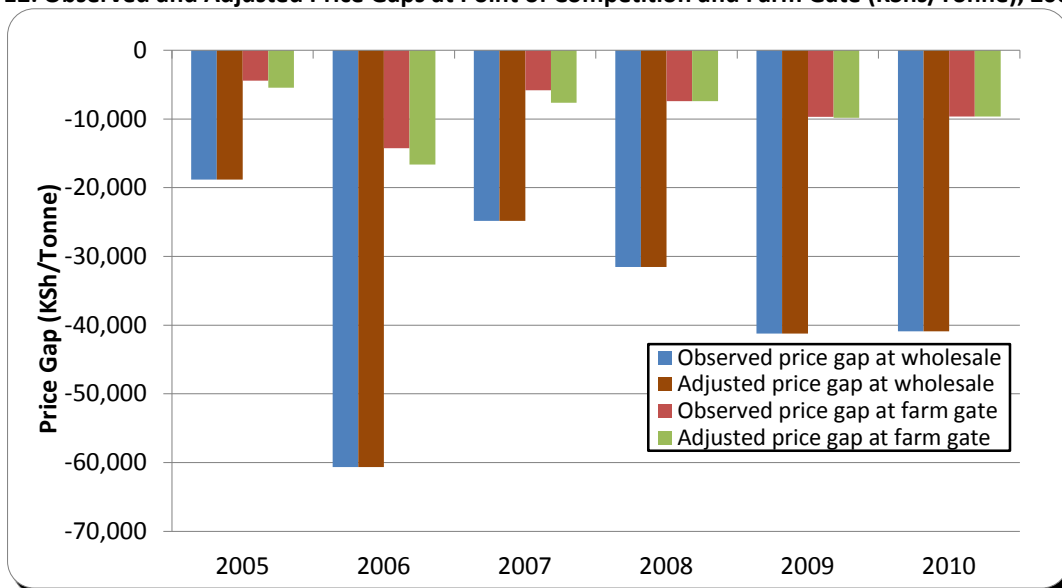
On the other side, the KTDA at the wholesale level (the market managing level) show better levels of protection that at farm gate, this is also because the second payment to the tea producers is calculated after all the obligations, costs and other expenses are covered by the KTDA.

Price Dynamics at Wholesale and Farm Gate

During the period under study, tea prices showed a constant increase after a long period of low tea prices. This was reflected on the price paid to the KTDA's farmers. The strong relationship between the price received at the auction and the price paid to the farmers is due to the pay mechanism of the KTDA to its farmers, which's second payment depends directly on the obtained selling price. However, the NRPs are consistently lower to the farmers, which means that even though the KTDA is supposed to act as a protective measure against external market structure, the KTDA is being less unprotected than the tea producer farmers. This could be because the profit margins that are paid to the shareholder farmers that are not paid to the overall producer farmers. This seems to be showing an inequity dilemma exposed before, that almost only one third of the farmers own the KTDA.

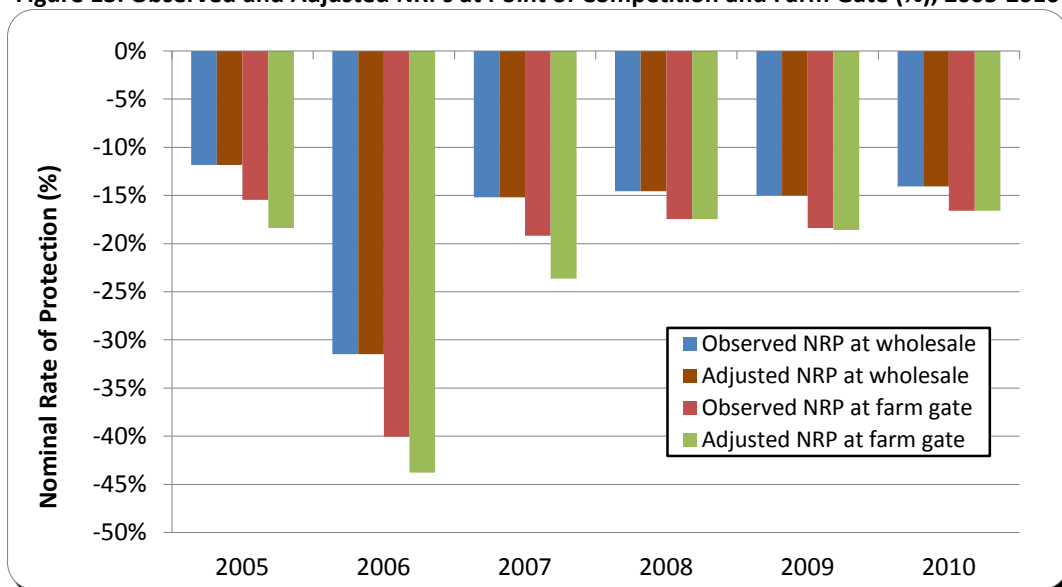
Finally, the standard deviation of the NRP's through the period at farm gate is higher than that of the wholesale level, 9 and 7 percent, respectively. This could mean that even with relatively stable prices, farmers are being more exposed to risk due to price changes.

Figure 12: Observed and Adjusted Price Gaps at Point of Competition and Farm Gate (KShs/Tonne), 2005-2010



Source: Author's own calculations using data as described above.

Figure 13: Observed and Adjusted NRPs at Point of Competition and Farm Gate (%), 2005-2010



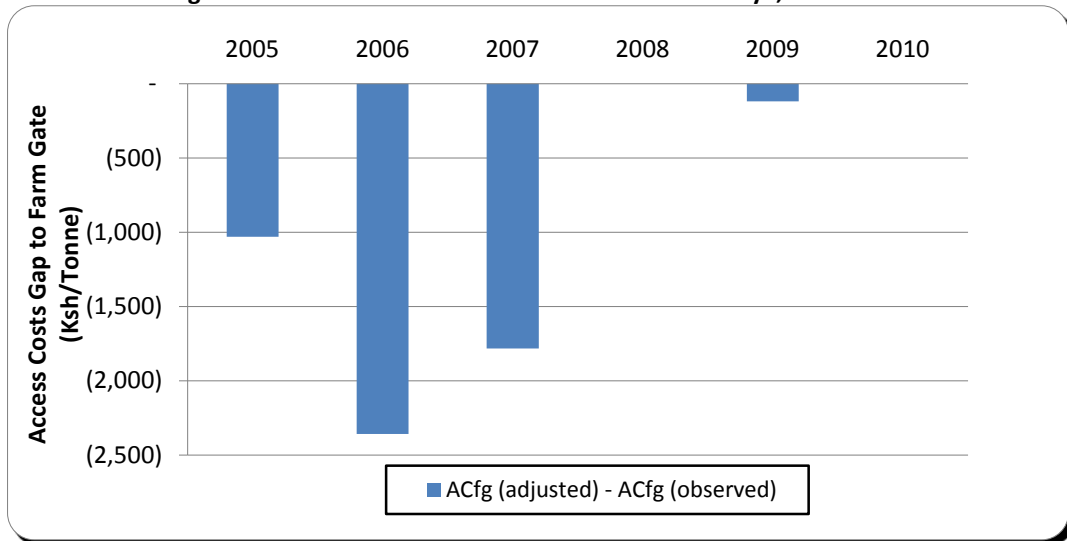
Source: Author's own calculations using data as described above.

Market Development Gaps (MDGs)

Only MDGs resulting from excessive marketing profit margins by the KTDA were identified on this study. This might be because of two reasons. (1) The KTDA tea value chain is highly integrated, controlling the entire process from input supply to marketing and exports leaving small chances for inefficiencies; and (2) because the source data is an average of all KTDA's factories. Specific case study could show other marketing inefficiencies that are not shown in the data provided.

The excessive margins from the KTDA show the possible bias towards KTDA's shareholder farmers against the rest of the smallholders. This could lead to a structural change in the tea smallholder subsector were relatively richer farmers get to buy other farmers land increasing the economic gap between.

Figure 19: MDG from Farm Gate to Wholesale in Kenya, 2005-2010



5. PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

MAIN MESSAGE

Even though Kenya's smallholder tea farmers are considered as one of the few examples of successful stallholders' organization, receiving considerably higher prices than those of tea farmers from another countries, they are still facing highly negative NRPs. One of the reasons is that even though the smallholders organized under the KTDA control and all the local tea producing process goes through a highly integrated supply and value chain, the tea international market structure is extremely concentrated and controlled by a very few bunch of multinational enterprises. Another reason is that almost all of the high quality Kenyan tea is exported in bulk, with low added value. The highly profitable parts of the bush to cup value chain take place mainly at the consumer countries. Several initiatives are taken to form a longer value adding chain in the country, but multinationals are reticent to move their operations to Kenya. The KTDA by itself is investing on this, however it is difficult that this will represent real benefits to the majority of the smallholder farmers.

There is an early warning about the possible bias towards KTDA's shareholders, only one third of the country's smallholder sector, over the rest of the smallholder tea producers. It is important to improve the relationship with the primary component of the KTDA and achieve a better representation of them all in the regulatory bodies and the trading centers.

It is true that the smallholder tea sector has exponentially increased its importance in the country tea production. However, a more detailed production analysis show that this mainly due to the expansion in area grown rather than an increase in land productivity. Governmental responsibility in research and agronomic extension services should be addressed.

Finally, it is important to take in account the new trends in socially responsible and sustainable tea production, promoted by the multinational companies based on west consuming countries. Fair trade certifications are a positive trend in world agricultural trade, but it needs to be assured that its benefits are collected by the smallholders in developing countries, rather than by the multinationals through its plantations in the producing countries. It has to be guaranteed that certifications do not represent a step towards unfair competition between the multinational companies and smallholders under the KTDA, which are producing a high quality product.

As an addendum, and common to the other commodities analyzed by this project, deficient transportation infrastructure and unreliable and high cost energy supply, are other of the challenges faced by the Kenyan tea sector.

LIMITATIONS

1. Lack of information regarding the value chain of the tea plantations sector, which represents 40 percent of the Kenyan tea production.
2. Lack of sufficient information regarding the tea states-multinational-importers relationships. It is difficult to obtain information on margins or a detailed breakdown of the retail price as it is sensitive information for the companies.
3. Lack of sub-sector' differentiated FOB and auction prices for all the period analyzed.

FURTHER INVESTIGATION AND RESEARCH

- An in-depth study of sub-sector differences between the smallholder and plantations;
- Deepen in a value chain analysis regarding the multinational tea value chain;
- Further investigation in the real impact of fair-trade certifications on smallholders and possible implications as a non-tariff barrier or attempt to lower KTDA's selling prices;
- Specific and in depth study of smallholder's value chain in order to identify market and structure inefficiencies in order to calculate the MDG's of the sector.

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ANNEX I: Data and calculations used in the analysis



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