The United Republic of Tanzania

Ministry of Agriculture Livestock and Fisheries

Commodity Value Chain Brief No.3

Coffee

Key Messages:

As a way of moving from the current yield level of 0.2 t/ha to 0.45 t/ha by 2021 as stated in the coffee industry strategy, the following needs to be undertaken:

- *Improve access to inputs and irrigation facilities by smallholder farmers for increased yields.*
- *Increase transparency and competition at the Moshi Exchange.*
- *Establish price risk management solutions to deal with price volatility.*
- *Reduce taxation to increase farm gate price, thereby incentivizing production.*

1. INTRODUCTION

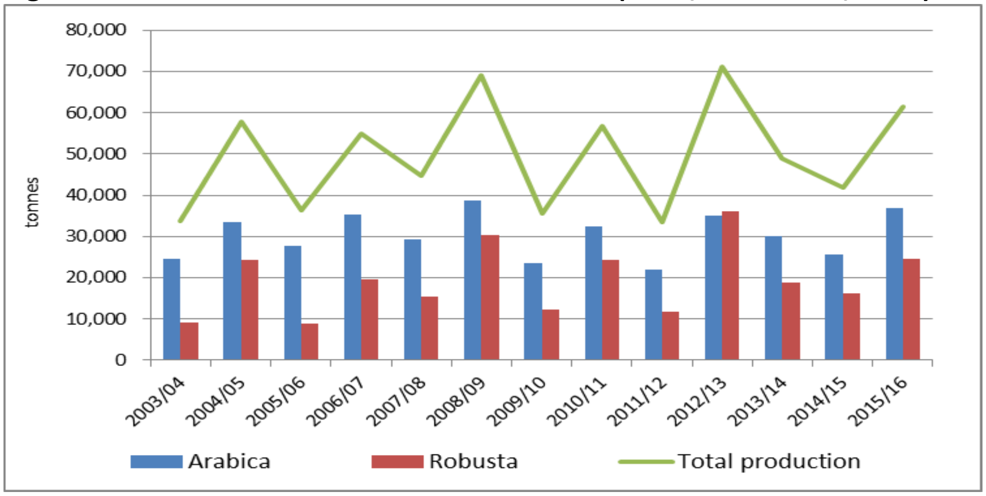
Coffee is Tanzania's second largest export crop in value terms after tobacco (UN Comtrade 2016), with an average production of 50,000 tons each year, of which approximately 60% is Arabica and 40% Robusta (Baregu et al, 2013). About 90% of coffee is produced by around 450,000 smallholder farmers on plots of 1-2 hectares. The coffee industry provides direct income to more than 80,000 households and indirectly supports the livelihoods of more than 2.4 million Tanzanians (URT, 2012).

2. PRODUCTION, PRODUCTIVITY AND FARMING SYSTEM

The country’s three main coffee producing areas are: Northern Highlands (Kilimanjaro, Arusha and Manyara); the Southern Highlands (Mbeya, Songwe, Ruvuma, Katavi and Njombe); and the Western Lake Zone (Kagera, Mara and Kigoma). Other important coffee producing areas include Tanga, Iringa, Morogoro and Mwanza.

Production has not increased significantly over the past thirty years. It has averaged around 50,000 tons. As seen in Figure 1, production volumes are characterized by biannual peaks and troughs and ranged from 33,000 tons and 68,000 tons between 2004 and 2016 (URT, 2012).

Figure 1. Coffee Production Trend in Tanzania (2003/2004-2015/2016)



Source: Kimaryo, 2016

Coffee production in Tanzania suffers from several constraints including lack of access to irrigation systems, a large number of older coffee trees and highly volatile coffee prices, all causing the dramatic fluctuations in production. Furthermore, many smallholder producers have not adopted improved agricultural practices, have limited access to credit, and have no access to adequate farming inputs. However, despite these major constraints, coffee production in Tanzania is expected to increase as a result of recent market conditions and the introduction of pest and disease tolerant coffee varieties.

The current coffee-based farming system in Tanzania is characterized by tree crops grown on permanent plots within a highly intensive land use structure. In Kagera, the plots are usually mulched with grass and refuse which controls erosion and increases organic matter. In Kilimanjaro, coffee is usually grown under banana and shade trees, intercropped with maize, beans and vegetables. The Southern regions of Songwe and Mbeya have both pure stand and mixed farming systems.

According to TaCRI (2016), research shows that coffee is profitable if farmers maintain a minimum of about 500 trees and use improved varieties coupled with Good Agricultural Practices, GAPs (Table 1). Farmers who integrate vertically along the chain also find the coffee business profitable as they receive true value of their coffee based on grade and quality.

Table 1. Farm budget for a hectare of coffee in Moshi or Mbinga or Kagera

Description	Traditional Variety	Improved Variety
Agrochemicals and labour (TZS)	1,515,570	198,000
Fertilizer N.P.K (TZS)	747,000	747,000
Organic manure (TZS)	846,600	846,600
Weeding: 20 man-days/ha (TZS)	240,000	240,000
Pruning: 54 man-days/ha (TZS)	486,000	486,000
Harvesting of cherries (TZS)	168,000	333,000
Processing (TZS)	79,650	96,300
Total operation cost (TZS)	**4,083,000**	**2,946,900**
Total operation cost per kg	6,121	2,211
Profit		
Number of trees per ha.	1,331	1,331
Production per tree (kg)	0.5	1
Production per ha (kg)	667	1,331
Price of clean coffee (TZS)	3,000	3,000
Sales (TZS)	**2,001,000**	**3,993,000**
Profit per ha (TZS)	**-2,082,000.**	**1,050,100**

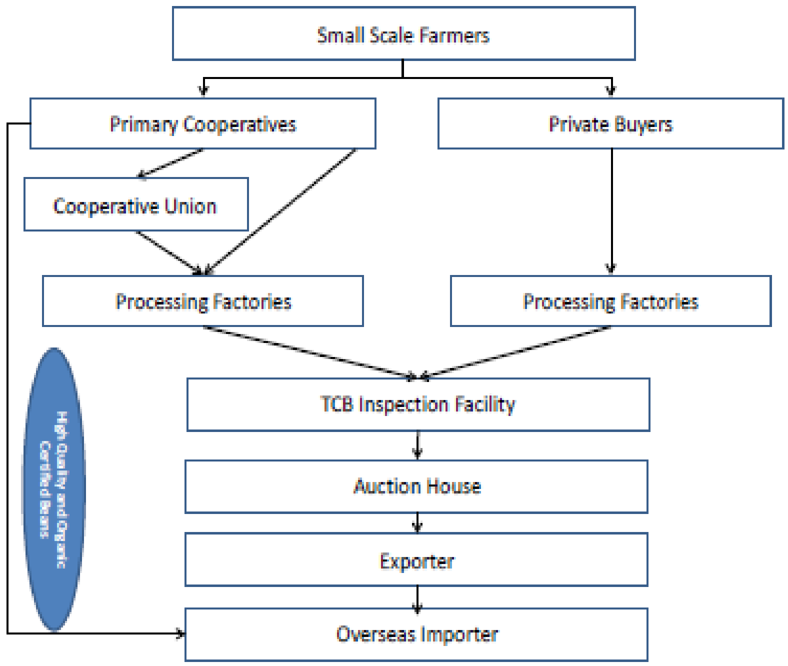
Source: TaCRI (2016)

3. MARKETING CHAIN DESCRIPTION[1]

Figure 2 illustrates the marketing and distribution chain for coffee in Tanzania. The first stage of primary processing is carried out by producers at the farm level. This involves handpicking red cherries and pulping on the same day, fermenting, washing, drying and packaging. Before selling, farmers need to grade their coffee according to the established grades by Tanzania Coffee Board (TCB), which is done on the farm after pulping.

[1] Unless otherwise stated, all the literature has been cited from Baregu et al., 2013

Figure 2: A Simplified Marketing and Distribution Chain for Coffee in Tanzania



Source: PROMAR (2011)

After primary processing is complete, farmers sell their coffee either to licensed coffee buyers, cooperatives, farmer groups or associations.[2] Coffee sold at this market level is in the form of wet processed parchment (Arabica) or dried cherry for (Robusta). Buyers then take the coffee to curing factories for drying and milling to produce clean coffee (green beans). These curing factories are operated and managed by cooperatives or by few private estate mills. As soon as the coffee enters this stage, the crop falls under the ownership of the society in charge of curing the coffee or the grower paying for the commercial mills. It is at this stage that the coffee is sampled, tested by inquirers and blended with other coffee based on the instructions from TCB.

After quality assessment, samples are transported to Moshi Coffee Auction, located in Moshi, Kilimanjaro Region in northern Tanzania. Coffee is sold to exporters by TCB at the coffee auctions in Moshi; private coffee buyers, cooperatives and other farmers' organizations bring

[2] After liberalization of the coffee subsector in the early 1990s, growers are no longer needed to market their product via cooperatives and could choose among three marketing channels (Mtaki, 2016).

most of the coffee solid in this market. Following the auction, the coffee is transported from regional warehouses to the port in Dar es Salaam for export. There are only four main buyers accounting for over 70% of total volume.

The other marketing channel is direct export, where producers of premium top grade coffees that are able to establish direct contacts with overseas buyers; these are allowed to by-pass the auction and sell their coffee directly. The Tanzania Coffee Board is mandated to approve the sale contract after being satisfied that the prices offered are higher compared to the coffee sold at the auctions. The main export destinations for Tanzania's coffee are Japan, Italy, United States, Germany, Belgium and Finland. Tanzania also exports soluble coffee that is manufactured at a plant in Bukoba for its neighboring countries (Mtaki, 2016).

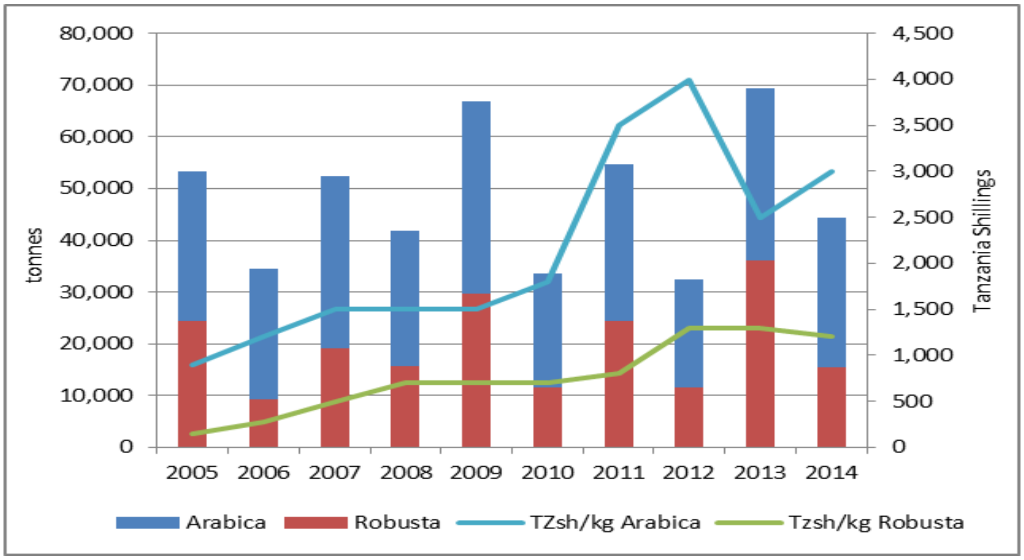
COFFEE PRICES

Coffee is traded on major futures and commodity exchanges, most importantly in London and New York. The movements of coffee prices are largely determined by supply/demand fundamentals - if there are more sellers than buyers, the price of coffee typically falls; when there are more buyers than sellers, the price of coffee typically rises. Two types of coffee are traded on a worldwide basis, Arabica and Robusta. Robusta coffee is typically sold for 70% of the price of Arabica, and for that reason, it is usually favored by the "Big Four" coffee roasting companies (Kraft, Nestlé, Procter & Gamble, and Sara Lee) that purchase approximately 50% of the coffee produced worldwide.

All over the world, a residual pricing model is common for determining farm gate prices. The close of terminal market price minus the access costs plus the country premium will result into a given gate price at a given area/location. Hence, the higher the terminal market the higher the farm gate price.

Figure 3 shows that coffee sales volumes are somewhat correlated with coffee prices, although with a delay in production response. For example, high coffee prices in 2008 spurred production in 2009, resulting in record sales volumes, while the drop in prices in 2009 resulted in a fall in production in 2010.

Figure 3: Auction volumes and farm gate prices for Arabica and Robusta coffee in Tanzania (2005-2014)



Source: Tanzania Coffee Board (not dated)

POLICY AND REGULATORY ENVIRONMENT

The Coffee Board of Tanzania (CBT) carries out regulatory functions and such other activities as are necessary, advantageous or proper for the benefit of the coffee industry. The main functions are to:

(a) Advise the Government on the policies and strategies for the development of coffee industry;

(b) Regulate and control the quality of coffee and coffee by-products;

(c) To collect, refine, maintain, use or disseminate information or data relating to the coffee industry;

(d) Monitor the production and exportation of coffee;

(e) Make regulations for processing, exportation and storage of coffee and coffee by products;

The TCB also maintains licensing powers and the function of running the coffee auction, allowing domestic traders to buy coffee only at authorized buying posts. It does not permit farm-gate buying, although the rule is not observed in some areas of the country. Finally, the TCB does not allow the movement of coffee from one area (southern, northern, and western) to another.

CONSUMPTION

Annual per capita coffee consumption in the country is 0.06 kg, and only about 7% of the country's total coffee production is consumed domestically (Mtaki, 2017). According to TCB, Tanzania does not have much of a coffee drinking culture, and tea is the preferred hot beverage.

POTENTIAL FOR INVESTMENT IN COFFEE INDUSTRY

Tanzania has a great opportunity to expand the coffee industry and to increase the share of world market value, capture a fair share of the Colombian Mild market, and get premium prices for the coffee produced. However, to revamp the sector requires a lot of investment.

The potential for investment in the coffee industry lies in increasing production levels to at least 100,000 metric tons per annum as well as improving the quality of coffee produced through adherence to internationally accepted standards.

To increase production, it is very important for investors to introduce modern coffee seedlings, modern inputs as well as advanced agronomic practices. This will in return result not only in increased production, but also yields and quality. It is important to note that Tanzania's average coffee yields are considerably low, but due to the existence of available arable and irrigable land, there is indeed huge potential in investing in coffee production in Tanzania.

Another very notable factor is that Tanzania is among six other countries in world that are able to produce and sell their coffee in the June-July "Marketing Year" (ANSAF, 2016). This gives the country a competitive advantage and potentially very high returns, especially if there is increased investment not only in production and yield performance, but also in processing, branding and marketing.

In addition to this, Tanzania is among the three countries in the world, including Colombia and Kenya, that produce a Mild Arabica known as Colombian Mild, which fetches a premium price on the world coffee market. If investments are made in improving the quality of processing and production, moving away from backyard processing practiced by small scale coffee farmers, there are huge premiums to be enjoyed.

4. DEVELOPMENT PARTNERS SUPPORTING THE VALUE CHAIN

The coffee industry in Tanzania has attracted support from various development partners such as the Japan International Cooperation Agency (JICA), through District Agricultural Development Plans (DADPs), and in particular pilot support in Mbozi District. Also, *Technoserve* and the Bill and Melinda Gates Foundation through the Coffee Initiative Project that aims to improve the livelihoods of smallholder coffee farmers and establish new coffee cooperatives while strengthen existing ones, and through the cooperatives to create business plans and access financing for wet mills. Other projects supporting the coffee industry are presented in Table 2.

Table 2. Other Partners Supporting the Coffee Sub-sector in Tanzania

PARTNER	PROJECT	AREA
VSO/Kadres	Improving market access for resource-poor coffee farmers	Karagwe and Kyerwa
Café Africa	Sustainable coffee programme	All zones
IDH -- Sustainable trade initiatives/ DAE	Kahawa Bora	Mbinga
Hanns R. Newmann	Sustainable coffee production in Tanzania/ Coffee and Climate	Mbeya/Songwe, Kilimanjaro, Arusha
EU-TaCRI	Increase competitiveness of smallholders coffee growers	All zones

5. POLICY ISSUES

Coffee farmers have not benefited from the liberalization of the sector, probably because exporters manage to maintain their dominant position in the market, irrespective of the government's efforts to introduce more competition in the auction system with the 'one-license initiative'.

Production is highly responsive to international coffee prices, which are quite volatile. When market prices increase, so does production. This continued fluctuation does not favor the stable development of the sector. Therefore, the coffee Board should explore ways of stabilizing at least the domestic prices at farm gate to ensure continual incentive to produce even when international prices plummet.

The sector is affected by more than 26 levies and taxes including produce cess and various licenses that have a profound impact on the farm gate price. The government and stakeholders should coordinate their efforts to address this.

The single license rule has been difficult to implement following some of the export companies establishing sister companies to operate in the sector. The amendment of the 2009 Act that allows for contract farming has further aggravated this situation.

In contrast to tobacco, sugar and tea, where the bulk of processing occurs near the farmer, in coffee this is hardly the case. However, this study observes that for the coffee sector to become more appealing to the farmer, the CBT should do the following:

1. Establish input schemes and subsidy to coffee growers
2. Strengthen cooperatives and establish price risk management solutions to manage price volatility

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