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The Ceylon Black Tea Value Chain

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Abstract

Sri Lankan tea has been referred to for generations as “Ceylon tea” and is reputed globally for its taste and aroma. The tea industry has played a significant role for more than a century in Sri Lanka’s economy through generating income, foreign exchange and employment. However, the performance of the Sri Lankan tea industry has slumped in recent years. The purpose of this study is, by applying a SWOT analysis, to identify what kind of attributes are directly influencing the recession in the tea industry. The paper is focused only on Ceylon black tea because it is the major tea produced in Sri Lanka. Lack of product diversification, limited factors of production, strict rules and regulations of government and lack of information-sharing networks are identified as the main factors negatively impacting the sustainability of the value chain. Some potential interventions are suggested to overcome these issues and generate important information for decision makers in the tea industry.

Key Words: Black tea, production, price, Sri Lanka, value chain

Introduction

About two thirds of Sri Lankans are involved in the agribusiness sector (Johnsson and Karlsson, 2016). This makes the agribusiness sector an important contributor to the country’s economy. Sri Lanka has a relatively diversified agribusiness sector and has provided the international market with agro-industrial products over a long period. In particular, Sri Lankan tea (also known as “Ceylon” tea) has been a significant export commodity since 1965. Sri Lanka is currently the third largest exporter and the fourth largest producer of tea in the world (Tea Exporters Association Sri Lanka, 2020).

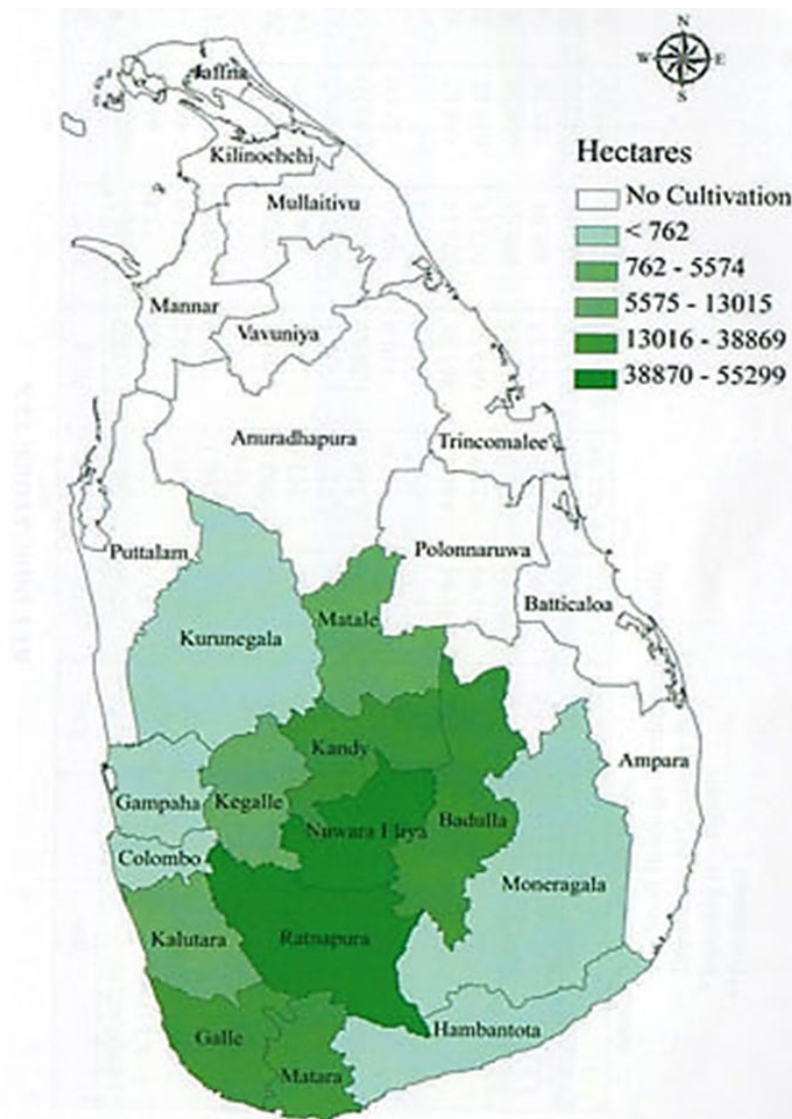
In 2018, the tea industry’s contribution to GDP was 1.2 per cent and it accounted for 15 per cent of total exports. Also it created around 15 per cent of the direct employment for the Sri Lankan people. In 2008, Sri Lankan tea export revenue crossed the \$US1 billion milestone and Sri Lanka is proud to have been the first country to achieve this feat (Central Bank of Sri Lanka, 2018).

Sri Lankan tea is very popular among consumers due to its characteristic taste and aroma. The majority of Sri Lankans routinely have a cup of tea for their breakfast. About 89 per cent of Sri Lankan people are tea consumers and they purchase on average about 112g of tea every month (Sri Lanka Tea Board, 2016). Unfortunately, most domestic consumers purchase low quality tea from the market due to the high cost of the best quality tea. Recent statistics show that the performance of Ceylon tea in the world market is gradually decreasing and other countries like China, India and Kenya are becoming the leading countries in the global tea industry (Statista, 2019).

The Tea Industry in Sri Lanka

Tea was introduced to Sri Lanka in 1867 by the British tea planter James Taylor, who started the first commercial cultivation in Loolecondera estate in Kandy (Halpe tea, 2020). This estate was successful and other plantations began to diversify into tea. The beneficial climate of rainfall, moisture and cold temperature in Sri Lanka helps to produce the world's finest quality tea (Sri Lanka Export Development Board, 2014). Figure 1 indicates the distribution of tea cultivation according to the districts in Sri Lanka.

Figure 1. Distribution of tea area by district in Sri Lanka



Source: Economic census (2013/14)

There are three main tea-growing regions:

- Low grown area - Elevation from sea level to 600m; subjected to a long period of sunshine; relatively dry environmental conditions;
- Mid grown area - Elevation between 600m to 1200m; an intermediate climate with cool and warm conditions; and
- High grown area - Elevation above 1200m; exposed to cool conditions and chill winds; limited hours of sunshine.

Table 1 illustrates that, in the year 2007, tea production by elevation was 24 per cent, 18 per cent and 58 per cent for high grown, mid grown and low grown areas, respectively. By 2018 the contributions had changed to 21 per cent, 16 per cent and 63 per cent, respectively. The contribution of green tea leaves which are harvested from the low grown area has increased due to the favorable weather, healthy soil and better agricultural practices than in other areas.

Table 1. Tea production in Sri Lanka by elevation, 2007-2018

Year	High Grown (Mn kg)	(%)	Medium Grown (Mn kg)	(%)	Low Grown (Mn kg)	(%)	Total (Mn kg)
2007	72.5	24	54.4	18	177.7	58	304.6
2008	84.4	26	49.0	15	185.3	58	318.7
2009	73.0	25	44.8	15	173.3	60	291.1
2010	79.1	24	56.1	17	196.2	59	331.4
2011	78.2	24	52.6	16	196.7	60	327.5
2012	73.6	22	52.6	16	202.1	62	328.4
2013	75.8	22	56.1	17	208.1	61	340.0
2014	78.9	23	49.2	15	209.9	62	338.8
2015	75.4	23	51.0	15	202.4	62	328.8
2016	64.42	22	44.51	15	183.64	63	292.57
2017	64.6	21	45.7	15	197.4	64	307.7
2018	64.97	21	47.13	16	191.84	63	303.94

Source: Sri Lanka Tea Board (2020)

There are three major types of tea: Black tea, Oolong tea and Green tea. They differ from each other with respect to the production process. Black tea is exposed to full fermentation in the production process while green tea is not subjected to fermentation. Oolong tea is semi-fermented tea and is often called half-black tea.

Sri Lanka is the only tea-growing nation which manufactures all types of tea. Cut Tear and Curl (CTC) and orthodox are two types of black tea which are manufactured using two different processes (Thasfiha et al., 2020). Orthodox tea is produced using the traditional method which involves a plucking, withering, rolling, fermentation, drying and sorting process (Figure 2).

With withering, freshly harvested green leaves are dried in airtight plates so as to remove 63 per cent of the moisture from the leaves. This makes the leaves soft and flexible for further processing.

With rolling, the tea leaves are then rolled by mechanical pressure in order to break up the cells and extract the cell saps. The leaves are still partially wet and are sieved to extract the finer leaves after 30 minutes of rolling. These extracted leaves are spread out immediately for fermentation while the remaining coarse leaves are rolled under pressure for a further 30 minutes.

This process may be repeated several times. The length of time of rolling greatly influences the final quality of tea. During the rolling process, the cell saps exit and react with oxygen which stimulates the

fermentation process. Simultaneously, oils are also secreted from the leaves and these are responsible for the aroma.

With fermentation, after rolling the tea is spread out in layers approximately 10 cm high for 1-3 hours in a cool, damp atmosphere to finish off the fermentation process. During this process, the green leaves turn a copper colour. The colour shading and the scent indicate how far the ageing has progressed.

During drying, the tea is dried by hot air at temperatures of 850 Celsius to 880 Celsius to interrupt the oxidation procedure. The rest of the moisture is extracted from the leaves. The now dry copper colour of the leaf turns to dark brown-to-black.

Finally, for sorting the dried tea is sieved to separate leaves based on quality. The orthodox production method provides teas of all leaf grades: leaf, broken, fanning and dust. Leaf grades only refer to the leaf size, not the quality of the tea.

Figure 2. Tea processing steps



Source: Ceylon tea marketing (Pvt) Ltd. (2020); School of tea (2019)

CTC and green tea are manufactured using the same process as orthodox tea, except for a few of the steps. CTC tea is normally used for teabags. The withered leaves are sliced by a machine to a uniform size, infused into the CTC machine where they are crushed by metal rollers and torn and curled. The separated cell sap is gathered and added to the leaves again. The crushed leaves are then matured, dried and arranged.

Green tea comes from the same plant as black tea, but the fermentation process that produces black tea is prevented by heat treatment. Fresh tea leaves are immediately treated with high temperature after harvesting in order to inactivate oxidizing enzymes in the leaves. The colour is green as its name implies because inactivated enzymes do not break down the chlorophyll.

Tea is well known for its flavor and therapeutic properties and offers a range of medical advantages. The United Kingdom was the largest and most lucrative tea importer from Sri Lanka, but its share has declined over time. Currently, Sri Lanka supplies about 60 per cent of the tea needs of the United

Kingdom (Pilapitiya et al., 2020). Sri Lanka also exported large quantities to the United States, Pakistan, Iraq, and Australia until recently.

With the rise of African producers, conventional providers like India and Sri Lanka have lost some share of the main traditional markets. The reduction in tea imports from Sri Lanka to the United Kingdom is not only the result of the reduction in tea consumption but also of the change in the structure of trade with the dominant role of multinational companies in the trade. Sri Lanka has lost market share in Australia, Canada, and Pakistan, too, during a similar period while Middle East nations like Iran and the United Arab Emirates and former USSR nations in West Asia have become more important in Sri Lanka's export portfolio (Ganewatta and Edwards, 2000).

The Sri Lankan tea industry is facing added pressure from competitors such as Kenya who, in 2004, surpassed Sri Lanka as the world's largest tea exporter. Kenya is a dominant producer of CTC tea which is becoming increasingly popular in many markets. Sri Lanka is a leading supplier of good quality orthodox teas, which command relatively higher prices, but is now under threat by competitors such as Vietnam and Indonesia offering similar but cheaper teas (Kasturiratne, 2015).

Tea leaf grading

Tea leaves are graded according to an internationally recognized common method (Tea Exporters Association Sri Lanka, 2020). There are several parameters that ultimately determine the tea grade like wholeness and the size of the leaves. The highest grades for Western and South Asian black teas are referred to as "orange pekoe", and the lowest as "fannings" or "dust".

Differences in climatic characteristics enable the production of teas with different aromas, tastes and textures. Many teas are unique to specific regions in Sri Lanka and are not found anywhere else in the world. So some specific types of Ceylon black tea are named for the agro-climatic region where they are grown, such as Nuwara Eliya, Dimbula, Uva and Uda Pussellawa in the high grown area, Ruhuna and Sambaragamuwa in the low grown area and Kandy in the mid grown area of Sri Lanka (see Figure 3).

Figure 3. Ceylon black tea grades according to agro climatic region



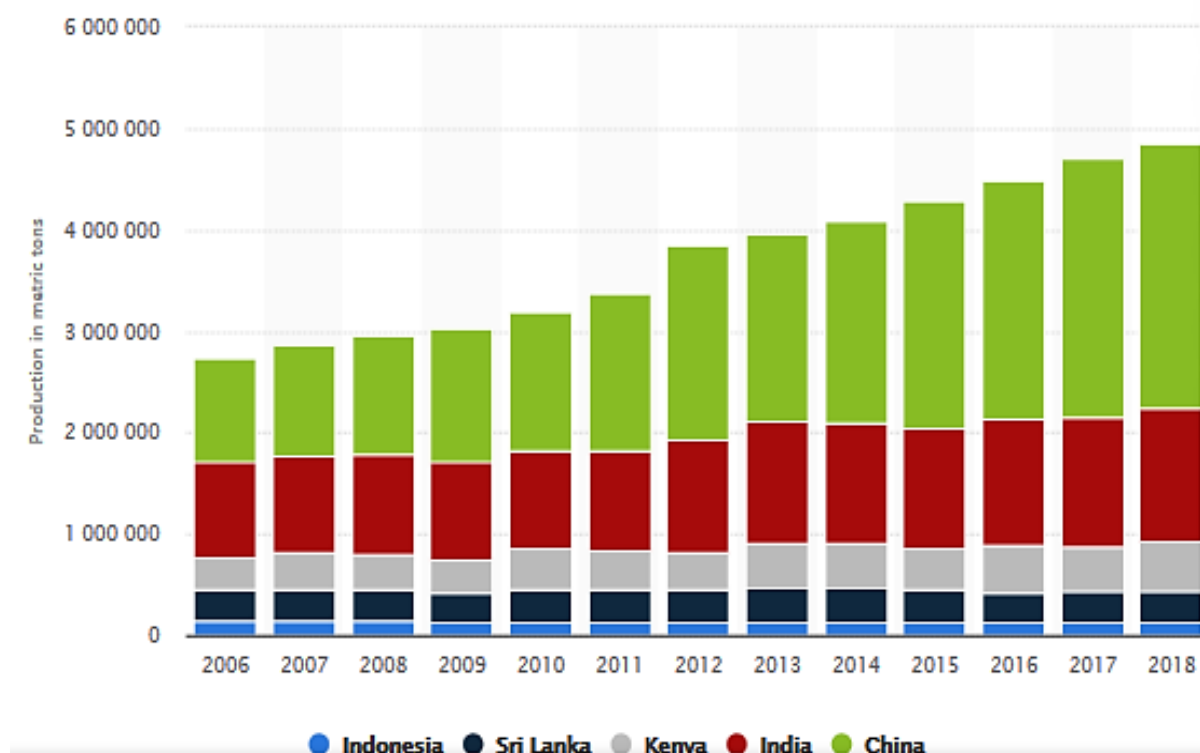
Source: Sri Lanka Export Development Board (2020)

The Global Tea Market

Globally, tea is one of the most frequently consumed beverages, second only to water (Ariyawardana, 2001). According to FAO (2015), the production of tea increased at an annual rate of 4.4 per cent between 2007 and 2016. The growth trend in the production and consumption of tea is expected to continue. For instance, the per capita consumption of tea is expected to increase by around 3 per cent by 2021.

Tea is grown in more than 35 countries including China, India, Sri Lanka, Kenya, and Indonesia which together contribute 86.5 per cent of the total world tea production. As shown in Figure 4, between 2006 and 2018, China was the predominant country for tea production and its production quantity was increasing at a faster rate than that of other producers. Sri Lankan tea production has stagnated over this time period.

Figure 4. Tea production worldwide from 2006 to 2018, by leading countries

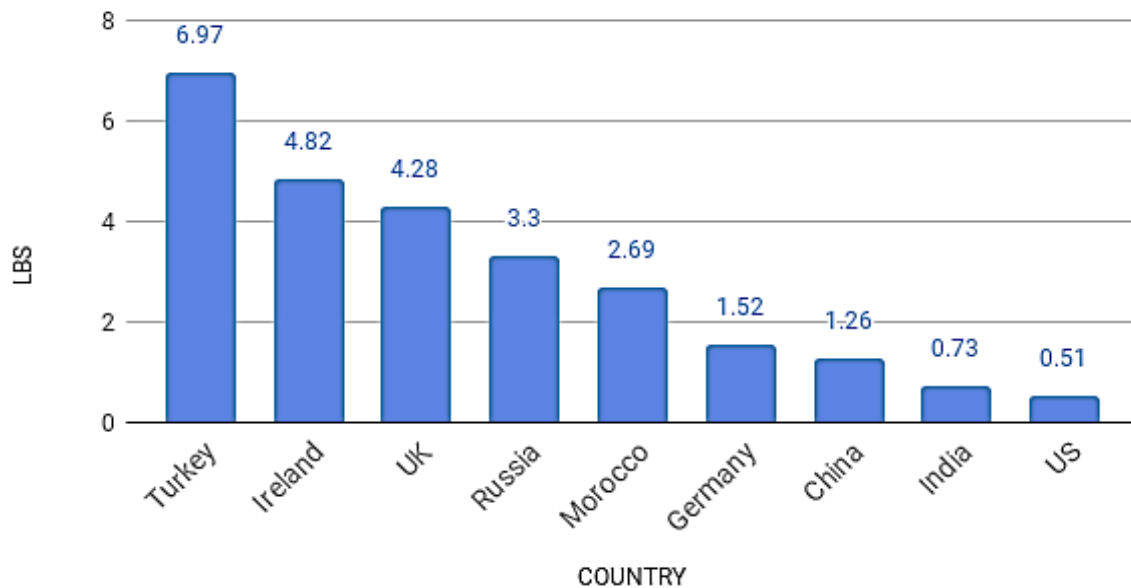


Source: Statista (2019)

The commitment of consumers for beverages is changing globally and tea market segments have been modified based on the type, packaging, distribution channel, application and geography. For example, in the United States, the introduction of premium tea products is expected to drive the market into the future. A major contribution for the ready to drink (RTD) tea segment in the United States was from premium and super-premium RTD in 2017. Similarly, European tea consumers are searching for specialty and luxurious flavors in customized offerings. Black tea fusions, herbal teas, fruit teas and RTD are the products that are growing as premium items (Businesswire, 2020).

Global consumption of tea amounted to about 273 billion litres in 2018. Figure 5 indicates that the highest tea-consuming country in per capita terms is Turkey, with Ireland and the United Kingdom in second and third places respectively.

Figure 5. Per capita consumption of tea in 2016, by well-known countries



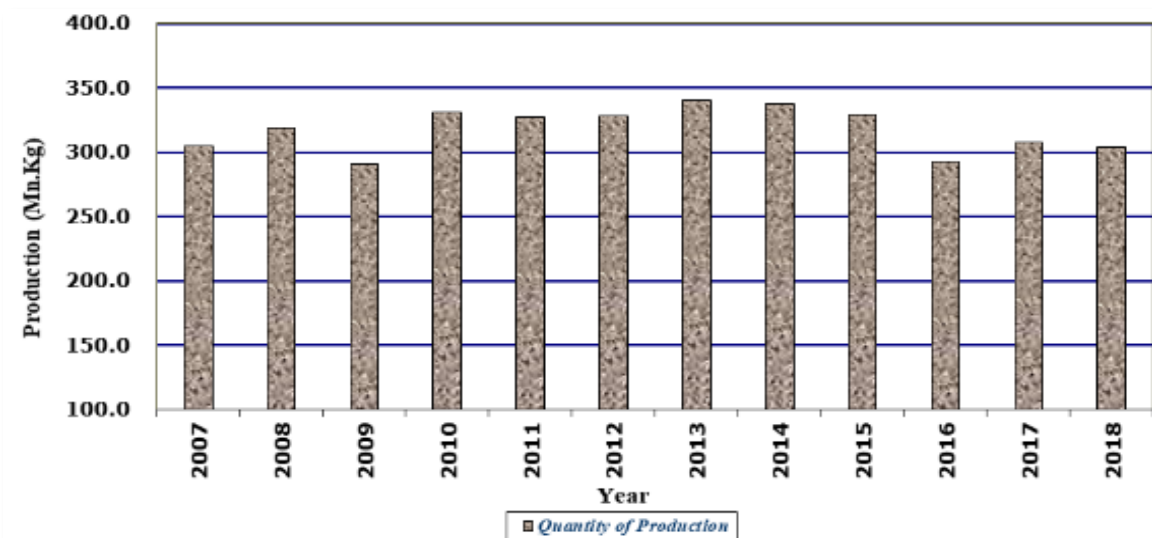
Source: Firsdtea (2019)

Market Analysis of Ceylon Black Tea

Production

Thanks to the variation of climate and elevation in the country, Sri Lanka produces tea throughout the year. According to Figure 6, total tea production exceeded 300 Mn.kg every year except in 2009 and in 2016. Annual tea production increased gradually from 2007 to 2013 with small fluctuations and then decreased in recent years due to adverse weather conditions, pest and disease problems, etc.

Figure 6. Total tea production in Sri Lanka, 2007-2018



Source: Sri Lanka Tea Board (2020)

Table 2 explains the annual tea production with regard to the tea types.

Table 2. Sri Lanka tea production (MT), 2017-2019

	2017	2018	2019
Orthodox	282,662	277,340	273,907
CTC	21,794	23,902	23,585
Green	2,624	2,601	2,642
Total	307,080	303,843	300,134

Source: Forbes & Walker Tea Brokers (Pvt) Limited (2020)

Almost all green tea leaves are allocated to produce black tea while less than 1 per cent of leaves are allocated annually to produce green tea. Further, the CTC production quantity has increased whereas the orthodox quantity has decreased in 2019 compared to the 2017. The quantity of green tea has remained at about the same level.

Domestic market distribution

Table 3 shows that most tea sold on the domestic market is delivered through grocery retailing and convenience stores, while only minor amounts are moved through specialty tea shops and tea houses to consumers. Grocery stores and convenience stores are usually located in easily accessible areas and they are reliable sources of tea for people from different parts of society.

Table 3. Domestic distribution channel in Ceylon black tea

Type	Percentage (%)
Supermarket	25
Grocery retailing	30
Convenience stores	30
Tea shops/ Tea houses	5
Others	10

Source: Sri Lanka Tea Board (2020)

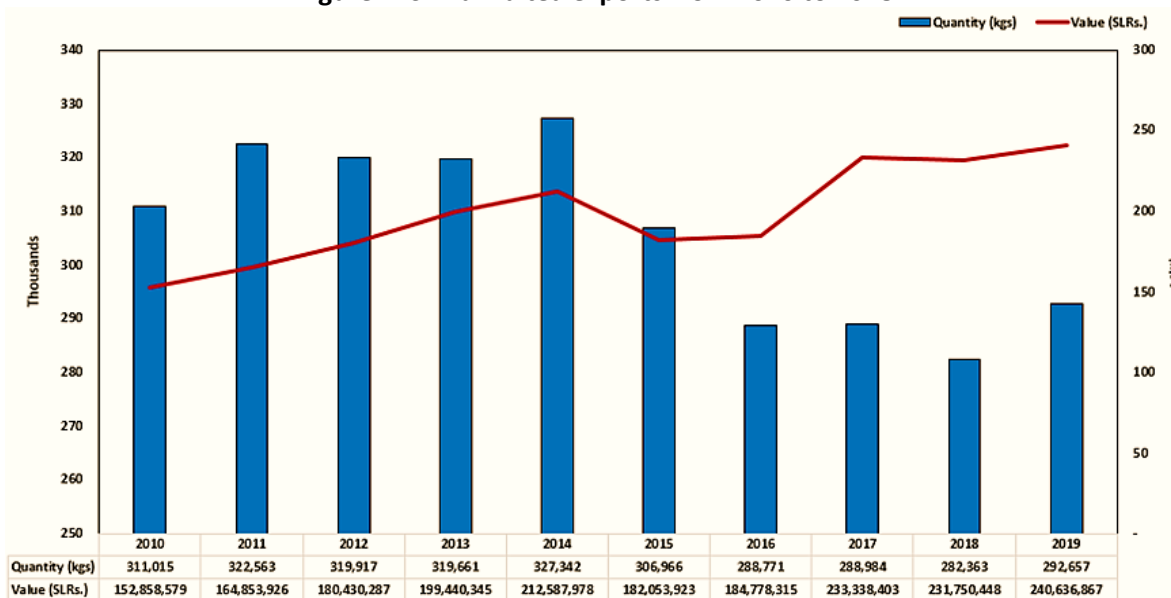
Export

Figure 7 reveals the export quantity of tea (kgs) and its total value (SLRs¹) each year over the period from 2010 to 2018. Tea exports gradually increased from 311,015 kgs to 327,342 kgs with small fluctuations, but have fallen dramatically in recent years to under 300,000 kgs. Simultaneously, the export value has steadily increased up to SLRs 212,587,978 before falling, but has increased again in recent years (even though export quantity is low) due to the favourable exchange rates.

¹ AUS\$ 1 = SLRs. 135.76

The latest statistics in Table 4 reveal total exports of tea with respect to the product type. Tea exports for 2019 were 292,657 metric tons, which is an increase of 10,294 metric tons over 2018. Bulk tea, tea packets, tea bags, instant tea and green tea exports all show an increment in 2019 compared to 2018. Moreover, exports in all categories except instant tea declined in 2018 compared to 2017.

Figure 7. Sri Lanka tea exports from 2010 to 2018



Source: Forbes and Walker Tea Brokers (Pvt) Limited (2020a)

Table 4. Sri Lanka tea exports based on product types (MT), 2017-2019

	2017	2018	2019
Bulk	125,629	122,428	122,844
Tea packets	134,509	131,256	139,080
Tea bags	21,701	21,578	22,913
Instant tea	2,122	2,481	3,071
Green tea	5,023	4,620	4,749
Total	288,984	282,363	292,657

Source: Forbes & Walker Tea Brokers (Pvt) Limited (2020b)

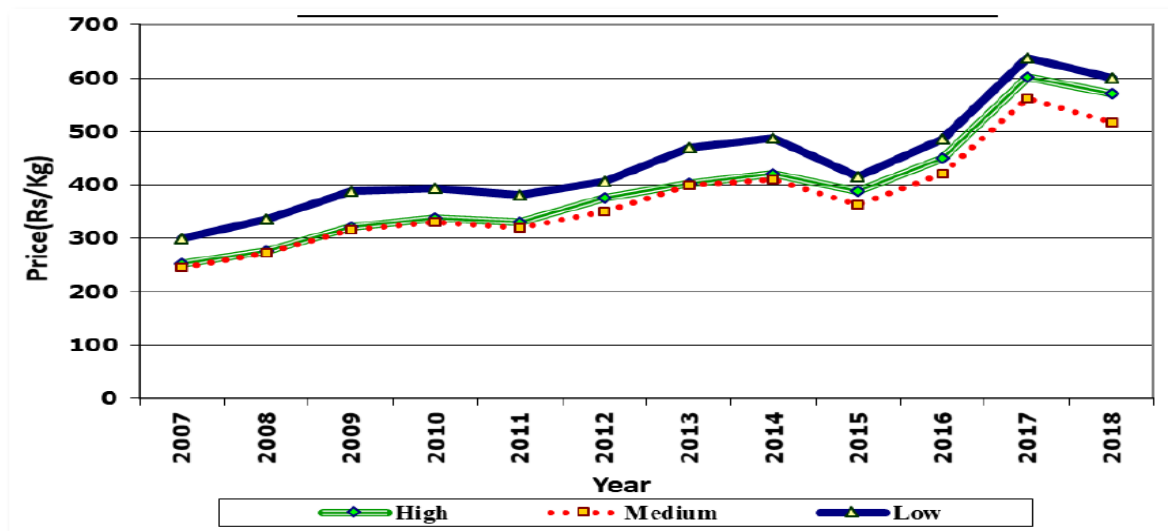
Prices

The Colombo Tea Auction is the second largest tea trading center in the world next to Mombasa in Kenya, and handles 6,000 to 7,000 metric tons of tea each week. Sri Lanka annually produces around 300,000 metric tons of tea, and exports 90 per cent through buyers at the Colombo Tea Auction. The auction is conducted on two days of the week and all tea prices are decided through it.

Figure 8 describes the average sale prices of tea from the high, medium and low grown areas. Tea which comes from the low grown areas received higher prices at the tea auction compared to the other two elevations. Tea prices have steadily increased from 2007 to 2017 except in 2011, 2015 and

2018. The average Colombo auction price recorded around a 99 per cent increase in the decade while all three elevations also recorded the highest ever price in 2017 at more than SLRs.550 per kg. The average Colombo auction price in all three elevations decreased by 6 per cent in 2018 compared with 2017. The key reason for the price decline is that the Sri Lankan rupee depreciated sharply over the last four months of 2018. Furthermore, reduced demand for tea from Japan has greatly affected the prices of high-grown tea in the Colombo tea auction (Fernando, 2019).

Figure 8. Colombo auction average black tea prices, 2007-2018

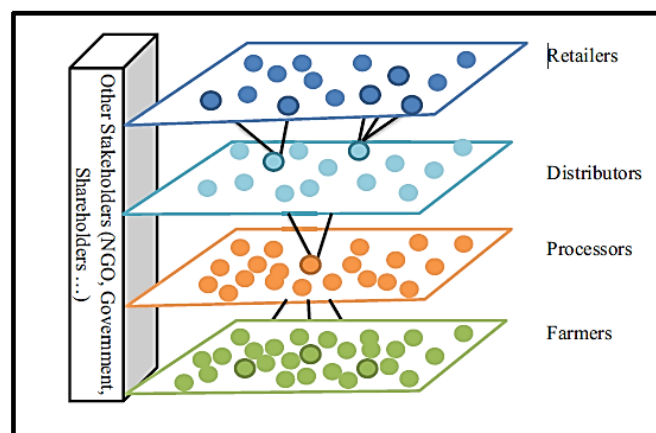


Source: Sri Lanka Tea Board (2020)

The Ceylon Black Tea Value Chain

An agri-supply chain can be described as a value creation process with a full range of activities that help to supply a product or a service from the original resources to final consumers through various stages of growing and processing of the product or service (Stamm et al., 2006). Generally, agri-supply chains include four functional areas such as production, processing, distribution and retailing (Figure 9). Based on the characteristics of the product or the service, the logistics activities in the value chain vary considerably (Van der Vorst, 2006).

Figure 9. Schematic diagram of the agro-food supply chain



Source: Van der Vorst et al. (2000)

The tea industry in Sri Lanka is quite fragmented. There are numerous partners engaged in the value chain, undertaking activities such as tea growing and plucking, processing, brokering, wholesaling, exporting and retailing. Large-scale growers are engaged with more activities along the value chain while small-scale growers are limited only to tea growing and plucking. The directions of the product flow and the financial flow between partners of the value chain are shown in Figure 10.

Tea is cultivated in Sri Lanka by both the smallholder sector who are private owners, and the estate sector which are managed by tea corporations. A tea smallholding is defined as a tea plot extending up to 10 acres (4 ha). The tea smallholders sector has been playing a significant role in the tea plantation sector as they contribute about 76 per cent of the national green leaf production. Therefore, the future of the tea industry largely depends on the smallholder sector and its production systems (Weersink, 2006). The corporate management sector includes 20 regional plantation companies, which are owned by the government. Some 99 per cent of the ownership is leased to the corporate sector on 53-year contracts (Sri Lanka Tea Board, 2020).

Farmers are the primary suppliers of tea leaves. Tea leaves are plucked by hand every seven days by Tamil women who are descendants from India's Tamil Nadu. After harvesting, green tea leaves should be sent to the processing factories immediately. The majority of small-scale farmers supply tea leaves to factories through green leaf dealers and collectors, since the farmers have limited resources and facilities such as transport, labour, etc. Tea leaves which are harvested from large scale estates are directly supplied to the private factories or to their own tea factories.

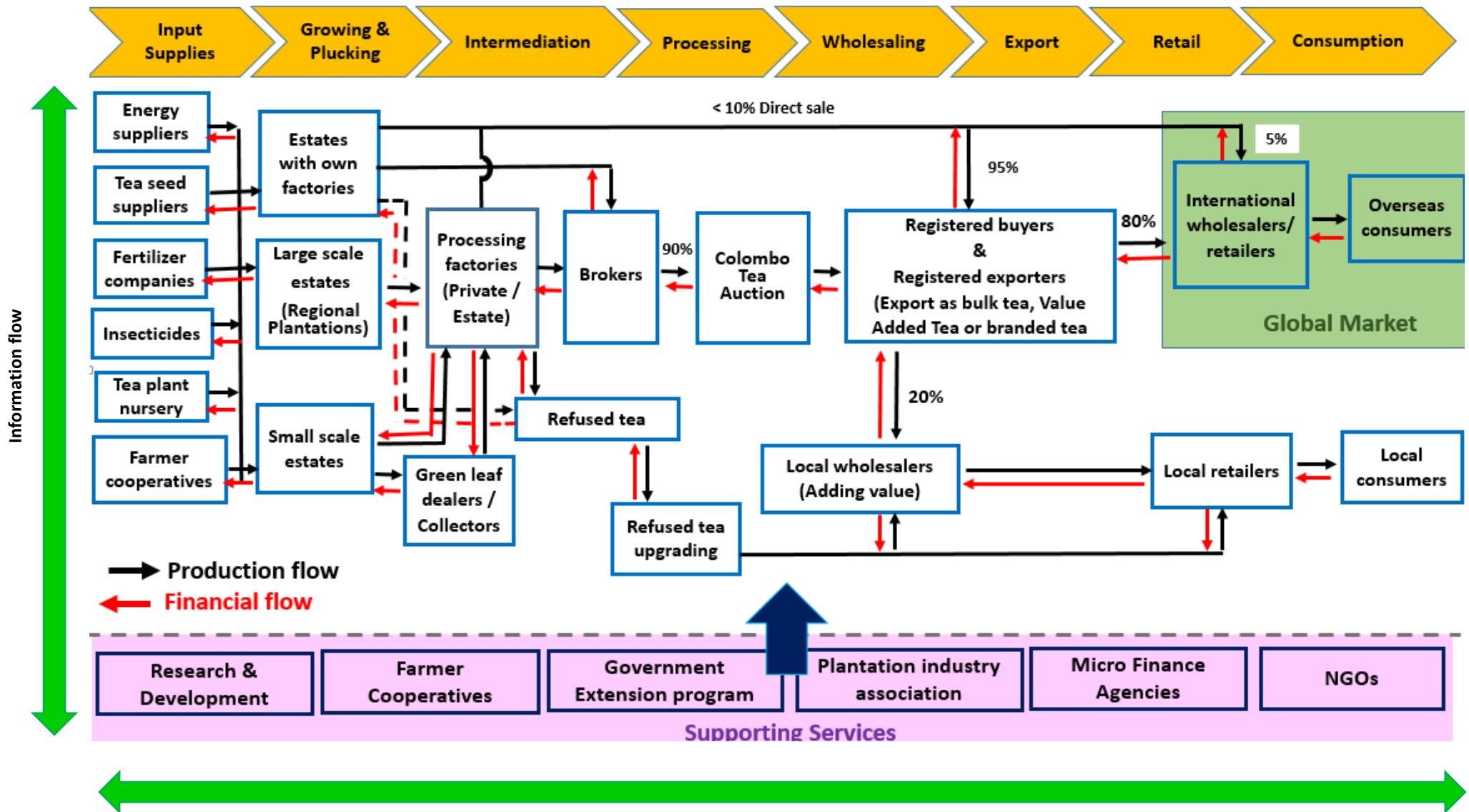
In Sri Lanka, all the produced tea has to be sold through the Colombo Tea Auction. Bids are set for the tea before arranging for export. So both small-scale and large-scale factories send the produced tea lots to brokers and then they contact the different registered tea buyers by distributing samples of the tea. Simultaneously, the broker sends tea samples to the Sri Lanka Tea Board to check the quality specifications. If tea samples include any defects or unwanted debris, the Tea Board has the authority to withhold auction. Sri Lankan broker companies work according to the International Tea Committee (ITC) regulations and they strive to manage the sale price effectively and to build client connections. There are currently eight broking companies that are certified to sell at the Colombo Tea Auction. The tea that is sold through the auction is branded with the "lion" logo (see Figure 13), indicating that the tea was created in Sri Lanka. In contrast, direct sales via forward contract and private treaty make up less than 10 per cent of tea sales.

Export companies' independence can create high flexibility and they can easily adjust volumes and types according to the market's demand. About 41 per cent of tea is exported as bulk tea and it refers to unblended tea which is obtained from a single plantation or blended tea from different plantations which have specific flavors. The other portion of tea is exported as value added tea. This includes branded teas or private labels that are directly exported to international wholesalers and retailers.

Approximately 20 per cent of good quality tea is consumed by Sri Lankans while the rest is shipped overseas. In addition to this good quality tea, "refused" tea is abundantly available in the domestic market. Refused tea is a waste, produced during the manufacture of tea. Refused tea is directly purchased by the wholesalers from the factories, and then it is upgraded. The final product comes to the market through local retailers after all value-added activities are completed.

The tea industry is linked not only with the main stakeholders in the value chain but also with many other industries such as input suppliers, packing material suppliers, transport service providers, warehouse providers and other infrastructure providers. In the villages, farmer cooperatives gather smallholders together and source input materials for supply at lower prices.

Figure 10. Ceylon black tea value chain



Four categories of subsidies are operating for the tea industry in Sri Lanka. First, there is a field rehabilitation and development subsidy for long-term upgrading of production facilities such as new planting, replanting and infilling. Second, there is a factory development subsidy for increasing the efficiency of tea processing and converting from Orthodox to CTC varieties. Third, there is an irregular and short-term production subsidy to meet, for example, falls in tea prices or rises in input costs. These include a tea fertilizer subsidy and one for green leaf supply. Fourth, there are marketing subsidies, in the form of tea promotion grants, import duty rebates, Export Development Board grants, and the like (Asian Development Bank, 1990).

Research and development facilities are available in Sri Lanka to assist the industry through the Tea Research Institute. As well, offices of a large number of institutions related to the tea industry are located in the various regions such as the Ministry of Plantation, Tea Exporters Association, Sri Lanka Tea Board and Tea Smallholders Association. Apart from this, various assistance schemes are implemented by government to strengthen the sector such as system certification scheme, tea grading area capacity development scheme and a specific assistance program for promotion and development of brand names and brand excellence. Micro finance agencies also promote different loans especially for small scale farmers.

Value Chain Performance

Value chain performance is defined as the degree to which a supply chain meets end-user and stakeholder requirements concerning the relevant performance indicators at any point in time (Christien et al., 2006).

Efficiency of an investment

Table 5 illustrates the data regarding the Rate of Return on Investment (ROI) and profit margin with respect to value chain actors. Data was collected through face to face interviews and over the phone from six individuals at each stage and then the average price was calculated (however the authors were unable to capture the average cost of production of international middlemen while conducting the survey).

Table 5. Rate of Return on Investment (%) and profit margin

Value chain actors	Avg. Cost of Production + Avg. Indirect cost (SLRs/kg)	Avg. Selling price (SLRs/kg)	Rate of return on investment (%)	Profit Margin (%)
Small holder	46 + 3	73	48.9	32.8
Green leaf collector	73 + 3	80	5.2	5
Factory processor	125 + 20	408	181.3	64.4
Broker	410 + 8	569	36.1	26.5
Local buyer	589 + 15	790	30.7	23.5
Exporter	599 + 20	850	37.3	27.1
Local Retailer	800 + 12	1090	34.2	25.5
Local consumer	1090	-	-	
Overseas consumer	3600	-	-	

Source: Over the phone and face to face interviews from the respondents

The ROI is usually expressed as a percentage and is calculated by taking the net gains and net costs of an investment. A higher ROI percentage indicates that the investment gains of a project are favorable

to their costs. Domestically, the highest rate of return on investment is shown by factory processors as 181.3 per cent while the lowest rate of return on investment is indicated by green leaf collectors as 5.2 per cent. When considering the international tea market, the product flow is the same as the local chain until tea comes to the brokers, where it goes to the consumer through the exporters and middlemen. Overseas consumers purchase 1 kg of tea at SLRs3600 and Sri Lanka exports the same quantity of tea at SLRs1090. The difference in the value is taken by the importers to pay for the costs of freight, insurance, etc.

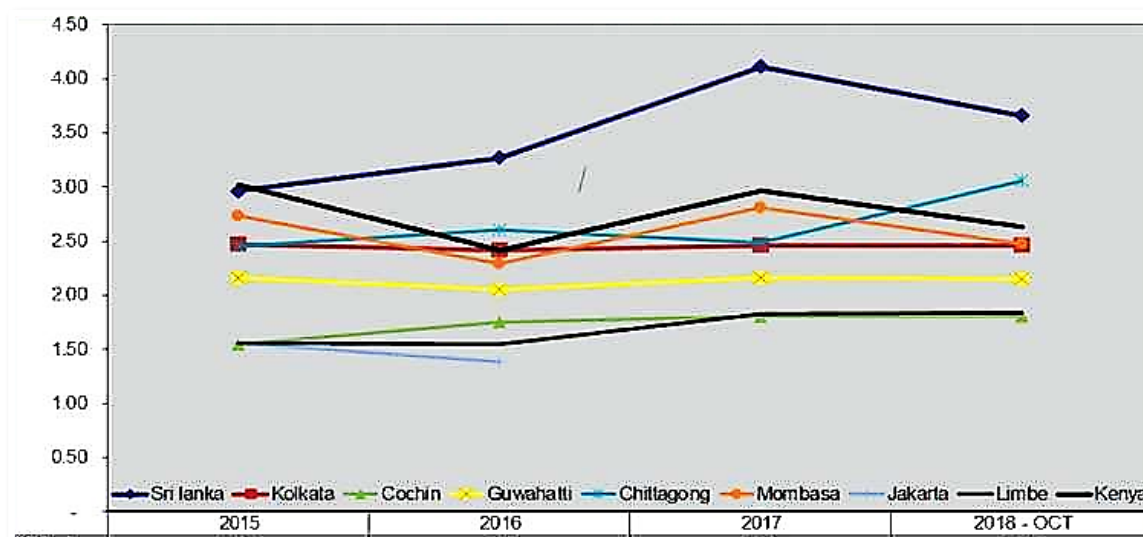
Profit margin

Table 5 indicates that all actors in the value chain earn a considerable amount of profit with respect to their costs. It can be clearly seen that factory processors earn a higher rate of profit margin than others. However, the factory processors stressed that in some months of the year they distribute a considerable portion of the profit as a bonus to their labourers who are working in the factories. Similarly, smallholders often have one or two labourers working for them, and a portion of their grower profit is distributed to the labourers as a bonus.

Price

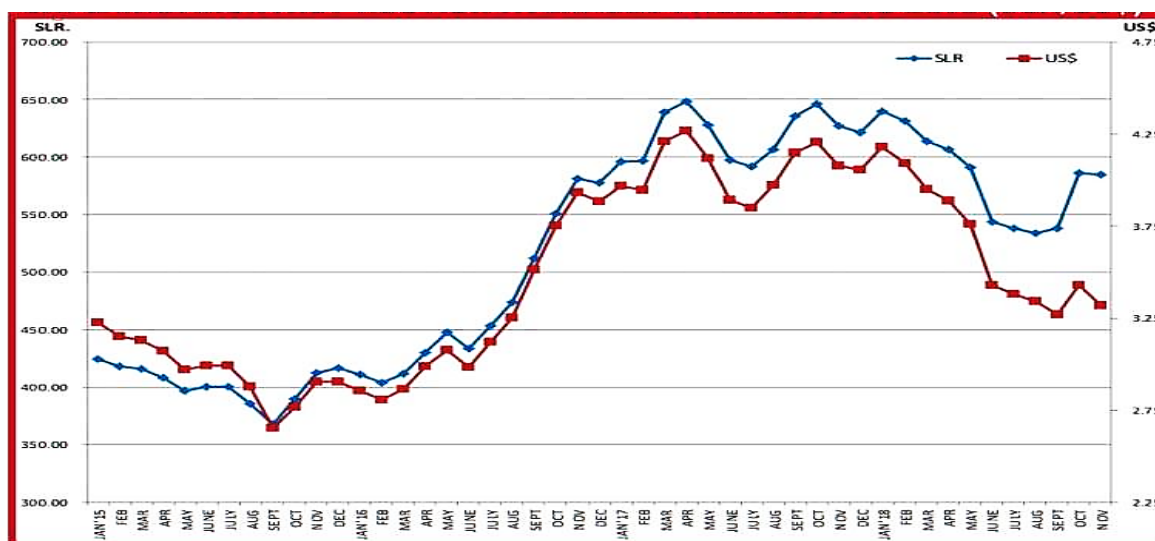
World tea prices are dependent on both the quality and the product reliability. According to Figure 11, the average tea prices expressed at some world tea auction centers during the four years 2015-2018 reveal that the Colombo Tea Auction always gets better prices than its rivals. This is evidence of the preference for Sri Lankan tea among consumers over the world. 2017 was the most fruitful year in terms of foreign exchange and it can be clearly seen in Figure 12 how the SLR behaves in relation to the \$US.

Figure 11. Tea prices at some world tea auctions, 2015-2018 (US\$/kg)



Source: Forbes and Walker Tea Brokers (Pvt) Limited (2018)

As shown in Figure 12, Ceylon tea prices decreased from \$US3.25 per kg in January 2015 to under \$US2.75 per kg in September 2015. Then tea prices gradually increased up to \$US4.25 per kg in March 2017 and after that it decreased to around \$US3.25 per kg in November 2018 with small ups and downs. The currency relationship is clearly evident.

Figure 12. Sri Lankan monthly auction averages from 2015 to 2018 (SLR/US\$)

Source: Forbes and Walker Tea Brokers (Pvt) Limited (2018)

Quality standards

Food quality is a global concern. Skilful plucking of the tea leaf is essential to the final quality of the tea. In Sri Lanka, all green leaves are plucked by hand and harvesting is focused only on the bud and one or two leaves where the flavor and aroma of the tea is present.

The lion logo which appears on Ceylon tea packs denotes not only the country of origin but also the quality of Ceylon tea (Figure 13). The Sri Lanka Tea Board is the owner of the Ceylon tea lion logo which has been registered in many countries in the world. The usage of the lion logo is subject to several conditions such as being used only on consumer packs of Ceylon tea, the packs should contain 100 per cent pure Ceylon tea, and the brands which use the lion logo should be packed in Sri Lanka. Overseas importers/packers are not allowed to use the lion logo on their tea packs even if the packs contain pure Ceylon tea. Additionally, the brands which use the lion logo should conform to the quality standards set out by the Sri Lanka Tea Board (Sri Lanka Tea Board, 2020).

Figure 13. Lion logo

Source: Sri Lanka Tea Board (2020)

This kind of quality standard provides good support to compete with rivals in the market because consumers consider product quality and safety when deciding on a product to buy.

Bargaining power of buyers

Strong bargaining power by buyers is a risk to a particular industry because they tend to force down prices, bargain for higher quality or more services, and play competitors against each other. All these

affect the profitability of the industry adversely (Porter, 1998). In the global tea industry, buyers are highly concentrated and this leads to bargaining power imbalances over the tea producing countries that supply tea as an agricultural commodity (Fonseka, 1997). Four major multinational companies account for approximately 80 per cent of the international tea trade. Moreover, they are in the process of backward integration which further enhances their bargaining power. For instance, Unilever has resorted to backward integration through the ownership of 17,533 hectares of tea in five different countries (Fonseka, 1997). The high concentration of buyers has intensified the competition amongst them to supply tea at low prices to the supermarket chains (Fonseka, 1997).

Response time

The Sri Lanka tea value chain has a long response time. The tea is processed in the factories within one or two days after harvesting. Processed tea is stored in the broker's warehouse or producer's warehouse until it is moved to the buyers. However, brokers take more than three weeks to deliver the samples and catalogs to registered buyers/exporters, and then teas are sold at the auction in the fourth week from production. As well, the Sri Lanka Tea Board imposes different quality checks at each stage of the value chain (pre-auction, post-auction) and this causes a further increase in response time.

Losses due to unfavorable weather conditions and pests and diseases

Tea yield is greatly influenced by rainfall, temperature, radiation, evaporation, sunshine hours, and soil condition. Seasonally, peak tea production follows the peak rainfall by one month. Also, a temperature that is less than 32°C is conducive to optimum growth of tea. If any tea plot is unable to obtain favorable environmental conditions for at least one month it directly affects the number of green leaves. The economic loss of tea due to diseases is higher compared to pests. The number of pests and diseases associated with the tea plants in an area depends on the length of time for which it is cultivated in that area.

Product differentiation

Loyalty is the offshoot of satisfaction. Tea is offered to the global market by other countries with numerous varieties as packeted tea, tea bags, instant tea, flavored tea, herbal tea, carbonated tea, tea wine, and ice tea (Figure 14). But in Sri Lanka, the predominant export products are packeted tea and tea bags, with very small quantities of green tea and instant tea. About 41 per cent of Ceylon tea is exported in bulk and blended elsewhere. Blending is the process of combining tea, herbs, spices, and other quality ingredients to produce a new product. If Sri Lankan traders can cater to customer satisfaction through the blending of this bulk tea, it is a good platform to protect the Ceylon tea reputation among global consumers and to minimize the cash leaving the country.

Figure 14. Value-added tea products



Source: Sri Lanka Export Development Board (2020)

Information flow

Models of market competition depend on the assumption of perfect information flow along the value chain. All value chain actors from producer to consumer should be aware of the required information which is needed for the production and marketing of the product. Smallholders and large-scale growers who are not owners of the tea factory are limited to certain activities such as growing and plucking. Generally, they get market information only from input suppliers, green leaf dealers, and factory processors.

But export companies are integrated with both international partners and domestic partners. They take orders from overseas wholesalers and develop the customized products. Hence export companies have wide knowledge related to the preferences of overseas consumers and the nature of the domestic tea industry. However, resulting from the lack of direct contact between the export companies and the estates and enterprises, are also a couple of disadvantages in the form of quality since there is low feedback from the consumers according to Braga and Strebel (2012). Similarly, factory owners who have tea estates are connected with both overseas and local partners and this also provides some market power in their transactions.

SWOT Analysis

Strengths

Sri Lanka is strong in the production of orthodox tea, which appeals to a particular type of market looking for flavor, brightness, aroma, leaf appearance, etc. (Mohamed and Zoysa, 2006). The Sri Lankan tea industry has the capability to produce tea with unique characteristics (see also Figure 3). Uva teas from the Eastern Highlands contain unique seasonal characters and are widely used in many quality blends particular in Germany and Japan. The medium grown teas provide thick coloured varieties which are popular in Australia, Europe, Japan and North America. The teas produced in low grown areas are mainly popular in Western Asia, Middle Eastern countries and emerging economy countries. Hence, Sri Lanka has the potential to meet this demand for quality and convenience at the same time.

The natural gift of the diverse beneficial climate is an advantage of in producing the world's finest tea. Tea growing areas are mainly concentrated in the central highlands and southern inland areas of the island nurtured by excellent basic conditions for tea production.

The Sri Lankan tea industry maintains the highest quality in the world market and ISO 3720 is the minimum standard applied for the products. European Union Surveillance Reports confirm that Sri Lankan tea is the cleanest with regard to pesticides and other chemicals normally found in tea (Zesta, 2020). In addition, the International Organization for Standards (ISO) in 1997 declared Sri Lankan tea as the cleanest, as far as pesticide residues are concerned (School of tea, 2019).

Moreover the processing/manufacturing facilities owned by the export companies comply with local standards (SLSI) and also with International Quality Standards such as ISO and HACCP, and the standards imposed by the European Union. Traceability throughout the supply chain is monitored in order to guarantee a safe product to consumers (Sri Lanka Export Development Board, 2014).

All tea grown in Sri Lanka is now 100 per cent ozone-friendly. This is a distinction of which no other tea-producing nation can boast. Plans are now being drawn up to impose a total ban on methyl bromide used in applications like export packaging and shipping. As of May 2011, all Ceylon tea is entitled to bear the new 'Ozone Friendly Pure Ceylon Tea' logo, certifying that it has been produced without the use of any ozone-depleting substances. When consumers reach for a cup of Ceylon tea, they are not just refreshing themselves, they are also helping refresh and renew an environmental resource critically important to all life on Earth (Sri Lanka Tea Board, 2020).

The Colombo Tea Auction in Sri Lanka has switched to an online platform as a countermeasure against the Covid-19 pandemic. Consequently, efficiency has increased the auction while bringing down the operating costs. But the ultimate goal is that the auction has more transparency for all participants and stakeholders are facilitated to bid online.

Weaknesses

The tea plantation is a highly labor-intensive sector in Sri Lanka. The workers engaged with tea plantations are essentially Indian Tamils. Workers receive a daily wage of SLRs.730, which consists of the basic wage (SLRs.500/day), a price share supplement (SLRs.30/day), an attendance allowance (SLRs.60/day), and a productivity incentive (SLRs.140/day). This daily wage for tea plucked is very low compared to other jobs in Sri Lanka. Hence a systematic approach should be introduced to estate workers to improve their conditions of employment, including an increase in daily wages. One approach is that the management of the estate should divide certain duties to the laborers which will give them extra money through looking after the tea bushes on the estate.

One such model is called the Contract Farming System (CFS) (Jayarathna, 2018). The proposed CFS model will ensure 10 days' work at the current pay rate for the labor. The remainder of the days the laborers will be paid on a productivity-based instalment where for every kilo they pluck they will be paid a particular rate as is done in the tea smallholding sector. All agrarian work, agronomic practice, and the gathering be finished by the cultivator himself but the estate will own the stock of the tea bushes. All the input cost is incurred by the estate on a monthly instalment cost-recovery basis. It is estimated that the individuals who are engaged with a CFS framework could acquire an extra salary of SLRs.6000 to SLRs.7500 every month.

Some of the Sri Lankan tea sellers trade their products through private sales or forward contracts outside of the auction system. As well, larger, brand buyers also prefer to purchase tea through forward contracts or private sales. This push from large powerful buyers to buy outside of the auction would have a negative impact on the auction system if they unanimously were to decide in the future to boycott the auction (Kasturiratne, 2008). Accordingly, tighter rules and regulations are needed to avoid direct sales from Sri Lanka. The auction system has thus far worked well to protect the supplier and the Sri Lankan tea industry because auctions are highly regulated and expose teas from large and small estates to the same, fair and equal competition and bidding on an open stage that reflects the world market prices (Kasturiratne, 2008).

Cess is a type of tax in Sri Lanka that is charged at the point of export. Currently, the Cess charge for value-added tea exports is SLRs4.50 per kilogram whereas for bulk tea exports it is SLRs10.00 per kilogram. Even though the Cess fund was initiated to support industry stakeholders in developing production capacity, the funds have not been released in the last two decades. Instead, the government has diverted this money to the treasury for general government expenses. The industry says that this is a violation of the fund's purpose. As a result, most of its development programs have been stopped, resulting in declining performance in the sector (Jayarathna, 2018). The Cess charges

would be acceptable if the funds are pumped back into the development in the tea industry. But if the government is mishandling the funds, responsibility for the Cess disbursements should be devolved to an independent private body which has appropriate capabilities and resources.

According to the Sri Lankan government policies and regulations, all tea producers should gain approval from the Sri Lankan Tea Board almost every time before selling their produce. Practically, they have to spend significant amounts of time filling out different applications and statements. This has resulted in increasing the production lead time in several ways. Sometimes due to the deferral of approvals and administration procedures, the quality of tea deteriorates and when it reaches the consumer, it does not have the same quality as when it leaves the factories. Unnecessary time wastages along the value chain of tea need to be cut down to enhance the efficiency of product flow as well as financial flow. Almost all the farmers in the tea industry are registered with the accredited farmer cooperatives of the Sri Lanka Tea Board. So when taking approval for tea for sale, a representative of the farmer cooperative in that area should be able to gain collective approval rather than involving each individual.

During the production process of tea, factories send their processed tea sample to the brokers for sale at the auction. At this stage they do not receive any cash from the brokers and they have to wait more than three weeks until the tea is sold at auction. So this is a challenge for the factories because they avoid investing money for any purpose until they receive the revenue from the sale. To improve the performance of the financial flow between the broker and the factories, a constitutional period for the broker to pay the money to factories should be proscribed, since the Colombo Tea Auction is held twice a week and the broker has enough time to sell tea in the auction.

The large-scale producers in the industry find it difficult to take business decisions due to strong government control. The first and foremost thing is the ownership of the land. The plantation companies only lease their land through 53 year contracts. Subsequently, the majority of them are hesitant to allocate resources to improve the land since future proprietorship is uncertain. Generally, the tea plant takes 3 years to achieve maturity after planting and the life span of the tea is estimated as 30 to 50 years. If a tea bush dies for any reason in the middle of the contract period, farmers do not attempt to replant again due to the uncertainty of the future ownership of the land. This is a major reason for the low transplanting rate (less than 0.3 per cent) and for not having reached the target replanting rates (around 6 per cent) in the country (Jayarathna, 2018). So, allocating an adequate time period for these lease contracts is an essential solution.

Tea is comprised of numerous health benefits compared to substitutes. Although consumers are often aware of these health benefits of tea, they do not attempt to buy higher quantities or at a higher price due to the lack of differentiation of tea. Focusing on different value-added products would lead to more closely satisfying customer needs, rather than offering only blending and packing. Ice tea, carbonated tea, tea wine, and herbal tea are some examples of differentiated tea products.

One of the major reasons for the low production of value-added tea in Sri Lanka is the lack of technology. Government intervention is indispensable to facilitate the importation of technology and machinery which is needed for value addition. Therefore, the government should provide bank loans at concessionary rates and exporters should be motivated to expand their business opportunities in international forums such as trade fair participation, inward buying missions, product development programs, introduction of simplified trade policies, awareness programs, quality improvement programs, and market access requirements such as standards, quality certifications, etc.

Information flow along the tea value chain is neutral and the final consumer never meets the growers and producers. It is a barrier to identify the real needs and wants of consumers to all value chain actors. Creating a mobile application platform by interconnecting the main value chain actors would facilitate the sharing of information along the value chain. The latest market situation can then be easily updated.

The farmer-to-extension officer ratio is very large in most of the areas due to the lack of extension officers. Hence, there is a need for more skills development, vocational training qualification, and attractive incentive packages to farmers to encourage their services in the industry.

Opportunities

Tea tourism is a new concept. It avoids the monotonous lifestyle of the tea smallholder families and helps to enhance their livelihoods. They can provide better services for visitors such as accommodation, transport, and guidance, etc. while travelers can join field visits, factory walks, bird watching, and other leisure time activities. However, younger members of smallholder families should receive proper training and knowledge to upgrade facilities to host visitors.

Tea bars and tea cafes are quickly becoming more common among developed nations and have started popping up in urban areas as modern shops that are dedicated to tea service. The image of Ceylon tea is very strong and known as the “cleanest tea in the world”. So establishing Ceylon tea bars is a good chance to carry on Sri Lanka’s reputation among international consumers. As well, they can earn more revenue and Sri Lankans can deliver their culture and rituals indirectly through these outlets to international consumers.

Organic tea has a growing demand in the international market, in particular in Europe, North America, and Australia. Sri Lanka is succeeding in establishing organic tea farming and presently, Sri Lanka is exporting organic tea to Europe, Australia, and Japan. There may be an insufficient supply of organic tea in the future due to the growing demand. Therefore, the Sri Lankan tea industry should increase organic tea production.

Empowering women would help to increase labor productivity in the tea industry. They have demonstrated their capacity for collective activity in farmer societies, making agricultural decisions, and the acquisition of technical skills (Esham et al., 2018). To achieve the real empowerment of women, improving their access to financial services, integrating gender equality in national policies for employment, and improving access to training and skills development are required.

Threats

Substitute products are the products that can perform the same function as the product of the industry (Porter, 1998; Oster, 1998). Soft drinks, fruit juices, coffee, and alcohol can be regarded as the major substitute products for tea (Ali et al., 1997; Kenneth Abeywickrama Associates, 1990). Modern marketing of these beverages has eroded the value of the tea market, especially in developed countries that have the bulk of consumer spending power (Kenneth Abeywickrama Associates, 1990). The annual per capita consumption of tea will be reduced due to the substitutes in the market.

New entrants to an industry add additional capacity to it and come with a desire to gain market share. As a result, prices can be bid down and costs may go up. The potential threat of new entrants to an industry depends on entry barriers. Porter (1998) has identified six major sources of barriers to entry: economies of scale, product differentiation, capital requirements, switching costs, access to distribution channels, and government policy. For example, Kenya was able to amplify its market share

in the United Kingdom tea market through aggressive competition and Sri Lanka and India lost their market share significantly as a result (ITC, 2014).

Climatic conditions pose another threat. The adverse climate in the areas of tea plantation is affecting the production of tea. Under unfavorable climatic conditions, the tea plantation companies receive crops lower than during favorable periods. Sudden changes in the climate adversely affect the quality of tea as well.

Conclusion

Overall, Sri Lanka needs to enhance healthy tea production levels while maintaining high quality and raising unit prices while cutting the cost of production. Ceylon black tea has a good reputation in the world market and it helps to create strong consumer loyalty. The study reveals that taking action is necessary to enhance productivity. On the one hand, the Contract Farming System (CFS) is a good method to protect estate laborers in the industry and to increase the value chain efficiency. On the other hand, introducing tea tourism and empowering women will help increase labor productivity in the tea industry. As well, product differentiation achieved through value addition should be considered as the best strategy for Sri Lanka in positioning with the global tea industry. The government has to try to increase competitiveness through different strategies and policies such as the fertilizer subsidy scheme, replanting, and new planting subsidy to encourage the small scale farmers in the industry. However, some rules and regulations of the government negatively impact the value chain, because excessive documentation requirements delay business processes, increase response time, and enhance operating costs. Besides, better management of funds is inevitable to maintain cash flow in the country. The new concepts developed will provide insight to both government and operators to increase the profitability and overall sustainability in the sector not only in Sri Lanka but also for other tea producing countries.

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Appendix. Calculations of Rate of Return on Investment (ROI) and profit margin with respect to value chain actors

Avg. total cost = (Avg. direct cost) + (Avg. indirect cost)

- Small holder

$$\text{Avg. total cost} = \text{Avg.} \left(\begin{array}{l} \text{Labor cost + Tools and} \\ \text{equipment + Planting} \\ \text{materials + Fertilizer} \end{array} \right) + \text{Avg. Crop insurance}$$

$$= \text{SLRs.46} + \text{SLRs.3}$$

$$= \text{SLRs.49 /kg}$$

Avg. selling price = SLRs.73 /kg

Profit margin = $73 - 49 / 73 = 32.8\%$

Rate of return on investment (%) = $73 - 49 / 49 = 48.9\%$

- Green leaf collector

Avg. total cost = Avg. (Purchasing price of tea leaves) + Avg. (Fuel cost + Handling cost)

$$= \text{SLRs.73} + \text{SLRs.3}$$

$$= \text{SLRs.76/kg}$$

Avg. selling price = SLRs.80/kg

Profit margin = $80 - 76 / 80 = 5\%$

Rate of return on investment (%) = $80 - 76 / 76 = 5.2\%$

- Factory processor

$$\text{Avg. total cost} = \text{Avg.} \left(\begin{array}{l} \text{Purchasing + Labor cost + Machines} \\ \text{price of and equipment +} \\ \text{tea leaves Packing materials} \end{array} \right) + \text{Avg.} \left(\begin{array}{l} \text{Electricity bills + Fuel} \\ \text{expenses+ Ware} \\ \text{housing charges+} \\ \text{Supervision charges} \end{array} \right)$$

$$= (\text{SLRs.80} + \text{SLRs. 45}) + \text{SLRS.20}$$

$$= \text{SLRs.145/kg}$$

Avg. selling price = SLRs.408/kg

Profit margin = $408 - 145 / 408 = 64.4\%$

Rate of return on investment (%) = $408-145 / 145 = 181.3\%$

- Broker

$$\text{Avg. total cost} = \text{Avg.} \left(\begin{array}{l} \text{Purchasing price + Stationaries} \\ \text{of tea bulk for catalogs} \end{array} \right) + \text{Avg.} \left(\begin{array}{l} \text{Fuel charges +} \\ \text{Visiting charges} \end{array} \right)$$

$$= (\text{SLRs. 408} + \text{SLRs.2}) + \text{SLRS.8}$$

$$= \text{SLRs.418/kg}$$

Avg. selling price = SLRs.569/kg

Profit margin = $569 - 418 / 569 = 26.5\%$

Rate of return on investment (%) = $569 - 418 / 418 = 36.1\%$

- Local buyers

$$\text{Avg. total cost} = \text{Avg.} \left(\begin{array}{l} \text{Purchasing + Packing materials +} \\ \text{price of tea Labor cost +} \\ \text{bulk Machinerics} \end{array} \right) + \text{Avg.} \left(\begin{array}{l} \text{Fuel charges +} \\ \text{Ware housing} \\ \text{charges} \end{array} \right)$$

$$= (\text{SLRs.}569 + \text{SLRs.}20) + \text{SLRS.}15$$

$$= \text{SLRs.}604/\text{kg}$$

Avg. selling price = SLRs.790/kg

Profit margin = $790 - 604 / 790 = 23.5\%$

Rate of return on investment (%) = $790 - 604 / 604 = 30.7\%$

- Exporters

$$\text{Avg. total cost} = \text{Avg.} \left(\begin{array}{l} \text{Purchasing} \\ \text{price of tea} \end{array} + \begin{array}{l} \text{Packing materials} \\ + \text{Labor cost} + \\ \text{Machineries} + \\ \text{Blending materials} \end{array} \right) + \text{Avg.} \left(\begin{array}{l} \text{Fuel charges} + \text{Ware} \\ \text{housing charges} + \\ \text{Supervision charges} + \\ \text{Electricity charges} \end{array} \right)$$

$$= (\text{SLRs.}569 + \text{SLRs.}30) + \text{SLRS.}20$$

$$= \text{SLRs.}619/\text{kg}$$

Avg. selling price = SLRs.850/kg

Profit margin = $850 - 619 / 850 = 27.1\%$

Rate of return on investment (%) = $850 - 619 / 619 = 37.3\%$

- Retailers

$$\text{Avg. total cost} = \text{Avg.} \left(\begin{array}{l} \text{Purchasing} \\ \text{price of tea} \\ \text{bulk} \end{array} + \begin{array}{l} \text{Packing materials} + \\ \text{Labor cost} + \\ \text{Machineries} + \\ \text{Blending materials} \end{array} \right) + \text{Avg.} \left(\begin{array}{l} \text{Fuel charges} + \text{Ware} \\ \text{housing charges} + \\ \text{Electricity charges} \end{array} \right)$$

$$= (\text{SLRs.}790 + \text{SLRs.}10) + \text{SLRS.}12$$

$$= \text{SLRs.}812/\text{kg}$$

Avg. selling price = SLRs.1090/kg

Profit margin = $1090 - 812 / 1090 = 25.5\%$

Rate of return on investment (%) = $1090 - 812 / 812 = 34.2\%$