

**FOOD STANDARDS AND GOVERNANCE IN THE TEA INDUSTRY IN
SRI LANKA: A VALUE CHAIN ANALYSIS**

A thesis submitted for the degree of Doctor of Philosophy

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Publications & Conferences Attended during the Candidature

Wijayasiri, J. & Jayaratne, S. (2009). *Impact of Information Technology (IT) in Trade Facilitation on Small and Medium Enterprises (SMEs) in Sri Lanka*. Working Paper Series No.13. Colombo: Institute of Policy Studies of Sri Lanka.

Wijayasiri, J. & Jayaratne, S. (2011, June). *Implications of agri-food standards for Sri Lanka: Case studies of tea and fisheries export industries*. ARTNeT Working Paper Series, No. 104, Bangkok: UNESCAP.

Wijayasiri, J. (2012, 12-14 December) *Challenges of meeting emerging food safety and other standards: The Case of Tea Exports from Sri Lanka*. 9th Network of Asia Pacific Schools and Institutes of Public Administration and Governance (NAPSIPAG) International Conference, Colombo, Sri Lanka.

Wijayasiri, J. (2013, 26-30 May). *Strategic responses of the Sri Lankan tea exporters to emerging food standards in international markets*. 4th Annual International Journal of Arts & Sciences (IJAS) Conference, Boston, MA.

Abstract

This study examines the implications of food standards required by international buyers and markets for exporters, manufacturers and producers and governance in the tea value chain in Sri Lanka. Currently Sri Lanka is one of the world's largest tea producers and exporters, but the industry is increasingly subject to stringent product standards, process standards, multiple private standards, and standards covering social and environmental issues. The study explores governance in the chain, stakeholders' perception of food standards, their response to emerging standards and the impact of these on governance. It adopts a qualitative case study. It involved interviews with 45 key informants in the tea industry. In addition, documentary analysis and direct observations were utilised to triangulate the data collected and analysed.

The study reveals the following key findings. First, the Sri Lankan tea value chain is complex, consisting of a number of stakeholders (smallholders, collectors, regional plantation companies, private factories, brokers, and exporters) who undertake various tasks (cultivation, collection, manufacturing, marketing, and exporting) and add value to the product as it moves along the chain. While the overall chain can be best described as buyer-driven, different parts of it (cultivation, manufacturing, marketing and exporting) are governed in distinct ways (market, relational, captive and hierarchical).

Second, the tea value chain is increasingly governed by a number of public and private standards that cover not only the product but also the production process. These standards are set and monitored locally and internationally by governments and private businesses and organisations. Compliance with public mandatory standards is high, because they are required by regulation, whereas compliance varies in the case of public and private voluntary standards and depends on end-consumers and markets.

Compliance has brought a number of benefits to stakeholders (efficiency, discipline, reduction in wastage, market access and product and process assurance), despite the costs (capital costs, consultant fees and training costs, new staff and additional time, and input costs). Most stakeholders perceived benefits to outweigh their costs.

Third, the industry complied with emerging standards rather than adopting a strategy of voice or exit; most stakeholders saw the benefit of compliance and fell into line. The industry complied both proactively and reactively – proactively in the case of voluntary standards, but

reactively in response to mandatory standards. The industry rarely adopted a strategy of voice or exit.

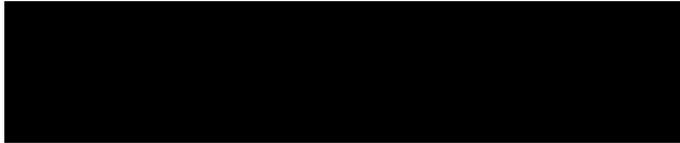
Fourth, complying with standards has neither altered the governance relationships between exporters and their international buyers nor those between exporters and the manufacturers. However, the linkages between manufacturers and smallholders further up in the value chain appear to have become closer and tighter subsequent to the introduction of food standards; it was observed that factories are increasingly assisting and monitoring smallholders.

Given the growing importance of standards in global value chains, the government of Sri Lanka and industry associations should together provide necessary support to stakeholders to meet the challenges of standards to ensure the continuity of Sri Lanka's prominent position in the international market, because this is increasingly under threat. This will require a multi-pronged approach, which would include promoting awareness of standards, providing financial assistance, training workers, improving institutional capacity, targeting low-income markets, harmonising standards and participating in standard-setting bodies.

The study has contributed to the existing literature on global value chains and standards by mapping the tea chain in Sri Lanka, exploring the governance types in the chain, documenting various food standards in the industry and their implications for governance.

Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other institution and to the best of my knowledge contains no material previously published or written by another person, except where due reference is made in the text of the thesis.



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Abbreviations

ADB	Asian Development Bank
ASOEX	<i>La Asociación de Exportadores de Frutas de Chile</i> (Fruit Exporter's Association of Chile)
BLF	Bought Leaf Factory
BRC	British Retail Consortium
CBA	Ceylon Brokers' Association
CCC	Ceylon Chambers of Commerce
CIS	Commonwealth of Independent States
CODEX	Codex Alimentarius
CQC-QMS	Ceylon Quality Certification Quality Management System
CTC	Cut Tear and Curl
CTTA	Ceylon Tea Traders Association
EDB	Export Development Board
ETP	Ethical Tea Partnership
EU	European Union
FAO	Food and Agricultural Organisation of the United Nations
FOB	Free On Board
GAP	Good Agricultural Practice
GCC	Global Commodity Chains
GHP	Good Hygienic Practices
GlobalGAP	Global Good Agricultural Practice
GMP	Good Manufacturing Practice
GOSL	Government of Sri Lanka
GPN	Global Production Network
GTZ	<i>Deutsche Gesellschaft für Technische Zusammenarbeit</i> (German Agency for Technical Cooperation)
GVC	Global Value Chains
HACCP	Hazard Analysis and Critical Control Points
IDS	Institute of Development Studies
IFS	International Food Standard
IGG	FAO Inter-Governmental Group on Tea
IPS	Institute of Policy Studies of Sri Lanka
ISO	International Organization for Standardization

ITI	Industrial Technology Institute
JEBD	Janatha Estate Development Board
MPI	Ministry of Plantation Industries
MRL	Maximum Residual Level/Limit
NGO	Non-governmental Organisation
NIPM	National Institute of Plantation Management
NSA	Net Sales Average
OECD	Organisation for Economic Co-operation and Development
ORP	Office of Registrar of Pesticides
PA	Planters Association of Ceylon
PFTOA	Private Factory Owners Association
PHI	Pre-Harvesting Interval
RA	Rainforest Alliance
RPC	Regional Plantation Company
SGS	Société Générale de Surveillance
SLFTSDS	Sri Lanka Federation of Tea Smallholders Development Societies
SLSI	Sri Lanka Standards Institute
SLSPC	Sri Lanka State Plantation Corporation
SLTB	Sri Lanka Tea Board
SPS	Sanitary and Phytosanitary
SQF	Safe Quality Food
TASL	Tea Association of Sri Lanka
TEA	Tea Exporter's Association
TRI	Tea Research Institute
TSHDA	Tea Smallholders Development Authority
UAE	United Arab Emirates
UNCTAD	United Nations Conference on Trade and Development (UNCTAD)
USAID	United States Agency for International Development
USDA	U.S. Department of Agriculture
VP	Vegetative Propagation
WB	World Bank
WTO	World Trade Organisation

Chapter 1 Introduction

We live in a world profoundly reliant on product standards. They affect our lives in ways we sometimes do not even notice, but they have far-reaching implications for economic activity. (WTO, 2005, p.xxiv)

1.1 Background to the Study and Chapter Objectives

This study examines the implications of emerging food standards for principal stakeholders and the tea value chain in Sri Lanka. It aims to provide an insight into the perceptions of tea exporters, manufacturers and producers regarding food standards, their response to emerging standards and how standards compliance affects governance in the tea value chain.

Over the past two decades, public standards or regulations governing agro-food production in industrialised countries have tightened, and this has been accompanied by significant institutional changes and intensification of border inspections to control agriculture and food imports (Henson & Jaffee, 2008; World Bank, 2005). These changes were brought about by heightened public awareness and concern following a series of highly publicised food scares/scandals (Henson & Caswell, 1999; Henson & Jaffee, 2008). Well-known examples of these in the past included Bovine Spongiform Encephalopathy (BSE or 'mad cow disease') in the UK, microbiological contamination of berries in the US and Canada, and large-scale food poisoning in Japan (Humphrey, 2009). More recent examples include milk and milk powder adulteration with toxic melamine in China in 2008 (BBC, 2010; Gereffi & Lee, 2009; Sommerville, 2009), the horsemeat scandal in Europe (BBC, 2013b; Walsh, 2013) and botulism fear in milk from New Zealand (BBC, 2013a) in 2013.

In parallel with these regulatory developments, a number of concerted private sector initiatives have addressed the tightening of the regulatory environment to restore consumer confidence about the safety of products sold in the market (Henson & Jaffee, 2008). Consequently, this has led to the proliferation of private standards governing value chains (Henson & Jaffee, 2008). These standards are individually and collectively developed by businesses/organisations, administered by specialised organisations and enforced through third party certification (Humphrey & Memodovic, 2006; Lee, Gereffi, & Beauvais, 2012). Major food retailers, food manufacturers and restaurant chains alike in industrialised countries have adopted private standards, largely to mitigate any reputational or commercial risks associated with food scares/scandals (Henson, 2006; Henson & Jaffee, 2008). Private food

standards have become a basis for market differentiation in a very competitive market place (Henson & Jaffee, 2008; Lee, et al., 2012). For example, Carrefour Quality Certification programme links high quality and safety standards to the product and the company in order to produce reputational and competitive advantage in the retail sector (Henson and Reardon, 2005).

There has also been an increase in scope and coverage of standards. Several standards now combine food safety with product quality and social and environmental issues and go beyond what is generally required by regulations on product quality and safety (Henson & Reardon, 2005; Reardon, Codron, Busch, Bingen, & Harris, 2001). While private standards in the beginning focused on food safety (for example, the British Retail Consortium - BRC Global Standard, and International Food Standards - IFS), they now cover protection of the environment, ethical trading (for example Ethical Trading Initiative - ETI and Fairtrade International standard - FLO), animal welfare (for example Freedom Food) and organic production methods (for example International Federation of Organic Agriculture Movements - IFOAM standard) (Henson & Humphrey, 2010). These developments are largely responding to consumer and civil society concerns about the conditions under which goods are produced (Jaffee & Masakure, 2005). In addition, there is greater emphasis on *how* a product is manufactured and handled along the value chain, whereas in the past the emphasis was squarely put on meeting the standard of the end product (Nadvi & Waltring, 2004). Although inspection of produce to check if the product meets a required specification remains important, it is now widely acknowledged that such screening has limitations, given that testing can be expensive and many hazards can contaminate food products at several points in the chain (Unnevehr, 2000). Hence there is a growing adoption of Hazard Analysis and Critical Control Points (HACCP) by the food industry (FAO, 1988), including the tea trade (TradeStandards.org, n.d.). HACCP aims to prevent, monitor and control hazards in production (Henson & Jaffee, 2006; Unnevehr, 2003). HACCP is only one example of a trend towards increasing application of systematic approaches to food safety (Humphrey & Memodovic, 2006).

The increasing complexity of regulations and commercial requirements governing food and agricultural commodities has made compliance difficult for many agro-food industries in developing countries in accessing and securing markets abroad (Humphrey & Memodovic, 2006; Tallontire, Opondo, Nelson, & Martin, 2011), including the tea industry in Sri Lanka, which is highly export-oriented (Institute of Social Development 2008). Over the years Sri

Lanka has established an international reputation for the producing the finest teas in the world (Sri Lanka Tea Board, 2012d) and is currently one of the largest tea producing and exporting countries (Sri Lanka Tea Board, 2008b). Although it has been a successful producer and exporter, one of the major challenges facing the industry is meeting an ever-growing set of standards required by buyers and markets abroad (Mohamed & Zoysa, 2008). For example, there are number of standards governing worker welfare (Ethical Tea Partnership - ETP), food safety (HAACP, ISO22000), productivity (ISO9001), etc. (Mohamed & Zoysa, 2008). Different types of standards now govern the production, processing and trade in tea, making compliance a challenging exercise for the stakeholders, from smallholders cultivating and harvesting tea at one end of the chain to exporters linked to international buyers and markets at the other end. Compliance with standards will not only provide market access, efficiency/productivity gains, quality improvements, etc, (World Bank, 2005), but offer competitive advantage (Caswell, Bredahl, & Hooker, 1998; Karunanayake, 2005) and thereby assist in regaining Sri Lanka's prominent position in the international tea market, which is increasingly under threat. As Plantation Industries Minister Mahinda Samarasinghe has said: 'Ceylon Tea is no more the world product leader. Our task is to see that it gets back its prestige as being the best in the world. It was at the top. But now others have pushed us back. Our job is to ensure we are back on top' (Morrell, 2010b, para. 1). Compliance with standards is also likely to affect governance in the value chain, potentially leading to arm's length or closer relationships between international buyers, exporters, manufacturers and producers, which will have implications for market access, acquisition of production capabilities, distribution of gains, etc. (Humphrey & Schmitz, 2001). Given that standards are likely to multiply and become complicated in the future (Henson & Humphrey, 2010; Lee, et al., 2012; OCED, 2007), a closer examination of these issues is warranted in order to ensure the sustainability of the industry and better understanding of how relationships between stakeholders have changed and will be affected.

In the remainder of the chapter the research problem is explained, the main objectives outlined as is the scope of the study. The rationale for the research topic is explained, the methodology used to answer the research questions is discussed, and the outline for the structure of the study is provided.

1.2 Statement of the Problem

Food standards are not a new phenomenon; compliance with food standards of importing countries has been an issue for food exporters since the 19th century (Humphrey, 2009). What

is different now is that standards are increasing in stringency, complexity, numbers and coverage of issues (Henson & Jaffee, 2008). For example, there are now nearly 400 private standards governing food industry in Europe (Kern, 2008 as cited in Gibbon & Lazaro, 2010). The focus of standards is not only becoming more vertical, covering the whole production and distribution chain such as Fairtrade and Forestry Stewardship Council (FSC) (Henson & Humphrey, 2010) but many standards are also extending horizontally to cover a wider range of issues (Gibbon & Lazaro, 2010). For example GlobalGAP standard today combine food safety, with environmental issues and social concerns (Henson & Humphrey, 2010).

Understandably, this is a cause for concern amongst many developing countries, including Sri Lanka, as standards can become potential barriers to accessing international markets, given that quotas and tariffs have been reduced over the years (Henson, 2004; Kaplinsky, 2010; OECD, 2006; World Bank, 2001). There is widespread belief amongst people in developing countries that food safety standards can be used as a protectionist tool against their agricultural and food exports (World Bank, 2005). Even in cases where standards are not intentionally used to discriminate against imports from developing countries, the multiplication of standards and their lack of harmonisation could adversely affect their access to markets abroad (Henson & Caswell, 1999). For example, IFS and BRC standards overlap in their scope and requirements as much as by 80 percent, but retailers in the UK, Germany and France do not accept these two standard as equivalent (Henson, 2006). Thus manufacturers supplying into these markets are required to comply with both standards. In this context, there is greater concern amongst policy makers in low-income countries, given their weak supply-side capacities to comply, which can adversely affect export-led growth diversification and rural development (Henson & Jaffee, 2008; Wilson & Abiola, 2003). Moreover, the additional costs associated with compliance could potentially undermine their competitive position in international markets (World Bank, 2005) although standards can confer competitive advantage due to improved control and increased efficiency (Henson & Caswell, 1999).

In an interview with the *Financial Times*, Pascal Lamy, the former Director-General of the World Trade Organisation (WTO), noted that the increase in standards was a cause of concern for developing countries: 'Developing countries are certainly beginning to have a real problem and the question of standards is becoming a real issue' (International Institute for Environment and Development, 2010, para. 2).

Despite the emergence of complex food standards, there are numerous examples of industries in developing countries which have managed to gain access to markets in industrialised countries (World Bank, 2005). In fact, some have even used high quality and safety standards to successfully re-position themselves in competitive global markets (Jaffee, 2003; Jaffee & Masakure, 2005), while compliance has brought about efficiency/productivity gains, quality improvements, etc., amongst many other benefits (World Bank, 2005). Thus the situation for developing countries is not as problematic and pessimistic as some usually perceive it to be (Jaffee & Henson, 2005). Moreover, it is typically assumed that developing countries are 'standard takers' with few if any alternatives available (Henson & Jaffee, 2008). However, this is again far from the truth; developing countries frequently have room for manoeuvre and can adopt various strategies to meet standards (Henson & Jaffee, 2008). They have a range of options other than compliance, including catering to less stringent buyers/markets or even by participating in setting the standard and thereby changing the 'rules of the game' (Jaffee, 2005).

While the predominant strategy of developing countries has been compliance in face of emerging new standards (Henson & Jaffee, 2008), compliance could have a significant implication for value chain governance within agro-food chains (Nadvi, 2008). On the one hand, adoption of standards might require assistance from buyers, leading to closer relationships within the value chain (Nadvi, 2004; Quadros, 2004). Buyers might support suppliers in the expectation that improvements in supplier performance would translate into benefits for them. On the other hand, adoption of standards might lead to looser relationships between buyers and suppliers: standards acting as a substitute for direct monitoring of supplier performance (Nadvi, 2004; Quadros, 2004). However, there is no definitive indication of how governance would be affected as a consequence of standards according to the literature on standards and governance (Dolan & Humphrey, 2000; Gereffi, Humphrey, & Sturgeon, 2005; Humphrey & Memodovic, 2006; Nadvi, 2004, 2008; Ponte, 2009; Ponte & Gibbon, 2005; Quadros, 2004; Sturgeon, 2003). In some cases it has led to arm's length relationships while in others to a more hierarchical relationship within the chain. As highlighted by the International Trade Centre (ITC) report (2011, p.ix) on standards and global value chains, 'While standards play an increasing important role in international trade and global value chains, little is known about their actual impacts on these chains'.

Like other agro-food products (e.g., coffee, cocoa, nuts and spices, meats, fish, fruits, vegetables, flowers), tea is increasingly subjected to stringent food standards, standards

relating to the production process, multiple private standards, and standards covering social and environmental issues in the last two decades (Institute of Social Development 2008; Mohamed & Zoysa, 2008; van der Wal, 2008). This is due to tightening of regulations in some key markets, including Europe, Japan and North America (Goonetilleke, 2006; Lanka Business Online, 2010b), growing concern on the part of consumers and buyers (Kithsiri, 2008; van der Wal, 2008), NGOs calling on tea producers and buyers to improve social, economic and environmental conditions under which tea is currently produced, and increasing competition (van der Wal, 2008). Some of these standards include minimum quality standard (ISO3720), food safety (HACCP, ISO2200, GlobalGAP), quality management system (ISO9001), sustainable standards (ETP, FLO), etc. (Mohammed, 2009) The changing landscape of standards has serious implications not only for stakeholders within the tea value chain but also for its governance. So far there has been no study on this issue for Sri Lanka using a value chain analysis, which leaves a serious gap in the value chain literature. This study aims to address this gap by examining the relationship between food standards and governance in the tea chain in Sri Lanka.

1.3 Objectives of the Study

Given the increasing complexity of standards, the overall objective of this study is to analyse the implications of food standards for inter-firm relationships in the tea value chain in Sri Lanka. The study also examines the implications of food standards for three main stakeholders in the tea value chain (tea producers, manufacturers and exporters) and the strategies they adopt in the face of emerging food standards in production, manufacturing and processing. The study therefore investigates the following four research questions.

RQ1: How is the Sri Lankan tea value chain governed?

This question seeks to ascertain a) how the tea value chain is organised from the producer through to the exporter, and b) the forms of linkages between the different stakeholders within the chain.

RQ2: How do tea industry stakeholders perceive food standards governing the tea value chain?

This question will provide a) typology of food standards governing the tea industry in Sri Lanka and b) examine their costs, benefits and challenges, based on perceptions of tea producers, manufacturers and exporters.

RQ3: How did the tea industry in Sri Lanka respond to food standards?

This question focuses on how tea exporters, manufacturers and producers responded to increasing food standards in export markets.

RQ4: How did complying with the standards affect governance in the tea value chain in Sri Lanka?

This question examines whether complying with food standards led to arm's length or hierarchical forms of relationship in the tea value chain.

1.4 Scope of the Study

The tea value chain in Sri Lanka is complex with a number of stakeholders carrying out various activities from cultivation to retail. Whilst the entire value chain is mapped from production to retail in national and international markets, the focus of the study will be on tea producers, manufacturers and exporters, given the study's objectives, which are to examine how food standards required by international buyers and markets affect stakeholders and governance in the tea value chain in Sri Lanka. In addition, the study focuses on exporters, manufacturers and producers in the value chain, given that food safety standards are more applicable and important to upstream activities, which include cultivation, harvesting, manufacturing and processing, compared to downstream activities like marketing and retailing. Tea is exported as a ready-to-consume product, and as much as 40% of the exports are shipped in value-added form, including tea bags and packets (Sri Lanka Tea Board, 2008b), which makes it important to adhere to emerging food standards.

1.5 Rationale for the Study

1.5.1 Why Tea?

Tea is increasingly being subjected to stringent food product standards, which are becoming important, given that tea has been considered a 'beverage/food' since 1995 (Ranawaera,

2007). In addition to meeting product standards, which are becoming stringent, there is also increasing emphasis on meeting process standards such as HACCP and ISO22000, both by governments and buyers (Institute of Social Development 2008; van der Wal, 2008). For example, the European Union under the General Food Law (Regulation (EC) No 178/2002) and Regulation (EC) No 853/2004 on the hygiene of foodstuffs requires food businesses to implement procedures based on HACCP principles (Karunanayake, 2005) to prevent unsafe foods *inter alia* (Institute of Food Research, n.d.). This has prompted some buyers in Europe to require HACCP certification from tea exporters as well as producers, though it is not currently mandatory (Karunanayake, 2005). The tea industry is also confronted by a variety of private standards that combine food safety with product quality, social and environmental issues, reflecting growing consumer concerns about food production methods employed and their impact on poor people and the environment (Loconto, 2010a, 2010b; Neilson & Pritchard, 2010; van der Wal, 2008). Some private initiatives, include Fair Trade, Organic, Rainforest Alliance (RA) and UTZ certifications (Loconto, 2010a, 2010b; Neilson & Pritchard, 2010), which started in the coffee sector, but have since extended to other agricultural commodities, including tea (van Reenen, Panhuysen, & Weiligmann, 2010). These private standards go beyond what is generally required by regulations for quality and safety of the product (Hammoudi, Hoffman, & Surry, 2009). Thus the standards landscape governing tea production, manufacturing, processing and trading has become increasingly complicated and the tea industry is now confronted by a range of standards.

While there have been a number of value chain studies on the implication of standards on agro-food products like coffee (Neilson, 2008; Neilson & Pritchard, 2007, 2010; Ponte, 2002, 2004; Reynolds, 2002, 2004, 2009), fruits and vegetables (Bain, 2010; Barrientos, Dolan, & Tallontire, 2003; Dolan & Humphrey, 2000, 2004; Humphrey, 2009), there have been relatively few on the tea industry until recently. This is despite the fact that tea is the most popular beverage after water and consumed all around the world (van Reenen, et al., 2010). Moreover, tea is a unique product; the quality of tea, much like wine, significantly depends on agro-climatic conditions, which vary considerably within a country and hence produce a range of teas (M. Fernando, 2003). Existing tea value chain studies include Loconto (2010a, 2010b, 2010c), who examined sustainability standards such as Ethical Tea Partnership (ETP), Fair Trade, Organic and RA in the tea value chain in Tanzania, Neilson and Pritchard (2010) and Neilson, Pritchard and Spriggs (2006), who looked at Fair Trade and ethical standards, and quality and traceability initiatives in Southern India, respectively.

1.5.2 Why Sri Lanka?

Today, three quarters of tea production comes from China, India, Kenya and Sri Lanka (van Reenen, et al., 2010). In 2008, China and India contributed 30% and 26% respectively to global production of tea, while Kenya and Sri Lanka contributed an additional 9.2% and 8.5%, respectively (Sri Lanka Tea Board, 2008b). China and India are the biggest producers but they are also the biggest consumers, accounting for more than half of their production. Whereas both Kenya and Sri Lanka are large producers, they export most of their tea, given that domestic consumption is relatively small compared to total production. Consequently, Sri Lanka exports as much as 90% of the tea produced (Institute of Social Development 2008). Sri Lanka currently accounts for about 18.3% of global tea exports, and is the second largest exporter after Kenya (23.3%) (Sri Lanka Tea Board, 2008b). Nevertheless, Sri Lanka is still the market leader in terms of Orthodox Black Tea (a traditional method of manufacturing which produces leafy types of tea), with a market share of 32% (Ethulgala, 2009), while Kenya is a predominantly a Cut Tear and Curl (CTC) producer (manufacturing granular tea particles more suitable for tea bags) (Ali, Choudhry, & Lister, 1997; Senaweera, 2010).

The tea industry plays an important role in the economies of the producing countries. In fact, in Sri Lanka it has played an important role in the development of the island's economy since its establishment nearly 150 years ago (Ganewatte, 2002). While its relative importance has waned over the years, it remains a vital sector of the Sri Lankan economy in terms of its contribution to national output, employment and net foreign exchange earnings (Arumugam, 1995; Ekanayake, 1995). Tea is the third largest agricultural crop in Sri Lanka after paddy and coconut (Central Bank of Sri Lanka, 2012). As a whole, the agricultural sector contributed about 9.8% of GDP in 2012, of which 9.2% was accounted for by tea (Central Bank of Sri Lanka, 2012). The tea industry provides employment directly and indirectly to two million people (De Alwis, 2011), supporting livelihoods for poor communities in remote rural areas. At the farm level, tea is a cash crop that brings incomes to both farmers and workers, to pay for food, schooling and healthcare (van Reenen, et al., 2010). In addition, the tea industry also generates a significant amount of valuable foreign exchange (Institute of Social Development 2008). In 2012, Sri Lanka exported approximately 320 million kg of tea, which brought in \$US1,412 million and this amounted to 14.4% of total agricultural export earnings; agricultural exports contributed 23.9% to total exports (Central Bank of Sri Lanka, 2012).

While there have been case studies on agro-food value chains in Sri Lanka, including fisheries (Arunatilake et al., 2008; Thordarson, 2008), banana and pineapples (Hathurusinghe, Vidanapathirana, Rambukwella, & Somarathne, 2013), rambutan (Barry, 2007), belli and woodapple (Barry, 2008), anthurium (Henriksen, Riisgaard, Ponte, Hartwich, & Kormawa, 2010), rubber (Henriksen, et al. 2010; UNESCAP, 2011), electronics (UNESCAP, 2011), and agribusiness (Stamm et al., 2006), there has been no such study on the tea industry to date, despite the importance of the industry. Available studies on tea value chains are either too general (van Reenen, et al., 2010) or from other tea-producing countries like India (Neilson & Pritchard, 2009; Neilson, et al., 2006) and Tanzania (Loconto, 2010a, 2010c). In this context, this study maps the tea value chain in Sri Lanka from cultivation to export, identifies main stakeholders in the chain, describes their functions/activities and examines their relationships with one another.

In light of the lack of studies on food standards and tea value chains, especially in the Sri Lankan context, this study will add to the emerging field of literature on value chains by offering an analysis of how food standards have affected stakeholders and governance in the tea value chain in Sri Lanka. The evolving landscape of standards has serious implications for the future of Sri Lanka's tea industry, not only for the exporters who have direct links with the buyers abroad but also for manufacturers and producers in the chain, including tea smallholders, who make up the backbone of the industry (Martinez & Wijayapala, 2007).

1.6 Methodology

To analyse the implications of food standards for stakeholders and value chain governance, this study will adopt a *qualitative* research method. A qualitative approach is used because it provides detail, process, richness and sensitivity to the context (Tharenou, Donahue, & Cooper, 2007). The study does not intend to measure the impact of standards but attempts to analyse the implications of food safety standards for stakeholders and governance in the tea value chain in Sri Lanka, based on a qualitative research method. More specifically, a case study was deemed an appropriate research design, given the focus of the research, that is, on the tea value chain in Sri Lanka ('the case'). A case study 'is an empirical inquiry that investigates a contemporary phenomenon within its real-life context' (Yin, 2009, p.13). The purpose of a case study is not simply to describe an event but to provide an explanation – more specifically, 'how' and 'why' events occur. A case study will be used, as this study examines 'how' the tea value chain is organised and governed from production to export, 'how' the stakeholders in

the industry view standards, 'how' the industry responds to stringent and complex food standards demanded by buyers and markets abroad, and 'how' this in turn affects the governance structure in the chain.

Interviews were conducted with key informants in Sri Lanka to gather information for the study. Interviews formed the primary source of information. Key informants included stakeholders within the value chain (tea exporters, brokers, private factories owners, Regional Plantation Companies, smallholders) and officials from public and private sector organisations that support the tea industry. The purpose of the interviews with exporters, manufacturers and producers was to obtain first-hand accounts of their activities, functions and relationships with other stakeholders in the chain. The interviews also gathered their perceptions of food standards, their response to standards and the implications of standards for their relationships in the value chain. These interviews were useful in eliciting the information required for the study. Interviews were also conducted with relevant public and private sector organisations in order to further clarify the views presented by exporters, manufacturers and producers, and thereby achieve triangulation of information provided by individuals. In addition, documentary analysis and direct observations effectively contributed to the collection of primary data and analysis.

1.7 Definition of Key Concepts

This section introduces the definition of the key concepts used in the study: value chain governance, food standards, and tea. The concepts of governance, value chains and food standards will be further explored in Chapter 2.

1.7.1 Standards

Standards are designed to simplify transactions and provide an element of certainty in exchange (OECD, 2006). More specifically, they fulfil a number of functions, such as lowering risk, and increasing credibility and trust, which facilitate transactions between anonymous agents. Standards pertain to quality (appearance, cleanliness, taste, etc.), safety (pesticide residue, microbial presence, etc.), authenticity (guarantee of geographical origin) and goodness of the production process (worker health and safety, etc.) (Reardon & Farina, 2002). Whilst the study will discuss standards affecting the industry, the focus will be on food safety standards, which have been set both publicly and privately. Food safety standards have

become a leading issue for global trade in agricultural and food products (Henson & Jaffee, 2008).

1.7.2 Value chains

A value chain 'describes the full range of activities which are required to bring a product or service from conception, through the different phases of production, delivery to final consumers' and beyond (Kaplinsky & Morris, 2001, p.4). The value chain is a useful analytical tool for exploring how different agents interact with each other, as well as for understanding power relations within the chain. Of the different value chain approaches, the study utilises the Global Value Chain (GVC) framework, which has been widely adopted by researchers, industry and development practitioners in order to understand the political economy of contemporary global production systems (Neilson, 2008). This study undertakes a value chain analysis, since it is concerned with how food safety standards required by buyers and markets abroad at one end of the chain have affected upstream agents at the other end – that is, exporters, manufacturers and producers – and governance in the tea value chain in Sri Lanka.

1.7.3 Governance

The concept of 'governance' is central to the global value chain approach and has gained significant attention in recent years in the GVC literature (Humphrey & Schmitz, 2001). 'Governance' is a widely used term (Humphrey & Memodovic, 2006) but in this study value chain governance is used in reference to 'inter-firm relationships' – that is, relationships between buyers and sellers. It corresponds to a firm's ability to set and enforce parameters within which others in the chain operate (Humphrey & Schmitz, 2001). The key parameters are what is to be produced, how it is to be produced, how much is to be produced, when it is to be produced, and how it is to be transported (Humphrey & Schmitz, 2001). These parameters can also be set by governments, international organisations, non-governmental organisations, etc. (Humphrey & Schmitz, 2001). Parameters set from outside the value chain can lead to changes in chain governance when one firm in the chain enforces compliance with the parameters on other firms in the chain. For this study, the concept of governance is of central importance, given it is concerned with value chain governance – that is, the ability of buyers, governments and non-governmental organisations in distant locations to set and enforce parameters (i.e., food safety standards) under which tea is cultivated, manufactured, and processed in Sri Lanka. Increasingly, standards are an important part of the governance structure of agro-food

chains and their implementation determines how food is produced, processed and delivered to the consumer (Fulponi, 2006).

1.7.4 Tea

While there are different types of teas, such as black tea, green tea, white tea, etc., they are all produced from the leaves and buds of the same species of tea – *Camellia Sinensis* (M. Fernando, 2000; TradeStandards.org, n.d.). The differences come from how the tea leaves are processed (van Reenen, et al., 2010). In the case of black tea, which Sri Lanka mostly produces, the leaves are fully fermented in the process of manufacturing, whereas in the production of green tea leaves do not undergo any fermentation (Ali, et al., 1997).

1.8 Structure of the Study

The study comprises seven chapters.

Chapter 2 discusses the different types of standards, and the recent changes that are taking place in the standards environment. It also examines the challenges as well as the opportunities that developing countries generally face in complying with standards and looks at different strategies that are available to meet new standards. The Global Value Chain (GVC) approach is reviewed and compared with other value chain approaches. The chapter also looks at the concept of governance, which is central to the value chain approach, discusses the role of standards in the governance of value chains, and how standards affect that governance. The GVC provides a framework to analyse how standards affect governance in the value chains, which is the focus of this study.

Chapter 3 introduces the tea industry in Sri Lanka, providing a brief historical overview and underlining the importance of the industry. It also discusses salient features of the industry in terms of its production, manufacturing, marketing and exporting and the relevant stakeholders and organisations supporting the industry. The Chapter also examines the main challenges the industry currently faces, including meeting food standards, thereby providing context for the remainder of the study.

Chapter 4 covers the research design and method used in the study. It includes the rationale for using a qualitative approach, and, in particular, case study as a strategy of inquiry to answer the research questions posed. The chapter also outlines the multiple methods used to

collect data (interviews, documentation and observations) and discusses how the data were analysed. The ethics procedure followed for the study is spelled out and the main limitations of the research design are noted.

Chapter 5 maps the Sri Lankan tea value chain from cultivation to export and analyses the governance of the chain, thereby addressing the first research question. It argues that the tea value chain in Sri Lanka is complex, consisting of a number of agents carrying out various functions/activities. The chain displays different forms of governance structures at different points, though the overall governance structure can be best described as a buyer-driven chain.

Chapter 6 examines the second research question pertaining to stakeholder's perceptions of food standards governing the tea value chain – the costs, benefits and challenges of compliance. Despite the costs and challenges involved in complying with food standards, this chapter argues that there are several benefits stemming from compliance which should be taken into account when assessing the implications of standards for the industry.

Chapter 7 studies the response of tea producers, manufacturers and exporters to emerging standards and the implication for governance in the tea value chain, which are the remaining two research questions, respectively. By and large, the industry has fallen in line with emerging food standards and it has complied proactively as well as reactively, depending on the nature of the standard. Complying with standards has not altered governance within the tea value chain in Sri Lanka, with the exception of the relationship between factories and smallholders, which became closer as a consequence.

Chapter 8 concludes the study and outlines a path for future research. Figure 1 below illustrates the focus of each chapter and the flow of the study diagrammatically.

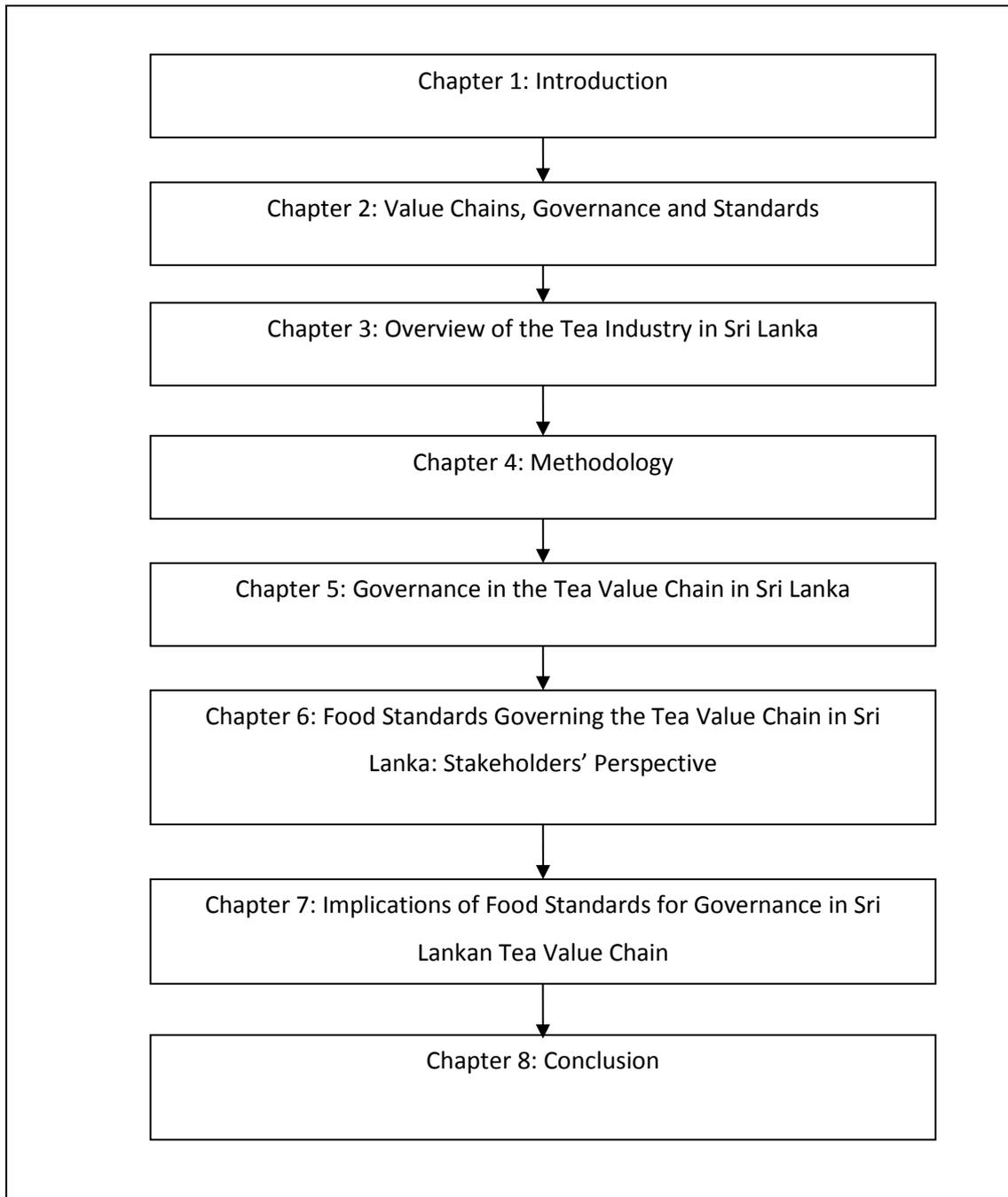


Figure 1.1 Flow diagram of the study

Chapter 2 Value Chains, Governance and Standards

2.1 Introduction

The purpose of this chapter is to introduce the key concepts of value chain, governance and food standards and the theoretical framework – Global Value Chains (GVC) – which will be used in the study, before reviewing the available literature on how standards affect governance within value chains – the primary focus of this study. More specially, the aim of this study is to examine how food standards required/imposed by buyers and markets abroad have affected governance, namely, inter-firm relationships between agents (tea exporters, manufacturers, producers, and global buyers) in the tea value chain.

For the purpose of this study, the definition of value chain by Kaplinsky and Morris (2001) is used. In its simplest form, value chain ‘describes the full range of activities which are required to bring a product or service from conception, through the different phases of production, delivery to final consumers’ and beyond (Kaplinsky & Morris, 2001, p.4). This includes activities such as design and development, production, marketing, distribution and consumption, among the many links possible. The activities that make up a value chain can be contained within a single firm or divided among different firms (Global Value Chains Initiative, 2006a).

In recent years, the number of development research studies using a value chain approach has multiplied (Stamm, 2004). The usefulness of value chain analysis has been demonstrated in studies of industries as diverse as fresh fruits and vegetables (Dolan & Humphrey, 2004), garments (Gereffi, 1994), and footwear (Schmitz & Knorringa, 2000). Most of these studies examine how international production and trade is organised, and the nature of the relationships between buyers and producers based in developed and developing countries, respectively (Stamm, 2004).

While early approaches were primarily descriptive in nature, the recent literature is more analytical (Stamm, 2004), with a strong focus on chain governance, contributing towards a better understanding of how production is spread across countries and continents, controlled by a few buyers who specify what to produce, how to produce, etc., without owning farms or factories (Coe, Dicken, & Hess, 2008; Stamm, 2004). Governance involves the ability of some firms to influence or determine the activities of others in the chain, including defining the

products to be produced by suppliers and specifying the processes to be used (Humphrey & Schmitz, 2001).

Increasingly agricultural and food value chains extend beyond national and regional boundaries, facilitated by communication technology, transportation and a policy environment that encourages more liberal trade (Henson, 2006). Elongated chains not only introduce greater risks of contamination, but make it harder to ensure quality at multiple stages (Lee, et al., 2012). In order to mitigate risks along the chain and address growing consumer concerns surrounding the quality of agro-foods, especially in developed countries, regulations governing food safety have been tightened for such products (Henson & Jaffee, 2008; Humphrey & Memodovic, 2006), while standards have been introduced by the private sector (retailers and brand owners) to safeguard their own vested interests (Henson, 2006). Some of these standards cover not only quality and safety issues but also social and environmental concerns, extending the scope of food standards beyond quality and safety (Humphrey & Memodovic, 2006). Businesses are also increasingly competing by placing more emphasis on quality attributes as a means of product differentiation through the use of standards (Lee, et al., 2012; OCED, 2007). Thus agro-food value chains are increasingly confronted with ever-growing standards (Tallontire, et al., 2011), set publicly and privately, with which developing countries must comply. Compliance is becoming necessary for entry into value chains which are global in extent and essential to international competitiveness (Nadvi, 2008). These changes are creating challenges as well as opportunities for developing countries (World Bank, 2005).

While there have been a number of case studies examining the implications of standards for value chain governance, especially in the agricultural and food sectors, there have been none to date on this issue with regard to the tea industry in Sri Lanka, despite tea being the second largest beverage consumed after water (van Reenen, et al., 2010) and Sri Lanka one of the largest producers and exporters of tea (Sri Lanka Tea Board, 2008b). In recent times, the industry in Sri Lanka has been increasingly subject to standards imposed by buyers and markets abroad (Mohamed & Zoysa, 2008) and these appear to be increasing in complexity and stringency, which is likely to have significant implications for governance in the tea chain.

The remainder of the section is structured as follows. In Section 2.2 the main approaches to value chain analysis to date and the concept of governance are examined as these have received the greatest attention to date in the GVC literature. In Section 2.3 the different types of standards and the recent changes that are taking place in the standards environment are

examined. In Section 2.4 the challenges and opportunities that developing countries generally face in complying with standards are explored, while in Section 2.5 how countries can respond – that is, the strategies that they adopt in the face of emerging standards – is assessed. Finally, in Section 2.6 the available literature on implications of standards for value chain governance is explored by drawing on applicable empirical studies.

2.2 Value Chain Approaches

For over twenty years there has been on-going attempt to describe and analyse the integration of the world economy, which has been accompanied by disintegration of production and distribution processes (Stamm, 2004), or, as Feenstra (1998, p.31) succinctly summed up, the ‘Integration of Trade and Disintegration of Production in the Global Economy’. A great variety of terms have been used to discuss very similar concepts – value chains, *filiere*, global commodity chains, global production networks, etc. (Gereffi, Humphrey, Kaplinsky, & Sturgeon, 2001; Kaplinsky & Morris, 2001). The result has been a considerable degree of confusion in the use and meaning of terminologies (Henderson, Dicken, Hess, Coe, & Wai-Chung Yeung, 2002; Kaplinsky & Morris, 2001). Although there is often an overlap between the approaches, they differ in terms of their disciplines (sociology, geography, economic, business/management, etc.), research tradition (Anglo-phone vs. Francophone literature), ontology (structuralism vs. post-structuralism) and their analysis (linear vs. non-linear approaches) (Neilson & Pritchard, 2009).

The concept of the value chain was popularized by Michael Porter in his best-seller, *Competitive Advantage: Creating and Sustaining Superior* in the mid-1980s (Henderson, et al., 2002). Porter (1985) described the value chain as a basic tool to systematically examine all the activities a firm performs and how they interact to analyse sources of competitive advantage. However, his analysis was limited to firm or inter-firm networks, and paid no attention to issues of power, institutional contexts or the territory in which the chains function (Henderson, et al., 2002; Stamm, 2004).

Another approach which is similar in some respects is the French variant of the field, *filiere*, which literally means a thread in French (Kaplinsky & Morris, 2001). Developed in the 1970s by French economists, the *filiere* approach maps commodity flows and identifies agents and activities within the chain, thereby allowing for a detailed analysis of integration and disintegration of economic activity (Henderson, et al., 2002). Although the *filiere* approach

focuses on agents and the roles they play within the production networks, the analysis is limited to examining two types of agents – large firms and state institutions – and their technological constraints (Henderson, et al., 2002).

A direct conceptual predecessor of the Global Value Chain (GVC) was the Global Commodity Chains (GCC), introduced by Gereffi during the mid-1990s (see Section 2.2.1, below). The GVC framework was initially developed by researchers at the Institute of Development Studies (IDS) in Sussex (Coe, et al., 2008) but has since expanded into the wider research network/community (Global Value Chains Initiative, 2006b).

The Global Production Network (GPN) framework, developed initially by researchers at Manchester University, combines GCC/GVC with ideas derived from actor-network theory and business systems literature (Coe, et al., 2008). It conceptualises production and the distribution process as being essentially a highly networked structure consisting of horizontal, diagonal and vertical linkages (Gibbon, Bair, & Ponte, 2008). As Coe, Dickens and Hess (2008, p.267) describe, 'It aims to reveal the multi-actor and multi-scalar characteristics of transnational production by combing notions of power, value and embeddedness'. Advocates of the GPN approach use the 'network' metaphor as opposed to the linear 'chain' approaches of GCC/GVC to describe dense, intricate and flexible interconnections (Neilson & Pritchard, 2009).

2.2.1 Global Value Chain (GVC)

In this study GVC analysis is used to examine the implications of emerging food standards for the governance of the Sri Lankan tea value chain. GVC provides a useful framework to examine linkages and power relations between agents in the value chain. To date, GVC analysis has been widely adopted by researchers, industry and development practitioners to understand the political economy of contemporary global production (Neilson, 2008). GVC studies trace the shifting patterns of global production, provide an understanding of how chains work or are governed, and determine the role they play in developed and developing countries (Global Value Chains Initiative, 2006a). Case studies of manufacturing and high-technology have been accompanied by case studies of agro-food commodities, services and transport and logistics (Ponte & Gibbon, 2005).

While the GVC approach was widely adopted by sociologists and geographers analysing international organisation of industries as diverse as clothing, electronics and tropical

commodities, it has increasingly attracted interest from economists, anthropologists and historians (Gibbon, et al., 2008). A number of international agencies, such as UNIDO (2009), the ILO (2013), and development organisations such as USAID (n.d.) and GTZ (2007), have also embraced value chain analysis (Gibbon, et al., 2008).

GVC is an evolution of Global Commodity Chain (GCC) analysis, which was developed by Gereffi in the 1990s (Dolan & Humphrey, 2004; Sturgeon, 2008) and initially stemmed from a structuralist world systems perspective (Coe, et al., 2008), drawing on work of Hopkins and Wallenstein (1986) (See Gibbon, et al., 2008; Neilson & Pritchard, 2009; Sturgeon, 2008). As Blair (2005, p.157) explains: 'GCC analysis is principally concerned with understanding how global industries are organised. It consists of identifying the full set of actors (i.e. firms) that are involved in the production and distribution of a particular good or service and mapping the kinds of relationships that exist among them'. While much of the earlier literature on globalisation in the 1970s and 1980s emphasised the role of transnational manufacturing corporations as the main agents of globalisation, Gereffi's pioneering work recognised the increasing influence of retailers and brand name companies in creating global production, distribution and marketing systems (Sturgeon, 2008). Later, Gereffi termed these firms 'manufacturers without factories' (Humphrey & Memodovic, 2006). This term highlighted the fact that these companies play an important role in product design, supplier selection and value chain coordination, although they do not directly engage in the manufacturing themselves. Nike is a good example of such a company: it undertakes design and markets footwear and clothing but does not own its own factories (Humphrey & Memodovic, 2006). Rather it works with a large number of suppliers in different countries, and supplies retail outlets with a fast-changing range of products. Nike's competences lie in design and branding but not in manufacturing. It has even outsourced logistics and supply chain management (Humphrey & Memodovic, 2006). Similar trends can be seen in agriculture and food trade, with supermarkets and major food processors increasingly specifying what is to be produced, how and when, though they do not own farms, or processing plants (Humphrey & Schmitz, 2008).

The term 'global commodity chain' was later replaced by the more inclusive 'global value chains' to capture a wide variety of products and services while retaining the basic framework of analysis (Neilson & Pritchard, 2009). The word 'commodity' was considered problematic because it implied the framework was associated with undifferentiated products or primary products/raw materials, when in fact much of the early research focused on manufacturing

(Neilson & Pritchard, 2009)¹ Alternatively, the term ‘value’ captured the concept of value addition, which fits in well with the chain metaphor while focusing on sources of economic development (Sturgeon, 2008). As a result, the ‘Global Commodity Chain’ approach is now often referred as ‘Global Value Chain’ (GVC) analysis, where ‘global’ refers to the global extent of the activities involved (Sturgeon, 2008).

The landmark volume, *Commodity Chains and Global Capitalism*, edited by Gereffi and Korzeniewicz (1994), contained a number of papers on commodity chains. The most widely cited and influential of these was Gereffi’s ‘The Organization of Buyer-Driven Global Commodity Chains: How U.S. Retailers Shape Overseas Production Networks’, which laid the foundation for what came to be known as Global Commodity Chains (GCCs) (Bair, 2005). Gereffi (1994) identified four dimensions to value chains: 1) an input-output structure, 2) territory/geographical coverage, 3) governance structure and 4) institutional framework. The first two dimensions are considered largely descriptive (i.e., how productive activities are organised along the chain and their geographical extent), while the latter two are more explanatory/analytical in nature, providing reasons for the observed organisational and spatial features of the GVCs (Neilson, 2008; Sturgeon, 2008).

‘Input-output structure’ refers to how activities (both tangible and intangible) along the chain are linked together sequentially, adding value at each stage. In its simplest form, a chain consists of four stages: design, supply, production and distribution (McCormick, 2001). A product is first designed, then raw materials are purchased and production takes place; the product is then distributed through wholesalers and retailers. At each stage, services such as transport or finance are needed to ensure functioning of the chain. A value chain also has a less visible input-output structure, and this includes knowledge and expertise, which are essential for functioning of the chain (McCormick, 2001).

‘Territoriality/geographical coverage’ refers to the geographical spread/extent of production. Some chains are truly global in scope with activities taking place in many countries across different continents (McCormick, 2001). Others are more limited, confined to a few locations.

¹ Although most work on value chains analyses vertical and horizontal linkages and thus display network-like structures, many of the relationships (governance) and processes (technological learning, innovation, upgrading) at the centre of interest are actually related to the vertical dimension (Stamm, 2004). Hence ‘value chain’ needs to be understood in a broader sense and not purely in a linear fashion.

It is also possible to identify national or regional chains, which operate in a similar fashion to global chains but their geographical spread is much more limited (McCormick, 2001).

'Governance' relates to how some firms exercise control along the chain (Humphrey & Schmitz, 2001). Gereffi (1994, p.97) defined governance as 'authority and power relationships that determine how financial, material and human resources are allocated and flow within a chain.' In this regard, governance was described broadly by Gereffi in terms of 'producer-driven' and 'buyer-driven' chains (Ponte & Gibbon, 2005) but was subsequently elaborated into five governance structures in GVC literature (see Section 2.2.2, below).

'Institutional' context was later added by Gereffi (1995) but is now very much part of the fourfold template (Neilson & Pritchard, 2009). Gereffi (1995, p.113) defined institutional framework as 'how local, national, and international conditions and policies shape the globalisation process at each stage of the chain'. The subsequent inclusion of institutions reflected the fact that value chains 'do not exist in a vacuum but within a complex matrix of institutions and supporting industries' (Sturgeon, 2001, p.11). Nevertheless, this element remains the least developed of the four dimensions (Bair, 2005). Until recently, most GVC studies focused attention on how lead firms govern a given value chain without necessarily studying the institutional context in which they are located, despite the fact that institutions can profoundly affect a chain's governance (Neilson & Pritchard, 2009). Consequently this has led to some researchers wrongly eschewing GVC for other approaches (i.e., GNP), due to its preoccupation with inter-firm issues and apparent insensitivity to institutional considerations. However, Neilson and Pritchard (2009) argue such a perception is misguided and 'reassertion of the importance of institutional analysis within the fourfold GVC approach generates a means to address these rifts' (p.8).

In the next section the third dimension, 'governance', is considered in more detail; it has received the most attention to date (Sturgeon, 2008) and is the focus of this study in relation to food standards.

2.2.2 Concept of Governance in Value Chains

Of the four dimensions, the concept of 'governance' is central to the GVC approach and has gained significant attention in the literature (Humphrey & Schmitz, 2001), because governance structures determine the prospects of firms in developing countries to engage in trade and how benefits are distributed along the chain (Barrientos, et al., 2003). Governance is a widely

used term and it can take various forms (Gereffi, et al., 2001; Nadvi, 2008). Within the GVC literature, governance is mainly used in reference to inter-firm or buyer-seller relationships (Humphrey & Memodovic, 2006) through which activities are coordinated within the chain. More specifically, 'governance' is used to express how powerful firms or 'lead firms' set and enforce parameters under which others in the chain operate (Gereffi, et al., 2001; Humphrey & Schmitz, 2001). Lead firms are predominantly located in developed countries and include not only multinational manufacturers but also large retailers and brand name firms (Humphrey & Schmitz, 2001).

At any point in the chain, the activities performed are defined by three key parameters (Humphrey and Schmitz, 2001, 2004), including:

Product parameters: What is to be produced? This question relates to product design and specification.

Process parameters: How is it to be produced? This question refers to production process, which includes the technology, quality systems, labour and environmental standards applied.

Logistic parameters: How much is to be produced, when it is to be produced, and how it is to be transported.

To these, price can be added as a fourth parameter, though prices are determined by supply and demand in an ideal market (Humphrey & Schmitz, 2001). Usually major buyers require suppliers not only to meet product and process parameters but they also set prices (Humphrey & Schmitz, 2001). For example, lead firms in industrialised countries, such as supermarket chains, increasingly dominate the agro-food trade, and they essentially decide what food is grown, where, how, by whom (Knoefal, Mascarenhas, & Hatanaka, 2005), when it is shipped and at what prices (Fulponi, 2007). These firms not only dictate terms of participation with their first-tier suppliers but also manage to transmit these demands upstream in the chains, sometimes all the way to producers (Ponte, 2007), including farmers. Hence value chain governance is said to arise when some firms in the chain work according to the product, process and logistics parameters set by lead firms. Governance of a value chain consists in not only defining the parameters but also supporting others in the chain to adhere to them, monitoring adherence and imposing sanctions when they are violated (Kaplinsky & Morris, 2001).

In terms of inter-firm linkages in the global economy, the most important parameters of value chain governance relate to 'product' and 'process' parameters (Humphrey & Schmitz, 2001), which can be specified at varying levels of detail. For example, in the case of 'product parameters', the buyer can provide different levels of specifications. That is, a buyer can set a design problem for the producer to resolve, giving the producer a free hand. Or the buyer can provide a particular design for the producer to work on, even to the extent of providing detailed drawings. The buyer can also specify 'process parameters' – that is, how a particular standard should be achieved by requiring or even helping the supplier to introduce particular production processes, etc. This has been more evident with buyers' specification of process parameters such as labour and environmental standards (Humphrey & Schmitz, 2001).

Though lead firms do not engage in production on their own, as Gereffi (1994) highlighted, they wield considerable purchasing power to coordinate activities within the chain (Sturgeon, 2008). Despite the fact that setting and/or enforcing parameters along the chain is not only inconvenient but a costly exercise for lead firms (Humphrey and Schmitz, 2004), they continue to seek to govern their chains. In general, there are several reasons why this is so (ITC, 2011). First, buyers have a better understanding of end-market requirements than suppliers, since they are closer to end-consumers (Humphrey & Schmitz, 2001). This is most likely to happen in fast-moving markets, such as in the garment industry, which is characterised by innovation and product differentiation. Second, buyers are increasingly pursuing a strategy of product differentiation through design and branding, which requires them to provide suppliers with precise product/process specifications and monitor whether these specifications are met. The more companies are involved in specifying these requirements, the more likely they will closely coordinate with suppliers (Gereffi, et al., 2001; Humphrey & Schmitz, 2001). Third, with risk of supplier failure, there is increasing importance attached to non-price competition-based factors, such as quality, response time and reliability, together with concerns about product safety and quality. Buyers specify such process parameters along the chain in order to contain risks associated with supplier failures. The more they are exposed to risks as a result of suppliers' failures, the more they will directly intervene to coordinate and monitor the supply chain (Gereffi, et al., 2001; Humphrey & Schmitz, 2001).

While parameters are usually set and enforced by buyers, product and process parameters can also be set and enforced by agents outside the chain (Kaplinsky, 2000). Governments and international organisations, which are external to the chain, can regulate product and process parameters in order to ensure consumer safety and create transparent markets (Humphrey &

Schmitz, 2001). An example is food safety standards, which are set and enforced by governments. These can be compulsory and legally binding (Humphrey & Schmitz, 2001). Standards may also be set by various non-governmental organisations (NGOs), and can be voluntary (Lee, et al., 2012; WTO, 2005) (see Section 2.3.1, below).

Parameters set from outside the chain can affect chain governance when lead firms enforce compliance with the parameters on others in the chain (Humphrey & Schmitz, 2001). This arises whenever the buyers are held responsible for suppliers in the chain. For example, the *UK Food Safety Act* holds food retailers/brands responsible with respect to the manufacture, transport, storage and preparation of food (Jaffee & Masakure, 2005). Under the Act, any supplier of branded products is liable for the safety of the product, and all produce sold in unpackaged form is considered to be the brand of the retailer. Given that both reputation and financial resources were at stake, retailers in the UK developed systems to trace and monitor food along the chain (Dolan & Humphrey, 2004; Humphrey & Schmitz, 2001).

2.2.3 Forms of Governance

Gereffi (1994) broadly distinguished between two different types of governance structures, 'producer driven value chains' and 'buyer driven value chains', to capture variation in the way firms organised their cross-border production arrangements (Sturgeon, 2008). More importantly, he highlighted that there has been a shift in power within chains from producers to buyers over time. Gereffi later suggested that internet commerce is leading to the emergence of a third governance structure: an internet-driven commodity chain (Bair, 2005; Ponte & Gibbon, 2005).

In 'producer driven' chains, firms set parameters that control key product and process technologies (Humphrey & Schmitz, 2008). Producer driven chains are usually found in sectors of high technological and capital requirements like automobiles, aircrafts and computers (Ponte & Gibbon, 2005), where chain governance is exercised by transnational companies that control key technology and production facilities (Riisgaard, 2008). In these chains, producers tend to keep control of capital-intensive operations and sub-contract more labour-intensive activities (Ponte & Gibbon, 2005). Conversely, 'buyer driven' value chains are found in more labour-intensive sectors such as garments (Gereffi, 1994), horticulture (Dolan & Humphrey, 2000) and footwear (Schmitz & Knorringer, 2000), and the key parameters are set by brand-name companies and retailers that focus on design, marketing and branding (Ponte & Gibbon,

2005). In these chains, production functions are usually outsourced and it is the retailers and brand name companies that exercise governance functions by defining what it is to be produced, how is it to be produced, etc. (Ponte & Gibbon, 2005; Riisgaard, 2008).

While the distinction between the two types of global chains is relevant for a number of industries (i.e., clothing and automobiles), it has been argued that it does not adequately represent the range of governance patterns observed in some chains (Stamm, 2004). The producer-driven/buyer-driven dichotomy has also been criticised on several counts (Humphrey & Memodovic, 2006; Ponte & Gibbon, 2005): buyer-driven governance patterns are increasingly emerging in almost all industries, including in previous producer-driven chains, making the buyer/producer-driven distinction redundant; buyers within buyer-driven chains are not all the same; and not all chains have clear drivers. Gibbon et al. (2008, p.321) argued that 'Some critics claimed that this typology [i.e., the distinction] was too narrow or excessively abstract'. While more recent work on GVCs has played down the terminology (Humphrey & Memodovic, 2006) and the producer/buyer-driven dichotomy has been qualified (Gereffi, et al., 2005), the typology is still relevant for understanding the way power is exercised within value chains (Riisgaard, 2008). Sturgeon (2003), for instance, proposed 'modular chains' in which power is not held at either the upstream or downstream ends of a chain but shared with middle agents; this has been documented in studies of electronics and automotive sectors in South East Asia (Neilson & Pritchard, 2009); Humphrey and Schmitz proposed a fourfold classification of market, networks, quasi-hierarchy and hierarchy; these works provided the basis for the five-part categorisation of governance in Gereffi, Humphrey and Sturgeon (2005).

Gereffi, Humphrey and Sturgeon (2005) developed a more coherent theoretical framework with satisfactory power to explain variations in value chain governance. They moved beyond the 'buyer-driven'/'producer-driven' dichotomy and proposed fivefold governance types, ranging from 'market' to 'hierarchy' at either side of the spectrum with various forms of coordination (or 'networks') in between to provide a better description of chain relationships in global industries (see Table 2.1). As Neilson and Pritchard (2009, p.41) explain: '... the development of this fivefold categorisation can be seen as marking a major evolution in this field. The dualistic heuristic of producer versus buyer driven chains has been recalibrated to match more realistically the findings of studies that apply the concept of governance to real-world cases'.

Table 2.1 Types of governance in value chains

Market	Market governance prevails when information necessary for transactions is easily codified, complexity of transactions is relatively simple and suppliers are capable of making products with little input from buyers. Market is the simplest form of governance, with price acting as the coordinating mechanism. Usually goods produced are standard products and there is no collaboration between buyers and sellers.
Modular	Modular value chains arise when suppliers are competent, and information can be codified even though the information is complex. An example is contract manufacturers in the electronics industry which make products according to the needs of a particular customer. In this case, 'technical standards simplify interactions by reducing component variation and by unifying component, product and process specifications and... suppliers have competence to supply full packages and modules, which internalises hard to codify (tacit) information, reduces asset specificity and therefore buyers need for direct monitoring and control' (Gereffi, et al., 2005, p.86). As a result, switching costs for suppliers and buyers remain low. Codification means that buyers can shift relatively easily between suppliers even though the product supplied is customised and complex.
Relational	'When product specifications cannot be codified, transactions are complex and supplier capabilities are high, relational value chains can be expected. This is because tacit knowledge must be exchanged between buyers and sellers, and because highly competent suppliers provide a strong motivation for lead firms to outsource to gain access to complementary competences' (Gereffi, et al., 2005, p.86). This mutual dependence makes costs of switching high for both suppliers and buyers.
Captive	Captive value chain arises when products are complex and product specifications are codifiable but supplier capabilities are low in relation to buyer requirements. In this case, the buyers need to monitor supplier performance closely and possibly invest in increasing supplier capabilities, making switching costs high for suppliers.
Hierarchy	'When product specifications cannot be codified, products are complex and highly competent suppliers cannot be found, the lead firm will be forced to develop and manufacture products in-house' (Gereffi, et al., 2005, p.87). This is the case of vertical integration in the value chain.

In fact, Gereffi et al. (2005) proposed a theory of value chain governance, drawing on transaction cost, production, network and technological capacity and firm learning literatures, arguing that five governance forms (market, modular, relational, captive, hierarchy) can vary depending on three key explanatory variables:

Complexity of transactions. More complex transactions require greater interaction among agents in the value chains and thus stronger forms of governance than a simple price-based one.

Codifiability of transaction. This refers to the extent to which complex information can be codified and transferred without the need for investment in transaction-specific relationships.

Capabilities of suppliers. The ability to receive and act upon complex information from lead firms requires a high degree of competence on the part of suppliers.

The five global value chains and the three explanatory variables are summarised in Table 2.2, which also shows the degree of explicit coordination and power asymmetry associated with the different governance types. As the value chain moves from market to hierarchy, the level of explicit coordination increases, as does the power asymmetry between agents. They range from low levels of coordination and power asymmetry between buyers and suppliers in the case of ‘markets’ to high levels of explicit coordination and power asymmetry in the case of ‘hierarchy’.

Table 2.2 Key determinants of global value chain governance

Governance type	Complexity of transactions	Ability to codify transactions	Capabilities of suppliers	Degree of explicit coordination and power asymmetry
Market	Low	High	High	Low
Modular	High	High	High	
Relational	High	Low	High	
Captive	High	High	Low	
Hierarchy	High	Low	Low	

Source: Gereffi et al., 2005.

According to Gereffi et al. (2005), if one of these three explanatory variables (complexity of transaction, ability to codify transactions or capabilities of suppliers) change, then value chain governance patterns tend to change in predictable ways (Table 2.3). For example, introduction of new technology can render an established codification scheme obsolete, and as a result modular chains can become more relational (Arrow 1). And if competent suppliers cannot be

found, captive networks or even vertical integration can become prevalent (Arrow 6). Conversely, rising supplier competence might result in captive networks moving towards a relational type (Arrow 5), while better codification can lead to modular networks (Arrow 3). Thus governance structures are not ‘static’ but are ‘dynamic’ and subject to change over time (Gereffi, et al., 2005).

Table 2.3 Dynamism in governance

Governance type	Complexity of transaction	Ability to codify transactions	Capabilities of suppliers
Market	Low	High	High
Modular	High	High	High
Relational	High	Low	High
Captive	High	High	Low
Hierarchy	High	Low	Low

Note: 1) Increasing complexity of transaction reduces supplier competence in relation to new demands, 2) Decreasing complexity of transactions and greater ease of codification, 3) Better codification of transactions, 4) De-codification of transactions, 5) Increasing supplier competence, 6) Decreasing supplier competence.

Source: Gereffi et al., 2005.

In this sense, GVC framework provides a simple theoretical model that can account for observed inter-firm relationships and geographical patterns in an industry (Sturgeon, 2008). Governance patterns vary across and within value chains (Gereffi, et al., 2005), that is, different parts of the same chain can be governed in different ways (Humphrey & Schmitz, 2001; Sturgeon, 2008). As Sturgeon (2008, p.124) argues:

Just as chains are composed of multiple linkages, so too can they contain multiple governance forms. In other words, characterising larger amalgams of transactions according to one of the five ideal GVC governance types requires an assumption that all linkages within a chain or industry have the same character. Such value chains do not exist in the real world.

In this regard, Ponte and Gibbon (2005, p.3) distinguish between ‘forms of coordination’ and ‘modes of governance’ and argue that ‘a GVC may be characterised by different forms of coordination in various segments, yet a single and relatively coherent mode of overall governance’. They cite the example of the coffee value chain, where ‘market’ relations characterise the link between retailers and roasters, ‘captive’ relations in the link between roasters and international traders, and ‘hierarchy’ in the link between trader-exporters. However, the overall coffee value chain is ‘buyer-driven’, with roasters as the lead firms. While

there have been numerous value chain studies on agro-food industries including coffee, there has been relatively little research on tea value chains, except in Tanzania (Loconto, 2010a, 2010c) and India (Neilson & Pritchard, 2009, 2010; Neilson, et al., 2006). No such study has examined the governance in the tea value chain in Sri Lanka. The theoretical framework (GVC) above will thus be used to address the first research question of the study:

RQ1: How is the Sri Lankan tea value chain governed?

2.3 Standards

Standards have been defined by Nadvi and Waltring (2004, p.56) ‘...as agreed criteria or external points of reference, by which a product or service’s performance, its technical and physical characteristics, and/or the process and conditions under which it has been produced or delivered can be assessed’. Standards communicate information to consumers about a product’s attributes (Ponte & Gibbon, 2005), which may include technical specifications (‘product standards’) or production/process methods (‘process standards’) (Nadvi, 2008). These attributes can be classified into three categories (search, experience and credence goods), according to the degree of information available to a consumer at the point of buying the good (OECD, 2006; Reardon, et al., 2001). In the case of ‘search’ attributes, consumers are able to ascertain a product’s quality before they purchase by inspecting/researching the product (for example, the *colour* of made black tea). ‘Experience’ attributes can only be determined after the product is purchased and consumed (for example, the *taste* of a brewed tea), while ‘credence’ attributes cannot be discerned before or even after consumption (for example, whether the tea has been ethically, socially or organically grown).

Standards fulfil a number of functions, including lowering risk, increasing credibility and trust, and facilitating predictability between buyers and sellers (OECD, 2006). In effect, standards are designed to simplify transactions between anonymous agents in the market by providing an element of certainty about the nature of the product (OECD, 2006). In fact, standards have historically played an important role in facilitating exchange and trade by reducing transaction costs and risks (Nadvi, 2004). The efficacy of exchange is increased by two functions (OECD, 2006): guaranteeing a minimum quality and defining the characteristics of the product or its production process. With the globalisation of production and trade, the demand for standards has greatly increased over recent decades (Nadvi & Waltring, 2004; WTO, 2005).

While traditionally standards were used to homogenise or standardise a commodity, and thereby achieve economies of scale and cater to mass markets, they are increasingly used to differentiate products and cater to niche markets to serve consumers with relatively high incomes (Reardon, et al., 2001). This development has been supported from both the demand and supply sides: on the demand side by richer consumers with sophisticated and wide ranging tastes, and on the supply side by technological advances in production, processing and distribution (Reardon, et al., 2001).

2.3.1 Types of Standards

This section will examine standards by different classifications: product/process, public/private, voluntary/mandatory.

2.3.1.1 Product and Process Standards

A distinction is often made between standards that relate to process/production methods and products (Henson, 2004). Traditionally, standards focused on product characteristics. Product standards as opposed to process standards specify the characteristics of the final product (Caswell, 2003; OECD, 2006). These characteristics are relatively unambiguous (Kaplinsky, 2010) and can include shape, size, weight, safety, authenticity, energy, nutritional content and organoleptic quality attributes such as colour/appearance, taste, texture, etc. (OECD, 2006). Product standards play an important role in goods that are vertically differentiated – that is, products that appear in different varieties but can be categorised according to some objective scale (OECD, 2006). The concept of minimum standard is usually used in reference to vertically differentiated goods – that is, only products that reach a certain level of quality can be considered to have met the standard. An example of product standard is the maximum level of pesticide residues permitted in tea (Reardon, et al., 2001; Reardon & Farina, 2002).

As opposed to product standards, process standards specify characteristics of the production process - that is, the way in which a product is made (Caswell, 2003; OECD, 2006). Labour and environmental standards are two examples (Nadvi, 2008). Process standards specify the production technique used in the preparation of a product from raw material to processing through to the intermediate and final product and distribution (Reardon & Farina, 2002). For example, the international buyer might specify that tea should be organically grown or that tea should be grown and manufactured adhering to Good Agricultural Practices (GAPs) and Good Manufacturing Practices (GMPs) to produce a good quality black tea (Reardon & Farina, 2002).

Process standards are introduced for several reasons (OECD, 2006; WTO, 2005): first and foremost, because they can affect the quality of the goods they produce (i.e., hygiene standards); second, because they affect the efficacy of the production process, and third, because they affect the environment (i.e., pollution standards). The focus of these standards is not what is produced but how, though in some cases like organic food, the questions of 'what' and 'how' are closely related (Nadvi & Waltring, 2004).

In general product standards are unambiguous and require single-point testing and verification at the end of the production process, whereas process standards are more complex, varied and systematic (Kaplinsky, 2010), because they involve documentation of procedures in the production process rather than measuring a single outcome; for example, ISO 9000 and 14000 quality and environmental standards, respectively require continuous documentation of practices and outcomes at various stages of production (Kaplinsky, 2010). Unlike product standards they do not set levels which must be achieved but require that these levels be checked and documented. They are more varied compared to product standards because in some cases they include both documentation of procedures and achievement of clearly defined and measured outcomes (Kaplinsky, 2010). They are more systematic because they typically involve documentation and/or achievement of standards throughout the chain (Kaplinsky, 2010).

Although they are conceptually distinct, it is not always possible to separate product or process standards from one another (Kaplinsky, 2010). In most cases a product standard requires the application of a particular process standard. Conversely, a process standard does not necessarily produce the required product standard. For example, ISO quality and environment standards like ISO9000 and ISO14000 require that relevant information is systematically collected. However, it is possible that producers can meet the required process standards without actually improving the quality and environmental performance (Caswell, et al., 1998; Nadvi, 2004). In a number of countries, there has been a shift from regulating the product to regulating process or emphasizing performance criteria for achieving food quality product towards process standards (OECD, 2006; Reardon, et al., 2001) (see Section 2.3.2.3 below).

2.3.1.2 Public and Private Standards

Broadly, standards have been classified into private and public standards although the line separating them is not always well-defined (OECD, 2006; WTO, 2005). In many instances, standards adopted by governments have their origins in the private realm (OCED, 2007; WTO, 2005). Often public standards specify minimum safety requirements, leaving the private sector to fill the gap beyond the minimum (Hammoudi, et al., 2009; Henson & Reardon, 2005), even though this risks standards becoming outmoded and the private sector creating its own.

Traditionally governments have played an important role in establishing minimum standards and removing from the market products which do not meet them (OECD, 2006). The rationale for public standards in the food sector is to reduce risks to human health from contaminated food and food-borne hazards and to protect consumers from fraud or deceptive practices of sellers. Information deficiencies consumers face with respect to food safety and quality are the greatest in the case of credence goods (Reardon, et al., 2001), requiring intervention by imposing mandatory public standards (OECD, 2006). Public standards cater to the interests of all actors in the economy – both producers and consumers and the society at large (OECD, 2006). In other words, food safety is a ‘public good’ that would go largely unserved in a private market (Kindleberger, 1983).

Private standards refer to particular labels used by private companies to differentiate their products and to indicate their superior quality (Humphrey & Memodovic, 2006). For example, the Nature’s Choice label developed by the UK supermarket, Tesco, guarantees superior safety, quality and environmental standards through monitoring and certification of its suppliers (Dolan & Humphrey, 2004; Humphrey & Memodovic, 2006). Private standards can also be collectively developed by groups of firms and business associations (Humphrey & Memodovic, 2006; Lee, et al., 2012). In the food industry, these standards include: the GlobalGAP standard developed by EUREP (an association of European fresh producers and retailers), the UK British Retail Consortium (BRC) standard for food processing and the Franco-German International Food Standard (IFS) (See FAO, 2007). These standards vary in the food products they cover, the points in the value chain they focus on and the extent to which they rely on certification and third-party verification (Humphrey & Memodovic, 2006). Compared to public standards, private standards are assumed to take account of profits and thereby interests of firms/private bodies (OECD, 2006). They are also expected to reflect the interests of consumers (OECD, 2006).

Private standards can also be set by non-government organisations or NGOs (Lee, et al., 2012; WTO, 2005). NGOs tend to be non-profit oriented and do not necessarily pursue the same objectives as government or businesses. They focus on ethical and environmental concerns such as the labour conditions under which the good is produced or what the impact of the production is on the environment (Kaplinsky, 2010). Although still a small segment of the global market, pressures are leading to their adoption by large businesses and increasingly becoming mainstream. For example, multinationals such as Lipton, Kraft, Mars and Ikea have adopted the Rainforest Alliance label (Gardner, 2012), which focuses on conserving biodiversity and ensuring sustainable livelihoods (Rainforest Alliance, 2003). However, one problem with standards driven by NGOs is that there are a number of confusing and overlapping standards confronting producers and consumers due to multiplicity of organisations involved (Gardner, 2012). Moreover, it is still unclear whether they make a marked difference in improving sustainability along the chain compared to their commercial counterparts (Lee, et al., 2012).

Private standards are voluntary but this does not make them less important, especially if producers seek to sell into niche markets (Kaplinsky, 2010). Private standards are used for a variety of reasons: to supplement missing/inadequate public standards, to increase profit through product differentiation and to reduce costs/risks in the supply chain by standardising products across suppliers (Gereffi & Lee, 2009; Lee, et al., 2012). Private standards are here to stay and large retailers will enforce them, together with other commercial requirements, as competition intensifies (Fulponi, 2007). Thus private standards will continue to increase in scope and stringency (Lee, et al., 2012; OECD, 2007). Table 2.4 provides a typology of food safety and quality standards as defined by who sets them.

Table 2.4 Examples of public and private food safety and quality standards

	Public		Private	
	Mandatory	Voluntary	Voluntary (Collective)	Voluntary (Individual)
National	- National Legislation (pesticide uses, sanitary inspections)	- Food safety enhancement programme - HACCP advantage - SQF - USDA's National Organic Programme	- Dutch HACCP - BRC Global Standard - Assure Food Standard - Qualität und Sicherheit - Intergrate Keten Beheersing - US's Pork Quality Assurance Program	- Nature's Choice - Field-to-Fork (Marks & Spencer, UK) - Filière Agriculture Raisonnée (Auchan, France) - Filière Qualité (Carrefour, France)
International	- EU regulations - WTO regulations	- ISO9000 - ISO22000	- International Food Standard - SQF - GlobalGAP	- Same as above for multinational companies

Source: Henson, 2006

2.3.1.3 Mandatory and Voluntary Standards

Standards, whether public or private, can be set in a number of ways, giving the users the freedom to comply or not (Henson, 2004). Standards can be mandatory in a legal sense or required in practice due to large numbers of buyers requiring them. Standards can also be voluntary so that users can decide whether to comply or not. Standards on a continuum range from mandatory to voluntary according to the extent to which users have freedom of choice and action regarding compliance (Henson, 2004). At one end are mandatory public regulations establishing minimum standards, while at the other users can decide to comply or not with voluntary standards. Voluntary standards can become *de facto* mandatory if compliance is obligatory for entering or remaining in a particular value chain. Private standards are by definition voluntary, while public standards can be either voluntary or mandatory, providing little leeway in terms of compliance (OECD, 2006; WTO, 2005).

Mandatory standards, also referred to as technical regulations (WTO, 2005), are set by governments and compliance is obligatory; only products meeting them are allowed to be sold

in a market (Hammoudi, et al., 2009; OECD, 2006). They are enforced through official inspection of the production facilities and/or the end product (Henson, 2006). In some areas mandatory standards are more predominant, especially when they relate to health and safety since buyers are not capable of assessing reliably the safety of the product prior to purchase/consumption and the cost of doing so is high (these are also referred to as 'experience goods'). Examples include food, drugs, toys, fire prevention and fighting, building materials, electrical appliances, gas appliances, protection of the environment etc (Henson, 2004). In the past, most standards introduced by government were mandatory. However, increasingly public regulatory agencies have developed voluntary standards in these areas, such as *label rouge* in France (OECD, 2006).

Voluntary standards can arise from a formal coordination process involving participants in the market, with or without the participation of government, to develop a technical specification to meet their collective needs (Henson, 2004, 2006). A number of private actors may be involved in the establishment of voluntary standards, including industry and trade organisations. The standard developed by private setting bodies, for example, the Safe Quality Food (SQF) Institute and the BRC, are examples specific to food safety and quality (Henson, 2006). Members of the group came together and formulated technical specifications which met their collective needs.

While the use of these standards is voluntary, complying with some is increasingly becoming necessary to access certain value chains; for example, large retailers with market power are enforcing them along with other commercial requirements like volumes, flexible delivery schedules, etc. (OCED, 2007), in which case, the standards can be considered *de facto* mandatory. *De facto* mandatory standards can arise from an uncoordinated process, due to market based competition between private firms (Henson, 2004). When a particular set of specifications gains a significant market share, adhering to them becomes crucial to remain in or enter that particular market. Under such circumstances the specifications can be considered *de facto* standards, though not legally mandated. For example, the Nature's Choice standard of Tesco Stores in the UK commands a market share of over 30% (Dolan & Humphrey, 2004; Henson, 2006; Humphrey & Memodovic, 2006). While the standard is private and not legally binding, as shown in Table 2.4 suppliers have little or no choice but to comply if they wish to supply Tesco supermarkets. Similarly, ISO9000 series of standards on quality management and ISO14000 series on environment management systems have become widespread in both

developed and developing countries and as such have become *de facto* mandatory alongside product and process standards (Henson, 2004).

In most developed markets voluntary and mandatory standards co-exist and operate together (Lee, et al., 2012; OECD, 2006). Voluntary standards can evolve as a means of complying with mandatory standards or to demonstrate compliance; for example, compliance with voluntary standards can be used as a means to demonstrate 'due diligence' required by liability regulations (Lee, et al., 2012). Mandatory standards can also reference private standards as a requirement, for example, the inclusion of HACCP among the regulatory requirements for meat and meat products in the US, Canada and the EU (Caswell, et al., 1998), and this can reinforce the use of voluntary standards and thereby increase their acceptance. In fact, voluntary standards can not only co-opt but also pre-empt mandatory standards (McCluskey & Winfree, 2009).

According to Henson (2004), most standards will be mandatory and public in the case of low-income countries. But as the economy develops and becomes integrated with the outside world, there is greater incidence of voluntary public and private standards. In the case of developed countries, many private standards have become *de facto* mandatory, as the dominant buyers impose their requirements on suppliers. In this regard, Henson (2006) notes a shift from mandatory standards as the predominant form of governance to more voluntary forms of governance driven by the private sector across agricultural and industrial sectors.

Having explained the broad differences in standards, the next section will review the changing standards environment governing agro-food industries in recent years.

2.3.2 Changing Standards Environment

The standards environment has transformed in recent years, displaying four major trends (Humphrey & Memodovic, 2006): 1) increasing stringency of public mandatory standards; 2) shift from product standards to process standards; 3) increasing importance of private standards; and 4) increasing scope of standards. These trends will continue to be reinforced in the future, with the result that food standards will become increasingly demanding (Caswell, 2003).

2.3.2.1 Increasing Stringency of Public Mandatory Standards

Over the past two decades, public awareness and concern regarding food safety in industrialised countries have increased in light of a series of highly publicized food scares and scandals (Henson & Caswell, 1999; Henson & Jaffee, 2008; OECD, 2006; World Bank, 2005). In response to these events and consumer concerns, public food standards have tended to become stricter (Henson & Jaffee, 2008; Humphrey & Memodovic, 2006). Increasingly, public regulatory authorities have to address new potential food-borne risks while attempting to improve control on established risks or areas which were previously less-regulated or unregulated (Caswell, 2003; Henson & Jaffee, 2008; Jaffee & Henson, 2005; Unnevehr, 2003). In the EU, for example, controls on pesticide residues have been increased, as have those relating to colouring and purity, while certain veterinary drugs have been banned in meat and seafood (Humphrey & Memodovic, 2006). Similarly, tightening can be seen in other developed countries and in other areas of concern (Humphrey & Memodovic, 2006).

Many governments have made efforts to apply food quality regulations which are less burdensome by shifting towards performance-based measures that allow greater flexibility to achieve the required level of food quality in a cost-effective way (Humphrey & Memodovic, 2006). For example, requirements are being put in place for process controls based on HACCP principles for the manufacture of food in recognition that end-product testing is an expensive and inefficient form of quality control (Caswell, et al., 1998; Humphrey, 2006). These developments have implications for the level and form of enforcement by public authorities, as performance-based regulations and HACCP process standards rely on enforcement through firm audits of production records, reducing the need for regular visits to production sites.

These changes have been accompanied by significant institutional changes and intensified border control on food imports in the industrialised countries (Henson & Jaffee, 2008; Jaffee & Masakure, 2005). For example, independent regulatory bodies focusing on public health and consumer protection have been set up in Europe, Australia, New Zealand and the US (Humphrey & Memodovic, 2006).

2.3.2.2 Increasing Importance of Private Standards

As public standards and oversight have changed, there have been a number of private initiatives undertaken to address food safety risks and consumer concerns (Jaffee & Henson, 2005). Private standards have evolved in response to regulatory and institutional

developments and consumer demands for higher quality and safety and to safeguard against reputational and/or commercial risks (Henson, 2006). In fact, emergence of private standards in Europe was a 'direct response to the increased stringency of public standards and the obligations they place on food companies' (Humphrey, 2006, p.579). In some countries, ensuring food safety was made the responsibility of the private sector and product liability legislation provided the incentive to food producers to sell products of acceptable quality and safety. Under liability laws, companies were also held accountable for damage or harm caused to a consumer from a product sold by them. This led to proliferation of private codes of practices, standards and other forms of supply chain governance to signal to both regulators and consumers (Jaffee & Masakure, 2005). These efforts have been driven by large food retailers (supermarkets), food manufacturers and food service operators (Henson, 2006; Henson & Jaffee, 2006).

Private standards have also allowed companies to differentiate their products and position themselves in competitive markets, especially in high-value-added products (Henson & Reardon, 2005). Many firms found public standards to be inadequate in this regard (Reardon, et al., 2001). Consequently private standards emerged to fill this gap (OECD, 2006; Reardon & Farina, 2002). The use of private standards is refocusing value chains from price-based to quality-based competition, and quality standards are now increasingly used to develop and differentiate products and markets (OECD, 2006). This is supported from both demand and supply sides: richer consumers with sophisticated and varied tastes and production, processing and distribution technologies, respectively (Reardon, et al., 2001). This phenomenon is not only confined to developed countries; private standards governing food safety are being applied more widely in middle- and low-income countries, driven by multinational supermarkets, restaurant chains and competitive responses by local companies (Reardon, et al., 2001).

As private food and retail businesses expand across the world and develop global value chains, they increasingly set standards for food that they purchase from suppliers and sell to consumers (Jaffee & Henson, 2005). These standards may be higher and more demanding than the minimum standards required by governments in their own markets (Fulponi, 2007; Martinez & Poole, 2004; OECD, 2006). They appear to be increasing in their scope and depth, reaching into areas such as labour, environment, etc. (Fulponi, 2006). By being able to respond more quickly to changing consumer demands, private standards can be more flexible, forward-looking and responsive than public standards (OECD, 2006).

The role of private standards has been growing in importance since the 1990s (Martinez & Poole, 2004) and arguably private rather than public standards are becoming predominant forms of governance in international markets for agricultural and food products (Henson, 2006). However, it is important to note that public standards still remain the predominant forms of governance in some agricultural and food products and in many countries around the world, especially in developing countries and even in developed countries such as Japan (Henson, 2006; World Bank, 2001).

2.3.2.3 Shift from Product Standards to Process Standards

Since the 1980s, there has been a shift in emphasis in a number of countries from product to process standards (Nadvi, 2004). This reflects both the inefficiency and inefficacy of traditional approaches to food safety control based on product standards and end-product testing (Jaffee & Henson, 2005). Although inspection of a product to check if it meets a required specification remains important, it is now widely acknowledged that such screening has limitations, since testing can be expensive and many hazards can contaminate food products at several points in the production process (Unnevehr, 2000). Today, there is greater focus on the production process along the length of the supply chain (Henson & Jaffee, 2006; Unnevehr, 2003).

In this regard, a notable example of a process standard is HACCP, which has been adopted by food processing industries in many countries (Caswell, et al., 1998; Henson & Jaffee, 2006; Humphrey & Memodovic, 2006). For example, the US has made it mandatory in plants processing meats, poultry, fish and fruit juices, while the EU requires HACCP from suppliers of dairy, meat and fish products (World Bank, 2005). Though the introduction of systems such as HACCP imposes additional costs, since they require establishment and verification of new systems, they provide better management systems for companies and guides to achieve compliance. HACCP is just an example of the increasing trend towards the broader application of systematic approaches to food safety that emphasise risk identification and management along the food value chain 'from farm to fork' (Humphrey & Memodovic, 2006, p.18) .

The shift towards process controls in food safety was clearly established by the European Food Safety Authority (Humphrey & Memodovic, 2006). In the EU's approach, food safety is seen as a product of the value chain and thus risks have to be managed at all points, along with traceability of the product (FAO, 2007). The EU's approach places the responsibility for food safety on food operators and builds on the *UK Food Safety Act*, which requires that retailers

demonstrate that they have undertaken necessary steps to ensure product safety during manufacturing, transportation, storage and preparation (Dolan & Humphrey, 2004).

2.3.2.4 Increasing Scope of Standards

Standards have become comprehensive in coverage over the years, as shown in Table 2.5: quality (i.e., appearance, cleanliness, taste); safety (i.e., pesticide or artificial hormone residues, microbial presence); and goodness of production process (i.e., worker health and safety or environment effects). For example, while GlobalGAP's main objectives are safety of fresh fruits and vegetables and ensuring compliance with pesticide and chemical use and application, it also focuses on environmental and social impacts (FAO, 2007). Thus it addresses issues of sustainability and working conditions (Humphrey & Memodovic, 2006).

Table 2.5 Food safety, product quality and social/environmental standards

Food safety	Product quality	Social/environmental
Pesticide use and residue limits	Grading	Recycling requirements
Food additives	Freshness	Organic production requirements
Hygiene requirements	Product composition	Labour standards
HACCP	Product cleanliness	Fair trade standards
Traceability requirements	Labelling requirements	CSR

Source: World Bank, 2005

The broadening of the scope of standards is aimed at differentiating products and responding to pressures on retailers from consumers and civil society groups. For example, consumers in Europe have become increasingly concerned about food safety and the ethical and environmental conditions under which food is produced and distributed (Jaffee & Masakure, 2005). Increasingly, consumers in developing countries are also demanding safer, high quality and more consistent products (Henson, 2004). Standards continue to evolve in response to changes in technology as well as changes in consumer demands (OECD, 2006).

In summary, a large number and a wide range of standards are being implemented at the local, regional and international levels, covering both products and process characteristics. This is more evident in developed countries but also increasingly in middle- and low-income countries. Consequently, export-oriented industries in developing countries are subjected to

multiple standards. Different types of standard can have different outcomes and in some cases they may conflict with one another (Henson, 2004). They may be subjected simultaneously to a range of standards and disentangling impacts of each is problematic.

2.4 Challenges and Opportunities in Complying with Standards

Standards are increasingly governing world production and trade, presenting both as a challenge and an opportunity to producers and exporters in developing countries. Complying with standards has become a major determinant of market access, particularly in high-income markets (Kaplinsky, 2010) and high-margin market segments (Ponte and Gibbon, 2005, Ponte, 2005). At the same time, compliance can be problematic (Humphrey & Memodovic, 2006) and is a great source of concern for many developing countries, as failure to comply may result in loss of market, fall in employment and industry decline (Nadvi, 2004). Moreover, it may impede trade and affect export-led agricultural growth and rural development (Henson & Jaffee, 2008; Wilson & Abiola, 2003).

Agriculture remains a source of significant economic growth in many developing countries (DFID, 2002). Historical experience suggests that agricultural growth and increase in agricultural productivity are necessary for broad-based economic growth and development (DFID, 2002). Agricultural growth provides a direct link to the poor and is more effective for poverty reduction compared to growth in other sectors (DFID, 2002). Thus increasing production and export of agricultural products can be an effective way of reducing poverty in developing countries (Humphrey & Memodovic, 2006). In this context, attention has increasingly been focused on the potential role of standards to act as barriers to trade in agro-food exports from developing countries, as traditional tools for managing imports and controlling market access such as quotas and tariffs have been progressively reduced over time through multilateral trade negotiations (Henson & Jaffee, 2008; Kaplinsky, 2010; OECD, 2006; World Bank, 2001). Some have compared standards 'to seabed rocks appearing when the tide goes down' (WTO, 2013).

Food safety standards can affect trade through explicit or partial bans on exports from other countries because they fail to meet food safety standards or through additional costs of compliance associated with meeting product/process requirements, which can be quite high, and thereby reduce competitiveness of exports (Henson, 2003; Jaffee & Henson, 2005). Bans can be applied to a product or restricted to a particular variety of the product or supplies from

particular countries/regions and/or imports at a particular times of the year (Henson, 2004). These are usually applied temporarily to products that pose the greatest risk to humans (Henson, 2003).

While food safety measures can be used for legitimate reasons, such as ensuring human safety and health, there is strong suspicion in developing countries that they are used as a non-transparent protectionist tool, to prohibit imports or discriminate against imports by applying higher standards than on domestic suppliers or frequently making changes to these to provide protection for domestic producers (Athukorala & Jayasuriya, 2003). Even if comparable measures are equally applied to both domestic and imported products in developed countries, they may affect imports from developing countries because of asymmetry in compliance costs (Athukorala & Jayasuriya, 2003). The WTO, through the Agreement on the Application of Sanitary and Phytosanitary (SPS) Measures, has attempted to overcome potential negative trade effects of food safety and quality standards (WTO, 2013). SPS agreement specifically applies to food (sanitary standards) and animals and plants (phytosanitary standards) (World Bank, 2001). The SPS agreement allows for the application of measures by countries for legitimate reasons (to protect human, animal or plant life or health), as long as they are scientifically justified and they are the least distortive options available (WTO, 2013). Thus the Agreement aims to minimise arbitrary or unjustified discriminatory use of standards and promote transparency and harmonisation (Henson & Jaffee, 2008). However, the experience of the SPS Agreement to date has been mixed (Roberts & Unnevehr, 2005), lagging behind original expectations (Athukorala & Jayasuriya, 2003).

The potential of standards in developed countries to act as non-tariff barriers to developing country exports of agricultural and food products is now widely recognised (Henson, 2004; Henson & Loader, 2001) and there is ample evidence (Athukorala & Jayasuriya, 2003). To date, most empirical evidence on the impact of standards on trade has been drawn from incidence of border detention data (especially from the US and the EU), issues raised through the WTO (complaints and counter-notifications made through the WTO's SPS Committee), specific in-depth case studies and a limited number of quantitative studies (Henson, 2004). For example, data from the US and EU suggest that the incidence of detention/rejections at the point of imports has been rising due to number of factors, including tightening and/or harmonisation of standards within the EU, application of new standards for formerly unregulated risks and increased capacity for inspection/enforcement (Henson, 2004). Certain agricultural and food

products, namely fish, meat products, fruits and vegetables, figure prominently in the dataset (Henson, 2004).

There are also in-depth case studies which show how food safety requirements have affected exports of fish (Abila, 2003; Cato & Subasinghe, 2003), groundnuts (Salay, 2003), and fresh fruits and vegetables (Calvin, Flores, & Foster, 2003; Norton, Sanchez, & Clarke-Harris, 2003) from developing countries. There have been few quantitative studies (Beghin & Bureau, 2001; Otsuki, Sewadeh, & Wilson, 2000) measuring the impact of standards on trade, due to complexities in the measurement (Jaffee & Henson, 2005). One of the widely cited is Otsuki et al. (2000), who quantified the impact of aflatoxin (toxic by-product of mould infestation) standard implemented by the EU on food exports from African countries. The authors estimated the impact of changes in differing levels of protection, based on the EU standard and those suggested by international standards, for 15 European countries and nine African countries. Their results suggested that the implementation of the new aflatoxin standard in the EU will have a significant negative impact on African exports of cereals, dried fruits and nuts to Europe. The EU standard will decrease exports by 64% or \$US670 million in contrast to regulation set at an international standard by Codex Alimentarius (Otsuki, et al., 2000).

While the predominant focus of the literature has been on effects of public regulation and standards governing food safety and quality standards on exports, there is also increasing recognition of the important role private standards play in international trade in agricultural and food products (Henson, 2006; Tallontire, et al., 2011). As discussed in Section 2.3.2, much of the oversight and monitoring now comes from the buyers, especially supermarkets and their buying agents, rather than from regulations imposed by importing countries (Jaffee & Henson, 2005). Thus private standards can impede trade the same way as public regulatory requirements/standards (Henson, 2003; Martinez & Poole, 2004) . In fact, there are greater concerns about the potential for private standards to act as barriers to trade given that they fall outside the WTO's SPS agreement aimed at providing discipline in the use of food safety and quality measures (Henson, 2006).

Even if standards are not intentionally used to discriminate against imports but are used for legitimate reasons, many developing countries, especially low-income countries, do not have adequate administrative, technical, financial and scientific capacities to comply (Henson & Jaffee, 2008; World Bank, 2001), let alone participate effectively in negotiations governing standards or formalise disputes when standards are used to discriminate against their exports

(Athukorala & Jayasuriya, 2003; Henson & Jaffee, 2006). Importing countries frequently require assurances/guarantees that imports are free from certain pests/diseases, minimum standards of hygiene have been observed in production, and products do not contain excessive amounts of pesticide residues and other contaminants. Developing countries need the necessary capacities – institutional structures and procedures, infrastructure and human capital, etc. – to comply with these requirements and demonstrate compliance (Jaffee & Henson, 2005). For example, in Kerala and Kenya the fish and fisheries sectors struggled to comply with stricter controls on hygiene required by the EU, due to inadequate legislation on fish processing, poorly defined administrative responsibilities for the approval and inspection of processing facilities and certification of exports, weak inspection systems for processing facilities, inadequate laboratory testing capacity and poor hygiene controls through the supply chain (Henson & Mitullah, 2004; Henson, Saqib, & Rajasenan, 2005). The capacity of a country to comply with standards broadly reflects the level of its economic development and external openness. For example, public infrastructure and institutions are generally poor in developing countries, which cause a drag on responding to standards (Reardon, et al., 2001).

Although administrative, technical and financial costs of compliance can be manageable at the country level, the challenges may be too much at the firm level (Henson, 2004), especially for products where margins are low due to competition (World Bank, 2005). Among the challenges often cited by exporters of fresh fruit and vegetables in complying with standards, specifically with regard to the GlobalGAP required by supermarkets in Europe were recordkeeping by producers, verification of chemical use, management of different standards and their compliance, certification, transforming the mindset of producers and meeting diverse country regulations (Fulponi, 2007). For producers, the main challenges were related to changes in agronomic practices, which included meeting food quality standards (harvest and post-harvest operations) and safety standards (chemical use, worker hygiene, etc.), record-keeping and traceability, investments required in buildings and equipment, information on foreign market regulations and private standards (Fulponi, 2007).

There are various costs associated with complying with standards and these can be high and affect the competitive positions of suppliers in developing countries (Athukorala & Jayasuriya, 2003; Henson & Jaffee, 2008), and reduce their profitability (World Bank, 2001). The costs associated with compliance can come in various forms, including fixed investments in adjusting production and processing facilities and practices, recurrent personnel and management costs to implement the standard, certification, etc. (Henson, 2004; Humphrey & Memodovic, 2006).

The most binding constraint in meeting standards is the upfront cost necessary to upgrade the factory/farm to be compliant (Fulponi, 2007). However, once compliant, recurrent costs of standards associated with audit and certification costs, etc., are not excessive in relation to sales; for example, complying with GlobalGAP, amounted to 1% or less of sales in Chile, 4% in South Africa and between 4-15% in Peru, depending on the volumes (Fulponi, 2007). Recurrent costs can be reduced much further, now that some standards such as GlobalGAP allows for group certification (OCED, 2007). However, these costs can still be simply unaffordable for many small firms and farmers (Reardon, et al., 2001).

Recording keeping at factory and farm levels has become complex because more and more information is required by buyers to comply with standards like GlobalGAP (Fulponi, 2007) and organic approaches (Raynolds, 2004). In the case of GlobalGAP, traceability requirements down to field level and the chemical application history are sometimes required and this can be a 'formidable task' (OCED, 2007). This has meant many factories and farms need managers to undertake detailed record keeping, which increases their costs of production (Fulponi, 2007). Generally, workers have low levels of literacy and they are not in a position to undertake such a task. Small producers/farmers face similar predicaments (OCED, 2007; Raynolds, 2004). Both exporters and producers found that requirements related to maximum residue levels (MRLs), micro-biological contamination prevention, pesticide selection, application and post-harvest testing, record keeping and traceability were costly and difficult to comply with (Fulponi, 2007). For many of these requirements, skilled labour is needed and it is often scarce.

Moreover, the growing complexity and lack of harmonisation can also adversely affect trade from developing countries (Henson & Jaffee, 2008; Jaffee & Henson, 2005). Exporters often face distinct standards in each of the markets that they supply. Standards may differ between countries, products and supply chains for several reasons: distinct tastes, diets, income levels, perceptions, differences in climate, and production/processing technology (Henson & Jaffee, 2006; Jaffee & Henson, 2005). Often developing countries must comply with several public and private standards simultaneously, requiring duplicative audits/tests for the same product though the standards are certifying conformity to similar sets of attributes (Fulponi, 2007; OCED, 2007). This increases costs as well as time, and can be a constraining factor if it does not lead to higher sales (OCED, 2007). And in some cases, there is uncertainty in how some countries implement standards, especially given a paucity of international standards for many agro-agricultural food products (Jaffee & Henson, 2005). Henson and Mitullah (2004) note that

developing countries have to meet a variety of standards in the US, EU and Japan when exporting fish products to these markets. Similarly, Mathews, Bernstein and Buzby (2003) highlight the range of product and process standards countries require to handle the risks of Salmonella contamination from processing and other stages of production in poultry products. The lack of harmonisation of standards is compounded by differences in conformity assessment procedures; together they raise production and transaction costs, reducing ability to achieve economies of scale (Jaffee & Henson, 2005). In the case of tea, there are challenges for tea exporters to comply with differing Maximum Residue Levels (MRLs) established in importing countries (Goonetilleke, 2006; TradeStandards.org, n.d.). Currently, harmonisation of MRLs for tea is under discussion (Lanka Business Online, 2011; TradeStandards.org, n.d.).

The complexity of the standards environment has been further increased by the expansion of process-based standards relating to production and the proliferation of private standards, such as the BRC and GlobalGAP standards, which combine food safety, environmental and social concerns. While the range and stringency of standards are likely to differ significantly between markets, the situation is likely to provide opportunity for exporters to choose the standards with which they can comply, at least in the short to medium term (Henson & Jaffee, 2006; Jaffee & Henson, 2005). Nevertheless, the considerable variation in standards across countries and products is a worry for developing countries (Henson & Jaffee, 2006). To overcome this problem, for example, the Export Association of Chile (ASOEX), together with the Chilean government, has developed ChileGAP, incorporating the GAP requirements of its two main markets, the US and the EU, enabling the fresh fruit and vegetable sector to supply both markets with one certificate (OCED, 2007).

Together these challenges may adversely affect developing countries, especially low-income countries and small suppliers. Indeed, there is a general concern that rising standards are marginalising the position of smaller and poorer countries and weaker players (Maertens & Swinnen, 2009; Wilson & Abiola, 2003), especially producers and exporters, who do not have access to finance and skilled labour, etc., (Fulponi, 2007) compared to larger companies, (Hammoudi, et al., 2009). A particular issue is smaller players being disadvantaged where there are economies of scale associated with complying with the standard (Henson, 2004; Loader & Hobbs, 1999). The necessary investments to comply can be 'lumpy'; for example, setting up laboratories and cold storage facilities is economically viable only for large-scale operations and prohibitive for small-scale businesses (Fulponi, 2007). Likewise, hiring skilled technical personnel will be difficult in the case of small companies. The changes that may be required

can be sometimes overwhelming for small operations, though the investments may not be substantial. Sometimes certifying that the standards have been met may be more difficult for small exporters and producers (smallholders) than complying with the food standard requirements, because of low levels of education (which is an obstacle to understanding and adopting standards required by regulation or buyers), lack of record keeping skills, low management skills, low technical agronomic knowledge, poor hygiene habits, lack of business-like mindsets, lack of access to credit for upgrading or equipment and meeting certification costs, poor participation in associations, etc. (OCED, 2007).

These problems may lead to rationalisation and concentration within chain (Hammoudi, et al., 2009; Reardon, et al., 2001) among the large exporters and producers that are capable of complying with food standards while small- and medium-scale firms, including smallholders may be marginalised or excluded from export markets (Athukorala & Jayasuriya, 2003; Lee, et al., 2012; Wilson & Abiola, 2003). For example, evidence suggests that exporters of fresh vegetables in Kenya have responded to stricter pesticide controls in the EU by procuring from a few large commercial farmers who are easier to oversee than numerous small scale farmers (Henson, 2003). The experience of the Kenyan fresh vegetable industry is often cited in the literature as an example of adverse implications of rising standards for small farmers (Fulponi, 2007).

Fresh vegetable production for UK markets began in 1970-80s with small farmers and medium-large scale farms selling their produce to exporters (Dolan & Humphrey, 2000, 2004). As food safety standards rose and fresh produce became a key item in competition for market share, purchasing from the wholesale markets was no longer a reliable source for the quantity and quality required by supermarkets. Supermarkets started to buy directly from importers and exporters in the 1990s and they developed their own codes of conduct and introduced procedures to monitor them, prompted by the *UK Food Safety Act* (Dolan & Humphrey, 2000, 2004). This led to tighter linkages between supermarkets and importers, and Kenyan exporters and growers. Consequently, production moved away from smallholders to large farms which were owned by exporters, while those smallholders that remained in the value chain were organised into out-grower schemes with a high degree of supervision by exporters.

In cases where agro-food production is dominated by smallholders, and exporters need supplies to meet the required volumes in the export market, exporters may finance inputs, provide training, monitor production, manage and undertake chemical application and do the

record keeping and thereby assist the smallholders to become certified (OCED, 2007). However, exporters may still find it difficult to control volumes and ensure continuity in supplies from a large number of smallholders, thus necessitating backward integration into production or they prefer to deal with well-established large suppliers that are capable of providing consistently adequate supplies at the required quality (Dolan & Humphrey, 2004).

Usually the perception is that the actions and costs associated with compliance are unjustified and burdensome on developing country suppliers. It is perceived that these requirements lack scientific bases or involve costly arrangements when there are simple or less costly alternatives that can achieve similar outcomes (Henson, 2004). Moreover, suppliers do not obtain substantial benefits beyond continued market access, despite the considerable costs involved in complying. In fact, much of the earlier research viewed standards as barriers to trade, restricting market access of agricultural and food exports from developing countries with no or little attention given to their positive effects (World Bank, 2005). However, more recent literature shows a more varied picture and the situation is not as dire or 'problematic' as it was generally perceived to be (Henson & Jaffee, 2006; Jaffee & Henson, 2005). Other than gaining access to global value chains, benefits from complying with standards include developing longer-term trading relationships and improving efficiency in operations from reduced costs through better use of inputs, improvements to organisation of tasks, better information on proper use and storage of pesticides, improvements in worker safety through proper attire and through changes in storage, etc. (Fulponi, 2007).

Standards may well provide incentives for modernisation of export supply chains (Bain, 2010), while compliance may stimulate capacity building in the public sector (Jaffee & Henson, 2005). Some also point out that, under certain circumstances, developing countries and their suppliers can make use of standards for their own competitive advantage by repositioning themselves into high-value-added segments and increasing their export performance, thereby securing access to lucrative markets or access new markets. For example, leading Kenyan fresh produce suppliers have transformed themselves in response to and anticipation of changes in official regulations and private standards and thereby moved up the chain to relatively more profitable and faster growing value-added segments of the European fresh vegetable market, which are demanding in terms of quality assurance and food safety (Jaffee, 2003; Jaffee & Masakure, 2005). To this end, the industry has invested substantially to improve production and procurement systems, upgrade packing houses and implement food safety management systems (Jaffee & Masakure, 2005). Similarly, Indian fish processing plants that have invested

in sophisticated systems of hygiene control are making efforts to access higher value markets for processed and semi-processed products (Henson, et al., 2005). Thus compliance can potentially avert pitfalls of globalisation, particularly the 'race to the bottom', where developing countries engage in downward spiralling competition based on lowering prices/wages and, violating labour and environmental norms (Nadvi & Waltring, 2004) by catering to higher value-added or niche markets. This 'branding from below' can counter the 'branding from above' effort by international buyers (retailers) (Humphrey, 2006).

Furthermore, adopting standards can have spill-over effects on the rest of the economy by raising domestic standards through the adoption of good agricultural practise (GAP) and good manufacturing practices (GMP) , etc., thereby benefiting consumers of the product (Henson & Jaffee, 2008; Jaffee & Henson, 2005). In such a context, part of the costs of compliance could be considered necessary investments which would enhance the capacity to meet stricter standards. While the emergence of standards poses a serious challenge to many developing countries in accessing lucrative markets abroad, they also provide potential opportunities. Rather than reducing competitiveness of developing countries, stricter food safety standards may potentially create new sources of competitive advantage (Henson & Jaffee, 2006, 2008). However, the potential for competitive repositioning depends on the manner in which countries and their suppliers respond to emerging standards (Henson & Jaffee, 2006, 2008) (see Section 2.5, below).

2.4.1 Costs and Benefits Associated with Standards Compliance

Compliance costs have been defined as 'additional costs incurred by government and private sector in meeting requirements to comply with a given standard in a given market' (World Bank, 2005, p.67). Compliance costs are imposed both on public and private sectors (Henson, 2003). For example, in order to establish a 'competent authority' recognised by trading partners, government controls may need to be strengthened while institutional structures may need to be reformed or even put in place, if they are absent. In addition, the private sector may have to upgrade infrastructure/equipment, implement new practices, etc.

In assessing costs, an important distinction has been made between 'recurring' and 'non-recurring costs' (World Bank, 2005) (see Table 2.6). 'Non-recurring costs' are one-off or time-limited investments made in order to achieve compliance. Usually these may include upgrading infrastructure and processing facilities, establishing new procedures/practices,

training of personnel, the cost of designing new management system such as the HACCP system, etc. Some of these investments can be 'lumpy' for which there are significant economies of scale. For example, the fisheries sector in Kerala had to make significant improvements in basic infrastructure and implement HACCP to comply with EU requirements (Henson, et al., 2005). The required changes varied between individual processing facilities. In extreme cases, plants had to be extended or the entire layout changed. Many plants also installed ice-making and laboratory facilities, upgraded water treatment and increased chilling room facilities. 'Recurring costs' include training, certification/testing, and other production costs associated with complying with the standards.

Table 2.6 Examples of recurring and non-recurring costs of compliance

	Tangible	Intangible
Non-recurring	<ul style="list-style-type: none"> • Upgrade of laboratory facilities • Upgrade of processing and farm level facilities 	<ul style="list-style-type: none"> • Reduced investment in new product development • Reduced investment in domestic food safety controls
Recurring	<ul style="list-style-type: none"> • Cost of collection and analysis of laboratory tests • Additional procurement costs for buying certified raw materials • Additional overhead costs of implementing HACCP 	<ul style="list-style-type: none"> • Reduced flexibility in production process • Reduced enforcement of domestic food safety controls

Source: World Bank, 2005

A further distinction in costs is made between 'tangible' and 'intangible' costs of compliance (World Bank, 2005). While tangible costs are easy to identify (i.e., cost of upgrading infrastructure/equipment), intangible costs are more difficult to identify, let alone quantify. In many cases they are indirectly related to compliance (i.e., forgone opportunity cost of investments, etc). Most attempts to assess costs of compliance with new standards ignore intangible costs, though they may be more significant than tangible costs (World Bank, 2005).

The level and relative significance of compliance costs varies across countries, industries and individual companies/farmers (Henson, 2004). Important factors which affect compliance costs include the prevailing structure and conditions of the industry, range and extent of administrative and scientific capacities, level of effective intra-industry and public-private

cooperation, strength of existing technical service industries (Henson, 2004) and the standard in question (Fulponi, 2007). For example, in a mature and reasonably well-developed export industry, new standards may require minor changes by exporters/producers and modest adjustments by the public sector. Where a supply chain is underdeveloped, new standards may require significant upgrades to comply with the standards. Thus, when it comes to compliance costs, 'history matters' (OCED, 2007). The variation in costs of compliance is well illustrated by the experiences of Bangladesh and Nicaragua, both of which export shrimp to the US and the EU (World Bank, 2005). In the mid-1990s, Bangladesh had to make major investments to upgrade fish processing facilities, product testing laboratories, etc., in light of repeated quality and safety detentions of products exported to the US and a ban on shrimp exports to the EU. These investments amounted to 2.3% of the value of its shrimp exports, while the annual costs of maintaining food safety controls equalled 1.1% of exports (World Bank, 2005). In the case of Nicaragua, the shrimp industry had to make adjustments during 1997-2002 to improve hygiene controls to comply with US fish safety regulations. But because the Nicaraguan factories were relatively new and modern, only modest investments were required (estimated at 0.61% of total value of exports while annual maintenance was 1.26% of total value of exports) (World Bank, 2005).

In addition to costs, there are benefits associated with standards compliance. To date, most studies have failed even to recognise the benefits and tended as a result to overstate the net costs of compliance (World Bank, 2005). The most significant benefit from compliance is continued and better market access. As with costs, benefits can also be both recurring/nonrecurring and tangible/intangible (see Table 2.7).

Many of the benefits of standards are only indirectly associated with the process of complying with a standard and thus are largely intangible (World Bank, 2005). 'Intangible' benefits include opportunities to reassess the production process, enhancement of product quality, enhancement of morale, and gains in reputation for the company and/or country. Enhancement of food safety capacity can send positive signals to existing and potential customers, enabling companies to reposition themselves in the market place or gain access to new markets. For example, Indian fish processing plants, having invested in the HACCP systems and gained third-party certification, were able to access higher value-added markets for processed and semi-processed markets (Henson, et al., 2005).

Table 2.7 Examples of recurring and non-recurring benefits of compliance

	Tangible	Intangible
Non-recurring	<ul style="list-style-type: none"> • Crisis containment 	<ul style="list-style-type: none"> • Opportunity to examine overall efficacy of controls
Recurring	<ul style="list-style-type: none"> • Access to lucrative markets and supply chains • Reduction in costs due to enhanced efficiency • Reduction in wastage • Reduction in the level of inspection/detention 	<ul style="list-style-type: none"> • Enhancement of product quality • Enhancement of morale of staff • Improved reputation of firm and/or country

Source: World Bank, 2005

Potential ‘tangible’ benefits of food safety standards include less wastage in production, greater efficiency, reduction in product inspection/detection, etc., which in turn reduces production costs and promotes product competitiveness. In the case of Ghanaian fresh fruit and vegetable exporters and producers, production costs significantly reduced as a result of implementing GlobalGAP due to better use of chemical inputs, improvements in agronomic practices, better monitoring, and record keeping (Henson, 2006). The reduction of production cost was accompanied by improvements in product quality and, in some cases, higher market prices. Other important tangible benefits are better access to markets or particular market segments. There may be also spill-over effects, as in improvements in domestic productivity and consumer health in the domestic market (World Bank, 2005).

Given that costs of compliance with new standards are more tangible and visible than the benefits and that recurring benefits are more significant than non-recurring benefits, compliance is widely thought to be a costly exercise, leading exporters/producers to adopt a strategy of exit and be reactive most often (World Bank, 2005).

While there are problems associated with identifying and quantifying such costs and benefits, there are also problems attributing them to standards alone (World Bank, 2005). In many cases, efforts to achieve compliance with standards are undertaken within the prevailing competitive environment. Therefore the costs faced by firms may be different according to their competitive position and previous efforts to improve food safety, making it difficult to attribute costs and benefits to a particular standard alone (World Bank, 2005).

While there have been a number of case studies on countries (India, Jamaica, Kenya, Morocco, Nicaragua, Senegal, Thailand) and commodities (fish, shrimp and fish products, fruits and vegetables, nuts and spices), there has been no systematic study on tea and Sri Lanka, despite the fact that tea industry is increasingly subject to various standards – safety, quality, environmental and social. The second research question of the study seeks to address this gap in the literature:

RQ2: What are the tea industry stakeholders’ perceptions of standards governing the tea value chain?

2.5 Strategic Responses to Emerging Standards

As explained in Section 2.3.2, the changing regulatory and commercial environment poses significant challenges and offers opportunities for developing countries. In this light, it is imperative that both public and private sectors in developing countries take a strategic view of standards, identifying their requirements, assessing options available and responding accordingly. According to Henson and Jaffee (2006), when faced with the need to conform to emerging standards, developing countries and their exporters/producers rarely face ‘all or nothing situations’. Although mostly they may be ‘standard-takers, they still have considerable room for manoeuvre and can adopt a range of options (Henson & Jaffee, 2006). Broadly speaking, there are three types of strategies available (Henson & Jaffee, 2006). They include: exit, voice, and compliance (Table 2.8).

Table 2.8 Strategic options to standards: exit, voice and compliance

Exit	Move away from certain markets, products or buyers toward others whose standards may be more cost-effective to meet. Going out of business is a possibility.
Voice	Developing country governments, producers or exporters seek to influence the standard that they find difficult to meet through negotiations or through formal complaints; for example, WTO’s Sanitary and Phytosanitary (SPS) Committee.
Comply	Undertake legal, administrative, technical and organisational measures to conform to product/process requirements.

Source: Henson and Jaffee, 2006

Table 2.9 presents a simple framework developed by Henson and Jaffee (2006) to characterise the three strategic responses to emerging standards. Their scheme draws on the concepts of ‘exit’, ‘voice’ and ‘loyalty’ initially developed by Hirschman (1970), who used the framework to

examine alternative ways of responding to declining firms, organisations and states. For Hirschman, 'exit' involves customers no longer buying a product or members leaving an organisation/state, while 'voice' involves customers/members protesting or lobbying for change. 'Loyalty' involves a customer/member who has considerable attachment to the product/organisation/state deepening his/her alignment/participation. The framework has since been used to examine other scenarios, including country and firm/farm level responses to public and private standards (Henson & Jaffee, 2008; Jaffee & Masakure, 2005; Okello, 2011; World Bank, 2005).

Table 2.9 Strategic responses to standards

	Reactive	Proactive
Exit	Wait for standards and give up	Anticipate standards and leave particular markets
Compliance (Loyalty)	Wait for standards and then comply	Anticipate standards and comply ahead of time
Voice	Complain when standards are applied	Participate in standard creation or negotiate before standards are applied

Source: Henson and Jaffee, 2006

In their framework, Jaffee and Henson replace 'loyalty' with 'compliance', whilst retaining the concepts of 'voice' and 'exit'. The 'pro-activity-reactivity' dimension, not attributed to Hirschman, was also added by Henson and Jaffee (2006) and it relates to the time when efforts to comply commence. Usually there will be a combination of all three strategies but to different extents involving different stakeholders (Henson & Jaffee, 2006). Strategic action may involve the public and/or private sectors, individual stakeholders, such as exporters or producers, and collective action by industry associations (Henson & Jaffee, 2006). This particular framework will be employed in the study to examine how stakeholders in the tea industry in Sri Lanka responded to emerging stringent and multiple food standards.

It is usually assumed that developing countries and their exporters/producers will display 'compliance' when faced with a new standard (whether public or private) imposed in major markets abroad (Henson & Jaffee, 2006). 'Compliance' can be displayed in various forms, including legal/regulatory changes, reforms to institutional structures/responsibilities, restructuring supply chains, changes in production technologies, modifications in quality assurance and safety management systems, investments in physical infrastructure, strengthening of accreditation and certification system, etc. (World Bank, 2005).

Countries can comply at the time the standard comes into force ('reactively') or ahead of time ('proactively') (Henson & Jaffee, 2006). The latter approach provides greater potential or room to comply, which will maximise the benefits while minimising detrimental economic and social implications (World Bank, 2005). A proactive approach will provide the advantages of a first mover, including reputational gains, flexibility, etc. Porter and van der Linde (1995) argue that firms who adapt quickly to new, more stringent regulations gain a type of first mover advantage in the marketplace, which leaves them better able to compete when regulations become more widely adopted. Firms which are first to adapt may get a competitive edge (Loader & Hobbs, 1999). However, not many have the capacity to be first movers – that is, anticipating changes and taking early action and thereby gain an advantage over others. This may be due to lack of contacts, information, experience or finances (World Bank, 2005). Second-movers can learn from the successes and failures of the first movers by adopting measures which are suitable to their own situations and thereby minimising risks and costs (World Bank, 2005).

Strategic options open to developing countries are not limited to compliance. Countries and exporters/producers can 'exit', choosing not to comply with a particular standard (Henson & Jaffee, 2006), if the standard is too severe or complex (Loader & Hobbs, 1999). This may mean switching buyers in the case of a private standard or exiting export markets altogether (Henson & Jaffee, 2006). An example of this was reported for Japan where buyers of dairy products made demands on their suppliers which were perceived to be unreasonable (Loader & Hobbs, 1999). The exporters/producers may choose to switch to different products for which compliance is less problematic or costly. Such a strategy may be pursued if compliance would result in loss of competitiveness or has a very negative economic and social impact, especially if resources could be better spent elsewhere or if there are profitable, less demanding alternative markets available (Henson & Jaffee, 2006). Shifting product lines or market orientation can be a viable strategy to maintain competitiveness.

Developing country governments and exporters can also adopt a strategy of 'voice' (Henson & Jaffee, 2006), that is, attempting to change prevailing rules of the game or responding to new standards by negotiating or protesting, such as by raising complaints at the international level through the WTO SPS Committee or bilaterally engaging in negotiations with the trading partners (World Bank, 2005). Individual exporters may object to requirements imposed by buyers and they may attempt to compromise in terms of meeting standard requirements or they may go as far as negotiate (Henson & Jaffee, 2006), lead and advance their own interests,

as demonstrated by Chile's fresh fruit industry (Bain, 2010): large-scale producers and exporters, rather than accept they were standard takers, actively participated in the formulation of GlobalGAP as standards markers, thereby helping to advance their position as world leaders in the export of fresh fruits (Bain, 2010).

In both instances ('exit' and 'voice'), being 'proactive' is more strategically advantageous than being 'reactive' (Henson & Jaffee, 2006). Any of these measures can be taken by the public or private sectors or collectively through industry associations or between the public and private sectors. It is most likely that countries and exporters/producers will not adopt one strategic option but a mixed approach to address emerging standards (World Bank, 2005); for example, countries are likely to 'voice' their concerns at first, but subsequently 'comply' or even 'exit'.

The most positive and advantageous strategy combines 'voice' and 'proactive' dimensions (Henson & Jaffee, 2006). This approach is most likely to turn the challenges associated with new standards into opportunities and bring out positive social and economic outcomes (Henson & Jaffee, 2006). On the other hand, the most negative approach that can be pursued is a combination of 'exit' and 'reactivity', which involves considerable socio-economic costs (Henson & Jaffee, 2006).

The ability to implement any of the strategies depends on a range of factors at the country, industry and firm levels, as well as the specific nature of the standards (Henson & Jaffee, 2008; Reardon, et al., 2001; World Bank, 2005). These include: size of the firm/industry, market share, reputation for quality/safety, legal/regulatory framework, leadership/coordination within the private sector, private sector management/technical capacity, public sector management/technical capacity, clarity of institutional responsibilities/ procedures, geographical/agro-climatic factors, and circumstances (Henson & Jaffee, 2006; World Bank, 2005).

For individual exporters/producers, firm size is a key determinant in the ability to be proactive (Henson & Jaffee, 2008; Reardon, et al., 2001; World Bank, 2005). The capacity to respond increases with firm size, although there tends to be pockets of smaller firms capable of responding (Reardon, et al., 2001). However, there are significant economies of scale in compliance. Thus larger companies have significantly lower compliance costs and greater ability to comply. Compliance may impose disproportionately larger costs on small companies because they lack such economies (Loader & Hobbs, 1999). For example, the introduction of

HACCP in fish processing facilities in India and Kenya or GAP on a farm in Kenya required substantial investments irrespective of the size of the firm (Reardon, et al., 2001). Moreover, large companies have greater leverage to negotiate on standards-related requirements with their buyers while they have better access to resources including finance (Henson & Jaffee, 2006; World Bank, 2005). Their ability to take strategic options is also dependent on managerial and technical capacity at the company level. The reputation of the firm, the extent of value addition and branding are also important factors affecting strategic options (Henson & Jaffee, 2006; World Bank, 2005).

The size and structure of the industry, and the competitive environment where it functions, will also influence the strategic options that the industry adopts. In markets dominated by one firm, there may be little competitive pressure for the firm to comply, while where competition is fierce, with each firm seeking for a competitive advantage, they are unable to run the risk of not complying (Loader & Hobbs, 1999). Other factors include overall output of the industry to installed capacity, levels of coordination/cooperation within the chain (i.e., industry associations), international market share/existence of alternative sources of supply, and the presence of leadership within the industry (Henson & Jaffee, 2006; World Bank, 2005). Lead firms can set an example for others and get them on board to comply and thereby improve or maintain the industry's international reputation. Industry associations can also provide invaluable support to members through engaging in marketing and promotional activities, providing technical assistance and collecting, and analysing and disseminating industry information (OCED, 2007). They can also keep their members informed of regulatory changes in the international markets, initiate programmes and lobby the government (OCED, 2007). The efficacy of legal and regulatory frameworks, clarity of institutional roles and capacities of the public sector are other factors that are likely to affect strategic options (Reardon, et al., 2001).

The literature provides evidence of strategic approaches used by the private sector and governments in developing countries when confronted with new standards in international markets. Case studies have been carried out across commodities (fish and fishery products: (Henson & Mitullah, 2004; Henson, et al., 2005); horticultural products: (Jaffee, 2003); and spices: (Jaffee, 2005) in developing countries (Henson & Jaffee, 2008; World Bank, 2005).

In the case of the fish and fishery products from India, Kenya, Nicaragua, Senegal, and Thailand, all have faced challenges in meeting hygiene requirements in processing and

controlling antibiotics in aquaculture production (World Bank, 2005). Though countries differed significantly in terms of size and income level, their responses to evolving food safety standards were broadly similar: most governments and private sectors responded by 'complying' but 'reactively'. Hygiene and antibiotic controls were upgraded in response to regulatory changes in the EU and US, the main markets, or demands from major buyers. There was limited evidence of 'voice'; where it was used, it was generally in response to restrictions already imposed ('reactive' mode). But there were examples of exporters who adopted a proactive strategy: these 'leaders' had seen the overall direction of food safety standards and had made substantive efforts to upgrade and meet the standards ahead of competition. As a result of their efforts, they gained market share. However, they represented a small section of the total industry. At the same time, some processors/exporters 'exited' the industry altogether, while others focused on markets with lower standards: India diverted sales to less challenging markets such as China, the Middle East and Singapore (Henson, et al., 2005). Similarly, Kenyan fish exporters have diversified their exports to countries such as Australia, Japan and the US, due to problems experienced in complying with requirements in European markets (Henson & Mitullah, 2004).

However, failure to comply was not the only reasons to exit. There were other inherent problems that compounded the problems of compliance, such as shortages in supply of raw materials and limited possibilities of value addition in the case of Nile perch exports from Kenya (Henson & Mitullah, 2004).

In the case of horticulture (mainly fresh fruits and vegetables) and spice industries in India, Jamaica, Kenya, Morocco and Thailand, producers and exporters were increasingly required to comply with stringent safety and phytosanitary requirements of regulatory agencies and private buyers, in addition to complying with other demands such as quality, supply continuity, etc. (World Bank, 2005). More specifically, the industries faced challenges related to pesticide use and residues, plant protection and microbiological hazards. The dominant strategy they adopted was compliance; there was a greater incidence of proactivity. In several cases, attempts were made to influence prevailing standards; for example, India in the case of spices and chillies has sought to influence the international rules by proposing new MRLs be established, given the paucity of established MRLs for spices grown in tropical countries (World Bank, 2005). At the same time, some producers and exporters have exited certain markets or supply chains rather than comply.

In summary, strategic responses to food safety standards have varied across developing countries and exporters/producers (Henson & Jaffee, 2008; Reardon, et al., 2001; World Bank, 2005). Most have tended to take a reactive strategy both at the governmental and firms levels due to capacity constraints and a tendency to wait up till the last moment when the threat becomes real. Where there may be the capacity to implement the standard, the threat is less detrimental, but such a strategy forgoes the benefits of being 'proactive', if necessary action is not taken in advance. Nevertheless, at the firm level there is evidence of 'proactivity' among leading exporters. These firms tend to be larger or more diversified, with access to financial and technical resources. While there might be significant levels of market 'exit', especially among smaller firms, there are often leaders that are more proactive and gain as a result.

The above framework will be used to answer the third research question with regard to the tea industry in Sri Lanka, since there has been no case study on strategic responses to emerging standards in the tea industry:

RQ3: How did the tea industry in Sri Lanka respond to emerging standards?

2.6 Implications of Standards Compliance for Inter-firm Governance in Value Chain: Empirical Research

How does complying with standards impact on governance in the value chain? Does compliance make relationships within the chain closer, facilitating greater interaction between buyers and suppliers and fostering greater coordination, technical assistance and learning (ITC, 2011; Nadvi, 2004)? Or does it lead to a market type of governance characterised by arm's length relationships within the chain? According to the GVC framework, standards can affect value chain governance in two ways (Humphrey & Memodovic, 2006): 1) the extent of information which is required to conduct a transaction and the ability to codify this information; and 2) their effect on supplier competence (see Section 2.2.3).

The effect of standards on information flows in value chains, and hence on chain governance, can take two forms. First, imposition of standards increases information requirements along the chain. In the case of process standards, information requirements are limited to compliance documentation and thus do not affect value chain governance (see Trajectory 3, Table 2.3). While a process standard tends to specify how a particular outcome can be achieved and provides a means of verification, product standards usually identify a required

outcome. For example, EU legislation on Maximum Residual Levels (MRLs), a product standard, only specifies that pesticide residues should be below a certain level but does not indicate how this can be achieved. In this case, the buyers' initial information requirement extends either to information about the maximum levels of pesticides permitted in the product or to information about good agricultural practices that need to be adhered to meet the specified MRLs. In the short term, this could mean increased levels of information flowing along the value chain as buyers attempt to monitor and control production practices outside of their control (Trajectory 1, Table 2.3). Alternatively, buyers might decide to source from large, competent suppliers which can meet this standard. This is likely to marginalise small producers and lead to consolidation in the value chains, as discussed in Section 2.4. This process is likely to be reinforced by buyers increasingly taking a defensive stance against reputational damage and legal liabilities by sourcing from well-established large suppliers (Humphrey & Memodovic, 2006).

However, as standards become stringent, buyers might want to reduce their risks and the costs of monitoring suppliers by introducing process standards to meet product standards. Thus, by introducing a process standard, information requirements can be reduced to knowing whether or not the supplier is compliant. Thus codification of information by way of complying with a process standard simplifies information requirements within the chain, at the interface between buyers and their immediate suppliers. While complying with a process standard might reduce information asymmetries between buyers and their immediate suppliers, they can create new information requirements and compliance challenges further back the chain (Humphrey & Memodovic, 2006).

The second major effect of standards on value chains is on supplier competence, which is an important determinant of governance in value chains. The introduction of new standards changes the level of competence of suppliers. Suppliers who were once competent may find themselves incapable of meeting the new standards, at least in the short-run. For example in the case of EU MRLs, farmers accustomed to certain pesticide and its application will have to look for alternative agrochemicals to reduce the use of that particular pesticide. In the short term, the farmers may be unable to meet this requirement (Trajectory 6, Table 2.3).

Implementation of standards can promote codification of complex information and reduce the need for direct monitoring by lead firms, thereby lowering transaction costs within value chains. Moreover, the associated costs and risks of quality failure can be pushed down the

chain (Nadvi, 2004). One consequence is diminution of the need for greater coordination by lead firms within the chain, and governance can shift from relatively more hierarchical forms to more modular or market-based interactions (Gereffi, et al., 2005; Nadvi, 2004, 2008; Nadvi & Waltring, 2004; Quadros, 2004). This seems 'logical as standards are instruments to codify information, reducing the need for intensive coordination and communication' (ITC, 2011, p.13). If there are large numbers of certified suppliers, lead firms can pick and choose amongst them, forcing the suppliers to reduce prices (Nadvi, 2004).

Alternatively, standards compliance may result in closer linkages in the value chain (Nadvi, 2004; Quadros, 2004). Adoption of standards may call for technical support from lead firms, especially when they set the standards. In addition, lead firms will need to assist suppliers obtain necessary know-how to implement standards, adopt standard requirements and bring them into line with lead firms' requirements (Nadvi, 2004). Adoption of standards can lead to 'upgrading': to make better products, make them more efficiently or move into more skilled activities (Humphrey and Schmitz, 2002). This is most likely to happen when supplier incompetence is widespread. Moreover, once lead firms are assured that suppliers conform to the standards, they may collaborate in other areas of the chain such as design and development (Quadros, 2004). Then chain governance can become more network-like in orientation, enabling lead firms and suppliers to 'trade and talk' (Nadvi, 2004, p.309). Thus implementation of standards can have a diametrically opposite effect on governance in value chains. To date, the empirical evidence is mixed with regard to implications of standards on governance in value chains: 'this picture remains incomplete and standards impact value chain governance in many other ways' (ITC, 2011, p.ix).

In the case of product standards, compliance appears to have loosened ties within value chains (Nadvi, 2008). According to Gereffi et al. (2005) standards are critical to inter-firm ties because they provide the potential to codify complex information and reduce transaction costs. Sturgeon (2003) also notes technical product and process specifications/standards that codify knowledge are essential for the function of complex sectors such as electronics, which is characterised by modular relationships between large lead firms and suppliers (global turn-key manufacturers).

Similarly, Nadvi (2004) finds that in the case of process standards such as ISO9000, inter-firm ties have loosened between global lead firms and local suppliers subsequent to implementation. In the case of the surgical industry in Pakistan, Nadvi argued that

international buyers increasingly had a choice of sourcing from a large pool of local certified suppliers, which weakened links, as buyers shopped around and forced prices down, especially for low-quality products (Nadvi, 2004). However, in the case of higher quality, especially for some of the large to medium firms supplying leading Western traders and producers, Nadvi (2004) found that chain governance remained largely quasi-hierarchical: buyers still provided product designs, supplied materials and conducted quality inspections; for such buyers ISO9000 certification was not considered a sufficient basis to determine supplier competence. Consequently, there was direct monitoring of suppliers as well as assistance extended to suppliers. Nevertheless, adoption of ISO9000 in the surgical industry by and large led to weakening of relationships within the value chain.

Using key concepts of convention theory to further the understanding of governance in global value chains, Ponte and Gibbon (2005) have noted there has been a movement from hierarchical to 'hands-off' or looser forms of forms of coordination between lead firms and their immediate suppliers, though the complexity of information required has increased. Nevertheless, they argue that chains are not necessarily becoming less driven than in the past. This is because lead firms have been able to codify quality information into widely accepted standards, labels, certifications and codification systems (Ponte, 2007, 2009).

However, the evidence with regard to other process standards governing food safety, labour and social standards is mixed; it is not clear whether codification through process standards actually leads to lesser coordination within value chains. Nadvi (2008) highlights the case of global horticulture value chains, which have been increasingly subject to food safety standards (e.g., HACCP and EU food safety regulations) and environmental and labour concerns (e.g., GlobalGAP, BRC, and the UK's Ethical Trade Initiative or ETI) over the past two decades. Despite these developments in codification, he argues that the nature of governance of global horticulture value chains linking supermarkets to agricultural suppliers in developing countries has not moved to either modular or market-based interactions. In some cases, while there are signs that certification has helped promote market-based transactions because supermarkets choose the cheapest standard-compliant suppliers, there is also evidence of greater coordination within chains (Nadvi, 2008). For example, Dolan and Humphrey (2004) observe how increasing stringent standards and competitive differentiation in previously undifferentiated product categories such as fresh fruits and vegetables introduced new levels of explicit coordination in horticultural value chains that had previously been market based/arm's length. There was a movement away from arm's length market relationships

towards relational/captive relationships across the chain – between UK-based retailers and importers and African fresh vegetable exporters and growers. Initially supermarkets developed their own company standards, not only defining the product and process parameters to be adhered to along the chain but also establishing systems to monitor compliance. Over time, supermarkets included broad-based external standards: sectoral codes developed by industry-wide organisations (BRC and GlobalGAP) and social codes developed by trade unions, NGOs, etc. (SA8000 and ETI). Given that these external standards are audited by agents outside the chain, which would mean supermarkets can become less engaged in supervision and monitoring, the authors do not expect external standards to ‘completely substitute direct monitoring’ by supermarkets (Dolan & Humphrey, 2004, p.503).

The evidence regarding the relationship between process standards and value chain governance is equally inconclusive with regard to environmental and social standards (Nadvi, 2008). Despite increasing harmonisation of labour and social standards through a number of initiatives such as UK’s ETI base code, Social Accountability International’s SA8000 and ISO2600, which should lower transaction costs associated with governing the chain by lead firms, there is no clear evidence to indicate a movement from a relatively hierarchical/captive arrangements to modular, relational/market-based governance. This may be due to the presence of risks to brand reputation/integrity, which would prompt lead firms to conduct their own audits and inspection of their supplier in order to ensure compliance on labour and social requirements.

In summary, what can be drawn from the few existing studies on whether standards result in arm’s length or more hierarchical relationships within value chains is rather limited and unambiguous. It appears to depend on a number of factors.

First, whether standards in question are product or process (Nadvi, 2008). Product and technical standards, and quality management standards, can help promote codification of knowledge and lower transaction costs within chains, thereby reducing the need for coordination. However, it is unclear whether the need for chain coordination has declined with the imposition of process standards on environment and social conditions.

Second, who defines and monitors the setting and enforcement of the standard (Nadvi, 2008)? Humphrey and Schmitz (2001) argue that standards set by lead firms within the chain will be enforced by those firms or by agents contracted by them. Conversely, standards set by agents

external to the chain will be enforced by agents external to the chain (Humphrey & Schmitz, 2001). Where lead firms require suppliers to adhere to a standard which is generally well-known and adopted, it is likely that third-party organisations exist to certify companies and help to achieve the standard (Humphrey & Schmitz, 2001). Where standards are imposed by external agents such as governments and NGOs, but the lead firm is held responsible for specifying the process and monitoring it, the lead firm makes necessary arrangements to ensure compliance along the chain (Humphrey & Schmitz, 2001).

Third, there are associated risks for lead firms in the event of compliance failure in the chain (Nadvi, 2008). Lead firms, especially brand names, are vulnerable to scandals, for example food contamination or child labour exposés in the media, causing irreparable damage to the brand and its integrity. Brands have been found to be forceful in implementing changes amongst suppliers, either internalising activities which were formerly outsourced/sub-contracted or moving towards closer partnering relationships with suppliers (Loader & Hobbs, 1999), thereby allowing for direct monitoring and containing any risk of supplier failure (Nadvi, 2004).

Fourth, various aspects of supply relationships are hard to specify and certify (Dolan & Humphrey, 2000). These non-contractable aspects of relationships can be verified only through experience of trading (Dolan & Humphrey, 2000). Moreover, the existing standards may not cover all areas of food safety, environmental protection and social welfare, over which buyers might want to retain oversight. For example, Reardon et al. (2001) have discussed how agro-industrial firms in Latin America have been reluctant to give up control over food safety, despite the prevalence of generic standards.

Fifth, buyers may prefer to specify standards – their own – and monitor their suppliers as means of differentiating their product in competitive markets or because generic standards are not regarded as credible (Dolan & Humphrey, 2000). For example, Tesco's Nature's Choice, a supermarket code of conduct, tries to distinguish the supermarket's products from its competitors by guaranteeing superior safety, quality and environmental standards through monitoring and certification of suppliers (Humphrey & Memodovic, 2006).

Since empirical literature on the impact of standards on chain governance is mixed and unclear (Nadvi, 2008), the fourth research question this study aims to answer is:

RQ4: How did compliance with food standards affect governance within the tea chain in Sri Lanka?

2.7 Conclusion

The purpose of this chapter was to introduce the concepts of value chains, governance and standards, and the theoretical framework (GVC) which are used in this study to examine the implications of food standards for the tea value chain in Sri Lanka. Value chains increasingly extend beyond national borders and they are controlled by a few buyers who specify what to produce, how to produce, etc. This development has been accompanied by increasing stringency and proliferation of standards in the chains, especially in the agricultural and food sector as governments, especially in developed countries, respond to increasing consumer concerns, while buyers seek to safeguard and promote their business interests in a competitive market. The changes in the standards environment create not only opportunities and challenges for developing countries but are also likely to have significant implications for the way value chains are governed. On both counts, the literature is mixed. In the past, standards were often seen as a challenge, a tedious and costly exercise, but more recent literature reveals that there are opportunities, such as raising efficiency and quality, in complying with standards. Moreover, the literature is mixed with regard to implications of standards for value chain governance; standards can lead to strengthening as well as weakening of linkages within the chain. This study therefore examines the implications of food standards for stakeholders and governance of the tea value chain in Sri Lanka.

The following chapter introduces the tea industry in Sri Lanka, which is the focus of this study.

Chapter 3 Overview of the Tea Industry in Sri Lanka

3.1 Introduction

The purpose of this chapter is to introduce the Sri Lankan tea industry, and the institutions supporting it, and discuss its main challenges, thereby providing context for subsequent chapters.

This chapter will first give a brief historical account of how the tea industry emerged to become a highly mature and well-established industry with an export-orientation. Sri Lanka is one of the largest tea producers (after China, India and Kenya) and exporters (after Kenya) in the world (Sri Lanka Tea Board, 2008b). Second, the chapter will underline the importance of the tea industry in its contribution to Sri Lanka's national income, employment and foreign exchange earnings. The contribution of the tea industry to Sri Lanka's development is such that it has generated a sizable share of national income, provided employment to a large section of the population and brought in valuable foreign exchange (L. I. De Silva, 2013) while financing welfare programmes of successive governments (Manikam, 1995). Third, the chapter will examine the major characteristics of the tea value chain and the stakeholders involved in tea production, manufacturing, marketing and exporting. Fourth, the main public and private institutions closely connected with the tea industry are discussed, along with the objectives/activities and challenges facing them. Lastly, the chapter will highlight the main challenges the industry currently faces, including complying with proliferating standards. These challenges need to be addressed in order to safeguard Sri Lanka's place in the international tea production and trade.

3.2 Historical Background to the Tea Industry in Sri Lanka

The tea industry in Sri Lanka has a long history, spanning nearly 150 years, which can be categorised into three broad phases (Yogaratnam, 2009): first phase (1867-1971/75), beginning with the introduction of tea to Sri Lanka under the British control and its gradual growth to become the leading export until the nationalisation of estates in 1971-75; second phase (1971/75-1992), under government control, which lasted until 1992; and third phase (1992 to present), with the active participation of the private sector in the management of state-owned tea plantations. Table 3.1 highlights the major milestones in the history of the Sri Lankan tea industry discussed in this Chapter.

Table 3.1 Milestones in Sri Lanka's tea industry

Under British Colonial Rule and Post-Independence	
1824	A tea plant brought from China is planted at the Royal Botanical Gardens
1839	Establishment of Ceylon Chambers of Commerce (CCC)
1854	Establishment of Planters' Association (PA) of Ceylon
1867	James Taylor plants 18 acres of tea in Loolecondra Estate near Kandy
1872	First sale of Loolecondra teas in Kandy
1873	Export of Sri Lanka's first tea consignment of 23 lbs from Loolecondra Estate to London
1883	First public Colombo Auction held on 30 July, 1883 under the auspices of CCC
1894	Formation of the Colombo Tea Traders' Association (CTTA)
1896	Colombo Brokers' Association (CBA) formed
1925	Establishment of Tea Research Institute (TRI)
1932	Formation of the Ceylon Tea Propaganda Board
1951	Export levy/cess on tea introduced
1958	Formation of the State Plantations Corporation
1963	Production and export of instant teas commence
1965	Sri Lanka becomes the world's largest tea exporter for the first time
Nationalisation	
1972	Government takes over privately owned estates
1975	Nationalisation of Rupee and Sterling companies Establishment of Sri Lanka Tea Board (SLTB), Janatha Estate Development Board (JEDB) and Tea Small Holding Development Authority (TSHDA)
1976	Export of tea bags commences
1982	Production and exports of green tea commences
1983	Production of CTC teas commences
Privatisation	
1993	Privatisation of the management of government-owned tea estates
2002	Tea Association of Sri Lanka (TASL) formed

Source: Sri Lanka Tea Board, 2008

Tea is not an indigenous plant to Sri Lanka but was introduced by the British from India and China when Sri Lanka (then known as Ceylon) was under British rule (Vidanagamachchi, 1987). While experimental planting of tea is reported to have begun as early as 1824 and 1839 when tea seeds were brought to Sri Lanka from China and India, respectively, commercial cultivation only began in 1867 (Wimaladharm, 2003). However, it did not emerge as a viable plantation crop until 1875 (M. Fernando, 2000). Before the introduction of tea, coffee was the dominant cash crop (Sri Lanka Tea Board, 2012b), but when the coffee plantations were struck by coffee rust (*Hemileia Vastatrix*) towards the end of the 1860s, British planters switched to cultivation

and production of tea (K. M. De Silva, 1981). By the 1890s almost all coffee plantations in Sri Lanka had been converted to tea (Emmet, 1967).

The first commercial tea plantation was started on an experimental basis by James Taylor, a Scottish planter on an estate known as 'Loolecondera' near Kandy (Sivaram, 2003). Taylor played a significant role in the development of Ceylon Tea¹ and is now considered the 'father of the tea industry' in Sri Lanka (Sri Lanka Tea Board & Planters Association of Ceylon, n.d.). Taylor experimented with tea cultivation and leaf manipulation in order to obtain the best possible flavour from tea leaves. He soon was able to prove that tea could be grown as an alternative plantation crop to coffee (M. Fernando, 2000). Taylor's methods were quickly emulated by other planters, and Ceylon Tea was favourably received by buyers at London auctions, proving that tea could be a profitable cash crop. According to records, the first official consignment of Ceylon tea consisting of two packages of 23lbs was shipped to England in 1873 (Sri Lanka Tea Board, 2008b).

The availability of fertile land for tea cultivation in the highlands at practically no cost, with ideal climatic conditions for growing tea, British capital and cheap imported labour from India, and a readily available market in Britain for the product laid the foundation for the industry (Manikam, 1995). The locals did not take kindly to plantation work as they had their own occupations (Banyard, 1981), such as paddy cultivation. There were also certain cultural factors which discouraged locals from working in the plantations: working for hire was looked upon as almost slavery (K. M. De Silva, 1981). Thus, the labour requirements of plantations were met by migrant labour from Southern India, initially to harvest coffee and then to work in the tea plantations (Banyard, 1981).

The industry witnessed a rapid expansion in 1870s and 1880s, and this brought a good deal of interest from large British companies, which took over many of the estates (C. R. De Silva, 1987; Sri Lanka Tea Board, 2012b). From 4,047 hectares in 1875, the tea area grew to 121,410 hectares by 1900 (Wimaladharma, 2003), while exports expanded with increasing demand for tea in the British market and rising prices. China, which supplied nearly fourth-fifths of tea sold in London at that time, was soon replaced by teas from India and Sri Lanka, which caused a notable increase in the area planted with tea (K. M. De Silva, 1973). At the turn of the century,

¹ In 1972, the official name of the island was officially changed from Ceylon to Sri Lanka but tea from Sri Lanka was continued to be called Ceylon Tea for marketing purposes (Sri Lanka Tea Board, 2012a)

tea accounted for Rs.53.7 million of the island's total export earnings of around Rs.90.8 million (K. M. De Silva, 1981). The colonial administration gave every encouragement and assistance to investors, as the British colonial policy was to run the colonies at a profit (M. Fernando, 2000). Infrastructure such as roads and railways which were established at the height of coffee cultivation, linking Colombo (the administrative and commercial capital) with the plantations in the hinterland to transport produce (K. M. De Silva, 1981), were further expanded and helped the rapid development of the tea industry (M. Fernando, 2000).

At the beginning most plantations in Sri Lanka were owned and run by Europeans but with the emergence of a local middle class, particularly among the low-country Sinhalese, gradually the local capitalists also became owners of tea estates (Emmet, 1967). Initially, smallholders played a very limited role in the cultivation of tea and none at all in the processing of tea, because production and processing required heavy capital investments (K. M. De Silva, 1981).

Following independence in 1948, the newly elected government did not want to change the status quo (Sri Lanka Tea Board, 2012b). The tea plantations and ancillary services continued to be largely controlled by British interests, while the country maintained close relations with the former colonial power, which was the main market (M. Fernando, 2000). The government did not want to deviate from the importance attached to the tea industry which was still the main life blood of the economy. By 1965, Sri Lanka became the world's largest tea exporter (Sri Lanka Tea Board, 2012b).

However, political groups with leftist leanings and trade unionists called for nationalization and greater control of the commanding heights of the economy. This was very much in line with the thinking at that time; in the late 1960s a wave of socialism swept across the world, advocating nationalism and setting up of public sector organisations (R. Fernando, 1994). These voices became much vocal after the change of government in 1956, which brought to power politicians with populist views. These developments had an impact on the tea industry. In anticipation of nationalisation, foreign companies which owned the estates began to cut down on investment in replanting and factory modernisation and neglected the plantations (Manikam, 1995). They also found new investment opportunities elsewhere in some of Britain's colonies in East Africa, which possessed suitable agro-climatic conditions with considerable virgin land for tea cultivation (R. Fernando, 1994). Thus foreign ownership of plantations declined in the post-independence period (Manikam, 1995).

Until 1971, almost two-thirds of tea plantations were owned and managed by foreign and local companies (Ranasinghe, 1995). With the emergence of a government with an absolute majority in Parliament and many leftists occupying key ministries in 1970, plantations were nationalised in the period 1972 to 1975 towards achieving a socialist society (Shanmugaratnam, 1997). Nationalisation was the first major policy change to have a significant impact on the tea industry (Wimaladharma, 2003). The Land Reform Laws of 1971 and 1975 limited private holdings to a maximum of 20 hectares enabling the government to acquire more than 500 tea, rubber and coconut estates owned by foreign and local individuals and companies (Ethulgala, 2009). The Land Reform Act gave the state majority control of the plantations and left about a third of the estates in private hands; 62% of tea land, 32% of rubber land and 11% of coconut land came under government control (Ranasinghe, 1995).

The tea industry thereafter broke up into two segments: the plantations consisting of nationalised tea estates of over 20 ha of land and smallholder farmers with less than 20 ha. After several experiments with management, plantations were brought under two state-owned corporations in 1977, Janatha (People's) Estate Development Board (JEDB) and Sri Lanka State Plantation Corporation (SLSPC). They became two of the world's largest agricultural corporations, producing two-thirds of Sri Lanka's tea and one-third of its rubber (R. Fernando, 1995). The entire state sector was managed by these two corporations until 1992 (Mohamed & Zoysa, 2008).

Estates neglected for almost two decades by companies in anticipation of nationalisation were further run down after the take-over, due to mismanagement (Manikam, 1995). These two organisations incurred heavy losses due to 'waste, corruption and inefficiency' (R. Fernando, 1994, p.2). Combined with high taxes and falling international prices, they proved to be a burden on the state. The government that came to power in 1977 liberalized the economy, and took several measures to rehabilitate the tea sector, including setting up of separate Ministry to oversee the two state corporations, and embarking upon a number of projects with funding from the World Bank (WB) and the Asian Development Bank (ADB). Despite these measures, the two corporations continued to make heavy losses. Cumulative annual operating losses for the period 1985-1990 were estimated to be nearly Rs.3 billion (R. Fernando, 1994) .

This was in contrast to the smallholder sector, which grew significantly particularly after 1980, with the demand for low-grown tea from the Middle East, Russia and Commonwealth of Independent States (CIS) (Mohamed & Zoysa, 2008). Many farmers switched to tea from less

profitable crops such as rubber, cinnamon, vegetables and fruits, increased their tea holdings, leased land or encroached on government land for tea cultivation due to high prices for low-grown teas (Government of Sri Lanka, 1995). The government, too, encouraged the expansion of the sector by setting up the Tea Smallholder Development Authority (TSHDA), and providing incentives, such as subsidies for new planting, replanting, fertiliser, planting material, etc. (Government of Sri Lanka, 1995).

Due to the poor performance of state-run plantations which accounted for much of the tea industry, the overall contribution of tea to the economy declined while industries such as apparel took a more prominent place (R. Fernando, 1995). Sri Lanka also began to lose its competitive edge and market share of world tea exports due to increases in cost of production, low productivity, preference for CTC teas and emergence of low-cost producers (R. Fernando, 1995; Mohamed & Zoysa, 2008), discussed in Section 3.10.

In the early 1990s, a restructuring programme was introduced under pressure from the WB and ADB, which brought in the private sector to manage the 450 state-owned estates. Thus 'the wheel turned the full circle from private management to public sector through nationalisation and back again to private sector management' (R. Fernando, 1994, p.4). Privatisation was the second important policy change made in relation to the industry (Ethulgala, 2009). Privatisation was expected to improve the commercial operation and management of plantations by bringing in expertise from the private sector and ending the regular supply of funds by government to cover the losses of the two corporations (Mohamed & Zoysa, 2008). In 1992, the estates were amalgamated into 23 clusters, each consisting of high and low productivity tea and rubber estates (Ranasinghe, 1995). Their management was handed over to the private sector through competitive bidding on a five-year lease, later extended up to 53 years in 1995 to encourage private investments (UNESCAP, 1999). Total divestiture by the government was delayed due to strong opposition (Ethulgala, 2009).

After study on how to make further improvements to the industry, restructuring of the RPCs to allow the fuller participation of the private sector in their ownership was recommended. Most estates were subsequently privatised in 1996-97 (UNESCAP, 1999). The RPCs were capitalised and stocks were sold through the Colombo Stock Exchange, with the government selling the majority of the shares (51%) to the private sector in January 1996, 20% to the public in September 1997 and 10% gifted to employees in December 1997 as the final step of the privatisation programme. The government retained one Golden Share in the companies, giving

it special rights (R. Fernando, 1995). This move resulted in huge savings for the government and some companies managing the estates started making profits. Fifty estates were categorised as non-viable and remained with the government, despite repeated attempts to hand them over to the private sector (R. Fernando, 1994; Mohamed & Zoysa, 2008).

3.3 Importance of Tea Industry to Sri Lanka's Economy

For the greater part of British colonial rule (1796-1948), and almost three decades after independence, tea was the mainstay of Sri Lanka's economy. Forrest (1967, p.19), who wrote the most authoritative historical account of the industry in 1967 to coincide with its 100th anniversary, made the following observations:

It is a commonplace to say that tea is the life blood of Ceylon; it provides two-thirds of the country's export revenue, while the wages it pays, its countless minor offshoots and services which feed it, represent a further massive slice of her internally circulating wealth. Moreover, Ceylon is the only country in the world whose economic existence actually depends on this particular crop; even her greatest rival India could survive without tea – at a price.

Although many developments have taken place since this book was published, and the structure of Sri Lanka's economy has changed drastically with expansion of industrial and service sectors of the economy, the role that the industry has played in Sri Lanka's socio-economic development cannot be matched by any other sector (Ganewatte, 2002). For example, successive governments in the past have relied heavily on the plantation sector to finance welfare programmes for which Sri Lanka became well-known (Dunham, 1998).

While its relative importance has gradually declined over time and it is no longer the mainstay of the economy, tea remains a vital sector of the economy (Arumugam, 1995; Ekanayake, 1995). Today, the industry is the third-largest agricultural crop after paddy and coconut (Central Bank of Sri Lanka, 2009). The agricultural sector contributes about 9.2% of total GDP, of which tea comprises about 9.8% (Central Bank of Sri Lanka, 2012). Not only does this industry provide employment directly and indirectly to two million people, which accounts for roughly 10% of the population (De Alwis, 2011), it also generates significant, valuable foreign exchange (Institute of Social Development 2008). In fact, tea was Sri Lanka's main export until the 1980s, when it was surpassed by apparel. If the foreign exchange spent on imported inputs for apparel such as yarn or buttons is considered, the importance of tea for Sri Lanka assumes greater significance, since it is wholly produced in-country. In 2008, Sri Lanka exported

approximately 305 million kg of black tea, which brought in US\$ 1.271 billion (Sri Lanka Tea Board, 2009). This amounted to 21% of total export earnings in that year (Central Bank of Sri Lanka, 2009).

3.4 Area of Production

Sri Lanka produces tea throughout the year; it is grown on sloping terrains in the central highlands and southern foothills, which have a cool and pleasant subtropical climate ideal for cultivation. While tea is picked all year round, the finest teas are gathered from June to September in the eastern districts and from December to March in the western tea-growing areas, coinciding with the South-West and North-East monsoons, respectively (M. Fernando, 2003). The quality of tea, much like wine, significantly depends on agro climatic conditions, which vary considerably and thus produce a range of teas, a hallmark of Sri Lanka's industry (M. Fernando, 2003).

Tea is grown in 14 of the 25 districts across five provinces: Colombo, Gampaha, Kalutara (Western Province); Kandy, Matale, Nuwara Eliya (Central Province); Galle, Matara, Hambantota (Southern Province); Kurunegala (Northern Western Province); Badulla, Monaragala (Uva Province); and Ratnapura, Kegalle (Sabaragamuwa Province). Figure 3.1 shows tea cultivation by district.

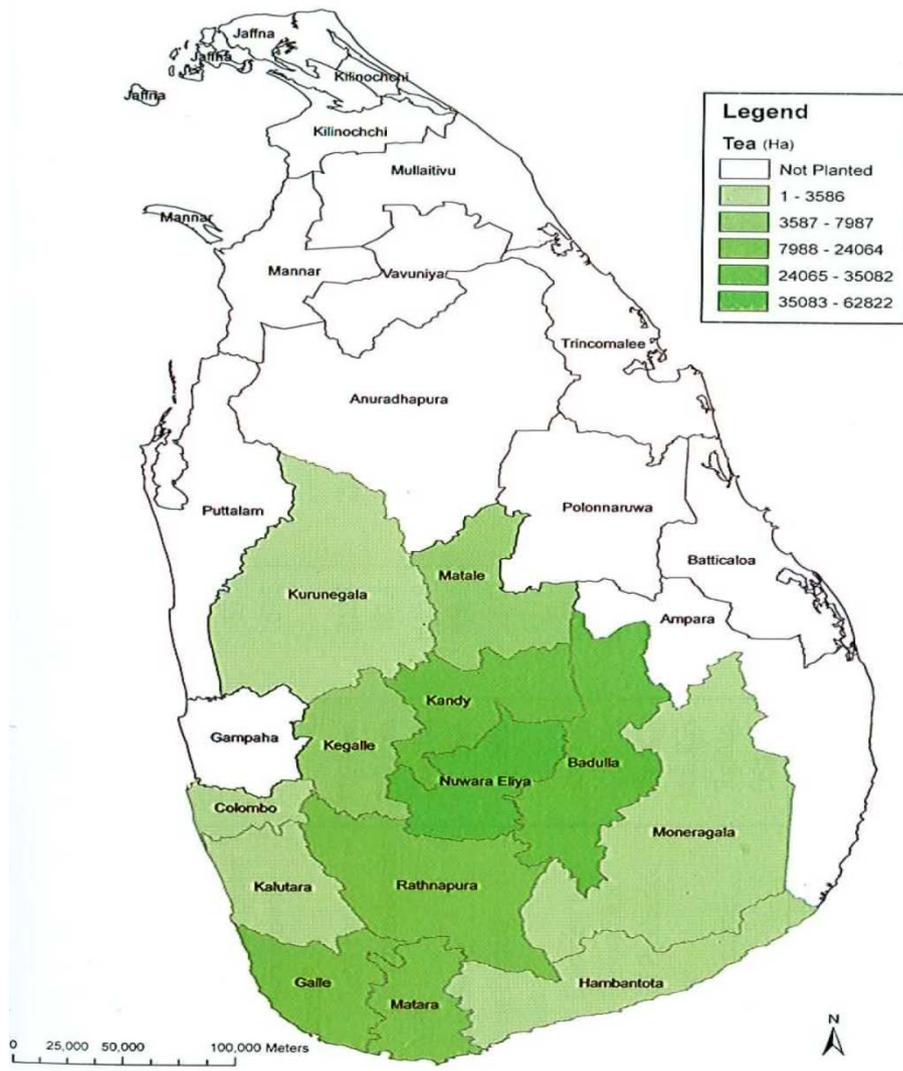


Figure 3.1 Extent of tea plantation by district

Source: Ministry of Plantation Industries, 2009

The total extent of land under tea cultivation is approximately 221,969ha, the world's third largest tea growing area after China and India, according to the International Tea Committee (Sri Lanka Tea Board, 2010). Although tea is cultivated in 14 districts, it is extensively cultivated in six: Nuwara Eliya (50,266ha), Ratnapura (38,352ha), Badulla (30,639ha), Galle (25,629ha), Matara (23,704ha), and Kandy (22,599ha). These together accounted for 90% of total land under tea in 2002 (Ministry of Plantation Industries, 2009).

Tea-growing areas are broadly categorised by elevation at which tea is grown by the Sri Lanka Tea Board (2008b): high-grown (from 1200m upwards), medium-grown (600-1200 m) and low-

grown (sea level to 600m). Teas from low-grown areas account for 49% of total land cultivated under tea; high- and medium-grown tea account for 19 and 32% respectively (Table 3.2).

Table 3.2 Registered tea area by elevation

	Hectares	% of total
High elevation (1200m upwards)	41137	18.53
Medium elevation (600-1200m)	71018	31.99
Low elevation (sea level-600m)	109814	49.47
Total registered land	221969	100.00

Source: Compiled from Sri Lanka Tea Board Tea Statistics, 2008

There are significant differences in the quality of tea produced by elevation due to agro-climatic conditions (Ganewatte, 2002). While high-grown tea is considered rich in colour, flavour and quality, low-grown tea is better known for its strong colour and strength (M. Fernando, 2000). Mid-grown teas have both properties of low- and high-grown teas. Since tea is affected by agro-climatic conditions, the quality from the same estate varies throughout the year. There is no superiority in terms of elevation (Ganewatte, 2002). The choice of teas from different elevations depends on individual preferences. Generally speaking, consumers in Western Europe, USA and Canada prefer high-grown teas for their flavour, while Middle Eastern and Eastern European consumers like low-grown teas for the colour (Ganewatte, 2002). Thus Ceylon Tea is considered unique because of diversity of tea produced in Sri Lanka.

The extent of cultivation has steadily declined in the aftermath of nationalisation of plantations in 1972-75 (Pitigala, 2000). This has been more pronounced in the high- and medium-grown areas compared to low-grown, which has seen a significant increase with the expansion of the smallholder sector.

Tea cultivation in Sri Lanka, as in other countries, is undertaken by plantation and smallholder sectors (Neilson & Pritchard, 2009). The plantation sector consists of 23 regional plantation companies (RPCs) owned by large companies/conglomerates. Each plantation company owns several estates, ranging on average from 240 to 400ha (Modder, 1999), each with its own labour force living and working on the estate. Workers depend on the estate for their day-to-day life (Arumugam, 1995). Estates are often self-contained with their own factory, schools, hospital, housing and place of worship (Oxfam, 2002). RPC-owned estates are widespread, growing tea at different elevations and other agricultural crops like rubber, coconut, etc. They

also own tea factories which are located on the estates and process their own tea leaf as well as bought leaf supplied by smallholders.

In contrast, the smallholding sector consists of approximately 400,000 farmers, who grow tea on 0.5 to 20.2ha (Ministry of Plantation Industries, 2009). According to the *Tea Control Act No. 51* of 1957, holdings below 20.2ha are treated as smallholdings (Government of Sri Lanka, 1995). In 2005, there were 397,223 smallholdings, covering 132,329ha (Tea Smallholdings Development Authority, 2009). Of total holdings, 99% of smallholdings were less than 10ha, and in total covered 117,619ha, accounting for 89% of total land under smallholdings (see Table 3.3) (Sri Lanka Tea Board, 2008b). In addition, there were 624 holdings above 10 and below 20.2ha ('small estates'), covering 14,710ha or 11.2% of land under smallholders (Sri Lanka Tea Board, 2008b). In fact, 97% of smallholders own less than 1ha and their total extent was 90,842ha (68% of the total); the average size is 0.33ha. The smallholders either rely on family labour or hire workers to cultivate and harvest tea but depend on bought-leaf factories to process leaf (Ekanayake, 1995). While most smallholders are found in the low country (for example, in the districts of Ratnapura, Galle, Matara, Kalutara), plantations are located mostly in the high and medium elevations (Mohamed & Zoysa, 2008).

Table 3.3 Classification of tea smallholdings by extent and number of tea smallholdings

Hectares	Number of holdings	%	Extent of tea (hectares)	%
less than 1/2ha	35,0292	88.4	67,982	51.4
1/2-<1ha	33,840	8.5	22,850	17.2
1-<2ha	7,918	2.0	10,155	7.6
2-<3ha	2,286	0.5	5,191	3.9
3-<5ha	1,429	0.3	5,541	4.2
5-<10ha	834	0.2	5,900	4.5
10ha & above	624	0.1	14,710	11.2
	397,223	100	132,329	100

Source: Compiled from Sri Lanka Tea Board Tea Statistics, 2008

Within the last two decades, the smallholder sector has emerged to play an important role in the tea industry, which was previously dominated by the plantation sector. Of the 221,919ha cultivated with tea, 132,329ha (59.6%) are under smallholders while the rest (89,640 or 40.4%) is under the management of RPCs and the state sector (Sri Lanka Tea Board, 2008b) (Figure 3.2). The expansion of smallholdings was driven by the increase in demand for low grown teas in international markets, as noted above. In addition, the smallholder sector received

considerable encouragement and support from the state (Sri Lanka Tea Board, 2012b). The decline of the plantation sector from 1965 has been attributed to negligence of estates by owners due to fear of land reform, nationalisation of plantations, etc. (Ganewatte, 2002).

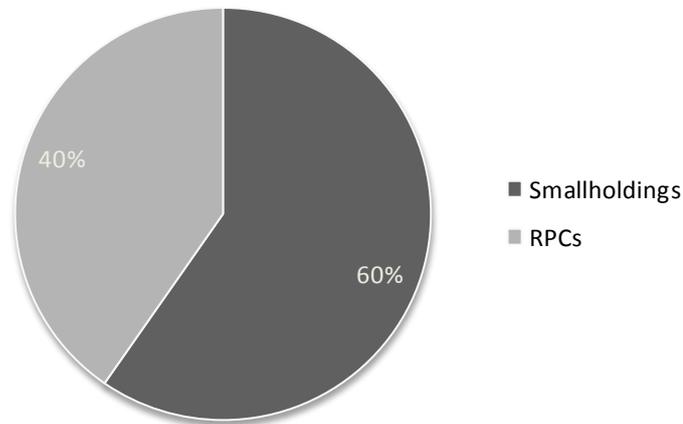


Figure 3.2 Breakdown of tea land by ownership - smallholdings and RPCs

Source: Compiled from Sri Lanka Tea Board Tea Statistics, 2008

3.5 Production

Tea production continued to increase until 1965 and thereafter witnessed a gradual decline (Ganewatte, 2002). There was a turnaround after privatisation in 1992 with a steady increase in production (Pitigala, 2000). During the last decade, Sri Lanka's tea production growth averaged just above 1% a year according to Sri Lanka Tea Board (2008b) statistics. In 2008, Sri Lanka produced about 319 million kg, a new production record. Much of the increase came from low-grown areas where smallholders are concentrated while slow growth in production has been due to poor performance of the plantation sector (Yogaratnam, 2009). As shown in Figure 3.3, low-grown teas account for 58% of total production; high- and medium-grown teas have a share of 27 and 15% respectively in 2008 (Sri Lanka Tea Board, 2008b). High-grown tea was the leader prior to 1985, but, with rising demand for heavy liquouring, low-grown teas overtook the former (Government of Sri Lanka, 1995).

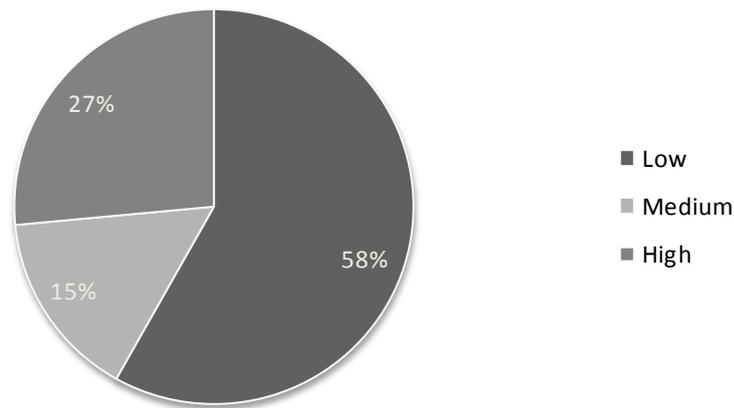


Figure 3.3 Tea production by elevation

Source: Compiled from Sri Lanka Tea Board Tea Statistics, 2008

Two major factors underline the marked increase in the production of low-grown teas since 1978 (Government of Sri Lanka, 1995): 1) the increase in demand for low grown teas; and 2) the expansion of smallholdings and private factories in low country, compared to high- and medium-grown teas which were under the state control. Currently, smallholders contribute as much as 76% of total production (Tea Smallholdings Development Authority, 2009), with plantations accounting for 24% (see Figure 3.4).

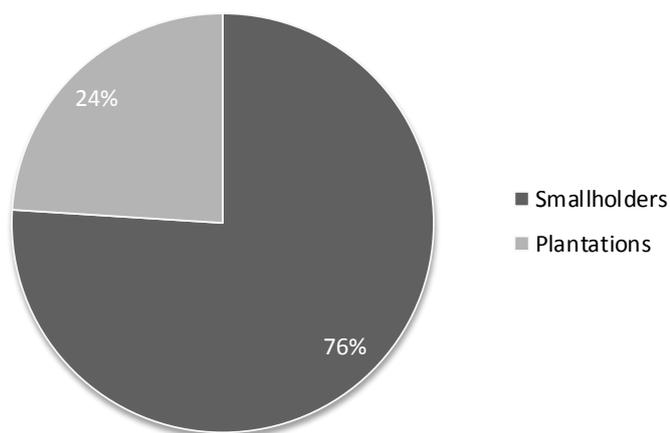


Figure 3.4 Contribution of total tea production - plantations and smallholdings

Source: Tea Smallholdings Development Authority, 2009

3.6 Manufacturing

Sri Lanka mainly manufactures black tea. Black tea is further categorised on the basis of the processing method into Cut, Tear and Curl (CTC) and Orthodox Tea. In the case of CTC, tea leaf undergoes the ‘crush, tea, curl’ process which produces small granules (Ali, et al., 1997). This is now the most common type of tea sold in the international market and is known to be better suited for tea bag (Institute of Social Development, 2008). In the orthodox process of production, withered leaves are lightly crushed by a roller producing a tea which is twisted and wiry in appearance (Ali, et al., 1997). This a more traditional means of manufacturing tea, namely specialty teas (Ali, et al., 1997). While Sri Lanka produces both categories, orthodox tea accounts for 93% of total production (Figure 3.5). CTC only accounts for 5% of total production in Sri Lanka (Sri Lanka Tea Board, 2008b). Additionally, Sri Lanka also produces a small quantity of green tea but this accounts for 1% of total production (Sri Lanka Tea Board, 2008b).

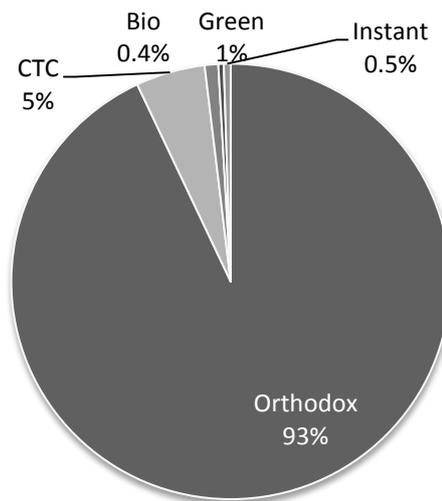


Figure 3.5 Tea production by category

Source: Compiled from Sri Lanka Tea Board Tea Statistics, 2008

According to the Tea Commissioner’s Division (personal communication, January 15, 2011), there are 694 tea factories in operation, though the number of registered factories is much greater (876). There has been a steady expansion in the number of operating factories. This is a cause of concern because there are more factories in relation to supply of green leaf, leading to deterioration in the quality of tea (see Section 3.10). This is most apparent in some low-grown areas where there is stiff competition between bought-leaf factories. Attractive prices

for low-grown teas and the availability of liberal credit facilities, etc., led to a substantial increase in the number of bought-leaf factories, to meet the rapid increase in production of low-grown tea by smallholders (Government of Sri Lanka, 1995).

Of the 694 operating tea factories, 407 are privately owned (59%) and 234 (34%) are operated by RPCs; the remaining 53 are under the management control of the government (SLSPC, JEDB, TRI) and societies/cooperatives (Figure 3.6). Most private factories are located in low elevations; RPC-owned factories are to be found in high elevations.

Over time, the number of high- and medium-grown factories has fallen as a result of the decline in the production of high- and medium-grown teas; there has been a corresponding increase in the number of low-grown factories to meet the rise in demand (Government of Sri Lanka, 1995). Currently, 53% of teas manufactured in Sri Lanka are by private factories; RPC- and state-owned factories manufacture 41% and 6%, respectively, mirroring the number of factories by type of management (Sri Lanka Tea Board, 2008b).

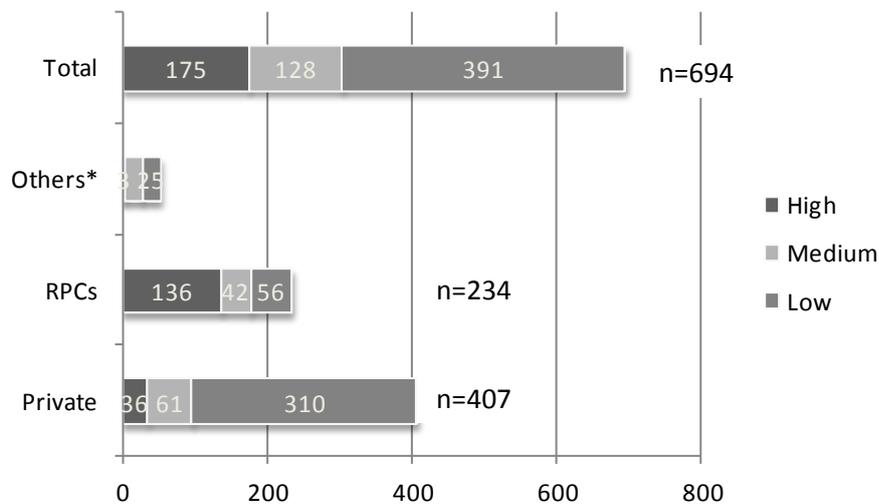


Figure 3.6 Factories by type of management and elevation

Source: Compiled from statistics provided by the Tea Commissioner of the Sri Lanka Tea Board

Of tea manufactured (318.7million kg) during 2008, bought-leaf, which is largely smallholder leaf, amounted to 231.5million kg or 73%, underlying the importance of smallholder contribution (Sri Lanka Tea Board, 2008b). The quantity manufactured using own leaf was only 87.2million kg. As shown in Figure 3.7, most production by private factories depends almost

exclusively on bought leaf (92%) supplied largely by smallholders; management companies are relatively less dependent on bought leaf (40%).

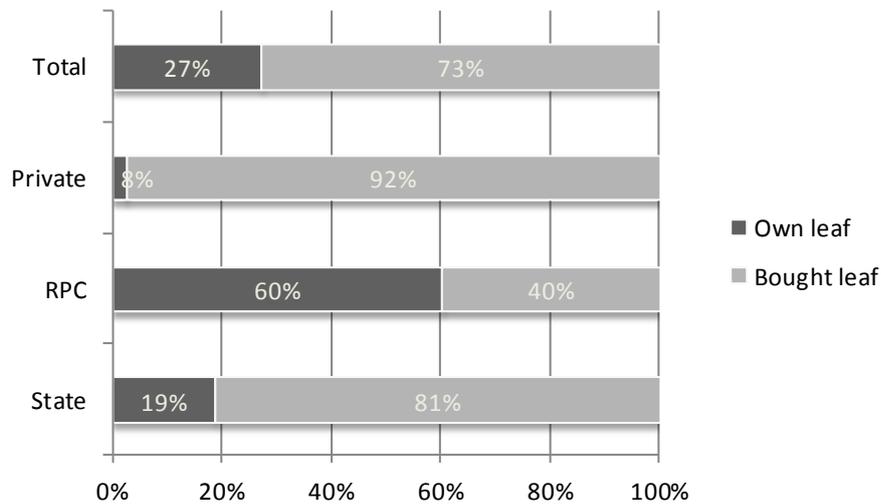


Figure 3.7 Tea production – own leaf and bought leaf

Source: Compiled from Sri Lanka Tea Board Tea Statistics, 2008

3.7 Marketing

As Ceylon tea gained in global popularity, a need arose to mediate and monitor the sale of tea. The first public sale of tea in Sri Lanka was conducted in the office of selling broker Somerville and Company in 1883 (Daily News, 2007) but it took another two and a half years before the Colombo tea auction became established (M. Fernando, 2000). From modest beginnings, the Colombo tea auction has grown to become the largest in the world and on average trades about 5-6 million kg of tea weekly (Mohamed & Zoysa, 2008). Almost 85% of tea sold in Sri Lanka takes place through the Colombo Auction (see Figure 3.8). Other methods of sales are private and direct sales in which the producer sells directly to the buyer, bypassing the auctions. In 2008, private and direct sales accounted for 14.4% and 0.6% of the total sold in Sri Lanka, respectively (Sri Lanka Tea Board, 2008b). With the suspension of private sales from 2008-09, now virtually all teas produced in Sri Lanka are sold through the auction (Ceylon Tea Traders Association, 2011)

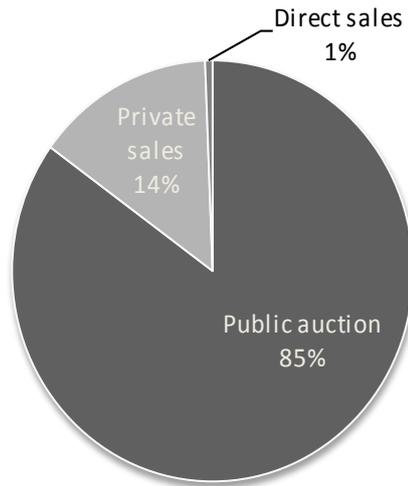


Figure 3.8 Modes of made tea marketing

Source: Compiled from Sri Lanka Tea Board Tea Statistics, 2008

In 2008, 313.5million kg of tea was sold, at an average of Rs.310.53/kg (USD2.87/kg), an all-time high (Sri Lanka Tea Board, 2008b). In terms of elevation, low-grown accounted for the largest share of sales (58%) and fetched the highest price (Rs.336.61/kg or USD3.11/kg) at the auctions in 2008; medium- and high-grown accounted for 17.3 and 24.9% percent of sales at the Colombo Auction, fetching Rs.272.73/kg (USD2.52/kg) and 276.06/kg (USD2.55/kg) in 2008 (Sri Lanka Tea Board, 2009). Prices at the Colombo Auction have been generally above average global prices (Ceylon Tea Traders Association, 2011). The consolidated global price for tea in 2008 was US\$2.29/kg. The prices fetched (US\$/kg) in the major tea auction centres in 2008 were: Kolkata (2.30), Cochin (1.61), Guwahati (2.06), Chittagong (1.62), Mombasa (2.18), Jakarta (1.51) and Colombo (2.87) (Sri Lanka Tea Board, 2008b). Thus Colombo was above the global price with Kolkata the second best (Figure 3.9). According to a Tea Board (personal communication, February 5, 2013), there are several reasons for the high prices: predominance of orthodox tea, strong international demand for Ceylon tea, high levels of value addition, adherence to international standards, and extensive marketing/promotional work by the industry and Tea Board.

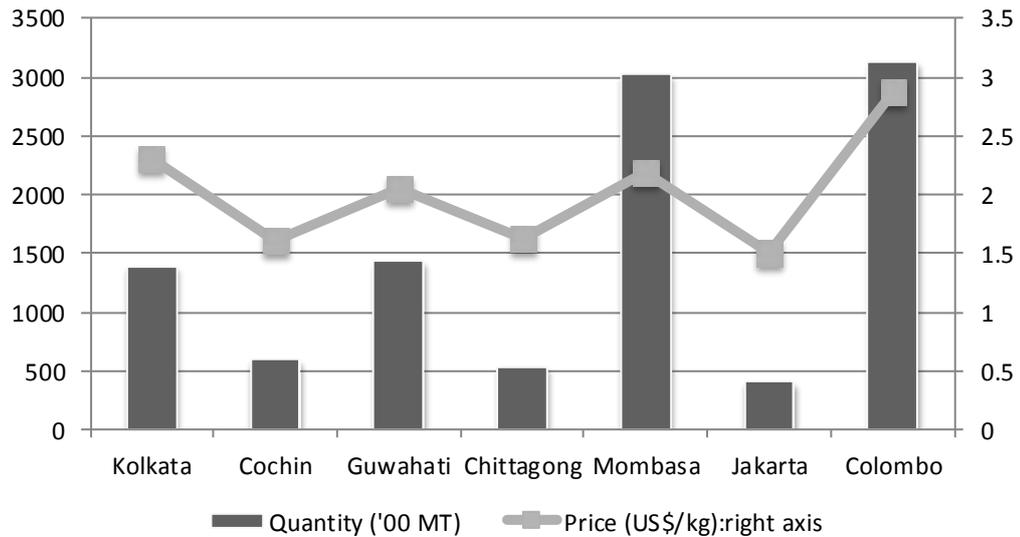


Figure 3.9 Annual tea sales at major auction centres

Source: Compiled from Sri Lanka Tea Board Tea Statistics, 2008

3.8 Exporting

Despite its size, Sri Lanka is the fourth largest tea producer after China (31%), India (26%) and Kenya (9%), with a share of 8.5% of world tea production in 2008 (Sri Lanka Tea Board, 2008b). While both China and India are the largest producers, they consume most of what they produce domestically. Sri Lanka, by contrast, is highly export-oriented with almost 90% of tea exported (Institute of Social Development 2008), accounting for about 18.3% of global tea exports in 2008, and second largest after Kenya (23.3%); China and India accounted for 18.1 and 11.7 percent of total world export of tea, respectively (Sri Lanka Tea Board, 2008b). From 1965, Sri Lanka was the largest exporter before Kenya took this coveted position in 2004 (Mohamed & Zoysa, 2008). Nevertheless, Sri Lanka remains the market leader in terms of orthodox tea (Ceylon Tea Traders Association, 2011), with a market share of 32%, whereas Kenya is a predominantly CTC producer (Ethulgala, 2009). In 2008, Sri Lanka exported 320million kg, which brought in Rs.138bn (USD1.27mn) export earnings (Sri Lanka Tea Board, 2008b).

As at the end of 2009, 325 firms were registered as exporters with the Sri Lanka Tea Board (Sri Lanka Tea Board, 2008b). However, the number of active exporters reported is far below the registered number, at 215 (Sri Lanka Tea Board, 2008b). As shown in Figure 3.10, there were

19 'large' exporters who exported more than 5million kg each in 2009 and accounted for 75% of total volume from Sri Lanka. The largest single exporter, Akbar Brothers, alone accounted for 15% of total exports. Below the large exporters are 23 'medium'-sized exporters, exporting between 1 and 5million kg each, and accounting for 16% of the total. In addition, 174 'small' companies export below 1million kg each, accounting for 8%. These smaller companies export on an *ad hoc* basis during the year; they also export other commodities, such as spices, etc. (ASSOC6). Though there are many firms actively involved in tea export, the trade is highly concentrated amongst a handful (Government of Sri Lanka, 1995). Nevertheless, there is intense competition between them to win orders from overseas buyers.

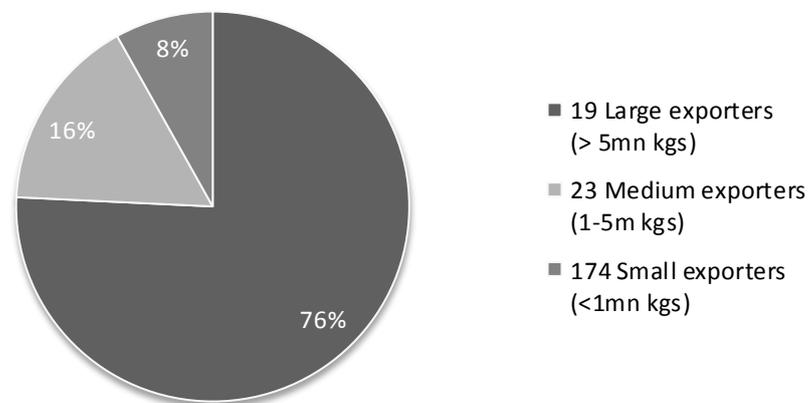


Figure 3.10 Tea exporters (by size) and the share of their exports (volume)

Source: Compiled from Sri Lanka Tea Board Tea Statistics, 2008

Given the variety of tea produced, Sri Lanka exports to more than 132 countries (2008b). As shown in Table 3.4, the top ten tea export markets for Sri Lanka are Russia (15.3% of overall exports), followed by the UAE (15%), Iran (10.3%), Syria (8.7%), Turkey (5.3%), Jordan (4.8%), Iraq (3.9%), Japan (3.4%), Ukraine (2.6%) and Kuwait (2.5%). Table 3.3 also shows how each category (bulk tea, tea packets, tea bags, instant tea, green tea and other tea) is distributed among the leading destinations for 2008. The UAE was first in the bulk tea and tea packet segments, accounting for 17% and 15% of total bulk tea and tea packets. Russia holds prime position in green tea and tea bags. For instant and other teas, Ireland and Iraq were the largest markets.

Table 3.4 Major destinations of Ceylon Tea by export categories (total, bulk, tea packets, tea bags, instant, green and other)

	Total tea exports (% of total)	Bulk tea (% of total bulk tea)	Tea packets (% of total tea packets)	Tea bags (% of total tea bags)	Instant (% of total instant tea)	Green (% of total green tea)	Other (% of total other tea)
1	Russia (15.3)	UAE (17.4)	UAE (14.6)	Russia (17.8)	Ireland (69.2)	Russia (38.9)	Iraq (38.2)
2	UAE (15.0)	Russia (16.4)	Syria (11.9)	Australia (9.8)	India (15.2)	Ukraine (11.6)	Russia (12.5)
3	Iran (10.3)	Iran (13.6)	Russia (11.0)	Syria (7.89)	Germany (5.63)	UAE (5.50)	Iran (11.8)
4	Syria (8.68)	Syria (8.0)	Jordan (10.4)	Jordan (7.42)	Japan (2.53)	Italy (4.13)	UAE (6.68)
5	Turkey (5.26)	Turkey (6.15)	Libya (8.27)	Saudi Arabia (4.9)	Italy (1.37)	Taiwan (3.38)	Ukraine (6.03)
6	Jordan (4.75)	Japan (5.11)	Iraq (6.81)	Poland (4.31)	USA (1.29)	Belarus (3.05)	Japan (2.96)
7	Iraq (3.87)	Chile (4.01)	Iran (6.29)	Ukraine (3.82)	Taiwan (1.07)	USA (2.97)	USA (2,12)
8	Japan (3.40)	Tunisia (2.74)	Turkey (5.55)	UAE (3.46)	Indonesia (1.03)	Australia (2.72)	Netherlands (1.83)
9	Ukraine (2.55)	Saudi Arabia (2.55)	Netherlands (3.61)	New Zealand (3.22)	Malaysia (0.95)	Germany (1.99)	Kuwait (1.82)
10	Kuwait (2.50)	Kuwait (2.55)	Kuwait (2.66)	Japan (3.16)	S. Korea (0.53)	S. Arabia (1.96)	Syria (1.32)

Source: Compiled from Sri Lanka Tea Board Tea Statistics, 2008

By region, the Middle East and Russia-CIS countries are the largest markets for Sri Lanka's tea exports, accounting for 47% and 21% respectively in 2008 (Figure 3.11). While European markets do not appear in the top ten tea export markets, the EU as a region is an important destination, accounting for 10%.

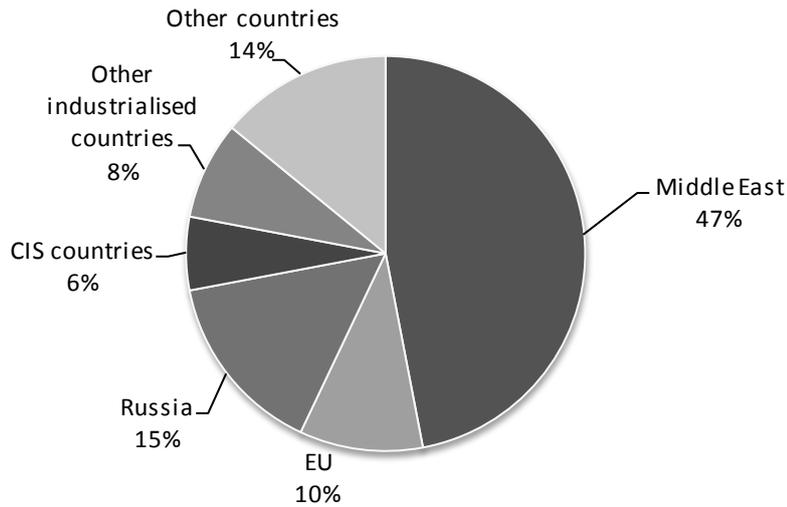


Figure 3.11 Major export markets for tea, by region

Source: Compiled from Sri Lanka Tea Board Tea Statistics, 2008

Sri Lanka exports tea in a variety of ways: in bulk and value-added form (packets, tea bags). While tea has traditionally been sold in bulk form, the industry over time has been adding value to the product by exporting it in various forms, catering to changing consumer demands (De Alwis, 2001). Sri Lanka exports a wide variety of tea packets (in box board cartons, foil packs, soft wooden boxes, metal cans, ceramic jars, wooden boxes, etc.) and a range of tea bags (single or double chambers, heat or non-heat sealed, with or without tags, etc.) (De Alwis, 2001). In 1959, the first consignment of packeted teas was sent to Libya. In the early 1970s the tea bag was introduced to cater to upmarket segments in tea-consuming countries (De Alwis, 2001). The export of retail packets accounted for 0.8% of total tea exports in 1962 and tea bags accounted for 0.2% of total exports in 1976 (Sri Lanka Tea Board, 2008). There has been an increasing trend in the export of tea packets and tea bags since then. By 2008, the share of bulk tea has fallen to 60%. Tea packets and tea bags now account for 27 and 7% of total tea exports, respectively (Figure 3.12). In comparison to other tea-exporting countries, Sri Lanka adds more value to its tea (Ceylon Tea Traders Association, 2011).

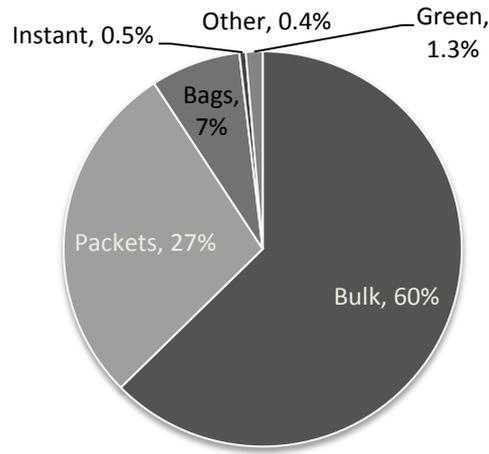


Figure 3.12 Composition of tea exports

Source: Compiled from Sri Lanka Tea Board Tea Statistics, 2008

Tea in bulk form is shipped to buyers abroad who blend and package for the retail market (Ganewatte, 2002). Tea bags and retail packs produced in Sri Lanka are marketed under Sri Lankan-owned brands, jointly owned brands and overseas-owned brands or what are commonly referred to as ‘private labels’. Sri Lankan-owned brands are those labels which are completely owned and conceived by local exporters. A number of Sri Lankan-owned companies have established their own brands and distribute retail products which are well established in many countries, especially in developing markets like the CIS and Middle East. Jointly owned brands are co-owned by local and foreign companies. Private labels are owned completely by foreign companies and the local exporters pack on behalf of foreign companies according to their specifications. According to a study by the Institute of Policy Studies (2001), Sri Lankan-owned and jointly owned brands account for about 20% of bags and packets; the remainder is accounted for by private labels. Despite the increasing quantity of value-added products, there are only a small number of companies that export products under their own brand names (Ganewatte, 2002).

The government over time has been promoting value addition amongst tea exporters by offering various concessions (Ingall, 2006): for example, promotional support for export of bags and packs and a subsidy scheme for the purchase of tea-bagging machinery, etc. (Ganewatte, 2002). However, there are several constraints that prevent the expansion of tea bags and retail packs exports. These include competition from established traders, especially multinational corporations with vast resources to promote their brands, tariff and non-tariff

restrictions on imports of tea bags and packets (Ceylon Tea Traders Association, 2011; Sunday Observer, 2012), inadequate cheap filler and CTC teas for blending, high investment costs for plant and machinery, packaging, advertising and promotion, etc., and restrictive policy on tea imports (M. J. Fernando, 2007; Ganewatte, 2002).

3.9 Public and Private Institutions Associated with the Tea Industry in Sri Lanka

There are a number of public and private organisations supporting the industry in Sri Lanka (Figure 3.13). Within the public sector, there is the Sri Lanka Tea Board (SLTB), the Tea Research Institute (TRI), and the Tea Small Holdings Development Authority (TSHDA), which fall under the purview of the Ministry of Plantation Industries (MPI). The Ministry, formed in 1971 for the development of plantation crops, including tea, rubber, coconut, palmyrah, sugarcane, mulberries and cashews, is responsible for the formulation, implementation and handling of policies, programmes and projects related to these crops, and oversees statutory bodies (Ministry of Plantation Industries, 2012). In addition, there are a number of well-established private sector associations, representing the different stakeholders groups of the industry, including producers, smallholders, brokers, exporters, etc. These associations have a long history dating back to the beginning of the industry.

The remainder of this section will examine the most relevant public organisations and private associations related to the industry and their main objectives, relationships with stakeholders and the challenges facing them.

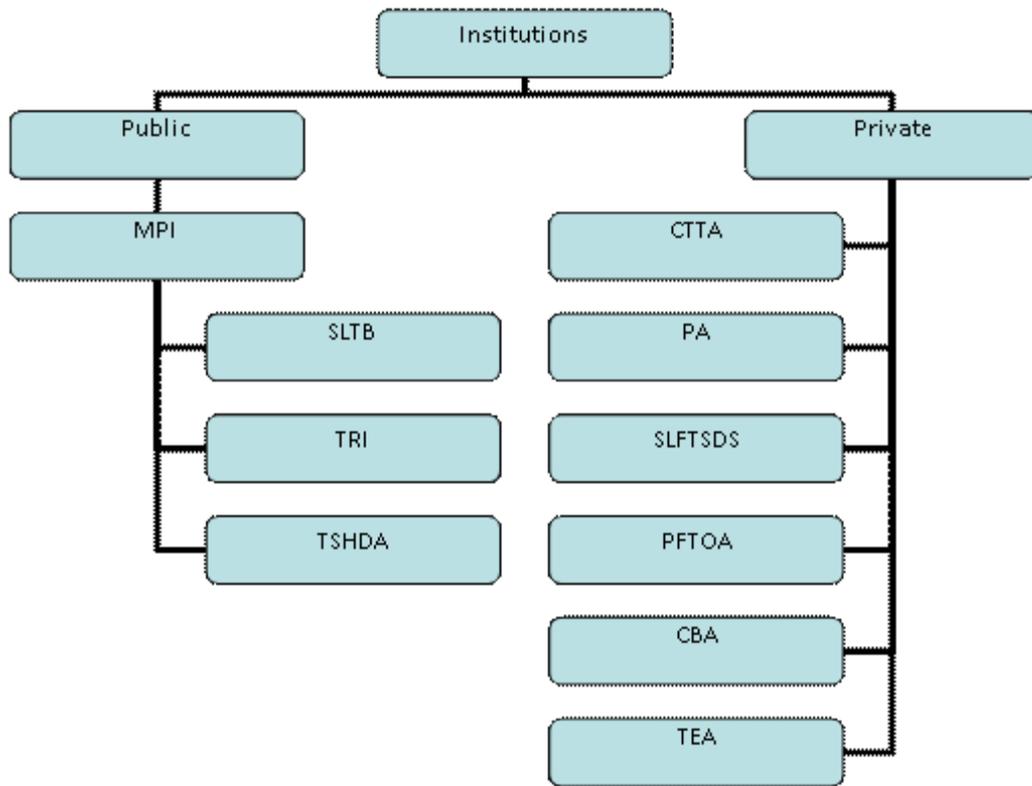


Figure 3.13 Main institutions supporting the tea industry in Sri Lanka

3.9.1 Sri Lanka Tea Board (SLTB)

Under the MPI is the Sri Lanka Tea Board, which is responsible for regulation, development of the industry and promotion of Ceylon tea globally (Sri Lanka Tea Board, 2009). SLTB was established on 1 January 1976 under the *Sri Lanka Tea Board Law No.14 of 1975* following the amalgamation of the Tea Control Department, the Tea Export Commissioner’s Department and the Ceylon Tea Propaganda Board and the TRI of Sri Lanka. TRI was legally separated in 1994 (Sri Lanka Tea Board, 2011).

Broadly speaking, SLTB has three functions: regulatory, promotional and developmental (Hettiarachchi, 2007). First, it is responsible for regulating the industry, including production, cultivation, replanting, rehabilitation of old tea gardens, establishment of factories and their operation. It also regulates auctions, monitors quality standards, sales, brokerage, warehousing and shipping. Second, it undertakes promotion in and outside Sri Lanka. Third, it undertakes development activities, including enhancing the quality of factories, implementation of quality systems, provision of replanting and factory modernisation schemes, and providing advice on good agricultural and manufacturing practices. These

functions are carried out through six divisions (Head Office, Promotion Division, Market Intelligence & Resources Division, Export Division, Tea Commissioner's Division, Tea Tasting Unit and Analytical Laboratory)(Sri Lanka Tea Board, 2011).

As the premier institution in the industry, SLTB works closely with all stakeholders of the value chain, including green leaf dealers, tea factories, tea brokers, warehouses and exporters (GOV2). All the industry stakeholder associations are also represented on the SLTB, including the Ceylon Tea Traders Association (CTTA), the Planters' Association (PA), the Private Tea Factory Owner's Association (PFTOA), the Sri Lanka Federation of Tea Smallholders Development Societies (SLFTSDS), and the Ceylon Broker's Association (CBA). There are monthly meetings where issues are discussed and recommendations made. Information is disseminated through these meetings as well as directly with individual stakeholders through circulars, etc. (GOV2).

Functions of the SLTB have suffered due to lack of adequate funds. For example, overseas trade promotions were curtailed or abandoned (News360.lk). The SLTB, the TRI and the TSHDA are funded from a cess or levy of four rupees on every kilo of tea exported (Hettiarachchi, 2007). The cess in the past went to the MPI, which then disbursed it amongst the three institutions. The government subsequently diverted the funds to the Treasury, which now makes a budgetary allocation (Hettiarachchi, 2007). The industry has repeatedly complained that the funds extracted from the industry were being (mis)used by the government for purposes other than for the benefit of the industry (Lanka Business Online, 2008; Sunday Leader, 2009) and that it should be re-invested in the industry (Planters' Association of Ceylon, 2010).

3.9.2 Tea Research Institute (TRI)

TRI was founded in 1925 by planters to support the industry through research; since its establishment, it has been the only national body to generate and disseminate new technologies related to tea cultivation and processing (Tea Research Institute, 2010b). TRI had its beginnings in Kandy, but later moved to Nuwara Eliya before finally shifting to its present site at Talawakele in 1929. Since then, TRI has established regional centres in Passara, Kottawa, Kandy, Ratnapura, and Deniyaya and more recently in Kalutara (Tea Research Institute, 2010b). TRI also operates two estates and factories on commercial lines but they mainly conduct research into tea processing, growing and manufacturing.

Research and advice are disseminated through events, circulars, publications, and the Advisory and Extension Division, which undertakes field visits, training, adaptive trials and demonstrations, and crop clinics (Tea Research Institute, 2010a).

TRI has a close relationship with all the stakeholders and interacts with them at different levels. For example, TRI has regular meetings with stakeholders. There are bi-annual Experimental and Extension (E&E) meetings with the CEOs and Senior Managers of the RPCs to inform them of the latest developments. In addition, there are regional meetings to brief Superintendents and Assistant Superintendents of tea estates about issues pertaining to a particular tea-growing region. E&E meetings are also conducted in Sinhala and officials from the TSHDA and representatives of SLFTSDS participate. In addition to directly interacting with individual stakeholders, TRI has tri-party meetings with the SLTB and the CTTA, which represent all industry associations. At these meetings, industry stakeholders are informed of developments at TRI and the industry brings problems to the table for address.

Currently, the TRI has difficulty in meeting its mandate and serving the industry due to lack of financial and human resources (Amarasuriya, 2012). TRI's recurrent and capital expenditures were covered initially by the Cess Fund (the levy of Rs.4/kg) but since 1978 it had to be shared between the SLTB and the TSHDA. The sub-division of the Fund has severely affected the functions and activities of the TRI (Morrell, 2006b), while its scientists have left the Institute in large numbers (Sunday Leader, 2009). TRI, which undertook pioneering work in the past (Ali, et al., 1997; Sunday Leader, 2009), is no longer a centre of *par excellence* for tea research. Given the circumstances, necessary funds must be allocated to the TRI to conduct research and offer attractive remuneration packages to attract and retain scientific staff (L. I. De Silva, 2013).

3.9.3 Tea Small Holdings Development Authority (TSHDA)

TSHDA is a semi-government organisation established under the *Tea Small Holdings Development Act No. 35 of 1975* but it came into being as a formal organisation in 1977 (Tea Small Holdings Development Authority, 2010b). TSHDA was set up to look after the development of the small holder sector and improve the livelihoods of tea farmers.

It undertakes activities for the benefit of the smallholders, including programmes for tea planting, replanting and new planting, and provision of material assistance (fertilisers, planting material, and plants). For example, the government through the TSHDA distributes a 50kg

fertiliser mixture bag for Rs.1000 (USD9) to improve the productivity of smallholdings under the Mahinda Chinthana Fertiliser Subsidy programme (Ministry of Plantation Industries, 2010). It also provides extension services and disseminates technical know-how through eight regional offices in the main tea-growing regions and 32 sub-offices (Tea Small Holdings Development Authority, 2010b). There are currently about 147 extension officers/tea inspectors attached to the TSHDA providing grass-root level service (Tea Small Holdings Development Authority, 2010b). The officers/tea inspectors work in conjunction with the SLFTSDS in the provision of services (Tea Small Holdings Development Authority, 2010b). These services are aimed at improving the productivity of smallholdings, quality of produce and developing additional income-earning activities (Tea Small Holdings Development Authority, 2010a). TSHDA also maintains the Tea Shakthi Fund, which has an insurance scheme for the welfare of smallholders (Ministry of Plantation Industries, n.d.). The Fund also runs 13 'model' factories in various tea-growing areas to process green leaf of smallholders (Ministry of Plantation Industries, n.d.).

TSDHA is currently constrained from expanding its advisory and extension services due to cost and lack of funding (Tea Smallholdings Development Authority, 2009), which has limited the number of officers/tea inspectors (Weeraratne, 1987). According to the TSDHA, the ratio of extension officers to farmer at present is 1:2633 (Tea Smallholdings Development Authority, 2009). This ratio is 'quite high... the ideal should be around 1000' (GOV4), which would enable the Authority to improve the delivery and reach of its services.

In addition to these government institutions supporting the industry, there are several private industry associations representing stakeholders in the value chain. The remainder of the section will examine these.

3.9.4 Planters' Association (PA) of Ceylon

All the regional plantation companies are members of this Association. PA is one of the oldest institutions in Sri Lanka (Amarasuriya, 2012). It was established in 1854 by planters 'to have some organisation that would be able to speak authoritatively on their behalf and to deal with those responsible for the administration of the island' (Planters' Association of Ceylon 2011). The PA was incorporated in 1916 (Planters' Association of Ceylon 2011). PA represents the interests of 23 large RPCs, as well as individual planters. Currently, it has a membership of 172,

with a total of 413 factories/production units, and tea land accounting for 38% of the nation (Planters' Association of Ceylon, 2010).

PA maintains a close relationship with its members (ASSOC2). Information is disseminated through meetings and circulars. There are monthly Plantation Management meetings with the CEOs of RPCs at headquarters in Colombo and quarterly meetings with planters through the eight district level associations (ASSOC2).

PA is represented in various organisations, including the SLTB, TRI and CTTA. PA does not have funds to assist its members (ASSOC2). Nevertheless, as an Association it negotiates whenever possible on their behalf with the MPI and the Treasury for funding or concessions (ASSOC2). It also assists its members in other ways; for example, keeping the membership up-to-date with information relevant to their business or intervening whenever an estate has a problem (ASSOC2).

3.9.5 Sri Lanka Federation of Tea Smallholding Development Societies (SLFTSDS)

The Federation was formed to represent the hundreds of thousands of smallholders who are scattered across tea growing areas (ASSOC4). The Federation was set up and registered under a *Small Holdings Development Act No. 36 of 1991* and was given legal status in 1997 under the *Small Holdings Development Act No. 21 of 1997 (Tea Small Holdings Development Authority)*. However, its origin dates back to the 1970s, coinciding with the expansion of the smallholder sector (ASSOC4). The Federation represents about 300,000 of the 400,000 smallholders, mostly smaller farmers with less than 4.04ha of land (ASSOC4). The number of members has grown annually since its inception (ASSOC4). Membership is voluntary and smallholders pay a nominal monthly fee of Rs. 10 (US9 cents).

Currently, there are 1353 grass-root level tea smallholder societies registered with the TSHDA (Tea Smallholdings Development Authority, 2009); each society consists of groups of smallholders (ASSOC4). The grass-root level societies meet every month and report to district-level societies. There are eight district-level societies in the main tea-growing areas (Tea Smallholdings Development Authority, 2009) of Galle, Matara, Ratnapura, Kandy, Nuwara Eliya, Badulla, Kegalle and Kalutara (ASSOC4). The district-level societies also have monthly meetings and report their activities and problems to the national-level Federation, which meets every month in Colombo. When issues faced by smallholders are brought to the notice of the Federation, they are discussed and taken up with the appropriate institution – whether

it be the SLTB, TSHDA or the TRI. Through this channel, information is also passed down to smallholders: for example, if a new clone or fertiliser is developed by the TRI.

The Federation lobbies on behalf of its members and has considerable political clout given the sheer size of the smallholder sector (ASSOC4). The Federation works in parallel with the TSHDA and coordinates its activities. For example, the societies at grass-roots level invite officers of the TSHDA to address farmers and assist in disbursement of subsidies for replanting, etc. Together with the TSHDA, the Federation disseminates knowledge about good agricultural practices to smallholders. Nevertheless, the organisation at times finds it difficult to meet the expectations of individual smallholders given its limited resources (ASSOC4), which it receives from the Treasury.

3.9.6 Private Tea Factory Owners Association (PTFOA)

PTFOA is a self-financed, organisation registered as a Private Limited Liability Company under the *Companies Act No.17 of 1982* but was incorporated in September 1990 (Email Communication). The primary objective of the Association is to promote, foster and protect the tea manufacturing industry of Sri Lanka and the interests of the tea factory owners of Sri Lanka (ASSOC3). Membership currently exceeds 230, with a main office in Colombo and branches located in Galle, Matara, Ratnapura/Balangoda, Kalutara/Mathugama, and Kandy/Gampola (ASSOC3). The representatives from the five branches meet monthly to discuss and deliberate on issues pertaining to the membership; problems are brought through branch members and important issues discussed at the meeting are conveyed to members through branch representatives, in addition to circulars and newsletters. The Association raises issues with relevant organisation or bodies like the CTTA, SLTB and the TRI, where the President of the Association participates as *ex-officio* (ASSOC3). It also facilitates activities and lobbies the government on behalf of its members. For example, the PTFOA lobbied the government and obtained a subsidy to modernise their factories (ASSOC3). It also conducts awareness programmes for its members (on good manufacturing practices, changing consumer demands, etc).

3.9.7 Tea Exporters Association (TEA)

TEA was set up in 1989 but it became active much later in 1996 (ASSOC6). It was formed to represent the interests of exporters as they felt their concerns were not being heard or

addressed at the CTTA, which represent all industry stakeholders (ASSOC6). Currently the Association has about 150 members who account for 83% of the Sri Lanka's tea exports (Razak, 2010) and is sustained through membership fees (ASSOC6). The Association lobbies the government and engages in dialogue with other stakeholders to resolve issues. The Association consists of a 20-member management committee, representing a mix of large, medium and small exporters, and meets monthly (ASSOC6).

3.9.8 Colombo Brokers Association (CBA)

CBA has a documented history of more 100 years and during its existence has played an important role in the sale of produce from the plantations spread over the length and breadth of Sri Lanka (Abdeen, 2004). CBA currently represent all eight tea brokers and some rubber and other producer (cinnamon, cardamom and coconut) brokers. The main objective of the Association is to promote the collective interests of its members and to ensure healthy competition in the trade and resolve disputes between members (ASSOC5). CBA, consisting of the Chairman and coordinators of the tea, rubber and produce sectors, meets every month and regularly communicates with its members on industry issues. The Chairman of the CBA has representation on industry bodies such as the SLTB and the CTTA. The CBA has 'a very good' relationship with its members, because the community is small (ASSOC5). Currently, the Association does not have a permanent, full-time Secretariat like other stakeholder associations such as the PA, and this makes it challenging for the Association to effectively serve its membership (ASSOC5).

3.9.9 Colombo Tea Traders' Association (CTTA)

CTTA consists of both tea buyers and sellers at the auction and was formed in 1894 (Ceylon Tea Traders Association, 2011). On behalf of the Ceylon Chamber of Commerce, it manages the Colombo auction in accordance with the *Sri Lanka Tea Board Law No.14 of 1975* and the *Tea Regulations of 1978*. It also inspects and approves warehouses, packing material, etc., through its sub-committees. The main objective of CTTA is to promote the common interests of sellers and buyers of tea and to uphold the good name of the Colombo Tea Auction (Ceylon Tea Traders Association, 2011). Currently, the CTTA has over 250 members within its fold (ASSOC1) and its main sources of income include membership subscription and interest income.

In addition to the elected sellers and buyers on the Managing Committee, other key stakeholders (PTFOA, PA, CBA, TEA, and SLFTSDS) also participate in the meetings by invitation. There are monthly Committee meetings and information is disseminated to the industry through stakeholder associations represented on the Committee and through circulars.

Given the fact that CTTA has wide stakeholder representation, it is often considered as the apex industry body (Ceylon Tea Traders Association, 2011) and takes decisions on behalf of the industry based on consensus rather than majority vote (ASSOC1). Thus it plays a vital role in lobbying the government and influencing making policy relating to the industry. However, it is not always possible for the Association to be the voice of the industry, given that the interests of stakeholders are diverse and sometimes conflict (ASSOC1). A notable example of this is the contention surrounding tea importation, with most exporters supporting the liberalisation of tea imports for blending, while the producers and manufacturers oppose vehemently any moves towards such a policy stance by the government (Razak, 2010).

3.9.10 Tea Association of Sri Lanka (TASL)

TASL was formed in 2003 as a pan-industry apex body representing the six stakeholders in the tea industry (PA, CTTA, TEA, SLFTSDS, PTFOA, and CBA) and was the first of its kind amongst tea-producing countries (Economist Intelligence Unit, 2003). The organisation was financially supported by ADB's Plantation Reform Project (PRP) and Plantation Development Project (PDP) (Thenuwara, 2003). The objective of the Association was to develop a common long-term strategy, coordinate industry efforts, and provide inputs to policy makers. However, the TASL wound up due to lack of finances consequent upon the PDP terminating at the end of 2008 (Sri Lanka Tea Board, 2009).

3.10 Major Challenges Facing the Tea Industry in Sri Lanka

During the last two decades, the industry has undergone major changes with the privatisation of plantations and proliferation of smallholdings (Mohamed & Zoysa, 2008). Despite these changes, the industry still faces many problems, including the escalating cost of production, low labour and land productivity, labour shortages from top management to field levels, deterioration in the quality of made tea, etc. – all of which require urgent attention. This section examines some of the challenges confronting the industry.

3.10.1 Deterioration in the Quality of Tea

The quality of made tea is to a large extent determined by the quality of the green leaf (Government of Sri Lanka, 1995). The leaf quality depends on the coarseness of the leaf and the extent of damage to the leaf caused by handling and transporting from the field to the factory. Generally speaking, factories require smallholders to supply 'two leaves and a bud' standard and can reject or deduct when there is a high percentage of coarse leaf and leaf damage. The high standard of green leaf ensures a made tea of good quality which will receive a favourable price at auction. However, the situation has changed in recent times, with an increase in the production of poor quality tea (Sunday Observer, 2012). From time to time, the tea trade has expressed concern about poor quality tea. It was reported in the media that factories are producing 80% off-grades and only 20% main grades, and in some cases as much as 100% off-grades (Morrell, 2009a). There have also been reports of some factories adding chemicals during the manufacturing process to enhance the quality of the tea in gross violation of the *Tea Control Act* (Eheliyagoda, 2009). Such scandals will eventually damage the image of Ceylon Tea if they persist (Lanka Business Online, 2010c).

There has been a fall in the quality of tea for a number of reasons: expansion in the number of bought-leaf factories (Sunday Observer, 2012) and their capacities; entry of RPCs into the bought-leaf market, which has further increased the demand for bought leaf (Island, 2012); smallholders and green leaf collectors focusing more on quantity as opposed to quality of the leaf (because they are paid according to the quantity supplied) (Morrell, 2012); shortage of labour; acceptance of poor leaf by factories; inefficient manufacturing processes of some factories established hastily to make quick money; increase in the reprocessing of refuse tea; and inadequacy of authorities to deter manufacture, sale and export of sub-standard teas (Government of Sri Lanka, 1995). This problem is particularly acute in the low-grown areas, where the majority of the tea factories are located (Island, 2012).

In this context, the Tea Board has introduced a number of projects, including the SLSI-SLTB Quality Certificate, the Randalu (Golden Leaf) Programme, Low NSA Strategy, Rush Crop Management Programme and Factory Base Tea Development Programme (Sri Lanka Tea Board, 2009) to improve the quality of tea production and manufacturing. The industry has also called for closer monitoring of tea factories that consistently sell at the bottom end of the market to assist such factories to identify their weaknesses and take corrective measures

(Island, 2012), punish those who are tarnishing the image of Ceylon tea (Eheliyagoda, 2009), or suspend the setting up of new factories (Lanka Business Online, 2010c).

3.10.2 Competition from Other Tea Producing Countries

According to FAO, international trade in tea is dominated by five major players (China, India, Kenya, Sri Lanka and Indonesia). The five largest exporters accounted more than three-quarters of global tea exports in 2008 (Sri Lanka Tea Board, 2008b) but their position is increasingly threatened with the emergence of new producers like Vietnam, Cuba, Argentina, Brazil, Peru, Uganda, Malawi and Malaysia (Yogarathnam, 2010b). Sri Lanka's share in world tea trade has dropped from 40% in 1970 (Ali, et al., 1997) to 18.3% in 2008 (Sri Lanka Tea Board, 2008b). While it managed to increase its exports in the last 10 years by 1.34%, the increase is far less than its competitors in Asia and Africa with the exception of India (Sri Lanka Tea Board, 2008b). Indonesia, China and Kenya increased their volumes by 4.7, 3.3 and 4.5%, respectively (Sri Lanka Tea Board, 2008b). Sri Lanka has lost its market share in important tea-consuming countries like Pakistan and Egypt to its competitors (Kenya and Indonesia), partly because of its uncompetitiveness and lack of CTC teas of required quality and quantity (Government of Sri Lanka, 1995). Sri Lanka has also lost other markets such as the US to other tea competitors of orthodox teas (Argentina, China and Indonesia) because Sri Lankan teas are more expensive (Government of Sri Lanka, 1995).

3.10.3 Low Field Productivity

While the average productivity (yield per hectare) has gradually increased over time (Mohamed & Zoysa, 2008), the productivity levels achieved by Sri Lanka (1615kg/ha) is one of the lowest compared to other major tea-producing countries (Ceylon Tea Traders Association, 2011; Pitigala, 2000) such as India (1,640kg/Ha), and Kenya (2,477kg/ha) in 2007, thereby contributing to the cost of production (Sri Lanka Tea Board, 2008b). However, it has to be noted that there are significant differences between smallholders and plantation-owned estates in terms of yields. According to MPI (2012), average productivity of the tea smallholding sector in year 2011 was 1,974 kg/ha, while the figure for the RPCs was 1,483 kg/ha per hectare. Generally speaking, yields in the plantations are lower compared to smallholders, which are somewhat comparable with Kenyan and South Indian levels (Ali, et al., 1997; Government of Sri Lanka, 1995; Pitigala, 2000; Yogarathnam, 2009). Low land productivity in Sri Lanka is due to 1) predominance of seedling tea, 2) high ratio of vacant areas, 3) the lack

of planting/replanting of high-yielding varieties, and 4) poor agricultural practices (Government of Sri Lanka, 1995), which are acute problems in plantations compared to the smallholder sector. Moreover, the weather conditions in smallholder areas (low country) are much more conducive for growing tea throughout the year than many of the areas (up- and mid-country) where most of the plantations are located (Ceylon Tea Traders Association, 2011).

Seedling teas give a lower yield than vegetatively propagated (VP) teas which are grown from leaf cuttings taken from selected bushes of high yielding and disease/weather resistant strain (GOV4). Yields from seedling tea can average 900 to 1,000kg/ha compared to VP tea, which can produce as much as 2,000 to 2,400 kg/ha (Pitigala, 2000). While most plantations, especially in the high and medium elevations, are planted with seedling tea, a larger part of smallholdings are cultivated with VP teas. For example, only 37% of the bushes in the plantations are of the high-yielding VP variety. In contrast, most small holders located in the low country have been planted with VP stock (88% of the land).

Also, the portion of vacant areas is high in many plantations due to lack of infilling. Vacant plots reduce the density of tea bushes/ha, which in turn lowers yields/ha (Government of Sri Lanka, 1995). This is also a problem with the smallholder sector (Economic Review, 1995).

Replanting has also been slow and far below recommended levels (L. I. De Silva, 2013). For example, the rate in the RPCs in the period 1993-2002 was only 0.7% of the total extent under tea, which is considerably less than the proposed minimum of 2%. Legislation passed in 1958 requires all new replanting to be of the VP variety but it was only during the post-privatisation period that there have been efforts to replant bushes with higher yielding VP tea (Pitigala, 2000). Replanting has been slow in the plantation sector due to high cost of replanting and protracted gestation period before a return can be realised (3-5 years until new bushes are ready for plucking), lack of disposable income, restrictions in disbursement of subsidies for replanting (Amarasuriya, 2012; Government of Sri Lanka, 1995), and high labour costs (2012). Consequently, the average age of bushes is much older in the plantations compared to the smallholder sector (Mohamed & Zoysa, 2008), where bushes are comparatively younger and grown on virgin land (Ceylon Tea Traders Association, 2011).

While most smallholdings are known to have planted a very high proportion of VP teas, the tea bushes are over 30 years old and they are past their prime bearing age, resulting in low yields

(Sunday Leader, 2012). According to the TRI, the productivity of VP is about 20 years and thereafter yields deteriorate (Morrell, 2009b), whereas lower yielding seedling tea can last up to 100 years (Pitigala, 2000). Smallholders are not replanting at the recommended levels despite the assistance provided by the government through the TSHDA. The government provides a subsidy of Rs.190,000 (USD 1680) for low-country smallholders and Rs.200,000 (USD 1769) for up-country replanting (C. De Silva, 2010). Despite this assistance, the cost of replanting is quite high and smallholders cannot afford the investment. It costs about Rs.1-1.5million (USD 7,836-11,756) to replant a hectare while the subsidy is much less and insufficient (Martinez & Wijayapala, 2007; Sunday Times 2012). Smallholders argue that they cannot afford to replant as their incomes would be adversely affected for about three to five years until the new tea bushes can be harvested (Island, 2012). Hence they are reluctant. To get round the problem, smallholders suggest introducing alternative income generation methods until replanted tea bushes can be harvested (Island, 2012). Currently, the replanting rate averages 0.8-0.9% in the smallholder sector (GOV4). These low figures for plantation and smallholder sectors underline the importance of replanting old seedling teas, re-planting of relatively older and less productive VP teas and infilling with newly developed cultivars in order to overcome falling yields, which is problematic for the industry's future.

Moreover, timely and appropriate application of fertiliser and proper agronomic care of bushes have not always been strictly followed in the past; these have contributed towards low land productivity, more specifically in the plantations, though the situation has improved following privatisation (Amarasuriya, 2012). Thus poor agronomic practices have further diminished yields (Pitigala, 2000). Soil conditions are also not very fertile due to cultivation practices undertaken over more than a century (Tea Research Institute, 2010c). According to some reports, more than 30mm of top soil has been lost in areas where tea is grown (Institute of Social Development 2008; Sunday Observer, 2012). Unless this is addressed, attempts to improve field productivity through replanting and infilling will be counterproductive.

3.10.4 Low Labour Productivity

Compared to other tea-producing countries Sri Lanka's labour productivity is much lower (Government of Sri Lanka, 1995). Labour productivity is much higher in smallholdings compared to RPC-managed estates because most smallholdings utilise family labour, which not only keeps the costs low but family members take a greater interest in obtaining higher yields (Island, 2010). When labour is hired from outside, workers are paid by smallholders on the

number of kilograms of leaf they pluck, so the workers work harder to improve their incomes (Island, 2010). This is not the case with workers in RPC estates, where labour unions have strongly resisted higher working norms (Government of Sri Lanka, 1995).

There are several causes for lower labour productivity (Government of Sri Lanka, 1995), including surplus labour in some plantations (there are more workers than required in high-grown estates compared to labour deficit situation in low- and mid-grown estates), wage increases (wages of estate workers have been raised without corresponding increases in productivity until recently), and low land productivity (Amarasuriya, 2012).

Plucking method also plays an important role in determining yields (Pitigala, 2000). The type of plucking required for orthodox tea production – two leaves and a bud – limits the leaf intake for production in order to ensure quality. In countries such as Kenya, which predominantly produces CTC teas, there is less concern with the quality of plucking and thus yields are higher. In this context, it is unlikely that Sri Lankan yields even with substantial improvements would be able to match Kenya's productivity levels, given existing plucking methods and orthodox manufacturing process (Pitigala, 2000). Consequently, low land and labour productivity have given rise to high cost of production (Ratnayake, 2009).

3.10.5 High Cost of Production

Compared to other tea growing countries, the cost of production in Sri Lanka is the highest amongst tea-producing countries (Ali, et al., 1997; Mohamed & Zoysa, 2008; Morrell, 2010b). The cost is US\$1.70-2.20/kg compared to US\$1.35 in Bangladesh, US\$1.25 in India, US\$1 In Kenya, and US\$0.75 in Vietnam (Institute of Social Development 2008). This is expected to increase further, though the country is still trying to compete on price (Sunday Times, 2007b)

High cost of production is due to low yields and low labour productivity, which are far below other countries (Government of Sri Lanka, 1995), as well as increases in wages due to unionised pressure (Mather, 2005; Yogaratnam, 2007), fuel prices and electricity costs, etc. According to one exporter, 'We are the highest cost producer in the world. Energy, fertiliser and labour take up more than 70 percent of the cost of production' (Sunday Times, 2007a). The high cost of production is one of the most important challenges facing the Sri Lankan tea industry because it makes the industry less competitive in the world market while lowering the profitability of producers and manufacturers, thereby hindering new investments (Ali, et al., 1997).

3.10.6 Decline and Volatility in Prices

Historically, the international tea market is characterised by a persistent oversupply, keeping prices low (van Reenen, et al., 2010). World prices in real terms have been falling since the 1980s due to continuing expansion of output in the face of sluggish demand (Ali, et al., 1997; Government of Sri Lanka, 1995; Yogaratnam, 2010a). Despite the decline in real prices, there has been steady increase in production, mainly from newcomers such as Kenya, Turkey, Indonesia and, Vietnam, for reasons including increasing producer prices due to depreciation of local currencies, inability of producers to adjust long-term investments in plantations to respond to market demands in the short term, and concentration of efforts to increase output and efficiency of production, resulting in intense price competition (Ali, et al., 1997; Government of Sri Lanka, 1995). Consequently, tea has become the cheapest beverage in the world (Government of Sri Lanka, 1995).

Due to adverse weather conditions in recent times, black tea prices rose to record levels in 2009 and the economic downturn did little to dampen consumption (van Reenen, et al., 2010). In fact, since 2009, the demand for black tea has exceeded supply, leading to firming of prices (FAO, 2012b). However, there is concern that the high prices realised in 2009 could overstimulate production and lead to a supply-demand imbalance, which is likely to adversely affect prices in the long term. In the next ten years, FAO (2012b) has estimated that world black tea production will grow at almost 1.9% annually to reach 3.28 million tonnes by 2021 and come into equilibrium with demand at a price of \$2.75/kg – just under the current price (\$2.85/kg in 2011). Another problem confronting the trade has been price volatility; in the last two decades the annual average price has fluctuated between a high of US\$3.33/kg to a low of US\$1.42/kg in 1980 terms (Yogaratnam, 2010a).

3.10.7 Exodus of Experienced Managers

The industry lacks qualified staff, especially managers, to supervise both cultivation and processing of tea (Institute of Social Development 2008). According to a survey carried out by the PA, around 100 planters within the age bracket of 30-45 years leave the industry annually (Mohamed & Zoysa, 2008). As stated by an industry consultant (CONS):

They have an aging workforce. So they have to recruit new people and train them. There are aging field officers; aging management; all the good managers and staff are leaving the industry. There is a huge sustainable problem in the industry in terms of human

resources – from top to bottom. They have an aging workforce; good people are not joining the industry and the good people who are in the industry are leaving.

3.10.8 Field and Factory Worker Shortages

Labour shortage is one of the more serious problems facing the tea industry (Mohamed & Zoysa, 2008); the 'labour situation has gone from one of surplus to deficit' (Pitigala, 2000, p.37). This is an acute problem in a labour-intensive industry such as tea, which requires large numbers of workers for plucking, pruning, weeding, fertilising, etc., as well as working on the factory floor (Institute of Social Development 2008). Shortage of labour affects the productivity and quality of the end product (Tea Research Institute, 2010c).

Due to changing socio-economic situation in Sri Lanka with the availability of other job opportunities (for female workers in the apparel industry and in nearby cities and urban areas with better pay and working conditions) and outside the country (employment in the Middle East), combined with the social stigma attached to plantation work, there is a poor inflow of workers into the industry, while there is an out-migration of existing workers to non-estate jobs. There is reluctance on the part of the younger generation, including the children of the estate workers, to follow in the footsteps of their parents. In fact, parents also encourage children to be educated and find a socially accepted job (Edirimuni, 2007). It has been reported that there is a 10-20% annual reduction of estate workers (Edirimuni, 2007). The situation is much more acute in mid- and low-country areas (Dunham, 1998), where much production currently comes from than up-county, where there is an excess of labour (Modder, 1999). As a result, plucking, pruning, fertiliser application, weeding and other field operations have been adversely affected (Modder, 2001). It is also a problem for smallholders: larger smallholder 'estates' also depend on nearby plantations for labour, especially at weekends for a considerable amount of pay (Kirindeniya, 2008).

Given the dire situation, it has become of utmost importance to mechanize the major field operations in tea cultivation wherever possible (Tea Research Institute, 2010c). However, total mechanisation is 'impossible' (Modder, 2001), given the terrain of tea lands. Mechanisation could also have an adverse impact on the quality of the end product, as the Secretary of MPI stated (Edirimuni, 2007):

If we use machines for plucking, we will lose the market we have because machines do not employ the same technique compared to (manual) plucking. If we mechanise this

function (plucking), we will not be able to pluck like that (two leaves a bud, which is a standard that Sri Lanka is famous for).

Nevertheless, limited mechanisation of some field operations through the introduction of shear harvester and pruning machines developed by the TRI has been undertaken to address the situation (Dissanaike, 2000), while plantation companies have improved the quality of life by providing better housing, sanitation, health care and welfare facilities (Modder, 1999; Yogaratnam, 2007), as well as working conditions of their workers to instil professionalism and pride in their work and thereby retain workers in the industry (Modder, 2001). MPI has also introduced a programme targeting GCE O/L qualified children of tea smallholders who would be trained in every aspect of the industry by experts to minimise the problem, at least with regard to smallholdings (Senadheera, 2007b). However, there are fears whether Sri Lanka can still maintain its image as a producer of quality tea if it resorts to full mechanisation (Dissanaike, 2000; Institute of Social Development 2008).

3.10.9 Proliferation of International Standards

In addition to complying with product standards laid down by the Sri Lanka Tea Board, namely the ISO3720, which is the minimum international standard for black tea (Institute of Social Development 2008; TradeStandards.org, n.d.), producers, manufacturers and exporters must increasingly comply with process standards which buyers and countries alike have introduced to improve the quality of tea and its production (Goonetilleke, 2006). The industry initially applied for the ISO9001 certification for tea processing as some buyers demanded it. Despite the fact that there were a number of benefits which were realised from complying with the standard (cost reduction, better machinery maintenance, productivity improvements, etc.), it did not ensure the quality of the end product (Institute of Social Development 2008). Tea factories and warehouses owned by manufacturers and exporters have also initiated action towards obtaining HACCP and ISO22000 certifications to ensure safety of the tea manufactured and exported (Abeyakoon, 2007; Institute of Social Development 2008). The industry is also interested in obtaining the ISO14000 environmental standard (Institute of Social Development 2008). Currently, the EU recommends but does not require that tea producers comply with the HACCP standard (Karunanayake, 2005). Some plantation management companies and private bought-leaf factories face difficulties in complying with the requirements of these standards, because their factories were established for 19th century requirements (S. L. De Silva, 2006). To meet HACCP and ISO22000, the industry had to upgrade factories, improve their water supplies and hygiene with the provision of meal rooms and

toilet facilities, train factory staff and workers, and obtain certification (Goonetilleke, 2006). Major improvements are needed since the industry has been falling behind over time, despite many changes taking place internationally.

Though it is still not compulsory to get HACCP or ISO22000, implementation of other international food safety standards like Good Manufacturing Practices (GMPs), Good Hygienic Practices (GHPs) and Standard Sanitary Operations (SSOPs) in factories have become a necessity (Kithsiri, 2008). To meet these requirements, the Sri Lanka Tea Board started the Ceylon Quality Certificate-Quality Management System (CQC-QMS) in 1998 with the aim of upgrading factories and improve tea quality (Kithsiri, 2008). Under the programme, factories are audited and rated on five categories: quality, productivity, good hygiene practices, production excellence and social responsibility programmes (Sri Lanka Tea Board, 2007).

This was implemented in conjunction with the Randalu Project, which aims to improve the quality of green leaf (Kithsiri, 2008). The MPI has also launched a subsidy programme for factories to obtain the HACCP certificate whereby 60% of the cost incurred in obtaining the certificate will be reimbursed (Sunday Times Online, 2007). To increase awareness in the industry amongst producers, manufacturers and exporters, MPI organised seminars to disseminate information on standards (Island, 2007a).

In addition, the EU and Japan require that tea imports comply with Maximum Residue Levels (MRLs): they have introduced a Positive List of approved agrochemicals together with MRLs for tea (Goonetilleke, 2006). While Ceylon Tea has been declared the Cleanest Tea in the world because it contains the least levels of pesticide residues (Institute of Social Development 2008; Modder, 2001, 2003), a difficulty faced by producers and exporters is that the EU and Japanese lists are neither identical in terms of approved agro-chemicals nor in permitted levels (Goonetilleke, 2006). There is discussion about harmonisation at the international level (TradeStandards.org); the MRL issue was taken up by the FAO Inter-Governmental Group on Tea and a Working Party specifically charged with promoting MRL harmonisation has been established since 2004-05 (Neilson & Pritchard, 2009). While the purpose of these standards is to prevent the occurrence of health hazards (Goonetilleke, 2006), requirements for very low levels of pesticide residues in made tea, especially for the EU and Japan, have become non-tariff barriers for tea exports from Sri Lanka (Institute of Social Development 2008).

Consumers in developed countries have been requiring tea producers to comply with minimum social and environmental standards. This has prompted many tea companies to sign up to codes of practices and standards like the UN Global Compact, Fair Trade, and Ethical Partnerships (Institute of Social Development 2008). RPCs such as Watawala Plantations, Kelani Valley Plantations, and Talawakelle Tea Estates have adopted these (Institute of Social Development 2008). Awareness of these certificates in the industry is high, as some of the buyers insist on them, for example, Fair Trade labelling and Ethical Tea Partnership. These certificates are usually demanded by buyers from the EU (UK and Germany), North America and Japan (Institute of Social Development 2008). Only a few estates have received Fair Trade certification while some are in the processing of obtaining it. Those who have adopted Fair Trade believe that there will be better demand for their products at auctions and greater opportunities for direct exports because of the certificate. In the case of ETP, there are no financial incentives to obtain ETP membership and as such there is no motivation towards applying for it amongst the RPCs (Institute of Social Development 2008).

3.11 Conclusion

The tea industry in Sri Lanka has a long history, and it has contributed greatly to the country's socio-economic development since its establishment 150 years ago. Though its role has diminished over the years, the industry still plays a vital part in the economy, contributing to the national income and employment and generating valuable foreign exchange. Tea is extensively cultivated in several districts and at elevations from high to low, producing a range of teas with quality and flavours. Tea plantations and tea from high and medium elevations, which once dominated the industry, have been overtaken by smallholders and low-grown teas, both in terms of the extent of tea cultivation and production with greater demand and higher prices for low-grown teas. There has been a corresponding expansion in the number and capacity of bought-leaf factories, especially in the low country to process leaf from smallholders. Teas are largely sold through the Colombo Auction, which has emerged as the largest tea auction in the world, fetching the highest average prices for tea. Teas are bought by traders, namely exporters who ship them in bulk and value-added forms, either under their own brands or private labels of buyers abroad. In fact, over 90% of the tea produced in Sri Lanka is exported, making the industry highly export-oriented.

In order to support the development of the industry, a number of organisations, both public and private, have been established over time and have assisted stakeholders of the industry in

numerous ways. However, most are constrained in carrying out their functions due to lack of resources, especially in the case of the public organisations. The industry also faces a number of difficulties with deterioration of tea quality, competition from other producing countries, low land and labour productivity, rising cost of production, and acute shortage of workers, which require urgent attention in order to ensure sustainability of the industry in the future.

Chapter 4 Methodology

4.1 Chapter Objectives

Having discussed the literature surrounding global value chains and standards in Chapter 2 and a background to the tea industry in Sri Lanka in Chapter 3, this chapter focuses on the research design adopted for the study – the overall plan used to answer the research questions. Section 4.2 provides the rationale for using a qualitative approach and case study as a strategy of inquiry. Section 4.3 includes a statement of the researcher’s past experiences, which are likely to shape the study. Section 4.4 outlines the multiple data collection methods (interviews, documents and observations) used to gather information for the study. Section 4.5 outlines how the data were analysed. Section 4.6 explains the measures taken to improve the quality of the research. The ethics procedure followed for the study is spelt out in Section 4.7. Section 4.8 describes the main limitations of the research design.

4.2 Rationale for Qualitative Research and Case study

A qualitative research approach was adopted because of the nature of the research questions and the method of analysis employed to answer the questions. Tharenou, Donohue and Cooper (2007, p.17) argue that, in choosing between qualitative and quantitative approach, ‘Qualitative analyses provide detail, process, richness and sensitivity to context.... Quantitative analysis is more appropriate for questions of incidence and measurement’. As stated in Chapter 1, the study aims to answer four research questions pertaining to governance in the tea chain in Sri Lanka, perceptions of stakeholders regarding standards governing the chain, the strategy adopted to comply with emerging food standards and the implications of standards compliance for governance in the chain. These questions require a comprehensive analysis which provides detail and rich descriptions as well as sensitivity to context. Moreover, the study does not seek to measure the impact of standards on the tea industry in Sri Lanka, which would have otherwise warranted a quantitative analysis (Tharenou, et al., 2007).

The five most popular and diverse approaches to qualitative research are ethnographies, grounded theory, case studies, phenomenological research, and narrative research (Creswell, 2003). Of these a case study was chosen as the most appropriate qualitative method of inquiry because of the focus of the study. In a case study, the central purpose or focus is the in-depth examination of a specific case. This is a distinct advantage of a case study yet also its

limitations, in that one cannot generalise its findings (Tharenou, et al., 2007), at least in the conventional sense of the word (Merriam, 1988). The focus of a biography is on the life history of an individual and the focus of a phenomenology is on understanding the essence of a phenomenon (Creswell, 1998). In grounded theory, the objective is to develop a theory grounded in data from the field, whereas an ethnography is chosen to study the behaviour of a cultural or social group (Creswell, 1998).

In this study, the focus is on the case: the tea value chain in Sri Lanka. The Sri Lankan tea industry was chosen because of its instrumental value: it is illustrative of a common problem facing export-oriented agro-food industries in Sri Lanka and other tea producing/exporting countries – what Stake (1995) refers to as an ‘instrumental case study’. A case study is described as instrumental when the use of the particular case is an attempt to understand something else (Grandy, 2010); the case study is ‘a means to an end’ (Thomas, 2011, p.99). Thus, by studying this case in-depth (Sri Lanka’s tea value chain), one can obtain a better insight into a particular issue – in this case, emerging standards (Grandy, 2010).

Case studies are commonly used as a research method in the political and social science discipline (Creswell, 1994), including management (Tharenou, et al., 2007). Yin (2009, p.13) defines a case study as ‘an empirical enquiry that investigates a contemporary phenomenon within its real-life context’. A case study focuses on the context, because it is important to understand the phenomenon. Thus considerable space is devoted to describing the context of the case (Chapter 3).

Yin (2009) outlined three conditions which are necessary for using a case study as a method of inquiry: 1) the type of research questions, 2) the extent to which the researcher has control over the actual events, and 3) degree of focus on contemporary events. The most important condition in choosing the appropriate research method is the type of question that is being asked. If the research questions are more explanatory in kind and focus mainly on ‘how’ and ‘why’ questions, a case study is preferable. As explained in Chapter 1, this study examines ‘how’ the tea value chain in Sri Lanka is governed, ‘how’ the stakeholders in the tea industry perceive food standards, ‘how’ the industry responded to food standards, and ‘how’ standards affected governance within the chain. In addition, a case study is a preferred method in examining contemporary events over which the researcher has little or no control (Yin, 2009). This study also fulfils these two conditions, since the case study examines a ‘contemporary event’ - that is, the emergence of food standards in the tea industry in Sri Lanka since 2000, as

mentioned in Chapter 1, and the researcher has no control over these events. Given the contemporary nature of the event, the study employs multiple methods of data collection, including interviews and observations, which is another distinct advantage of case study design (Yin, 2009). A case study was thus deemed the most appropriate method of inquiry for the research questions posed by the study.

4.3 Researcher's Role

Since 'the researcher is the instrument' (Patton, 1991, p.14) for data collection and analysis in qualitative research, the findings can be subject to bias, values and personal interest (Creswell, 2003). 'Qualitative research is fundamentally interpretative' (Creswell, 2003, p.184). It is thus necessary to state the position of the researcher at the outset of the study, given that 'openness is considered to be useful and positive' (Creswell, 1994, p.146): the researcher has been attached to the Institute of Policy Studies (IPS), an independent economic research organisation based in Sri Lanka since 1999. The Institute has excellent relationships with both the government and private sector, including the tea industry, for which it has undertaken a number of research studies. However, the researcher has no previous experience working with or for the industry. Hence, in conducting the case study, the researcher approached the topic as an outsider, not an insider. Moreover, the researcher was unfamiliar with the topic or the informants who participated in the study. Although every effort has been made to ensure objectivity, the researcher may bring certain biases to this study that may shape the way the data were collected and interpreted. The study commenced with the perspective that the tea industry in Sri Lanka is currently faced with the challenge of complying with standards, which can potentially act as barriers to trade. Moreover, standards may have significant implications for stakeholders and governance in the tea value chain, leading to closer links with larger and more established suppliers at the expense of smaller suppliers. This would be a cause of concern, since smallholders are the backbone of the industry. Nevertheless, complying with standards may provide opportunities and ensure access to buyers and markets abroad. The researcher views standards compliance as critical to the sustainability of the industry, given the export-oriented nature of the value chain.

4.4 Data Collection

The case study combines several qualitative data collection methods: 1) interviews, 2) documentation, and 3) observations to understand governance in chain and the effect of food

standards on stakeholders and governance. Thus the data came from both primary sources, such as interviews and direct observations, and secondary sources, such as documents (Figure 4.1). Each type has its advantages and disadvantages (Table 4.1); no single source has a complete advantage over others (Creswell, 1994; Yin, 2009). In fact, they are ‘highly complementary’ and a good case study contains a number of sources (Yin, 2009, p.80). A combination of data collection methods is used, because the ‘phenomenon’ under study is complex (Tharenou, et al., 2007). Moreover, the use of multiple sources of evidence improves the quality of the case study by triangulation of data (Creswell, 2003; Yin, 2009).

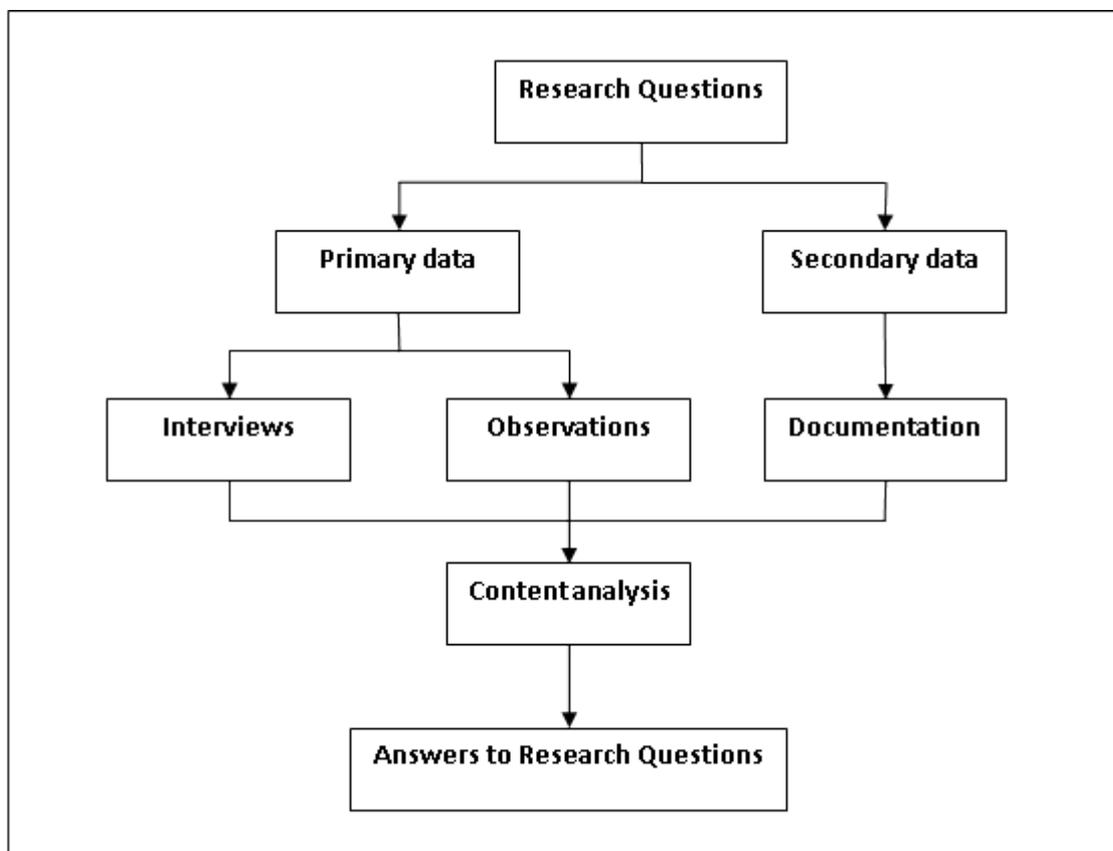


Figure 4.1 Overview of research design

Table 4.1 Advantages and disadvantages of interviews, documents and observations

Data type	Advantages	Disadvantages
Interviews	<ul style="list-style-type: none"> • Targeted – focuses directly on the case study topic • Insightful 	<ul style="list-style-type: none"> • Bias due to poorly constructed questions • Response bias • Inaccuracies due to poor recall • Reflexivity – interview gives what the interviewer wants to hear
Observations	<ul style="list-style-type: none"> • Reality – covers events in real time • Contextual – covers context of event 	<ul style="list-style-type: none"> • Time-consuming • Selectivity • Reflexivity
Documentation	<ul style="list-style-type: none"> • Can be reviewed repeatedly • Unobtrusive • Contains exact names, references and details of an event • Broad coverage – long span of time, many events 	<ul style="list-style-type: none"> • Retrievability – can be low • Biased selectivity • Reporting bias • Access may be restricted

Source: Yin (2009)

Field work was conducted in Sri Lanka in three stages; the first trip was made in August 2009, followed by a second trip from December 2010 to May 2011 and a third, shorter trip from January-February 2012. The purpose of the first trip was to make initial contact with stakeholders in the industry and to solicit their opinions about the relevance of the topic in order to explore topic feasibility. Informal interviews were undertaken with exporters, a selling broker, a certification agency, a consultant and an official from the Sri Lanka Tea Board (SLTB) as a means of establishing pathways for more comprehensive fieldwork later (Neilson & Pritchard, 2009). The second trip was undertaken in 2010-11 for a period of 6 months to conduct detailed, in-depth interviews with key informants, collect documents and observe. The third trip coincided with the Colombo International Tea Convention 2012, a global forum-cum-convention bringing together international and local tea exporters, producers and buyers (Colombo Tea Traders' Association & Sri Lanka Tea Board, n.d.). It was possible to conduct the remaining interviews and collect other material during this final trip and thereby complete data collection for the study.

Data collection was initially based in Colombo, which is the commercial hub and where most of the key informants were located, making it convenient to conduct interviews. However, it was necessary to travel to tea-growing areas in order to conduct interviews with smallholders and some privately owned factories. These interviews were carried out in some of the main tea-growing districts and at all three elevations in which tea is grown: Nuwara Eliya (high elevation), Kandy (medium elevation), Kegalle, Matara, and Ratnapura (low elevation). In addition, documents were collected from three local libraries: the libraries of the SLTB and the IPS in Colombo, and the Tea Research Institute (TRI) library in Talawakelle. These were done mostly during the second trip in 2011.

While data collection was a labour-intensive process, and lasted for seven months in total, the overall research experience was overwhelmingly positive. Everyone but for one association contacted was willing to meet and share points of view on the topic when the study's purpose was explained. Moreover, the personal experience of the researcher as a senior researcher at IPS, which is the leading think tank in the country, facilitated data collection. The Institute maintains close association with both the public and private sectors, including the tea industry. Access to interviewees through personal contacts was also a useful means of collecting data.

However, it was difficult to get an appointment with a Chairman of one association because he could not be convinced to participate in the study. Nevertheless, it was possible to obtain an interview at a later date with the newly appointed Chairman of the same association; he was more accommodating and understanding. All the interviewees were forthcoming in their answers to all questions posed, since the questions were not sensitive and posed no threat to the interviewee or to the organisation. Some also provided documentation which they deemed relevant to the study after the interviews or recommended reports which might be of interest. In fact, some went so far as to contact other informants in the industry and obtain an appointment.

4.4.1 Primary Data

4.4.1.1 Interviews

Interviews were conducted face-to-face with 45 key informants across the value chain in Sri Lanka from smallholders to exporters and the main institutions supporting the industry in both English and Sinhala, to examine the implications of international food standards for the governance of the tea value chain. Key informants were used, since it was not possible to

interview everyone in the industry. In addition, they provided access not only to information, which might not be available to the researcher but also to other individuals in the industry (Tharenou, et al., 2007). The key informants held special positions in their organizations and in the industry (Gilchrist & Williams, 1999; Tharenou, et al., 2007). Moreover, they not only possessed knowledge and status, but also communication skills, and they were willing to share their knowledge (Gilchrist & Williams, 1999).

Interviews provided the primary source of information for the case study. Interviews are an important source of information in case studies, because they are about human affairs (Yin, 2009). Interviews proved to be the most appropriate instrument to obtain first-hand accounts of stakeholder's relationships with other agents in the chain, their perceptions of emerging foods standards, how they responded to them over time and how compliance affected their relationships within the chain. In this regard, in-depth semi-structured interviews were conducted, as they provided the opportunity for stakeholders to express their points of view and talk through the issues over an extended period of time and sometimes in more than one sitting (Yin, 2009).

Semi-structured interviews are 'guided, concentrated, focused and open-ended communication events that are co-created by the investigator and interviewee(s), and occur outside the stream of everyday life' (Miller & Crabtree, 1999, p.19). The advantages of semi-structured interviews compared to other categories (structured and unstructured) are that 'they are more flexible than structured interviews, but have more focus than unstructured interviews' (Tharenou, et al., 2007, p.104). Whilst interviews are insightful and targeted, focusing on the topic of the case study, they can be subject to problems like response bias due to researcher's presence, poor recall of history or inaccurate articulation - see Table 4.1 (Creswell, 1994; Yin, 2009). These issues were addressed by corroborating the insights gained from informants with other sources of data (Yin, 2009).

Interview Guide

An interview guide was developed with headings, questions, probes to follow the questions and space for recording notes (See Appendices 4-8) for the purpose of conducting the interviews. The interview guide was piloted with participants (exporters, manufacturers, producers, etc. in the tea value chain) before it was used to ensure that the questions could be understood by participants and could be used to obtain relevant information for the study;

only minor amendments to the guide were made following the pre-testing stage to address repetition of questions, misinterpretation of questions, questions which were difficult to understand, etc. While the guide was more or less similar for most of interviews, it was adjusted for the participants interviewed (exporters, manufacturers, producers, etc.) to ensure the applicability of the questions to their roles in the tea chain. The guide contained a mix of open and closed questions to elicit general perceptions about the topic as well as specific aspects.

The guide was divided into seven sections to broadly reflect the four research questions. Table 4.2 links the research questions with the seven sections of the guide. Each section began with a set of broad questions before more specific questions were asked, or what is referred to as the ‘funnelling technique’ (Tharenou, et al., 2007). Section 1 dealt with background information about the interviewee’s business and its functions within the chain. Sections 2 and 3 addressed the interviewee’s relationship with buyers and suppliers. Section 4 covered food standards relevant to the interviewee’s business. Section 5 dealt with the strategy adopted in the face of emerging standards. Section 6 addressed how standards affected the relationship with buyers and suppliers. The interviews concluded with the informants being shown a map of the tea chain and asking them to comment on it, as well as requesting someone else to speak on the same issues. The finalised tea value chain based on the interviews is presented in Figure 5.1 in Chapter 5.

Table 4.2 Links between research questions and interview guide

Research Questions (RQs)	Interview Guide
RQ1: How is the Sri Lankan tea value chain governed?	Section 1: Background information Section 2: Relationship with buyer Section 3: Relationship with supplier Section 7: Map of Sri Lankan tea value chain
RQ2: How do industry stakeholders perceive food standards governing the tea value chain?	Section 4: Food and other standards
RQ3: How did the tea industry in Sri Lanka respond to the emerging food standards?	Section 5: Compliance strategy
RQ4: How did complying with standards affect governance in the tea chain in Sri Lanka?	Section 6: Implications for governance

Sampling Strategy

Key informants from the tea chain (exporters, manufacturers, brokers, producers, government officials and representatives from industry associations) were initially identified purposefully for interviews. Names of key informants were obtained from articles on the industry which regularly appear in Sri Lankan daily newspapers (for example, Daily News, Daily Mirror, etc.), as well as companies, associations (for example, PA, CTTA, etc.) and government websites (for example, SLTB, TRI, etc.). The informant pool was thereafter expanded using *snowballing or chain sampling strategy* (Miles & Huberman, 1994; Patton, 1991) where informants were asked at the end of the interviews: “Who knows a lot about...? Who should I talk to?”. The sample group grows as subsequent participants identify others (Tharenou, et al., 2007). As the sample builds up, enough data are gathered to be useful for research. Initially there was a divergence in the names recommended by informants but later there was convergence as some names were mentioned over and over again (Patton, 1991). In the selection of interviewees, no attempt was made to obtain a random sample of informants; rather the sample was *purposive*.

A snowballing or chain strategy was deemed the most appropriate method of sampling for this study, given that it examines the implications of food standards from a value chain perspective. Thus, it was necessary to move along the chain from cultivation to export, and obtain insights from informants at different points in the chain. Moreover, other value chain studies (Islam, 2008; Loconto, 2010a; Neilson, 2008; Neilson & Pritchard, 2010; Plahe, 2008) have also utilised this non-probability sampling technique. In most cases, the interviewee recommended other people whom they considered knowledgeable about the issues. Since the interviews were not selected from a random-sampling frame, snowballing can be subjected to biases. To avoid gaining a false impression of the ground situation by interviewing only recommended key informants, an effort was made to interview persons who are involved in the chain but were not referred by someone else (Neilson, 2008).

The interviewees were also selected to capture a broad variation in responses from key informants on the subject of the study. Thus *maximum variation sampling* (Miles & Huberman, 1994; Patton, 1991), also known as heterogenous sampling, was also employed. For example, small-, medium- and large-scale exporters, who ship bulk and value-added teas to diverse international markets, were chosen for interviews. Similarly, privately owned and management-run factories, located at various elevations (high, medium and low) were

interviewed, while smallholders with different extents of land were also selected for interviews. As stated in Chapter 3, smallholders include farmers with small plots of land (less than 10ha), using family labour, and those owning small estates (10-20ha), which depend on hired labour. Thus a combination of snowballing and maximum variation sampling was used in the selection of interviews.

Interviews were sequenced around interviews with exporters, as they provided a vital link between buyers abroad and local suppliers. Thereafter, the chain was traced back to manufacturers and producers using a snowballing technique. In most cases, interviews with private industry organizations were held before the interviews of each informant group to provide an opportunity to understand the issues surrounding the adoption of standards for exporters, manufacturers and producers.

Interview Technique

Interviews were conducted face-to-face in the natural setting of the participants (office, factories, home). Interviews lasted between one and two hours and were at interviewee convenience. In some occasions, due to busy work schedules, interviews were conducted on two separate occasions. Most interviews were conducted in English, which was the language of choice of participants who were bilingual, except in the case of smallholder interviews which were done in Sinhala, an official language spoken not only by Sinhalese, the largest ethnic group, but also by other ethnic groups. A handful of interviews were conducted in both English and Sinhala. The language decision was left up to the preference of the interviewee. Given the interviewer's fluency in both languages, the interviews were undertaken without difficulty or misunderstanding. All interviews were conducted using the appropriate guide by the researcher.

Before the interview, participants were contacted by email (or phone where there was no email address) and informed about the topic and the information that was requested from them. They were also informed about the researcher, the purpose of the interview, and the approximate time it would take, which were outlined in the Explanatory Statement, using terms that were understandable to the participant (Appendix 2). This was to ensure that participants were willing to speak as well as provide information required for the study. Before each interview, rapport and a common frame of reference were established with informants

so that they would be forthcoming in their answers and understand the kind of information that was required from them.

During the interview, the researcher followed a number of guiding principles outlined by Seidman (2006) which included focusing more on listening and less on talking, asking for clarifications and details, avoiding leading questions, allowing informants to speak without interruption whilst ensuring they remain focused on the topic, encouraging them to reconstruct events, allowing pauses in between questions in case they wanted to elaborate, follow hunches, share experiences, etc.

Recording Procedures

All interviews but one were digitally audio-recorded (with permission) to be able to go back over the interviews and obtain an accurate rendition. All voice recorded interviews were transcribed verbatim, which was time-consuming. The few interviews conducted in Sinhalese were undertaken using a translated interview guide. The interviews were then back-translated into English by two professional translators working at the Parliament of Sri Lanka. All transcripts were uploaded to NVivo9, a software widely used by academics, government and commercial organizations for qualitative data analysis (QSR International, 2013). During the interview, notes were taken in the event that recording equipment failed.

Participants

Interviews were conducted with key informants since it was not possible to interview everyone in the industry. Interviews were conducted with eight key informant groups and with more than one company/person from each group in the chain to obtain a diverse response. Accordingly, the numbers interviewed from each informant group are shown in Table 4.3. In all, 45 key informant interviews were carried out.

In order to ensure anonymity of interviewees, codes were assigned to them to denote their functions: exporter (EX), brokers (BR), manufacturers, which include private factories (PVT), regional plantation companies (RPC), producers, which include smallholders (SH) and regional plantation companies (RPC), government organisations (GOV), private associations (ASSOC), certification agencies (CERT) and a consultant (CONS).

Table 4.3 Key informants and codes

	Key informants		Code	Number of interviews
1	Exporter		EX	10
2	Manufacturer	Private Factories	PVT	4
		Regional plantation companies*	RPC	6
3	Producer	Smallholder	SH	10
4	Broker		BR	2
5	Government organisations		GOV	4
6	Private Associations		ASSOC	6
7	Consultant		CONS	1
8	Certification agencies		CERT	2
	Total			45

Note: *RPCs are involved in production as well as manufacturing of tea

In some organisations, more than one individual was interviewed. For example, in the case of exporter EX1, an interview was conducted with the Executive Director to obtain background information to the company, its activities and its relationship with its buyers/suppliers; the Quality Assurance Manager was also interviewed to learn about food standards applicable to the company, their implementation experience and the implications for buyer-seller relationships. A detailed list of key informants and their positions within the organisations are reported in Appendix 1.

Exporters (EX): Since exporters provide a vital link between international buyers and local tea manufacturers and producers, exporters were interviewed first. The exporters were identified through a list compiled by DataMonitor, a private consulting company which collects and compiles statistics related to tea exports. Its publication lists the names of exporters and their respective volume of tea exported during the year¹. According to the list, there were 216 tea exporters in 2009, of which 19 were large-scale and 23 and 174 medium- and small- scale, respectively. Ten were selected for interview. Of these, four were large, exporting more than 5million kg of tea annually. The other three were medium- and small-scale exporters (1-5million kg and less than 1million kg, respectively). More interviews were conducted with large

¹ The Tea Board maintains a directory of tea exporters but this only gives names and contact details, arranged alphabetically but not by volume/value of tea exports. Thus it is not possible to distinguish companies in terms of size for the purpose of interviews.

exporters compared to others, because they account for a substantial volume/value of teas exported. The ten interviewed account for one-fourth of tea exported by volume. All the exporters ship tea in bulk and value-added forms, under their own labels and private labels of their buyers, albeit to different extents. Moreover, they all comply with at least one food standard – for example, mandatory standard like ISO3720 required by the Tea Board. These interviews were conducted in and around Colombo, at their offices. Depending on the complexity of operations and availability, interviews were conducted with between one and three representatives holding a senior position, such as Director, CEO, Managing Director, or Head of Quality Assurance, etc. In most cases, a guided tour of the warehouse was given after the interview, showing the manufacturing process and the changes undertaken to comply with the standards.

Manufacturers – Regional Plantation Companies (RPC) and Private Factories (PVT): Ten interviews were carried out with manufacturers of made tea in management companies and privately owned factories involved in processing green leaf into made tea. Of these, six interviews were conducted with Directors, General Managers, etc., of management companies and four with owners of private factories. The RPCs have between seven and 16 factories under their management control, geographically spread across all elevations (high, medium and low). All four private factories were located in the low and medium elevations in the districts of Ratnapura, Matara, and Kandy. Assistance was sought from brokers, who liaise closely with manufacturers, and the two associations representing manufacturers, the Private Factory Owners Association (PFTOA) and the Planters Association (PA), to identify factories owned by management companies and individuals. All the RPCs interviews were at their Head Offices in Colombo; in the case of private factories, it was necessary to travel to their location, which provided an opportunity to see at firsthand the manufacturing process and the conditions of the factories and the level of standard compliance. Factories were compliant with at least mandatory standards such GMPs.

Producers – Regional Plantation Companies (RPC) and Smallholders (SH): Since management companies are involved not only in processing but also cultivation of tea, the interviews covered both these functions in the value chain. In addition to the six management companies interviewed, a small group of ten smallholders (in relation to the approximately 400,000 smallholders in total) were interviewed, given the study's limited resources and time constraints. Both categories of smallholders (with greater than 10ha, and below 20ha – two smallholders; with land less than 10ha – eight smallholders) were interviewed. All interviewees

were based in two districts with the highest concentration of smallholders, Ratnapura and Matara, and three other districts, Kalutara, Badulla, and Kegalle, which together accounted for 64% of total smallholder units and 60% extent of land under smallholdings (Ministry of Plantation Industries, 2009). Interviews were usually with the owners of the farm. Three were not only farmers but also district-level representatives of the Sri Lanka Federation of Tea Smallholder Development Societies (Matara, Ratnapura and Kegalle). These three interviews were conducted in Colombo when they came to Colombo for their monthly meetings at the Tea Smallholders Development Authority (TSHDA). Although these interviewees held positions in SLFTSDS and were not speaking on behalf of the organisation, they might have shared their organisation's perspective at times during the interviews. In order to ensure such biases are addressed, and smallholders who are less visible/represented, the other seven were arranged not only through district-level smallholder representatives but also tea manufacturers (private and RPC factories), which liaise directly with smallholders. The smallholders interviewed consisted a variety of farmers, those owning large extents of land (36 hectares) with their own resident labour force to those who rely on family members for tea cultivation given the small extent of land they hold (less than one hectare). A cross section of smallholders were interviewed to ensure a range of respondents and responses. These interviews were undertaken either at the homes of the smallholders or at the factory to which they supply their green leaf. In instances where the interviews were conducted at the factories, they were undertaken in a separate room without the presence of factory managers and owners to ensure that they were able to speak freely. These visits to the field provided the opportunity to see how tea is cultivated and the socio-economic conditions of the smallholders.

Brokers (BR): There are eight tea brokers operating in the Colombo Auction, of which two, one large and one small in terms of market share, were interviewed. The large broker was the largest in the business; the smaller broker ranked seventh in terms of total sales at the Auction. The CEOs of both companies were interviewed at their offices in Colombo. In both cases, the brokers also showed the tea tasting/sampling process and their warehouses where they stored the tea till sale at the Auction.

Government officials (GOV): Five senior officials from government agencies responsible for the industry were interviewed. They included the Ministry of Plantation Industries (MPI), which deals with policies relating to the industry, the TRI, which carries out research on tea cultivation, processing and product development, the TSHDA, established to address issues related to the smallholder sector, and the SLTB, which is responsible for regulatory,

promotional and developmental work. In the case of the SLTB, two separate interviews were carried out with the Director General and the Tea Commissioner. All interviews were held in Colombo, except for the TRI, which is based in Talawakelle.

Industry associations (ASSOC): Interviews were conducted with representatives from six industry associations: Ceylon Tea Traders Association (CTTA), the apex industry organisation representing tea buyers, sellers and brokers; the Tea Exporters Association (TEA), which accounts for 83% of total tea exports (Ladduwahetty); the PA, which represents the 23 RPCs, which have 304 estates under their control; the PFTOA, which represents the interests of private tea factory owners, who have emerged as an important pressure group in the industry; the Sri Lanka Federation of Tea Small Holder Development Societies, which represents nearly 400,000 smallholders scattered across tea growing areas; and the Ceylon Brokers Association (CBA), which represent the eight brokers who sell the tea at the Colombo Auctions. The interviews were conducted in most cases with the Chairman of the Association or Secretary General/Assistant Secretary General if the Chairman was not available.

Certification agencies (CERT): Interviews with representatives from the two main auditing certifying agencies (public and private) were conducted. The government-run auditing and certification agency is the national standards body with a long service record of being in the certification, inspection and resting business (Senaweera, 2010); the private organisation, based in Switzerland but with an international presence, including an office and laboratory in Colombo, is 'the world's leading inspection, verification, testing and certification company' (SGS). Most exporters and manufacturers have obtained their certificates from these two agencies and have sent their staff for the training programmes regularly conducted by them.

Consultant (CONS): Several exporters and manufacturers hired consultants to assist them implement standards such as ISO9001, HACCP, and ISO22000, due to their highly technical nature. In order to corroborate the exporter and manufacturer interviews, a consultant with extensive knowledge and experience with standards and their implementation was interviewed. The consultant selected has a successful company which has assisted several companies to obtain standard certifications and he has helped a number of interviewed exporters and manufacturers to obtain food standards.

4.4.1.2 Direct Observations

Interviews were complemented with direct observations. During the fieldwork, observations were made at different points in the value chain, such as smallholder plots, estates, tea processing factories, brokers' warehouses, the Colombo Auction, and exporters' blending/packaging plants, while undertaking interviews. Direct observation was less formal, as it was not the main instrument for collecting information. Instead observations provided opportunity to corroborate and triangulate the information provided by key informants.

From these visits it was possible to observe participants in their natural working environments of farms/plantations, tea factories, auction, warehouses, etc., and obtain a better understanding of how the tea value chain is organised, the functions of stakeholders in the chain, the challenges in complying with standards and their relationships with others in the chain. More importantly, it was possible to observe the conditions of the sites and various changes undertaken by stakeholders to comply with food standards: for example, the upgrading of buildings and machinery, practices/procedures adopted, etc., which were crucial to understanding the actual extent of compliance with standard requirements.

The researcher studied the value chain and the implementation of standards as a complete or a non-participant observer, i.e., the researcher observed without participating (Tharenou, et al., 2007). Observations were casual and they were done right throughout the fieldwork and coincided with the interviews. Field notes, containing demographic information, as well as descriptive notes on the activities of participants, were taken during the fieldwork (Creswell, 2003). An advantage of observation was that it was possible to get first-hand knowledge in a real-world context and in real time (Tharenou, et al., 2007) about the tea value chain in Sri Lanka and how the industry has complied with standards. However, a disadvantage of observation is the potential for reflexivity, that is, the participant being conscious of being observed and acting differently (Tharenou, et al., 2007).

4.4.2 Secondary Data

4.4.2.1 Documentation

Primary data collection was supported by the use of various types of documents in terms of published and unpublished materials. Documentation included newspapers (clippings and electronic), standard guidelines, annual reports, public relations and press releases, email

correspondence, government documents, reports, etc., which provided rich sources of information. Documents were primarily used to corroborate and augment information from other sources, the interviews (Yin, 2009).

Documents were unobtrusive and non-reactive sources of information compared to interviews and observations, and were helpful for the purpose of triangulation of data from other sources. Other advantages of documentation included text written by participants using their own words with substantial care, which saved time and expense in transcribing (Creswell, 2003; Tharenou, et al., 2007). Despite the usefulness of documents, they are not always accurate and may be biased, given that they were made for specific purpose and audience (Yin, 2009). As such, they were used with care in conducting the case study.

In data collection, documentation was initially used as a method to gather information prior to interviews and observations. These initial documents relevant to the study were found through internet searches, which provided invaluable background information. Documents not available electronically were collected while undertaking fieldwork from local libraries. The libraries of the SLTB and the IPS, both located in Colombo, were referred to several times during fieldwork; the TRI library was also accessed during a three-day visit to Talawakelle.

4.5 Analysis of Qualitative Data

Analysing the data involved making sense of the qualitative information collected to answer the research questions. This consisted of a number of steps, including preparing the data for analysis, reading through all the data, coding data, coding to generate themes, and narration of findings from the analysis (Creswell, 2003). Although these activities were carried out separately most of the time (step by step), there was an overlap at times simultaneously engaging the attention of the researcher (Creswell, 1994).

The first step was preparation of data, which included verbatim transcription of digitally taped interviews and translation into English (whenever the interviews were in Sinhala), and grouping the data according to key informant groups in the tea chain. The second step was scanning through the transcripts and making a general sense of the information, writing notes in the margins. The third step was to begin coding the transcripts, i.e., to go through the text and categorise and label sentences/paragraphs with terms, often using the same language as the interviewees. The NVivo9 software programme was used for coding, given the large

qualitative database (i.e., 45 key informant interviews with hundreds of pages of transcription). The software provided an efficient means of not only storing but also sorting the data. Using the NVivo9 programme, a mix of descriptive and thematic codes was generated. The descriptive codes covered information relating to companies, organisations and individuals (Appendix 9). Coding was also used to generate themes, which were arranged into larger categories like chain governance, perception of food standards, strategic responses to standards, and implications for governance, which are related to the research questions (Appendix 10). A template approach, one of the most popular approaches to content analysis, was used: text is analysed using a template consisting of a number of themes/categories relevant to the research questions; the template is based on existing knowledge/literature to guide the process of coding data, which are then organised into smaller categories; the template is not fixed but undergoes changes/revision; thereafter, connections are made between the categories. The fifth step was to convey and discuss the findings of the analysis. The sixth and final step was to interpret the data, i.e., compare the findings with information from the literature through qualitative narrative writing.

4.6 Quality of Research Design – Internal Validity, External Validity and Reliability

In conducting case studies, researchers need to be mindful about quality of the research: reliability, internal and external validity (Tharenou, et al., 2007). These concepts are often used to establish the quality of social research (Yin, 2009) though their importance varies depending on the research design (Creswell, 2003; Stenbacka, 2001).

In the context of qualitative research, reliability means the extent to which the data could be duplicated/replicated if the data were collected at another point in time, by any other means or from different persons (Creswell, 2003; Merriam, 1988; Tharenou, et al., 2007). The reliability of the information collected for a case study can be increased in a number of ways, including triangulating through multiple methods of data (interviews, documentation, observation, etc.), and multiple sources of data, etc. (Tharenou, et al., 2007). Triangulation is typically used as a means for improving reliability and validity of research (Golafshani, 2003). As elaborated by Mathison (1988, p.13):

Triangulation has risen as an important methodological issue... In particular, naturalistic and qualitative approaches to evaluation... to controlling bias and establishing valid

propositions because traditional scientific techniques are incompatible with these alternate epistemologies.

In this study, more than one individual was interviewed as a source of data (data triangulation). Forty-five informants were asked more or less the same questions. Also multiple sources of data such as interviews, documentation and observations (methodological triangulation) also increased the reliability of the information (Figure 4.2). The rationale for using multiple methods is that 'the flaws of one method are often the strengths of another; and by combining methods, observers can achieve best of each whole overcoming their unique deficiencies' (Denzin, 1978, p.302). Merriam (1988, p.172) also recommends leaving an 'audit trail' to address reliability so that others can authenticate the findings of a study by following the footsteps of the researcher. Towards this end, this Chapter has described in as much detail as possible how this study was conducted and the how findings were derived (i.e., data collection, data analysis, etc.) so that others can replicate the study, if necessary.

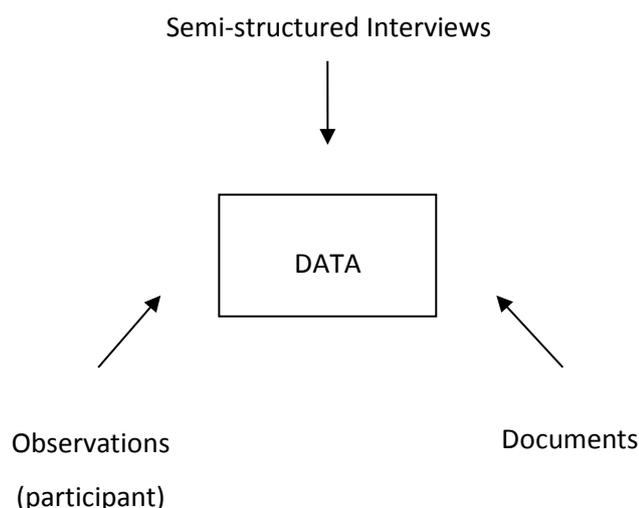


Figure 4.2 Triangulation through multiple sources of qualitative methods

Internal validity is the extent to which a correct cause and effect relationship has been established (Tharenou, et al., 2007). In a case study, it is possible to attribute causal relationships to the wrong causes ('spurious effects') and threaten internal validity of the research (Yin, 2009). This arises because the data are subject to researcher's interpretations; his own values and beliefs may be reflected or projected in the interpretation of the case (Tharenou, et al., 2007).

In order to ensure internal validity of the findings, a number of commonly used strategies suggested by Creswell (2003) were employed. The first strategy was triangulation of information: data were collected from multiple sources and methods in order to achieve convergence of information (Merriam, 1988; Stake, 1995). The second strategy was 'member checking': to ensure the accuracy of the qualitative findings, relevant sections of the study were sent to some key informants to obtain their feedback (Merriam, 1988; Stake, 1995). However, the response from informants was low. The third strategy was to spend prolonged time in the field (Merriam, 1988); fieldwork in Sri Lanka was conducted over a period of seven months, and during this time it was possible to develop an in-depth understanding of the situation on the ground through interviews and observations. The fourth strategy was peer examination, where feedback was sought from a variety of individuals throughout the study. This was done through in-house presentation at a seminar at the Institute of Policy Studies of Sri Lanka, Colombo (1 April 2011), and two conference presentations (9th Network of Asia Pacific Schools and Institutes of Public Administration and Governance International Conference, Colombo, Sri Lanka 12-14 December, 2012, and 4th Annual International Journal of Arts & Sciences (IJAS) Conference, Boston, 26-30 May, 2013). Findings were also discussed with supervisors and fellow higher degree candidates at the Department of Management and feedback obtained from those who are familiar with, as well as strangers, to the study. The fifth strategy was to recognise researcher bias; in qualitative research, the researcher as the primary data collection instrument needs to acknowledge personal values, biases and interests that he/she may bring to the study (Merriam, 1988). The sixth strategy was to take into account negative/discrepant information. Different perspectives, which emerged from the data collected, were reported in the analysis in order to add credibility to the study. The seventh strategy employed was to provide a rich, thick description to convey the findings to provide a better understanding of the setting or context.

External validity of the study – the extent to which findings can be applied to other situations – is limited, because it is difficult to generalise beyond the immediate case study (Tharenou, et al., 2007; Yin, 2009), at least in the conventional sense of the word. This has been a common complaint about cases studies for some time (Merriam, 1988). Stake (1995, p.85) eschews conventional notions of generalisation in place of a much more nuanced understanding, which he refers to as 'naturalistic generalisation' or 'conclusions arrived at through personal engagement in life's affairs'. In other words, naturalistic generalisation is a process whereby readers can gain an insight by reflecting on the details and descriptions presented in the case study (Melrose, 2010). As they recognise similarities in the details and descriptions in the case

study to which they can relate, the reader can consider whether their situations are similar enough to warrant generalisation (Melrose, 2010).

4.7 Ethical Consideration

Prior to conducting the field work in Sri Lanka, an application for ethics approval for the project, together with the interview questions, explanatory letter and consent form (Appendix 3) were lodged with the Monash University Human Research Ethics Committee (MUHREC) in August 2010. The Ethics form covered the following areas: project details, profile of the participants, procedures of data collection, procedures for explanation and gaining informed consent, collection of data materials and procedures, compliance with privacy legislation, feedback and debriefing procedures, and other ethical issues. Approval for the project was received towards the end of August 2010, as the project was categorised as low-risk.

All interviews were conducted on the basis of informed consent. Interviews were requested beforehand via email or phone (whenever there was no email contact), using the explanatory statement, which highlighted the purpose and procedure of the study to the participants. They were also sent the consent form, which all interviewees duly signed and returned, thereby agreeing to be interviewed and voice-recorded. Participants were informed that their decision to participate was voluntary and they could withdraw from the study at any time. Assurance of participant privacy was given: no information that could lead to their identification would be disclosed in the study. In analysing and reporting data, identity of individuals and companies was withdrawn to comply with the confidentiality statement. The data collected will be kept in secure storage for a period of five years and thereafter destroyed.

4.8 Limitations of the Research Design

Any research design has its relative strengths and limitations (Merriam, 1988). While one of the benefits of using a case study design is that it allows for a highly in-depth analysis of a specific empirical issue (Tharenou, et al., 2007), the main drawback is that it is difficult to generalise to other cases – that is, generalising from a sample to the population from which it was drawn (Merriam, 1988). This case study is about food standards in the Sri Lankan tea industry. Therefore the research findings cannot be generalised to another industry in Sri Lanka or to another country, given the numbers interviewed and the specific context of the study. One should bear in mind that a case study is selected because one wishes to understand

the particular case in depth, not necessarily because one wants to know what is generally true of many (Merriam, 1988). However, one way to increase generalizability is to undertake multiple case studies (cross-case, cross-site or multi-case analysis), which will involve considerably more information and a team of researchers. To this extent, this study will provide a basis for comparisons by providing 'rich, thick descriptions' (Merriam, 1988, p.177), so that anyone interested can conduct similar cases studies and increase the generalizability of the findings.

Given the qualitative nature of the questions posed, this case study did not measure the impact of standards on the tea industry in Sri Lanka. More specifically, the study did not quantify the costs and benefits of standards nor did it measure how they impacted on governance in the tea value chain, which would have required conducting a survey to gauge the perceptions of stakeholders and analyse the information collected using statistical procedures (Creswell, 2003). Such was not the intent of the study. Nevertheless, having explored the issue in-depth as a qualitative case study using interviews, documents and observations, the study could now be extended at a future date to a large sample of individuals through a survey and thereby generalise the findings to a population.

Another limitation of the research design is that data collection did not extend outside of Sri Lanka, due to time and resource limitations. A case study on the tea value chain in Sri Lanka was taxing, since it required spending considerable time in Sri Lanka collecting multiple sources of data that had then to be analysed. As stated by Hodkinson and Hodkinson (2001, p.8), 'Case study data is time-consuming to collect and even more time-consuming to analyse'. Nevertheless, a more comprehensive coverage of the tea chain from the point of export to consumption in markets abroad would have provided a global perspective to the overall organisation of the tea chain and how food standards are increasingly being used as means of governing the tea chain by buyers outside of Sri Lanka. Future research would benefit from extending the data collection and analysis into downstream activities in the tea value chain (i.e., international marketing and retailing) and thereby cover the entire length of the value chain.

4.9 Conclusion

In this Chapter it was explained why a qualitative case study was adopted to answer the research questions. Outlined in the chapter was the method of data collection, how the data

were analysed, ethics procedures followed in collecting data, and the limitations of the research design. The qualitative design proved to be effective in gathering and analysing data to answer the research questions. The key informant interviews provided first-hand information with regard to how the tea chain in Sri Lanka is governed, the relevant food standards governing the chain, how the industry responded in the face of new standards and how compliance affected the buyer-seller relations within the chain. Documentation and observations were primarily used for the purpose of triangulation to offset biases which can stem from interviews. The following chapter maps the tea value chain in Sri Lanka and analyses governance within the chain utilising the methods described in this chapter.

Chapter 5 Governance in the Tea Value Chain in Sri Lanka

5.1 Introduction

Using both primary and secondary data, this chapter maps the Sri Lankan tea value chain from cultivation to the point of export, and describes the main activities/functions, stakeholders and their relationships within the chain. It analyses inter-firm governance in the chain to address RQ1: 'how is the Sri Lankan tea value chain governed?'. The five part typology of governance structures by Gereffi *et al.* (2005) – market, modular, relational, captive and hierarchy – is used as the analytical framework to examine the linkages between the stakeholders in the value chain. This chapter also provides the foundation for Chapters 6 and 7, which examine the remaining questions regarding the implications of food standards for stakeholders and the governance of the chain.

The chapter contains three sections. Section 5.2 maps the chain from cultivation to point of export, identifies stakeholders, and describes their functions and relationships in the chain. Section 5.3 analyses governance through the lens of Gereffi *et al.*'s (2005) five governance structures. Section 5.4 reports the main findings. The themes and subthemes, which are derived from the analysis of the information collected and discussed in this chapter, are listed in Appendices 9 and 10.

5.2 Sri Lanka Tea Value Chain: Cultivation to Export

A value chain “describes the full range of activities which are required to bring a product or service from conception through the different phases of production... delivery to final consumers, and disposal after that” (Kaplinsky & Morris, 2001, p.4). This section examines how the Sri Lanka tea value chain is organised from cultivation to point of export and the main stakeholders (smallholders, leaf collectors, regional plantation companies, private tea factories, brokers and exporters), their functions and their relationship with one another. The discussion is limited to the tea value chain within Sri Lanka due to time and resource constraints. Based on analysis of interviews and documents, the chain is mapped in Figure 5.1. This section is organised to correspond to the main activities in the chain: 1) cultivation and collection, 2) manufacturing, 3) marketing and 4) trading (exporting).

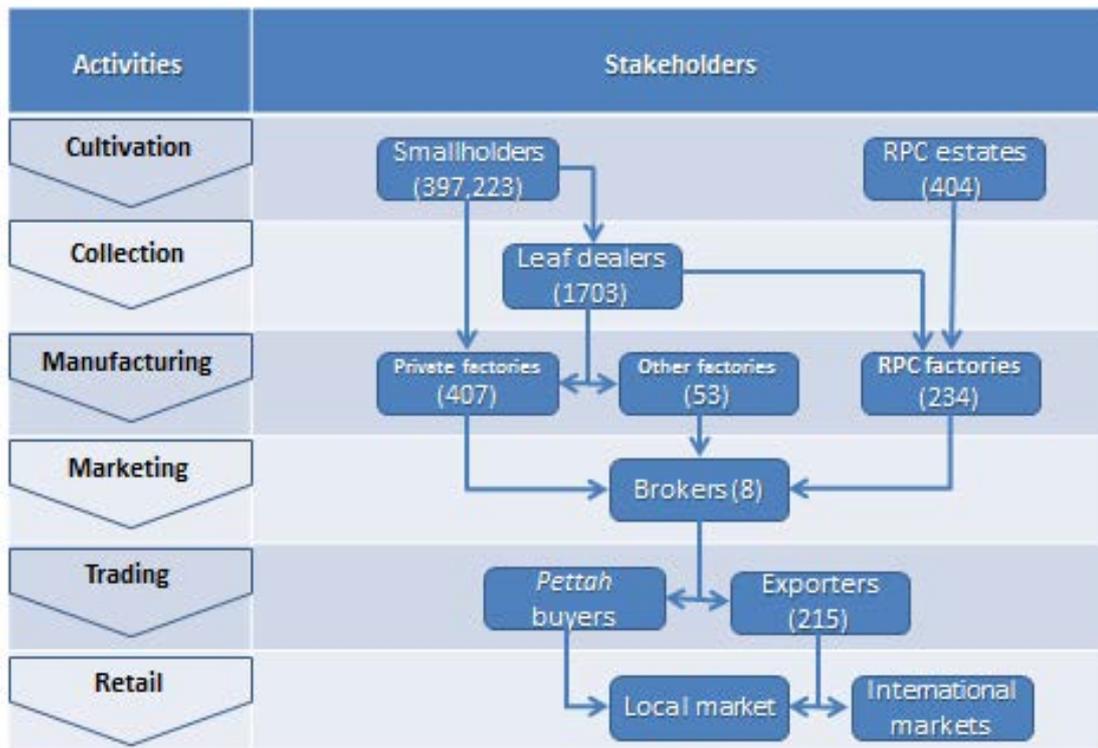


Figure 5.1 Sri Lankan tea value chain - stakeholders and activities

Note: Given that tea is now marketed almost exclusively through the auction, other marketing channels (private, direct and forwards sales) are not depicted in the Figure.

Source: Author

5.2.1 Tea Cultivation and Collection

Tea comes from an evergreen bush (*Camellia Sinensis*) which grows at altitudes from sea level to over 2100 meters and where soil is acidic, the rainfall is not less than 100-125cm a year and the seasonal temperature change is not marked (M. Fernando, 2000). It is a hardy plant which thrives in tropical and sub-tropical temperatures (Loconto, 2010b), but the finest teas are obtained from slower growing and lower yielding plantations in higher elevations (M. Fernando, 2000). Although there are different types of tea, such as black tea, green tea, white tea, they are all produced from the buds and leaves of the same species. The only difference is in the method of processing green tea leaf into made tea (van Reenen, et al., 2010).

In Sri Lanka, tea is grown from selected plant cuttings rather than from seedlings, which are contour-planted on slopes and hillsides, and interspersed with shade trees and shrubs to act as windbreakers and prevent soil erosion (M. Fernando, 2000; Sri Lanka Tea Board, 2012a). Fertilisation is undertaken on a regular basis with the application of artificial fertilisers, organic manure or mulch. In its natural state, the tea plant can grow to about three meters in height but in commercial cultivation it is cut down to a bush height for easy hand picking (Sri Lanka Tea Board, 2012a).

Tea production is a highly labour-intensive activity (Loconto, 2010c). Plantations employ thousands of workers to cultivate and harvest tea (van Reenen, et al., 2010). Harvesting, generally referred to as plucking, is the first stage in tea manufacture. Proper care and attention is important at this stage to ensure the production of a good quality tea, as quality starts in the field (GOV2). Tea pluckers pick tender shoots consisting of two leaves and an unopened leaf bud (referred to as the 'flush'); anything less would be considered 'fine' plucking; plucking an extra leaf or leaves is known as 'coarse' plucking (M. Fernando, 2000). Plucking of tea in plantations has traditionally been by women, who have acquired the deft skill of picking the shoots, breaking them off by twisting the leaves and buds in their fingers and then throwing handful of leaves into the carrier baskets on their backs (M. Fernando, 2000). An experienced tea plucker can gather around 20kg of fresh tea leaves a day (Sri Lanka Tea Board, 2012c). Men are involved in pruning, applying fertilisers and other agrochemicals (van Reenen, et al., 2010). In more recent years, plucking has been mechanised using specially designed machinery. However, there is no sign that it would replace hand plucking in Sri Lanka, given the terrain in which tea is grown (Forbes & Walker, 2006).

Within one or two weeks of plucking leaves, the bushes grow new leaves, depending on the elevation in which tea is grown. At low elevations, tea can be gathered every seven to eight days, whereas at higher elevations, especially in the central highlands, growth is normally a few days slower but produces tea which is highly valued for its superior flavour (M. Fernando, 2000). In tropical climates like Sri Lanka, tea harvesting goes on all year round.

5.2.1.1 Regional Plantation Companies

Cultivation is undertaken by 21 RPCs and independent small farmers, commonly referred to as smallholdings. In total, there are 404 estates under the management of 21 RPCs (Ethulgala, 2009). Estates owned by RPCs are spread all over the island, growing tea at all three

elevations, as well as other agricultural crops (Table 5.1). For example, RPC2 employs 12,000 workers and has 14 estates with a total of 8,000ha under tea cultivation in high- and low-grown areas. It also owns 12 tea factories located on the estates, producing 9million kg of made tea annually. RPC3 employs 7,500 workers and its 13 estates cultivate not only tea but also rubber, palm oil and coconut at all three elevations. It has nine factories that manufacture 5million kg of made tea. The factories process their own leaf as well as leaf supplied by smallholders, or bought leaf. While RPC factories in high-grown areas get as much as 95% of leaf from their own estates, in low-country factories, bought leaf accounts for about 80% (Sri Lanka Tea Board, 2008b). With the expansion of factory capacities, combined with dwindling yields from their estates, RPC factories are increasingly relying on smallholders for tea leaves (CONS).

Table 5.1 Profile of RPC and private factory interviewees

	Employment	# of estates	Cultivation	Hectares of land (under tea)	# of factories	Annual made tea production (kg)	No. of principal buyers
RPC1	15,000	17	Tea, rubber, palm oil	12,500 (4,438)	16	9mn	N/A
RPC2	12,000	14	Tea	8,000 (all tea)	12	9mn	10 exporters buy 70% of tea
RPC3	7,500	13	Tea, rubber, palm oil, coconut	8856 (2665)	9	5mn	5-6 exporters buy 30% of tea
RPC4	15,000	19	Tea, rubber	4,042	13	7mn	N/A
RPC5	14,000	18	Tea	10,560 (6,044)	14	10mn	5 exporters buy 45% of tea
RPC6	11,000	17	Tea, rubber, cinnamon, fuel wood	12,000 (4,000)	7	N/A	N/A
PVT1	170	1	Tea	30 (all)	1	450,000-500,000	5 exporters buy 60-65% of tea
PVT2	76	None	None	None	1	540,000	30-40 exporters
PVT3	350	1	Tea	6 (all)	1	1.56mn	N/A
PVT4	921	None	None	None	8	6mn	N/A

Source: Interviews

5.2.1.2 Smallholders

The smallholding sector largely consists of individual farmers, who grow tea on 0.5-20ha (Ministry of Plantation Industries, 2009) (Table 5.2). According to the *Tea Control Act of No. 51 of 1957*, a person with holdings below 50 acres or 20.2ha is considered a smallholder (Government of Sri Lanka, 1995). Within the last two to three decades, the smallholder sector has emerged to play a prominent role in the tea industry in Sri Lanka, contributing substantially to green leaf production with increasing international demand and prices for low-

country tea (ASSOC3). Many farmers have substituted tea for other less profitable crops, increased their tea holdings, leased land or encroached on government land for tea cultivation due to high prices for low-grown tea at the auction (Government of Sri Lanka, 1995). Even without government help, smallholders expanded their landholdings and cultivated tea because it provided a 'lucrative and regular income' (ASSOC3). Consequently, there has been a tremendous increase in the number of smallholdings and an expansion of the area cultivated by smallholders, while there has been a corresponding reduction in the role of the plantation sector in the industry (Government of Sri Lanka, 1995). Currently, the smallholder sector accounts for 76% of total green leaf production (Tea Smallholdings Development Authority, 2009), though it occupies only 60% of total tea-growing land (Sri Lanka Tea Board, 2008b). With the expansion of the smallholder sector, low-grown teas became prominent and overshadowed high-grown teas within a short period (ASSOC3). While smallholders are scattered all over tea-growing regions, most are to be found in the low country (Galle, Ratnapura, and Matara); most RPC estates are concentrated at higher elevations (Nuwara Eliya, and Badulla districts).

The majority of smallholders depend on the support of family members for tea cultivation, given the small extent of land they hold, as explained by SH3:

All my family members join us in plucking tea. My eldest son is studying at Sri Jayewardenepura University but he also joins us in plucking tea. My wife, daughter and the youngest son who is attending school – they all do plucking.

In the case of smallholders owning large extents of land, especially 'small estates' (land above 10 but below 20ha), rely on hired labour (SH2, SH8). Depending on the size of the land, smallholders hire workers either on a casual or permanent basis. In fact, many small estates have a resident labor force who are looked after in the same way as in estates under RPC management (SH2).

Table 5.2 Profile of smallholder interviewees

	Hectares of land (under tea cultivation)	Other crops	Green leaf production	Number of workers	Main source of income	Number of buyers
SH1	7.5 (1.6)	Rubber, coconut, cashews	600-700kg	8	Other crops	1 (Private factory)
SH2	36 (not specified)	Pepper, arecanut, coconut, vegetables	25,000kg	65	Tea	4 (private factories)
SH3	20.2 (3.2)	Rubber, coconut, spices, breadfruit, palm	2,000kg	6	Tea	3 (2 JEDB factories and 1 private factory)
SH4	1.6 (all)	Coconut, rubber	900-1,000kg	4	Tea	1 (collector)
SH5	4 (all)	Only tea	3,000kg	10	Tea	1 (Shakthi factory)
SH6	4 (2.8)	...	700-800kg	10	Tea	1 (collector)
SH7	4 (all)	Coconut, spices	4,000-4,500 kg	Not specified	Tea	3 (2 private factories and 1 RPC factory)
SH8	26 (20)	Rambuttan, mangosteen, durian	5,500-6,000kg	22	Tea	N/A
SH9	0.6(all)	Paddy, animal husbandry	400kg	2	Tea	1 (Private factory)
SH10	0.2 (all)	Areca nut, jack fruit	400-450kg	Own	Tea	1 (Private factory)

Source: Interviews

Cultivation of tea is the main source of income of most smallholders which they supplement with other sources of income; they grow other cash crops or work elsewhere. According to the TSHDA (2009), over 63.9% of small-holdings grow only tea, while the rest grow other crops like rubber, coconut and minor crops to provide shade and protection for tea plant, as well as to generate additional income, as confirmed by smallholder interviews.

While in the case of RPCs, production and manufacturing of tea is vertically integrated – that is, plantation companies not only grow tea on their estates but also process tea leaves into

made tea in their factories – smallholders are outgrowers. Smallholders sell their green leaf direct to factories, green leaf dealers/collectors, tea societies, etc. According to the Tea Small Holders Development Authority (2009), half of the smallholders (51.8%) sold their green leaf to dealer/collectors; one-third (33.7%) sold directly to tea factories. In addition, about 7% of leaf was disposed by smallholders through tea societies (Tea Smallholdings Development Authority, 2009). For example, SH4 and SH6 sold their leaf to a green leaf dealer/collector who in turn supplied factories, while other smallholders interviewed sold directly to factories.

Tea leaves are directly sold by the smallholders to factories, which are predominantly owned by individuals/families (private factories) and the corporate sector (RPCs). They also supply factories run by the government and tea smallholder societies/cooperatives such as Tea Shakthi. For example, most smallholders interviewed supplied to private factories. Some also supplied to a handful of factories run by the government (JEDB/SLSPC) like SH3 and to tea smallholder societies/cooperatives (Shakthi factories) like SH5. Smallholders transport the plucked leaf to the factories (by head, bicycles, motorcycles or trishaws) or it is collected from the road side/collection points by the factories. Most smallholders who supply directly to factories live in close proximity (SH9, SH10). Some factories also send their own lorries/tractors to collect leaf from smallholders. By directly sourcing from the smallholders, the factories interact with the smallholders and ensure a supply of good quality leaf (GOV4): ‘If they (factories) can get directly from smallholders, they can get better quality without damages from transportation’.

5.2.1.3 Leaf Dealers/Collectors

Alternatively, the smallholders *indirectly* supply tea factories by selling their leaves to licensed leaf dealers/collectors, who go from one smallholder to another to gather leaf and then deliver it to factories under their own name (SH4, SH6). The dealer usually pays smallholders on the spot or at the end of the month when the factory pays him, keeping a small margin for his transportation costs (ASSOC3) by recording production in a record book provided by factory/collector (Tea Smallholdings Development Authority, 2009). The most common practice is to collect the money on a monthly basis (Tea Smallholdings Development Authority, 2009). In this case, the smallholders do not directly interact with the factories and sometimes the factories do not know where the leaf has come from.

According to Tea Board (2009) records, there were 1703 registered green leaf dealers in 2009. Some own more than one vehicle; and some have even established collection centres/sheds for smallholders to deliver leaf. Smallholders who live far away from factories and have one or two bags of leaves a week find it convenient to sell to collectors rather than deliver the leaf in person to factories. As such, leaf dealers play an important role in the value chain by linking smallholders to factories and acting as a middleman. They were described as ‘a cog in the wheel’ (RPC6).

5.2.1.4 Relationship between Smallholders/Collectors and Bought Leaf Factories

Most smallholders and collectors have longstanding and close personal relationships with factories, especially in their vicinity. They supply green leaf on a regular basis and in some cases they have been supplying the same factory for generations (SH1). There is thus considerable loyalty towards the factories (PVT2): ‘A good many of them (have been there) for years and years. Even for gold they won’t desert us. Very loyal’. Moreover, the smallholders prefer to supply factories which are well-established and fair in their dealings in terms of payment, paying on time, weighing leaves correctly and not making excessive deductions for moisture, damage or coarse leaf, etc. According to some smallholders, there have been a number of factories going bankrupt in recent times due to the recession, which led to a glut in auctions and many were unable to pay smallholders for leaf supplied. Therefore smallholders are rather wary of supplying some factories, even if they offer higher prices (SH1): ‘We look for a factory that can be trusted. Even if the price is Rs.18 (US 16 cents), most people prefer trustworthy factories, as other factories are up to all kinds of malpractices’.

Most smallholders, especially those with great extent of land and green leaf production such as SH2, SH3 and SH7, supply to more than one factory at a time. Not only does this ensure that they have more than one outlet of sale for their leaves (ASSOC3), it makes them less dependent on one factory. Given that most smallholders mainly rely on income from tea cultivation to cover their day-to-day living expenses, by giving leaf to more than one factory they also get a continuous flow of income throughout the month, because different factories pay on different days of the month (SH7): ‘If we provide three factories, we are paid on different days. Then we have money all the time’. In addition, they can obtain other benefits like loans or credit from factories: the more factories they supply, the greater the benefits they can obtain. Moreover, factories have different requirements in terms of leaf standards and they pay accordingly; that is, better the leaf quality, the higher the payment per kilogram.

Therefore some smallholders tend to divide leaves between factories according to their required leaf standards and thus get the best possible prices for their produce (SH1):

They give the best leaf to the factory that pays the highest price. Private Factory 3 is the best factory in Ratnapura. The farmer will spread the leaves on the ground and select the best leaf for Private Factory 3 and then the next best to another factory. The worst is given to another factory.

Collectors also supply to more than one factory. They can supply up to two factories at a given time according to the license issued by Tea Board. While some collectors divide supplies between two factories like smallholders, depending on the factory's leaf requirement, others sell all their collection to only one.

Neither the smallholders nor the collectors have any contractual agreement with the factories to sell their leaf and hence they can sell their leaf to any factory. What they have is more of a verbal understanding, as explained by the Managing Director of RPC2: '(There is) nothing in writing. It is just an understanding. They won't commit themselves.' Thus they are free to supply to any factory they choose; they can switch to another factory, if they are not satisfied with the price paid and services offered by a particular factory (ASSOC3). Similarly, the factory is in no way obliged to take whatever leaf is supplied by smallholders or collectors. They can reject leaves if they are not up to the standard required by the factory (private factory owner PVT3): 'I can stop today if I want and they can stop today also if they want. It's an extremely free market. Dangerously free, I would say'. Although this reduces smallholders/collectors being bound to factories, the absence of an agreement has serious implications for bought-leaf factories in the context of expansion in the number of factories/factory capacities and shortage of green leaf as well as the smallholders.

While smallholders with greater land ('estates') have more bargaining power with factories as they are volume suppliers, smaller farmers do not appear to have much bargaining power *vis-à-vis* the factories, unless they get together and supply through smallholders' societies. As the Chairman of smallholder association ASSOC4 explained:

When we take green leaf to the factory, they can say anything – reduce for water content, removal of coarse leaf and reduce for the weight of the bag. They could do whatever they want. If they do not want, they can ask you to take the leaf back. What can we do with the leaf at home? Now we are grouped together and we can tell the factory that if you do like this, we will not give our leaf collectively. Then the factory owner will be forced to negotiate with us. We now have that empowerment.

However, with intense competition for green leaf amongst tea factories, especially in the lower elevations, most bought-leaf factories are reportedly operating below 60% of capacity (Morrell, 2013). Consequently, smallholders wield considerable power over them, as pointed out by the Chairman of a private factory association ASSOC3:

They appear to be more powerful because everything depends on the supply. It is a limited supply but the number of factories is large. Rarely farmers have a say. In most countries subsistence farmers depend a lot on the purchaser. Here they have a good organisation amongst themselves to ensure that their interest is looked after.

Because collectors bring large volumes of green leaf, they have greater bargaining power with the factories. In some factories in the low country, it was reported that they provide as much as 50% of green leaf required. Thus the factory needs them more than they need the factory, especially where there is heavy competition for green leaf between factories, as explained by the CEO/Director of RPC 6: '[The collectors] call the shots and we are beholden to them because we need the crops. They are not beholden to us because there are factories begging them to come'. In order to retain smallholders and collectors and ensure a continuous supply of green leaf, factories pay smallholders and collectors a good price for leaf and provide various services (ASSOC3).

The price paid by factories to smallholders for green leaf is regulated by the government. Under the Tea Control Act of the Tea Board, factories engaged in bought-leaf operations are required to pay smallholders according to the Reasonable Price Formula (Government of Sri Lanka, 1995). The price payable to green leaf suppliers, including collectors, is determined by the monthly net sales average at the auction. According to this formula, proceeds from made-tea sales are to be split between the factory and leaf suppliers in a ratio of 68:32: 68% going to smallholders, 32% to factories (Government of Sri Lanka, 1995). If the factory sales average exceeds the monthly elevation average, the revenues are to be shared equally (50:50). The formula ensures that factories and producers receive a remunerative price for their produce (Government of Sri Lanka, 1995) by taking into account the cost of production and the profit margin of producers and factories (FAO, 2012a). In this respect, the system in place in Sri Lanka has been considered 'successful' amongst tea-producing countries (FAO, 2012a). In order to get better leaf as well as attract leaf, some factories are paying more than the price stipulated by the formula, as stated by the Chairman of ASSOC4: 'In our factories the first priority is to ensure that we get quality leaf and we pay a higher price for that. I pay an incentive for better

quality of tea'. However, this is leading to a situation where factories are increasingly falling into debt, due to rising costs of production, with some even closing down (Morrell, 2013).

Both smallholders and collectors tend to give leaf to whichever factory that pays the highest price for a kilogram of green leaf and offers better services like credit and loans, etc. as SH1 explained: 'The supply of leaf in the tea industry depends entirely upon prices. If there are factories paying Rs.18, 22 and 25, (US 16, 20 and 23 cents) respectively, we select the factory which pays the most.' Similarly, the following was observed of collectors: 'They go to wherever high money is paid. I pay them Rs.50 (US 45 cents) (and at the) same time, another fellow [factory owner] says, "Here I'll give you Rs.60 (US 54 cents)", and pays an advance, then the collectors change' (RPC6).

In order to ensure a regular supply of good leaf and have a hold over their suppliers, factories assist smallholders and collectors in a number of ways (ASSOC4). They support smallholders financially by providing advances and loans, fertilizers and other agro-chemicals on credit, transportation of goods, etc. Most factories provide advances and interest-free loans to smallholders whenever required; this is deducted from leaf money (SH1):

If you need money for a wedding... they will provide it. Similarly, in case of a death they will provide all that is necessary. They even supply household items like rice and coconut. They will recover what they spent for these things from the payment due to the smallholder for delivered green leaf and pay the balance.

It was noted that private-owned factories are more flexible than RPCs, since they are able to provide loans on the spot without seeking approval from headquarters, which is the case with RPC-owned factories. Smallholders also get fertilizer and other agricultural inputs, including planting materials, from factories on credit; that is, they can pay for them in 2-3 installments. However, it was stated that if they purchase them from nearby shops or smallholder tea development societies, they will have to pay in full at the time of purchase. Thus most of the smallholders prefer to get these inputs from factories because they can pay by installment. Moreover, some factories will even deliver fertilizer and other goods to smallholders who live away from the town to their doorstep free of charge, as explained by SH1:

The thing is that their houses are located away from main roads and some tea holdings are about 5-6kms away. It is quite possible that the only vehicle that visits the area is the factory vehicle for collection of leaf and it is very convenient for the smallholder to get what he wants transported by the factory vehicle which comes to collect leaf. There is no need for the farmer to travel 6kms to get his requirements. It saves him time and money to get the factory lorry to bring what he wants. When the vehicle comes to

collect leaf, it is empty and if a farmer has bought what he needs, the factory will transport it free of charge.

By providing these services, factories try to ensure that smallholders and collectors do not switch to other factories.

Many smallholders with less than a hectare rely on such facilities, which bind them to the factory. However, owners of large holdings or small estates do not generally seek such arrangements because of their social standing/status.

Factories also provide technical assistance to smallholders through their extension services and training programmes. For example, private factories PVT1 and PVT3 have hired extension officers to work closely with smallholders to advise and educate them on good agricultural practices (GAPs). The factories also conduct training programmes on a regular basis at the factory premises and/or at collection points, in conjunction with personnel from fertiliser companies, TRI, and TSHDA. In addition, factories are also involved in numerous social initiatives to raise the living standards of the community in the vicinity of the factory: for example, road maintenance and community development projects (PVT3).

When supplying leaf to factories, smallholders and collectors are required by factories to bring leaf that meets a good leaf standard, since quality of made tea is to a great extent determined by the quality of green leaf (Government of Sri Lanka, 1995). Leaf quality depends on plucking of the leaf and the extent of damage to the leaf in transporting it to the factory. Usually, factories insist on a certain percentage of leaf being 'two leaves and a bud' , rejecting or deducting for coarseness, damage and high moisture content, as explained by private factory owner PVT3, who is very particular about leaf quality: '[The smallholder] has to ensure that he brings only the quality leaf we want. If the quality is bad, we don't take it. We return it. So either they have to go and give it to another factory or throw it out'. In addition, factories require that smallholders follow TRI guidelines and recommendations with respect to good agricultural practices (GAPs) like spraying of approved agro-chemicals at recommended dosages and observing pre-harvesting intervals (PHIs) between spraying and plucking of leaf, etc. The resulting high standard of the green leaf ensures a made tea of high quality which will fetch favourable prices at the auction (Government of Sri Lanka, 1995).

However, not all factories insist on good leaf; some are not very particular about the quality of the leaf they buy. It was reported that some factories even accept three or four leaves and a

bud to manufacture tea (SH1). What these factories require is quantity of leaf to run their factories at full capacity and make money. As SH1 emphasised, 'Some factories look at quality and some are not bothered of quality and they look for quantity. Both groups are there'. Thus the leaf standard specified by factories varies from one to another and some take leaf that is far below the level recommended by the Tea Board. There are factories that are prepared to buy poor, damaged leaf in order to keep running. This does not bode well for the future of the tea industry and Sri Lanka's reputation as a high-quality tea producer and exporter according to stakeholder interviews (GOV2).

Smallholders and collectors alike are informed about the factory's requirements when they deliver the leaf or through their extension officers, as RPC2 explained:

We send our staff They convey the message of the type of leaf that is required. They have been told. We tell them what is exactly required for the factory. They have been given instructions that if the leaves are not up to the standard, we will not accept that tea.

Factories monitor the green leaf they receive. They physically inspect the condition of the leaf and do a leaf-count at the point of collection or withering. If the factory finds that the quality standard is lower than what it requires, the smallholders or the collectors are informed, either directly or via the collector to the smallholder. Factories also regularly test a random sample of made-tea to ensure that they comply with the Tea Board requirements.

However, many bought-leaf factories find it challenging to procure good leaf quality. First, there are far too many factories for given supplies of leaf, especially in the low country, leading to undue competition between factories, as PVT3 noted:

I think we have too many factories, especially in Galle and Matara. So they fight each other, and very soon they will kill each other for green leaf. We have a lot of problems at our private factory owners meetings. They fight each other; shout at each other, saying so-and-so took my green leaf.

The situation is contributing to poor leaf quality because a number of factories are buying green leaf without imposing quality standards, thereby adversely affecting quality of made tea which will eventually damage the image of Ceylon Tea (Lanka Business Online, 2010a). Second, the competition for green leaf has resulted in smallholders (SH7) and green leaf collectors (PVT2) paying more attention to quantity rather than quality. There is more money to be made by supplying more than two leaves and a bud because they are often paid by weight (SH7, PVT2). Third, not all smallholders are in a position to pluck two leaves and a bud and adhere to

the recommended plucking cycles, because they are engaged in work outside tea cultivation. For the majority of the tea smallholders, tea cultivation is not the only source of income; they are also involved in cultivation of other cash crops or work as employees in private and state institutions to supplement their income from tea cultivation. Thus, they cannot strictly adhere to the plucking cycles and deliver good quality leaf as required by some factories. Fourth, the situation has worsened in some areas where there is a shortage of labour, which delays the plucking round, so leading to coarse/hard leaf. This is a particular problem for smallholders with larger plots ('small estates') because they depend on hired labour (SH3). Fifth, there is considerable post-harvest damage because teas are over-packed in synthetic fibre bags instead of coir bags, and kept out on the roadside for collection, exposed to sunlight.

5.2.2 Manufacturing

Manufacturing of tea is done at factories, where green tea leaves, which have been plucked in the field, are processed into ready to drink made tea (FAO, 2012a). Tea factories constitute a critical stage in the value chain (van Reenen, et al., 2010).

At factory level, green leaf undergoes processing (withering, rolling, fermenting, firing and shifting) before it is converted into made tea and packed for sale at auctions in Colombo (Sri Lanka Tea Board, 2012c). First, the leaf is spread evenly on racks or troughs for several hours, which allow air to circulate until the leaf loses some of its moisture and becomes soft. This is 'withering' and, under suitable conditions, can take up to 24 hours. Second, withered leaves are fed into 'rolling machines', which roll, twist and break them up to release natural juices and enzymes, giving tea its flavour and aroma. Third, the rolled tea is then spread out on tables in damp, cool air for oxidization to take place. In about three hours, the rolled green tea turns a coppery brown through absorption of oxygen. Fourth, oxidization is stopped at a precise stage by passing the tea slowly through a hot air chamber. This stage of production process is 'firing', which reduces the moisture levels to 3%. At this stage, the leaves turn black and fragrant and the leaf is reduced to less than one-fourth its initial weight. The final stage is shifting through vibrating meshes which separate the tea into various grades, based on the particle size of the leaf. This is 'grading'. Teas are graded irrespective of the elevations at which they are grown. There are two main grades: leaf grades and broken grades (M. Fernando, 2000). Leaf grades have larger and longer pieces of leaf, giving a light-coloured liquor. Broken grades consist of smaller pieces, which give darker liquor and a stronger flavour. A third grade is dust, the smallest particles of a leaf, which infuse quickly and strongly (M. Fernando, 2003).

Various grades of tea denote only the size and appearance of the leaf and bear no relation to quality of the tea (Ganewatte, 2002).

After manufacturing, teas are bulk-packed into paper sacks and transported to broker warehouses in Colombo for the auctions. It might not be possible to pack on a daily basis. Therefore the same particle size is collected in bins daily until a sufficient amount is available for packing (Forbes & Walker, 2006). It takes approximately two days from the plucking to manufacture:

You pluck a leaf today, by today evening it's in the factory, you manufacture tonight or tomorrow morning at the latest, the manufacturing process at the maximum would take two days, including the sifting. Then it's ready for packing. It's very much straight forward in the upcountry. Maximum two days. (RPC3)

A handful of RPCs like RPC4 and RPC2 have integrated forwards in the value chain, establishing their own marketing arm to export. However, these subsidiary export companies do not necessarily restrict their buying to their own teas; they also buy from other estates. This is because they need to source a wide range to meet their buyer's requirements in price and quality. For example, EX6 is the exporting subsidiary of RPC4 but it hardly buys any teas from its own plantations. Manufacturing and exporting sides of the business are run separately, as explained by RPC4, which also owns EX6:

We have a marketing arm ourselves... It's a branch of (our) plantations but it's a separate company and a separate profit centre. They go to the auctions. And they purchase teas; can be ours or others and they do the blending and selling. So it's not only our marks that they buy. They don't necessarily buy (our) teas because they have to get a tea that will satisfy the consumer in terms of prices; so if our teas are selling high, they have to have a cheaper tea to blend so that they can reduce the price.

5.2.2.1 Private and RPC Factories

In 2011, there are 694 factories manufacturing tea and are registered with the Tea Board of Sri Lanka (GOV2). Of these, 407 (59%) are privately owned and 234 (34%) are operated by RPCs; the remaining 53 factories (6%) are under the management control of the government (SLSPC, JEDB, TRI) and cooperatives (Figure 3.6). Thus most factories are either owned privately or by RPCs.

Privately owned factories are usually family-run businesses, and the family members are involved in their management (PVT1). Some own more than one factory: PVT4, for instance,

has eight (Table 5.1). Whilst private factories might be family-owned, they are not necessarily small in terms of scale of operation (ASSOC3). In fact, some are larger than some RPC factories in terms of manufacturing capacity. Most private factories are newly built compared to some RPC factories, which date back to the inception of the industry more than 100 years ago.

All the RPCs have a number of factories under their control. For example, all six RPCs interviewed owned 13-16 factories, producing 5-9 million kg of made tea annually. They are not only involved in cultivation; they also process green leaf from their own estates as well as bought leaf, especially in the case of RPC factories in low and mid elevations.

Factories can be found in all tea growing regions from low to high elevations, because leaves should be processed as soon as possible once plucked. As RPC3 explained, 'From the moment you pluck, you need to get it transported as much as possible within the shortest period of time to the factory'. Therefore factories have been built at all altitudes in tea growing areas, in order to reduce the time lag between plucking and processing. This ties factories and estates/smallholders together in a close geographical proximity, which reduces their ability to seek alternative channels of sales to some extent.

Over the years, the number of factories in high and medium elevations has fallen as a result of the fall in the production of high and medium grown teas, while there has been a corresponding increase in the number of factories at low elevations to meet the rise in demand for low-grown production with the expansion of the smallholder sector (Government of Sri Lanka, 1995). In terms of geographical spread, of the 694 factories, 391 (56%) are located in the low elevations; 175 (25%) and 128 (18%) are to be found in high and medium elevations, respectively (Figure 3.7). Most privately owned factories are located in the low elevations (76%), while in the case of those run by RPCs, half (58%) can be found in high elevations.

Given that most private factories are located in low elevations, they depend almost entirely on smallholders and collectors for supply of green leaf. Almost all the private factories interviewed are bought leaf operations, that is, they process leaf supplied by smallholders and collectors. As pointed out by PVT4, which has 8 factories in the low country, 'we don't grow anything actually because we are dependent on the smallholder tea'. However, some private factory owners like PVT1 and PVT3 do possess land close to factories where they cultivate tea but the amount of green leaf production is insufficient to run their factories. Hence they are highly dependent on smallholders and collectors. In contrast, most RPC factories located in the

higher elevations get most of their leaf from their own estates. Thus they are less dependent on bought leaf and smallholders/collectors. According to Tea Board statistics (2008b), 92% of private factories depend on bought leaf, compared to RPC factories at 40%. However, with excess factory capacity, low replanting rates and low yields on their own estates, RPC factories are increasingly turning to smallholders for green leaf (ASSOC1).

5.2.2.2 Relationship between Manufacturers and Exporters

Given that made tea is largely sold through the auction system, manufacturers do not have a direct relationship, let alone any form of agreement, with their buyers (exporters). The teas are sold by brokers on behalf of the factories at the auctions, and the brokers deal with the buyers:

We don't communicate directly with tea estates. We will never talk to an estate. Always we go through a broker. Say we buy tea and the quality is bad, we tell the broker this bag, the quality was bad and ask for a refund. They will pay us back. The broker will go and claim it from the estate. (EX1)

When buying tea at the auction, the main requirement of exporters is the quality of tea and the price. Some exporters catering to developed countries look for specific standard certifications relating to food safety, social and environment (HACCP, ISO22000, Fair Trade, Ethical Tea Partnership, and Organic) at the request of their international buyers and they restrict their buying to particular certified estates/factories. For example, EX8's main buyer, a supermarket chain in the Netherlands, requires Fair Trade teas, so he has to buy teas sold by 18-19 Fair Trade certified estates/factories at the auction. Some exporters also require letters of guarantee from estates certifying that they do not use certain banned agro-chemicals in the cultivation of tea (EX2). This is to reassure their international buyers, namely Japanese customers, who are concerned about pesticide residues. But this is more an exception to the rule. Generally speaking, most buyers do not insist on such certifications as they are aware that estates and factories are required to adhere to GAPs in the field and Good Manufacturing Practices (GMPs) (GOV2) in factories and the tea produced has to conform to ISO3720 (GOV2), a basic standard for black tea, which is closely monitored by the Tea Board (GOV2). Thus most buyers do not require certification at present but that might change in the future (EX1).

Quality of tea is the main barometer of buying at the auctions. Quality is subject to a taster's organoleptic assessment of the tea and this includes taste, sight, smell and touch of

the tea. This sensory test is widely accepted as a means of evaluating the quality of tea, and is a result of years of knowledge and experience of tasters. As the Manager at RPC2 stated,

...when the buyers come and bid, they simply look at the quality. They don't look at other things... the majority of the buyers are worried about the quality and the price.

This view was equally shared by RPC6: 'Generally, the buyers will first look (at) – 80% of the market is on the tea itself – the quality of the tea'.

Exporters buy from any estate or factory which is able to deliver on their requirement (EX2). Some buyers regularly purchase teas from certain estates/factories for their blends or blends of their buyers abroad, because these estates/factories consistently produce a good quality tea (RPC6). The exporters will continue to purchase teas from these particular estates/factories as long as the quality can be assured (RPC6).

In the event of variation in quality due to climatic changes (EX3), or problems in manufacturing, the exporter can easily substitute for tea of similar quality from another estate which is available at the auction or buy it but pay less because of lower quality. Thus exporters do not necessarily buy from the same estate/factory throughout the year (BR1). As EX5 explained,

I am more loyal to quality than estates. I won't just go and buy because it comes from a (particular) estate, I go to the auction and see what is good and then buy. I honestly don't care (from which estate the tea comes from).

Therefore, exporters are not dependent on a particular estate. The same is true for the estates – they are not dependent on a particular exporter.

The factory obtains information with regard to a buyer's requirements mainly from their brokers, who act as their selling agent and liaise with the exporters. The brokers not only send 50 gram samples of teas which will be auctioned to buyers but also visit the main buyers every week on what are known as 'buyer rounds' to gather information with regard to 'future market conditions, what types of enquires they have, what types of complaints they got from their overseas buyers and ... pass it down to the producers' (BR1). Brokers also provide market information to manufacturers/producers through publications such as the Weekly Tea Market Report, Monthly Statistical Summary, Annual Tea Chart and Annual Tea Review. Brokers assist tea manufacturers not only in terms of providing information about their buyers and market requirements but also giving feedback on the tea they have manufactured. Brokers give what

is called a Muster Report in which the broker highlights the pluses and minuses of the tea produced and what could be done to improve the quality (EX4). As BR2 said, 'They have to seek our advice and listen to our advice. And take our advice'.

Brokers also visit factories and provide manufacturing advice: they 'go through the manufacturing process, and tell them where they are going wrong, what they should be doing to make a better' (BR1). In addition, brokers provide additional services such as financial advances to manufacturers, given that it takes 4-5 weeks for proceeds from the sale of the tea at the auction to be realised. During this time, the manufacturer can pledge his stocks to the broker and borrow from the broker between 70 and 100% of the value of the tea. Most manufacturers, especially private factory owners, make use of this facility (BR2). Thus brokers maintain a very close relationship with the factories they represent and there is constant communication between the two. However, some manufactures have complained that brokers do not always do their job properly (PVT3). As a result, a handful of private factory owners and superintendents of estates owned by RPCs are meeting their regular and most important buyers to obtain feedback on the tea that they have produced, and how the quality can be further improved, to ensure that they continue to bid for their teas:

With people like Unilever and Akbar Brothers (two large buyers at the auction), our estate managers go and meet them. They inquire how their teas are and what kind of teas they like and whether there any improvements they require. (RPC5)

Independently of the brokers, manufacturers also closely follow what is happening at the auctions on a weekly basis. So they are aware of what the market requires and offers in terms of prices (ASSOC1). By and large, most factories manufacture tea with minimal input from their buyers on what to produce and how.

The manufacturers do not have difficulties in meeting the requirements of their buyers. Whilst there are quality claims made by buyers, that is, the sample which was given to them prior to the auction is different to what is delivered after sale at the auction, this is not a huge issue in the industry (EX6). In such cases, brokers intervene and resolve the issue by replacing the tea or refunding the money. According to RPC6,

I can safely say that generally we don't have big problems other than sometimes quality claims; bag to bag variants or the bag is damaged and things like that. I mean those are routine in industry. Sometimes they might say there is some grit. Those are run of the mill problems... But by and large I can say that the last 25 years we haven't had problems.

The buyers do not extend assistance to manufacturers other than providing information with regard to the quality that they require, communicated through brokers. Even then, only a few buyers do that. In the case of private and direct sales, which are alternative channels of sale, buyers not only provide information on the product and production process but also assist factories by paying in advance for the production they require (BR2).

Most exporters do not monitor the estates or the factories, that is, they do not visit and inspect the factories or estates, with the exception of a few large exporters who are increasingly engaging with estates and factories from which they regularly buy. For example, EX3 has started carrying out supplier audits randomly and giving the estates feedback to improve themselves. Similarly, Unilever, which is one of the largest buyers at the Colombo auction, has its own supplier assurance programme and distributes a Good Manufacturing Practice (GMP) booklet, which it has developed for its plantations in Kenya, to tea estates and factories in Sri Lanka from which it regularly buys tea. They then follow it up with questionnaire/checklist covering various aspects of production process, and at random select a number of estates/factories a year to visit and audit to ensure they comply with GMPs. As explained by the Head of the Tea Division of Unilever:

Say, for example, a company like us, we work through assurance programme because we understand the product (tea) and we know the risks associated with it. So we don't have to get HACCP for any of our customers. But the only thing we say is do GMP – be responsible for what you produce.

In addition, they also undertake product testing in their own laboratories; for example, EX3 has its own accredited laboratory. These buyers have their own brands or are buying agents for some of the big international tea brands.

However, what most exporters do is only taste the tea samples that they receive from brokers before they purchase at the auctions. This seems to be the most common means of monitoring the tea and ensuring that what they buy meets their requirements, as EX1 explained:: 'What our tasters do is that they look at the tea, feel, smell and taste it and figure how much it is worth and value it'. Then they go to the auctions and bid for the tea based on their valuation to meet their export orders. After purchasing, exporters also check to see whether what they have purchased matches the quality of the sample they were sent prior to auction. In addition, exporters know that both brokers and the Tea Board monitor the tea sold at the auction. As the regulatory body, the Tea Board monitors estates and factories and thus ensures that they

adhere to GAPs and GMPs, respectively: for example, in 2009, 118 surprise inspections were carried out by officials (Sri Lanka Tea Board, 2009).

5.2.3 Marketing

Factories sell their made tea through the auction system which is main channel of sale in the country. Other approved channels of sale by the Sri Lanka Tea Board include: 1) Private Sales, 2) Forward Contracts, 3) Direct Sales and 4) Ex-factory Sales. In 2008, around 85% of sales were through auction; 14.4 and 0.6% were sold through private sales and direct sales, respectively (Sri Lanka Tea Board, 2008b). With the suspension of private sales from 2008-09, now virtually all teas produced in Sri Lanka are sold through the auction (Ceylon Tea Traders Association, 2011)¹ (Figure 5.1).

5.2.3.1 Private Sales and Forward Contracts

Under Private Sales and Forward Contracts, samples are immediately submitted after manufacture by the broker, acting as an agent of the producer, to the buyer with his valuation (Government of Sri Lanka, 1995). If the buyer accepts the offer, the broker must obtain a ratification of price from two independent brokering firms. Under Private Sales and Forward Contracts, the producer is able to quickly get money for his tea compared to selling through the auction system (Government of Sri Lanka, 1995). Buyers also have the advantage of having immediate access to teas without having to wait for the weekly auction. Despite the advantages to both buyers and sellers, Private Sales and Forward Contracts are not popular (Government of Sri Lanka, 1995). The reason is that, in a rising market, the producer is not willing to sell through this channel, because he thinks he may get a better price at the auction. And in a falling market, the buyer prefers to wait for the auction because he thinks he can buy more cheaply. Moreover, forward sales are not popular because of the nature of the product; forward sales require a fairly uniform quality to be supplied, which is not possible because tea is prone to climatic changes: 'teas from one invoice to another could be different. And this is

¹ Due to the recession and low prices realised at the Colombo auction, the sale of low grown teas was suspended under private treaty from October 2008 by the Tea Board (Sri Lanka Tea Board, 2009). The suspension was extended to teas from all elevations from October 2009, with the exception of speciality teas and teas on special requests. As a result, now all manufacturers have to sell their tea production through the Colombo Auction (Sri Lanka Tea Board, 2009).

why you see in the auction... teas manufactured in the same estate have different prices. You can't really take one estate mark and say this tea will be the same throughout the year. It will never be the same' (ASSOC1). Thus the amount of teas sold through private and forward sales is 'very small' (BR1).

5.2.3.2 Ex-factory Sales and Direct Sales

Manufacturers can also to sell up to a maximum of 3% of their monthly production for local consumption under Ex-Factory Sales (Government of Sri Lanka, 1995). In this case, there is no price ratification. In addition, factories can sell up to 50-100% of their output under Direct Sales, subject to price ratification by a panel appointed by the Tea Board to ensure that the price is above the auction rate; 50% of tea production can be sold directly if the tea is exported in bulk form and 100% if it is exported in value-added form (BR2). In the latter case, the producer is allowed to directly enter into a contract with foreign buyers without the involvement of the broker. The advantages of direct sales are (Government of Sri Lanka, 1995): teas are sold much more quickly, by-passing the auction, and proceeds from the sale are available five weeks earlier than the auction; the producer receives a higher price by eliminating the broker's fees and other charges like warehousing and transport; and teas reach the buyer in a much fresher state. Direct sales also enable producers to manufacture tea according to the requirements of the buyer (BR2). However, direct sales have not amounted to much, accounting for less than 0.5-1% (BR1), because producers prefer to sell their teas through the auctions, while some factory owners would have borrowed from brokers to finance their working capital and thus are bound to sell their teas through brokers at the auction (BR2).

5.2.3.3 Auctions

Like other producing countries, marketing of tea in Sri Lanka is mainly through auction (van Reenen, et al., 2010). Colombo is the world's largest tea auction, handling more than 300 million kg and fetching the highest average tea price in 2008 (Sri Lanka Tea Board, 2008b). Sri Lanka has the highest percentage of tea production sold through auction (Government of Sri Lanka, 1995). The conduct of the auction is governed by the By-Laws and Conditions of Sale of the Ceylon Chamber of Commerce Ordinance No.10 of 1895 (Ceylon Tea Traders Association, 2011).

The Colombo auctions are held weekly on Tuesday and Wednesday at the Ceylon Chamber of Commerce (BR1) and they are open to all registered tea traders (ASSOC1). There are two channels of sales through the auction. Teas can be sold either in the Ex-estate Catalogue or in the Main Sale Catalogue (BR2). Teas sold through the Ex-estate Catalogue physically remain on the estate and samples are sent to brokers (BR2). About 25% of the volume at the Colombo Auction is sold through the Ex-estate catalogue (Government of Sri Lanka, 1995). This method of sale is popular with medium- and high-grown producers (BR2).

The auction system has become firmly established as a preferred mode of sale in all the major producing countries (Government of Sri Lanka, 1995). It is popular because it is convenient, transparent and the best method of bringing together buyers and sellers to make competitive bids for the teas on offer (Government of Sri Lanka, 1995). If a buyer wishes to purchase a particular type of tea he has to bid in open competition with others to meet his requirements. In this process, prices tend to move up. Sometimes buyers may also push each other's bids upwards in order to prevent their rivals buying tea cheaply. In this way, tea is sold to the highest bidder. After the tea is sold at the auctions through the Ex-Catalogue, the producers are required to deliver it to buyers within 14 days. In the case of Main Sale, buyers have to collect the tea from the broker's warehouse. Buyers have six days to pay the broker, and the producer is next paid by the broker, minus the broker's fee and any advances (BR1). Both buyers and sellers maintain that Colombo auction ensures competition while protecting their interests:

We think that the auction is the best way to sell our tea because of two reasons. One is that there is a good degree of competition. Number two is that we are sure of the money. If I sell today, within a week I get the money and that is very important. (PVT4)

The auction is characterised by the participation of a large number of buyers and sellers (Government of Sri Lanka, 1995). The auction is open to any registered buyer to participate and bid for teas that are catalogued and on offer. According to BR1, there are 250 buyers who have registered to participate and bid at the auctions but not all are active on a weekly basis. Almost all buyers at the auction are exporters, though a small proportion includes buyers who supply the local wholesale market (Figure 5.1). The latter group is referred to as '*Pettah* buyers'² who buy the dust and BOPF grades of tea at the auctions which are preferred by local

² *Pettah* is a neighbourhood in Colombo famous for its open-air bazaars and markets.

consumers and distribute to the local market through grocery shops or ‘boutiques’ in bulk form (BR1, BR2).

While large exporters (20) invariably dominate the auctions and regularly buy substantial quantities (BR1, BR2) of tea at the weekly auction, there is no evidence that the market is controlled by a single large buyer nor is there evidence to indicate that they are operating together in collusion to manipulate prices (Government of Sri Lanka, 1995). Not only are the large exporters competing between themselves but they also bid in open competition with medium to small buyers. However, this does not mean that the big buyers at the auction have no influence. A large buyer plays an important role in sustaining the auction. For example, if he reduces his purchase sharply, prices are likely to be depressed. While the share of a large buyer might not be significant as a whole, his purchase of a particular grade of teas or region may be substantial (Sri Lanka Tea Board, 2012c). For example, Unilever, an important buyer in the auction, is dominant in the high-grown tea export market and this gives Unilever greater buying power in the market for those teas. In comparison, low grown teas are much less concentrated, as there are several buyers in the auction like Akbar, Stassen, Expo Lanka, and Jafferjee Brothers (Government of Sri Lanka, 1995).

5.2.3.4 Brokers

Teas at the auctions are sold through eight licensed brokers appointed by the tea factories³. Brokers sell tea at the auction on behalf of producers. A producer may appoint more than one broker and divide his produce between them to create competition between brokers and reduce dependence on one broker (RPC3). Currently, there are eight tea brokering agencies: Forbes & Walker Tea Brokers, Asia Siyaka Commodities, Eastern Brokers, Lanka Commodity Brokers, Mercantile Brokers, John Keels, Ceylon Tea Brokers, and Bartleet & Company (Institute of Social Development 2008). The two largest brokering agents are John Keels and Forbes & Walker, with a share of about 40% of teas sold through the auction between them (BR1). Some brokers have been in business for a long time; for example, BR1 has been operating for over 100 years at the Colombo Auction. Given that almost all tea sales take place through the auctions, brokers play an important role in the tea value chain linking manufacturers and exporters (see Figure 5.1).

³ Brokers have to register with the Sri Lanka Tea Board and obtain a license from the Colombo Municipality and membership with the CTTA to operate in the auction (ASSOC1).

The job of a broker is to sell tea on behalf of his client, the producer: 'We would act as a marketing arm of the producer' (BR1) and facilitate the transaction between producers and traders. In selling the tea, the broker has complete discretion, since he is responsible for collecting the money from the buyer at the conclusion of a sale. In effect, the broker is a selling agent for the producer (ASSOC1). Towards this end, the broker warehouses the producer's teas, draws samples, tastes and values the teas, distributes samples free of charge to prospective buyers together with the catalogue prior to the auction, auctions the teas, attends to post-sales documentation and pays the producers after collecting payments from buyers (BR1, BR2). In addition, the broker advises the producers on manufacturing and price trends. For their services, a brokering fee of 1% on the net value of teas sold is charged (van der Wal, 2008).

5.2.3.5 Relationship between Brokers and Exporters

All eight brokers deal with buyers participating in the auction because one buyer is not going to purchase all the teas available. Generally, brokers maintain a 'very good' relationship with buyers to facilitate the sale, and they interact closely with them on a weekly basis, and sometimes on a daily basis in the case of larger buyers. Indeed, brokers engage with buyers prior to the auction – they send a sample of teas to potential buyers and the broker's catalogue – and deal with them after the conclusion of the sale, if there are any claims by the buyer about variation in the quality of tea delivered. There is considerable trust in the relationship, because exporters bid and buy at the auction on the basis of a 50 gram sample received prior to the auction: 'The biggest trust they could give is what we buy and the sample should be the same' (EX5).

5.2.4 Exporting

Once exporters have purchased the tea, they collect it from brokers and transport it to their warehouses, where they clean, blend it with other teas and ingredients such as herbs, fruits, flower petals, etc. (if required), and pack it (bulk, packets and tea bags). Some are also involved in marketing the finished product in Sri Lanka as well as abroad. These activities are the most profitable operations in the tea value chain in Sri Lanka. In addition to tea, they also source other inputs, including packaging material (filter paper, card board cartons, thread, wire, tags, envelopes, etc.) from the local market or import this, if not available locally (EX10).

5.2.4.1 Exporters

Almost all the exporting companies are Sri Lankan owned, except for a few like Unilever, Finlays and Van Rees, which are multinationals involved in growing, trading and marketing of tea worldwide. Most local tea exporters are family-owned businesses like EX1 or part of large conglomerates (EX6), as shown in Table 5.3. While most companies are involved in the tea export business, a few of the large and medium scale exporters such as EX3 and EX9, respectively, have integrated forward in the tea value chain by undertaking their own distribution and marketing abroad. To this end, they have established representative offices and warehouses in their main markets like in Australia and the USA. A handful of large exporting companies have also integrated backwards into tea brokering and tea plantations, as discussed earlier. For example, EX2 which is amongst the top 10 exporters, has not only an estate and a factory in the low country but also has shares in one of the eight tea brokering firms, as explained by the CEO of the company:

We have integrated backwards. We are one of the few companies in the industry which has operations at every level. The industry can be broken down into 4 levels: production, manufacture, brokering and exporting. We are involved in the whole chain. We have a plantation, factory, and we are part of a brokering establishment. We have one plantation and one factory.

EX1, the largest tea exporter in the country, has shares in the same brokering company as EX3, which owns another brokering company (BR1). Nevertheless, these businesses are run as separate entities (EX2). For example, though EX2 and EX have their own tea plantations, they buy tea from other estates through the auctions. Some of the larger to medium companies interviewed have also diversified into businesses outside the tea industry (EX1).

Some exporters not only supply international markets but also the domestic market. However, the volume sold to the domestic market is minute compared to their total export volumes. The tea industry in Sri Lanka is predominately export-oriented and geared towards catering to markets outside the country, as demonstrated by the high percentage of tea sold abroad by exporters compared to local sales. Sri Lanka exports almost 90% of its production abroad. While tea is sold all over the world, the major markets today for Ceylon Tea are the Middle East and Russia and CIS countries (Figure 3.11).

Table 5.3 Profile of exporter interviewees

	Vol. Kg (mn)	Ownership	Related activities	Own: private labels	Value added (as % of total exports)	Main markets	Number of buyers (of which main buyers account for)
EX1	42.35	Family owned	Tea tags printing, brokering	50:50	59%	Middle East, Russia	40 (6 buyers account for 60-70% exports)
EX2	10.74	Family owned	Tea production, manufacturing, brokering, marketing	50:50	54%	Middle East	36 (2 buyers account for 60-70% exports)
EX3	6.16	Family owned	Tea production, manufacturing & brokering	100	92%	Australasia, Russia, CIS countries	N/A
EX4	5.02	Multinational	Plantations	70:30	91%	Middle East	N/A
EX5	1.98	Family owned	Printing of tea tags and envelopes	65:35	90%	Middle East, Russia, EU,	25 (7-8 buyers account for 80% exports)
EX6	1.92	Subsidiary of a Sri Lankan-owned conglomerate	Plantations	80:20	32%	Russia, Japan, Middle East, USA, CIS	30-40
EX7	1.22	Family owned	N/A	45:55	13%	EU, USA, CIS	15
EX8	1.02	Subsidiary of regional plantation company	Plantations	10:90	95%	EU, Japan, USA	12-15 (1 buyer accounts for 90% exports)
EX9	0.74	Family owned	N/A	45:55	70%	Europe, USA	30 (Largest buyer accounts for 8% of exports)
EX10	0.29	Limited liability company	N/A	60:40	7%	Russia, Middle East	11 (3 buyers account for 80% exports)

Source: Interviews, company websites

Not surprising all the companies interviewed exported to all these regions; some exported to certain regions (the Middle East) more than others. For example, EX1 and EX2's main markets are the Middle East and Russia and CIS.

The exporters ship a variety of teas from all elevations in the country. Some also import tea for blending and re-exporting; these are teas in short supply, such as CTC teas, green teas, and speciality teas like Darjeeling and Assam from India (Lanka Business Online, 2012b). As EX4 explained,

We do all varieties of Ceylon Tea – low, medium, high, orthodox, CTC – everything. The entire range of Ceylon Teas is used in some form or the other in our blends. We also do imported teas. We have started importing from places like Kenya, Indonesia and China for blending.

Most exporters ship tea in loose or bulk form as well as value-added tea by blending and packaging into packets and tea bags, as EX6 explained: 'We would either ship the teas as they are or we would bulk pack and ship or we would bulk package into various packets or tins or various items and then ship'. While exporters tend to ship a mix of bulk and value-added teas, some are predominantly in value addition whilst others are in bulk exports. For example, 92% of EX3's shipment went as value-added products (tea bags), compared to EX10's 7% (essentially a bulk tea exporter). Nevertheless, all exporters do some of both, as EX4 explained:

We have to have a mix of bulk and packets. If you export bulk, your quantities go up because you can put 10 tonnes of bulk tea into a container, whereas with tea bags, you can put around 3 tonnes. In order to maintain our overhead and things like that, we need to have some portion of bulk tea also. We focus a lot on value addition, but value addition is not easy thing to do.

While the government has been encouraging tea exports in value-added form (Dayananda, 2008), and the industry over time has been increasingly adding more value to its tea by exporting it in various forms and catering to changing consumer demands, 60% of exports remain in bulk form (Sri Lanka Tea Board, 2008b). The Chairman of ASSOC6 commented that Sri Lanka is 'basically a glorified bulk exporter'.

Those who export value-added teas do so either under their own established brand names or private labels owned by buyers abroad; the latter practice was referred to as 'contract

packing'⁴. Most export companies have established many different brands to cater to different markets and market segments, as EX5 commented: 'We have brands for different markets'. Not only large but also small to medium exporters also have their own brand labels (EX6). Most export companies are flexible and will pack for private labels – that is, labels owned by international buyers. Even the largest exporter: 'We pack for other brands also, not only our brand' (EX1). In fact, half the value-added exports of EX1 go under its own labels; the other half is packed under its buyers' labels. In some cases, private labels account for as much as 90% of the exporter's value-added product (EX8). However, there are a handful of exporters who do not engage in 'contract packing'. For example, companies like EX3 will not pack for any brand other than its own. This exporter has an internationally recognised brand of tea selling world-wide. Generally speaking, most exporters are flexible and pack under their own labels and private labels. In fact, private labels account for a larger share of total branded exports; it has been reported that Sri Lankan-owned brands account for less than 10% of total tea exports (Lanka Business Online, 2012a).

5.2.4.2 Relationship between Exporters and International Buyers

Buyers abroad include a mix of state organisations, packers, importers, wholesalers, distributors, retailers (i.e., supermarkets, department stores, boutiques) and food chains: 'Different markets, different people' (EX1). Given that most exports are in bulk form, buyers abroad tend to be packers (ASSOC1). The majority of packers import teas in bulk and blend with other origins, because Sri Lankan 'tea prices are highest in the world', and pack and sell to the local market or re-export elsewhere (EX6).

Exporters have more than one buyer: there are as many buyers as the number of countries they export to, if not more (EX9). Although their customer base is wide, exporters tend to depend on a few buyers (or principals) who account for a sizable share of their sales:

The tea industry operates in a specific way in this country. It is true for the large as well as the small(er) players. The company runs with one or two major buyers contributing volume. If you ask any company, it would be like this. The balance would be a mix of many. (EX2)

⁴ Some brands are co-owned by the exporter and the buyer. For example, EX4 jointly owns a tea brand that is popular in the Middle East with one of its buyers.

EX8, for example, has 30 buyers but is highly dependent on one in the Netherlands who accounts for 90% of its exports. However, not all exporters are highly dependent on one particular buyer (EX9).

According to the interviews, exporters maintain ‘very close’ and ‘long term’ relationships with their buyers, especially their principal buyers. Principal buyers buy on a regular basis throughout the year, although the quantities they buy vary (EX5). In most cases, they have been working with their principal buyers since the inception of the company. While there have been instances of companies losing their buyers, this was rare: one company boasted, ‘We are yet to lose a customer’ (EX9). Given the longstanding relationship, there is a lot of trust in the relationship between the exporters and their overseas buyers: ‘Our relationship is based on trust. They don’t undermine what we say. Whatever they say also we believe’ (EX3).

In the case of labels names owned by the exporter (own brand), the international buyer will simply purchase the product that is available in pre-packed form and sell it in its market. The buyer has little or no input in the development of the product: ‘they sell whatever we produce because it is our brand and we develop it’ (EX9). One exporter bluntly stated: ‘Our own product – it’s a take it or leave it situation’. At most, what the international buyer does is inform the exporter of local regulations in terms of labelling and packing requirements (EX3). Some exporters usually have a performance-based agreement with their international buyers, especially with distributors, giving control to the exporter of its brand, as EX3, who has an internationally recognised brand, explained:

As a brand owner, we need to know what is happening to our product. We need to know of fast-moving stock and whether they have sufficient stocks to have promotions. We also need to know of the position of the brand in the market, pricing against competitors, etc. We have to look at all aspects. We have certain KPI [Key Performance Indicators] that we give the buyers/distributors.

Exporters also support their buyers in marketing their own brand abroad by providing promotional material, etc. Exporters have usually established several of their own brands to cater to different markets and market segments:

We have three of our brand names: *Akbar*, *Al Ghazneem* and *Cherry*. *Akbar* for Russia and some European countries, *Al Ghazneem* will be more towards the Middle East and *Cherry* for other Middle Eastern countries. (EX1)

In contrast, in the case of private labels or bulk tea, international buyers most of the time specify the quality required and how it should be produced. The exporter in turn prepares a

master sample, which is benchmark for subsequent orders. With bulk tea, the international buyer simply requests the exporter in Sri Lanka to buy and match the specified master sample:

Buyers (overseas) know what the type of tea they want depending on who the buyer is. One of our good clients in Russia would say I want so much of this type of tea. So we need to make sure that we purchase that at the auction. And if it's flavoured, we need to procure the flavours, mix it together, pack it and sent it. (EX1)

He then imports the tea and blends it with other origins, if required, and thereafter packs and sells the product in the local market. In the case of a value-added product, the international buyer specifies everything from design of the packet to the tea that goes into the packet: '...some people give specifications covering everything – the blend, the quality and even the place you need to buy them, standard, etc.' (EX9). While the buyer will specify what it requires in terms of the product and process specifications, including internationally accepted standards such as ISO9001, HACCP, ISO22000 and other certifications, exporters have the flexibility to source tea and other ingredients as long as they are able to conform to buyer requirements (master sample), according to RPC2, who packs tea directly from its own estate and exports abroad through its exporting arm, EX8:

We have to match the master sample – appearance, taste, character, liquor and everything. We can do whatever blend – we might not put the same teas all over. We have the flexibility to buy any tea and do a blend as long as we conform to the particular master sample.

In some cases, the exporter also provides advice and support in the development of the product to the buyer:

With regard to value addition, customers are always interested in new ideas, new forms of packaging, and new types of blends that could be created, new flavours which are out in the markets. When you want to make a client buy more, you have got to throw at him his type of products... they will specify but before their specifications you have got to feed them with enough and more designs. Once you do that they will give specifications as to what they need. (EX5)

In case of bulk exports and private labels, almost all exporters have not entered into any form of agreement with their buyers. In most cases, it is based on 'your word and it is an unwritten agreement' (EX4). If there are agreements between exporters and their buyers, these tend to be short term, because tea as a commodity is subject to wide price fluctuations, and neither party is willing to commit to a long-term agreement:

[It is] seldom that any company in Sri Lanka will do a contract for one year or so because tea prices fluctuate. Generally people go for short-term agreements. Some companies have agreements [saying] that they won't sell anything beyond three months. Or they will sell in terms of volumes; for example, 20 containers for this much. It is not like other industries where you can make an agreement for a year or so. ... It is risky to go for a long-term agreement. Say tomorrow, all of a sudden, there might be floods in Kenya and there is no tea there. Immediately everyone will come and buy from Sri Lanka. These are things that you can't predict. (EX5)

Exporters cooperate with their buyers in a number of ways. Occasionally buyers have difficulties in paying on time and in such circumstances exporters accommodate them and provide bridging credit (EX3). Similarly, buyers may also pay upfront or pay an advance when an order is placed, prior to a shipment, and help out the exporter in terms of cash flow and inventory management (EX9). They also share with one another know-how and market information on a regular basis. For example, exporters provide buyers blending advice and support for their private labels: 'There are things that don't know like tea and how to taste. So if they want out assistance, we help them' (EX8). At the same time, buyers provide exporters with market information: 'Our biggest asset is the customer in terms of market research. They are much closer to the end consumer than us. They give us the know-how' (EX9). Thus, exporters' relationships with their buyers '... work both ways' (EX10). Hence there is a constant flow of information between exporters and buyers (EX6). In fact, both buyers and exporters visit one another often to share information and discuss how to improve the product quality and thus build their relationship (EX9).

When placing orders, buyers mainly look for quality, price, reliability and service from exporters. Exporters do not have much difficulty in meeting buyer requirements, as demonstrated by the number of shipments returned, which has been minimal to date in comparison to the volume of teas shipped (GOV1). The most common difficulties that exporters encounter in dealing with buyers are obtaining better prices for tea due to availability of cheaper options, not just within Sri Lanka but also from other countries, receiving payments on time, sourcing of packaging materials and other inputs (EX9, EX10).

According to interviews, buyers do not closely monitor the exporter's activities: 'They come frequently, but not to inspect. Their main intention is to establish the relationship and strengthen it' (EX9). The only exception to this is Japanese buyers, who have their own stringent requirements and not only visit warehouses and factories and carry out audits but also recommend improvements to the product and production process (EX4). Some of buyers

check and test tea samples prior to and after the shipment to ensure that it meets their quality requirements (EX5), especially in the case of private labels.

5.3 Governance in the Sri Lankan Tea Value Chain

This section analyses inter-firm governance within the tea chain, using Gereffi *et al.*'s (2005) five-part governance framework. Connections within the chain are a continuum, extending from market chains, characterised by 'arm's length' relationships, to 'hierarchical' value chains (see Chapter 2, above). Between the two extremes are three network types of governance – modular, relational and captive.

- *Market governance* involves transactions that are relatively simple; information on product specifications is easily transmitted, and producers can make products with minimal input from buyers. These arm's-length transactions require little or no formal cooperation between agents and the cost of switching to new partners is low for both producers and buyers. Buyers have no controlling interest in the production side, set few if any standards, and provide producers with little to no information on what the market wants and how to produce it. The product and production process parameters are defined solely by each firm at its point in the chain. The central governance mechanism is price rather than a powerful lead firm.
- In *modular value* chains, suppliers make products to buyer specifications. Suppliers in modular value chains tend to take full responsibility for process technology and often use generic machinery that spreads investments across a wide customer base. This keeps switching costs low and limits transaction-specific investments, even though buyer-supplier interactions can be very complex. Linkages/relationships are more substantial than in simple markets, because of the high volume of information flowing across the chain. Nevertheless, codification of information or standards can keep interactions between agents from becoming highly complicated and difficult to manage.
- Interactions between buyers and sellers in *relational chains* are characterized by complex information that is not easily codified, transmitted or learned. This results in frequent interaction and knowledge sharing between the agents. Such linkages require trust and mutual reliance, which are mediated by reputation, social and spatial proximity, family and ethnic ties, etc. Despite mutual dependence, the buyer still specifies what is needed, and has the ability to exert control over suppliers. Producers

in relational chains are more likely to supply products differentiated in the marketplace as a result of their complexity, quality, origin or other unique characteristics. Relational linkages take time to build, so there are costs and difficulties involved in switching to new partners.

- In *captive chains*, small suppliers are dependent on one or a few buyers who often wield a great deal of power and control. Such networks are frequently characterized by a high degree of monitoring and control by the lead firm. The asymmetric power relationships in captive networks force suppliers to link to their buyer under conditions set by, and often specific to, that particular buyer. This leads to strong linkages and high switching costs for both parties. Since the competence of these lead firms tends to be in areas outside of production, helping their suppliers upgrade their production capabilities does not encroach on their core competency, but benefits the lead firms by increasing the efficiency of the supply chain.
- *Hierarchical chains* are characterized by vertical integration and managerial control of lead firms that develop and manufacture products in-house. This usually occurs when product specifications cannot be codified, products are complex, or highly competent suppliers cannot be found.

According to the framework of Gereffi *et al.* (2005), cultivation, collection and manufacturing stages of the Sri Lankan tea value chains can be characterised as both *relational* and *hierarchical* relationships (Figure 5.2). As explained in Section 5.2.1, tea production in Sri Lanka is predominantly undertaken by smallholders and plantations owned by management companies (RPCs). The relationship between smallholders and bought-leaf factories (BLFs) is *relational*, while in the case of RPCs it is mostly *hierarchical*, because cultivation, collection and manufacturing in the value chain are vertically integrated and controlled or managed by the plantation companies. The 21 RPCs not only own large tea estates on which they grow tea, among other cash crops, but also own factories located on most of the estates. Once the leaves are plucked, they are delivered to factories which are located on most of the estates; at the factory the leaves are processed into made tea. RPC factories on average process as much as 60% of own leaf grown on their own estates (Sri Lanka Tea Board, 2008b).

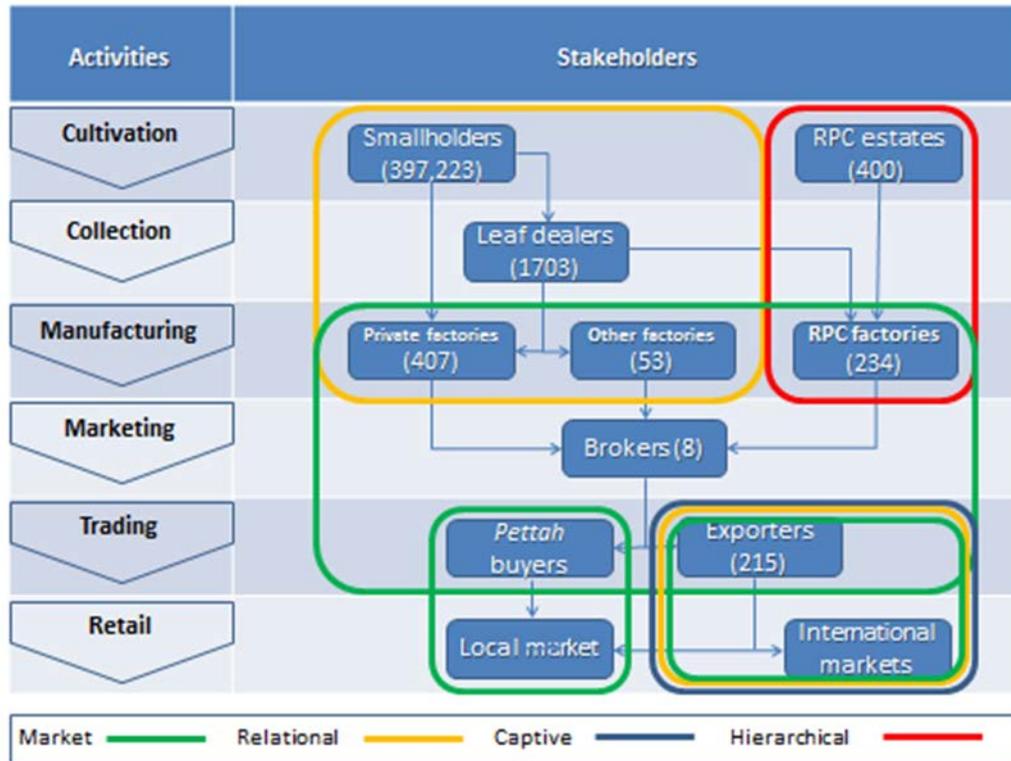


Figure 5.2 Governance in the Sri Lankan tea value chain

Source: Author

Smallholders sell their leaf to BLFs directly or indirectly through leaf dealers/collectors. A smallholder's relationship with BLFs is *relational*; most smallholders have a longstanding and personal relationship with the factories that they supply. As such, there is considerable trust in the relationship. Although they have no agreement, they supply these factories on a regular basis. Moreover, their relationship is bounded by geographical proximity; leaves once plucked have to be transported as soon as possible for processing before the quality deteriorates. Thus smallholders sometimes have very little choice about whom to sell their green leaf to. Nevertheless, some can and do shop around for better prices if they do not receive a good price and service from the factories, since there is intense competition between factories for green leaves, especially in some low-grown areas. This limits the power of factories to exert control over smallholders. Consequently, both parties are mutually dependent: factories need the green leaf of smallholders to run their factories while smallholders need a buyer for their leaf:

It is a very important symbiotic relationship. They need us and we need them. Without their raw material, we cannot survive. And they also cannot survive without the processing. (ASSOC3)

The price paid to smallholders for green leaf by factories is regulated by the Tea Board, thereby reducing the bargaining power of factories vis-à-vis their suppliers. In fact, due to high competition for green leaf, factories are paying more than the price stipulated by the formula to attract leaf supplied by smallholders. Factories also assist smallholders in various ways, providing inputs such as plants, fertilisers on credit, and advances or loans. Though they are mutually dependent, factories still specify what they need from smallholders in terms of quality ('two leaves and a bud' and '60% good leaf count') and adherence to good agricultural practices (GAPs). There is also increasing control and monitoring by some quality-conscious factories to ensure that smallholders deliver quality leaf required by the factories, with the appointment of extension officers and the organisation of training programmes to educate smallholders on GAPs.

Manufacturers' relationships with exporters is characterised by arm's length transactions or *market* governance. As explained in Section 5.2.2., the transaction between the two is simple, because tea is sold and bought through the auction system without much interaction. There is little or no cooperation between these two stakeholders, other than simple exchange of information, which is mediated through brokers, who act as the manufacturer's selling agent. Even then the information on the product requirement is relatively simple and easily transmitted and available. The factories manufacture tea with minimal inputs from buyers. In fact, much of the information comes from brokers, who provide factories with manufacturing advice, etc. The questions of what tea to produce and how to produce it are determined by each manufacturer with advice from brokers. The cost of switching is low for both manufacturers and exporters since neither one is dependent on each other, given that the tea is sold and bought at auction. At any given auction, teas from hundreds of estates or factories are sold each week, and there are similar numbers of buyers participating and bidding at the auctions. Although exporters buy from certain estates on a regular basis, they are not loyal to them. If they are unable to source the required quality from the estates that they regularly buy tea from at the auction, they can easily switch to another estate selling tea of similar quality. The central governance mechanism in the auction is price, determined by demand and supply, rather than one or several powerful buyers. Though there are large buyers who participate and buy substantial quantities of tea at the auction, they have to bid in open competition with

other large-, medium- and small-scale exporters. The tea is sold to the highest bidder. Alternative to selling at the auctions, manufacturers can sell directly to exporters or buyers abroad through private and direct sales. In this case, the exporters or buyers abroad would have a more direct relationship with manufacturers and they would have the ability to specify what to produce and how to produce the tea, etc. However, not much tea is sold through these two channels other than tea from highly exceptional estates/factories, catering to high-end niche markets. Moreover, with the recent suspension of private sales by the Tea Board, virtually now all teas are sold through the Colombo auction, thereby further strengthening the auction system and the role of the broker.

Exporters' relationships with their international buyers are characterised by *market*, *relational* and *captive* governance, depending on how the tea is shipped (bulk or value added forms), and in the case of value addition, under whose label (exporter's own or buyers). With bulk tea, buyers abroad specify their requirements and the exporter merely buys the tea from the auction and ships it without much value addition. Here the product specification is quite simple and easily transmitted. In addition, exporters can supply tea with minimal input from buyers. This transaction requires little or no formal cooperation between exporters and the bulk buyer. The cost of switching to alternative supplier/buyers is also low: the buyer can find an alternative exporter in Sri Lanka to source the teas from the auction, while the exporter can cater to another buyer, since it is a matter of buying at the auction and shipping the tea with little or no processing involved. Thus the relationship is best characterised as *market* for bulk tea exports.

In the case of value addition, and where exporters sell tea under their own labels/brands to buyers abroad, the relationship can be categorised as *relational*: exporters purchase tea from the auction and blend and pack tea with little input from their buyers (for example, buyers might provide information regarding regulatory requirements with regard to labelling, etc.). Buyers abroad largely buy a ready-made product offered by exporters. In some cases, the exporter will have an agreement with buyers and control or influence over downstream activities, including distribution and marketing. The strong capabilities and expertise of exporters in sourcing and blending teas and packaging are competencies that some international buyers (retailers, distributors, etc.) do not possess. Nevertheless, exporters still depend on their international buyers for the distribution and sale of the product in international markets, as most Sri Lankan exporters do not have the capacity to undertake their own marketing abroad except for a very few large companies. Thus they are mutually

dependent. These relationships take time to build: some exporters have been working with their principal buyers since the inception of the company and hence there is trust between them. Thus switching to new partners is not easy and will entail costs for both parties.

In the case of private labels (owned by buyers abroad), exporters buy teas from the auction and blend and package to meet buyer specifications on product and processing. In this case, the input of the exporter is minimal, if any. The exporter takes full responsibility in terms of the product and production process, using standardised machinery and spreading the investments across a wide customer base. This keeps switching costs low and limits transaction-specific investments. Nevertheless, the exporter's interaction with buyers abroad is much more substantial than under relational governance, since there is a high level of coordination in terms of information flow and the buyer monitoring exporters to ensure that the product and production process meet specifications. The relationship between exporters and international buyers is asymmetrical, because the buyer calls the shots. Thus, in the case of private labels, the relationship can be best described as *captive*, because the buyers wield more power over the exporter (Gereffi & Fernandez-Stark, 2011) .

5.4 Summary

The Sri Lanka tea value chain is long and elongated, consisting of diverse stakeholders undertaking a variety of tasks, thereby adding value to the product as it moves along the chain. The smallholder and corporate sectors are involved in the cultivation/harvesting of leaf, which is processed into made tea by privately and corporate owned factories. Made tea is primarily sold through the Colombo Auction by brokers, who have been nominated by factories as their agents. The buyers at auction include exporters, who ship tea abroad in bulk and value-added forms, as well as local traders supplying the domestic market. Exporters sell the tea to buyers abroad, who may be retailers, traders, packers, brand-owners, distributors, etc. depending on the market.

The tea value chain in Sri Lanka is characterised by complex inter-firm linkages. There is a range of governance relationships at play in the chain between different stakeholders and segments of the chain. At the production level, smallholders are linked to bought leaf factories (BLFs) under a *relational* form of governance. In the case of the plantation sector, the cultivation and manufacturing of tea are both undertaken by RPCs. Here the relationship can be best described as *hierarchical*, because the two stages of production are directly owned and

under the management of the same companies. At the manufacturing level, the governance structure between factories and exporters is characterised by *market structure*, because made tea is mainly sold and bought through the auction system. At the level of export, the relationship between exporters and international buyers is either *relational* or *captive*, depending on whether exporters pack and ship teas under their own or buyers' labels. In the case of bulk tea, the relationship is largely *market*. Thus the tea chain cannot be described by a single governance structure. In fact, the governance pattern varies from one stage or level of the chain to another (Gereffi & Fernandez-Stark, 2001; Humphrey & Schmitz, 2001; Sturgeon, 2008; Ponte & Gibbon, 2005).

The next chapter will examine the perception of the three main stakeholders, producers, manufacturers and exporters, with regard to food standards governing the tea value chain in Sri Lanka.

Chapter 6 Food Standards Governing the Tea Value Chain in Sri Lanka: Stakeholders' Perspective

6.1 Introduction

This chapter discusses how the main stakeholders (tea producers, manufacturers and exporters) perceive food standards governing the tea value chain, which is the second research question (RQ2) of the study.

As discussed in Chapter 2, the standards environment has transformed in recent years, displaying four main trends (Humphrey & Memodovic, 2006): increasing stringency of public mandatory standards, increasing importance of private standards, a shift from product standards to process standards, and increasing scope of standards. These developments too have affected the tea industry in Sri Lanka to some extent, as highlighted in Chapter 4. Currently, stakeholders in the industry not only have to meet public quality and safety standards which are mostly mandatory but also private standards set by the buyers and/or third party organisations abroad. These private standards are more complex than public standards (Fulponi, 2007; Martinez & Poole, 2004; OECD, 2006), going beyond quality and safety concerns (Fulponi, 2006). Though they are voluntary, private standards are increasingly becoming important for supplying certain overseas buyers and markets.

Section 6.2 examines the perception of stakeholders on the main food standards, both public and private, governing the Sri Lankan tea value chain. Sections 6.3 and 6.4 discuss the main costs and benefits of compliance, and the challenges, respectively. This chapter is based on information collected through stakeholder interviews and direct observations in the field over seven months (December 2010 – June 2011, January-February 2012). The full list of relevant themes and subthemes (i.e. standard, awareness, compliance, benefits, costs, challenges), which was derived from the information collected, and discussed in the chapter, is presented in Appendix 10.

6.2 Stakeholder Perceptions of Food Standards Governing the Value Chain in Sri Lanka

As mentioned in Chapter 5, there are a number of public and private standards, which affect the tea value chain in Sri Lanka. Table 6.1 shows the multiple points (cultivation, manufacturing, auctioning, and exporting) at which standards affect the chain.

Table 6.1 Food safety and quality standards in the Sri Lankan tea value chain

Standards	Tea Value Chain in Sri Lanka			
	Cultivation	Manufacturing	Auction	Export
Public (mandatory)	GAP	GMP	ISO3720 Foreign matter, micro-biological, heavy metal & pesticide residue limits	ISO3720 Foreign matter, micro-biological, heavy metal & pesticide residue limits
Public (Voluntary)		CQC-QMS SLSI-SLTB product certification 5S ISO9001 HACCP ISO22000	ISO9001 HACCP ISO22000	Lion Logo ISO9001 HACCP ISO22000
Private (Voluntary)	ETP GlobalGAP RA Fair Trade Organic	ETP RA Fair Trade Organic	Fair Trade Organic	Fair Trade Organic BRC Private Codes of Conduct

Source: Interviews

In cultivating tea, producers are required to follow recommendations and guidelines put out by the Tea Research Institute (TRI) with regard to Good Agricultural Practices (GAPs). In addition to complying with GAPs, plantations have obtained third party audited certifications under private standards, such as Ethical Tea Partnership (ETP), Fair Trade, GlobalGAP, Organic, and Rainforest Alliance (RA), which go beyond quality and safety of the product and cover social and environmental issues.

In manufacturing, tea factories are required by the Tea Board as part of their registration to comply with Good Manufacturing Practices (GMPs). Also, on their own initiative, factories are increasingly adopting HACCP and ISO22000, which are international food safety management systems; a few factories have gone beyond and obtained organic, Fair Trade and ETP certifications. These are again voluntary standards but they are increasingly necessary

compliance requirements to cater to specific international buyers and markets in developed countries.

In order to sell tea at the Colombo auction and export it, tea has to comply with ISO3720 product standard for black tea, which is required by the Tea Board. Moreover, tea has to adhere to other stipulated product standards, including foreign matter, micro-biological, heavy metal and pesticide limits, which have been specified by the Tea Board. In addition, to complying with these, exporters have to also meet product standards of importing countries, which can vary, as EX3 explained:

Standards are country-based. Sometimes the Russian standards are different to the Australian standards because of the regulatory body has its own requirements in each country. Russia's governing regulatory body for imports is ROSTUS. The exporters have to meet the requirements set by them... In Australia, there is AQUIS, which sets the standards for imports to Australia.

As in the case of tea factories, international public standards such as HACCP and ISO22000 are also increasingly becoming important for tea exporters, especially given that they deal directly with buyers and markets abroad. In addition to these public standards, some of the exporters have selectively adopted a number of national and international private standards, including British Retail Consortium (BRC), Organic, Fair Trade, etc., depending on their buyers abroad and end markets.

Awareness of the various public and private standards is 'very high' in the industry across the value chain from smallholders to exporters, given that there are a number of government organisations (SLTB, TRI, TSHDA) and private associations (CTTA, TEA, PA, PFTOA, etc.) supporting the industry. These organisations regularly disseminate information about standards. In addition, overseas buyers are an important source of information on standards, together with the certification agencies (CERT1, CERT2) and consultants (CONS) operating in Sri Lanka. It was also pointed out that the industry in Sri Lanka is 'very competitive' and 'outward looking' (ASSOC5), and adds considerably more value to its tea exports than any other producing country and also packs for many international brands (ASSOC1). In this context, the stakeholders are up-to-date with developments in the international tea trade, including emerging standards relevant to the industry.

Compliance with public, mandatory standards required by the Tea Board is high according to stakeholder interviews. This is to some extent indicated by the large volumes of tea being sold

at the auction (the highest in the world) and tea exported all over the world, even to the most stringent markets like Japan and the EU. In the case of public, voluntary standards, as well as private standards, compliance varies by virtue of these standards being optional, not mandatory. Thus their adoption by producers, manufacturers and exporters has been more selective and dependent on consumers and end markets.

The remainder of this section provides an overview of the main public and private food standards governing the chain outlined in Table 6.1, and discusses stakeholder perceptions in terms of awareness and compliance.

Table 6.2 Standards adopted by producers (RPCs) and manufacturers

	Public standards				Private standards						Applying for
	GMP	CQC-QMS	ISO9001	HACCP/ ISO22000	Fair Trade	Organic	ETP	BRC	GlobalGAP	SA8000	
RPC1	x	x	x	x	x		x				
RPC2	x		x	x	x		x	x		x	RA
RPC3	x		x	x			x				RA ISO14000
RPC4	x			x			x		x		RA
RPC5	x		x	x	x		x				RA
RPC6	x			x			x				Utz
PVT1	x	x	x	x			x				ISO14000
PVT2	x	x		x							
PVT3	x	x		x			x				RA
PVT4	x			x			x				OSHAS

Source: Interviews

6.2.1 Public, Mandatory Standards

6.2.1.1 Good Agricultural Practices (GAPs)

At the level of cultivation, smallholders and plantations are required to follow TRI recommendations and guidelines with regard to GAPs, including pesticide use, fertiliser application, harvesting, leaf handling, transport, etc. Smallholders are regularly informed about GAPs through the extension activities of the Tea Smallholder Development Authority (TSHDA) which works in conjunction with the Sri Lanka Federation of Smallholder

Development Societies: 'What you call GAPs are put out by the TRI, which is the research organisation. They are the research organisation and we are the smallholder organisation and we disseminate that information' (GOV4). To improve GAPs of smallholders, some quality-conscious bought leaf factories (BLFs) are also increasingly engaging with their green leaf suppliers, as explained by the Chairman of ASSOC3, which represents private factories:

... we have an extension officer who goes regularly and tells [smallholders] when to harvest the leaf, to keep it in a place where it won't collect sand. We tell them not to keep the green leaf where they store fertilisers and chemicals. Sometimes they will have fuel and green leaf in the same place in their homes. This is a delicate process and awareness is being created. Those days they used to sit on their green leaf bags till the lorry comes. We tell them not to do that because it will damage the leaves and they will get a lesser price for their green leaves. So we are educating them. And tell them how to record their crops. If they spray something, to follow TRI recommendations on how much they should spray and when they should spray. They should spray two weeks before harvest. Certain chemicals have been banned.

Officers from TRI also visit and disseminate information through regional/grass-root level smallholder society meetings. In the case of plantations, the TRI works with the estates and informs them about GAPs, etc., as discussed in Chapter 3. Thus awareness about GAPs is high among producers; even smallholders are aware of the need to follow GAPs in cultivating tea.

However, there appears to be a variance between smallholders and estates in terms of compliance, as the TRI recommendations and guidelines are neither mandated nor strictly enforced (GOV4). Smallholders do not always comply or fully adopt TRI recommendations and guidelines, as explained by the General Manager of GOV4, which supports the smallholder sector: 'GAP might be there and I don't think it is totally adapted. But to a certain extent at least the smallholders have adapted and they know of it, but not the complete recommendations given by TRI'. More specifically, it was stated that smallholders do not always adhere to the recommended dosages of agro-chemicals and frequency of application, harvesting, handling and transport due to lack of capital, illiteracy, lack of skilled labour, unhealthy competition between factories for green leaf, etc. Nevertheless, smallholders appear to comply to a large extent. According to the General Manager of GOV4, awareness and adoption levels were about 60-70% amongst the smallholders in the last sample survey of the sector.

Table 6.3 Standards adopted by exporters

	Public standards					Private standards					Applying for
	ISO3720 & Other *	ISO9001	GMP	HACCP/ ISO22000	ISO14000	Fair Trade	Organic	BRC	IFS	Customer specific	
EX1	x	x		x					x		Utz
EX2	x	x	x	x							
EX3	x	x		x				x		x	
EX4	x	x		x	x	x		x		x	
EX5	x			x	x		x				BRC, Fair Trade
EX6	x	x		x							
EX7	x	x		x							ISO22000
EX8	x	x		x		x	x	x			
EX9	x	x		x		x	x	x			SA8000
EX10	x	x		x							

Notes: 'Other' includes product standards such as foreign matter, heavy metal, micro-biological and pesticide limits; EX10 sub-contracts warehousing to companies which are ISO9001, HACCP and ISO22000 certified.

Source: Interviews

6.2.1.2 Good Manufacturing Practices (GMPs)

In processing green leaf into made tea, manufacturers are required to comply with GMPs set by the Tea Board. To this end, officials from the Tea Commissioners Division of the Tea Board regularly visit and monitor factories through seven regional offices and field officers/inspectors. As explained by the Director General of the GOV2, the Tea Board Act specifies the 'the building, equipment and manner of operation of (a) factory is ... of a standard conducive to the manufacture of made tea of good quality'. The manufacturers are well-aware of the need to comply with these requirements to process black tea. If factories do not comply with GMPs, they are advised to upgrade. Under the provisions of the *Tea Control Act 51 of 1957*, the Tea Board has the power to cancel the registration of any factory if it is not up to the required standard (GOV2). In 2002, the Tea Commissioner's Division cancelled licenses of 74 factories (Matthias, 2003). However, this rarely happens, as '[factories] normally upgrade' (GOV2). According to the Tea Commissioner of the Tea Board, a majority of the factories meet GMPs: 'In my view out of the 700 (factories), nearly 650 are in good condition'. Apart from the

Board, brokers, through their manufacturing advisory services (BR2), and some large buyers at the auction, like multinational Unilever, engage with factories and encourage them to follow GMPs in processing (ASSOC1). Unilever not only advises but also randomly audits tea factories for GMPs.

6.2.1.3 ISO 3720

In order to manufacture and export tea, manufacturers and exporters have to comply with the ISO3720 standard for black tea; the standard is mandatory (Sri Lanka Tea Board, 2008a). ISO3720 is an international product standard; the equivalent in Sri Lanka is SLSI 1315 (CERT1). Under this standard, six parameters are specified (water extract, total ash, water-soluble of total ash, alkalinity of water-soluble ash, acid insoluble ash, crude fibre), together with their specified limits and the testing method to ensure quality of the product (Sri Lanka Tea Board, 2008a). This standard is required to sell tea at the Colombo auction as well as to export it (Sri Lanka Tea Board, 2010). Sri Lanka is amongst the very few tea producing countries which strictly adheres to ISO3720 (van der Wal, 2008).

As the monitoring authority of quality, the Tea Board, together with brokers, closely checks tea before the auction and shipment to ensure it complies with the ISO3720 standard. Three weeks prior to sale at the Auction, the Tea Tasting Unit of the Tea Board goes through samples and randomly checks them visually. If in doubt they will send the samples to the Government Analyst's Department for testing (Matthias, 2003). If the tea falls short of ISO3720, the Tea Board instructs the estate through the broker to upgrade the tea or to de-nature it if it is adulterated. In addition, the Tea Board draws and checks samples prior to export; if the teas are below the required standard, shipments are cancelled and destroyed to prevent them from entering the local market or being exported. The Tea Board has been strictly implementing and monitoring ISO3720 since the mid-1980s (GOV1).

Brokers also monitor samples before they are catalogued for auction, as stated by Chairman of ASSOC5, which represents the brokers: 'We (brokers) are actively involved in pulling tea out before it comes out for sale'. According to Section 12 of the By-laws and Conditions of Sales, no tea can be offered for sale at the Colombo Auction if it is below ISO3720 (Government of Sri Lanka, 1995). To this end, brokers check each and every lot of tea by visually inspecting and tasting the tea, as confirmed by the Chairman of ASSOC3:

When it goes to Colombo, the brokers also taste the tea. The moment they taste they know. If there are a lot of stalks that are prominent, automatically they don't catalogue the tea. They examine and know at once.

The Tea Board regularly informs the trade of standards and any amendments through circulars. Awareness of this and the need to comply is high amongst exporters, as EX3 said: 'We are not allowed to ship anything if we don't meet these Tea Board Standards'. Compliance is thus high. According to the Director of the GOV3, complying with ISO3720 is 'not a problem' and 'not an issue'. However, there have been a few instances in the recent past of 'very, very low quality tea' being exported by unscrupulous manufacturers and exporters (GOV4). While these incidents have also been reported in the media (Morrell, 2010a), the amounts are negligible (GOV1). For example the following number of samples was withdrawn at pre-auction, post-auction, and pre-shipment in 2009: 1953, 748, and 9497, respectively (Sri Lanka Tea Board, 2008b). Thus much of the sub-standard teas which are below ISO3720 are weaned out before sale and export (GOV1), thereby ensuring quality and safety of the tea and protecting the image of Ceylon tea globally (Sri Lanka Tea Board, 2008a).

6.2.1.4 Foreign matter, micro-biological contamination, heavy metal and pesticide residue limits

In addition to ISO3720, the Tea Board requires tea exports to comply with other product standards pertaining to foreign matter (being completely free), micro-biological contamination, heavy metal (iron, copper, lead, zinc, cadmium) and pesticide residues, which are monitored by the Tea Board (Sri Lanka Tea Board, 2008a). Of these product standards, pesticide residues are the most important for exports. Sri Lanka does not have its own minimum residue limits; the Tea Board recommends that exporters should be guided by the standards in the destination country (Sri Lanka Tea Board, 2008a). Nevertheless, it provides EU and Japan limits as guidelines for exporters. Some overseas buyers also require exporters to analyse the tea for pesticides – that is, to get an independent company to draw samples and test and issue a certificate of compliance. However, most buyers do not require it, because Sri Lankan teas are generally free of residues (EX6). Also it is quite expensive to test each and every consignment of tea exported. It was stated that each test can cost up to \$US500 per sample (EX5). Nevertheless, some buyers in Japan and the EU test the tea at the point of import to ensure that it falls into line with the country's MRLs (EX4). Awareness of these requirements is high amongst stakeholders in Sri Lanka.

In terms of compliance, by and large Sri Lanka has been successful in meeting these standards. Exporters had no difficulties in complying with Tea Board requirements. According to exporter interviews, instances where there have been buyer complaints and shipments returned have been rare⁵. Moreover, there have been no reported cases of teas being banned or detained abroad, which exporters credit to the Tea Board and its close monitoring. It was pointed out that Sri Lanka has been able to ship teas abroad without much difficulty compared to other producing countries like India and China, which have had problems with pesticide residues. As explained by the Director of GOV3,

Luckily [with regard to] MRLs, so far none of our consignments have been rejected to my knowledge. But if you take India and [particularly] Darjeeling tea, there were serious problems. Most Darjeeling tea was exported to European countries and Japan. Obviously they could not meet [the MRLs] and there were rejections. Now they are converting to organic [tea].

In this respect, Sri Lanka is in a much better position because its pesticide usage is low due to the emphasis placed by the TRI on the use of biological pest and disease control methods (Modder, 2001) as opposed to chemical control (Sunday Observer, 2007). This has helped the industry to conform to standards required by importing countries. The EU randomly monitors samples from producing countries and submits a surveillance report every two years. To date, Sri Lankan tea has been recognised as the cleanest tea in the world (Kithsiri, 2008; Modder, 2001). This is a clearly an advantage that Sri Lanka has over other producing countries like India and China.

Several other reasons were cited by stakeholders to the low levels of pesticide residues present in tea exports. First, MRLs tend to be low because leaves bought from different smallholders or estates are bulked at the factory, then manufactured into black made tea before being packed into sacks, which is done over several days. In this process, residues, if present in excessive amounts in one batch of tea leaves, are reduced when bulked and converted into made black teas, as the Chairman of ASSOC1 stated:

⁵ In 2005, a shipment of tea with higher than maximum levels of pesticide/weedicide, 2,4-D was detected by Japan (Morrell, 2006a). Japan has set a maximum residual level for 2,4D at 0.01 mg/kg (parts per million), which is the lowest enforceable limit. It is more stringent than EU's limit of 0.1 mg/kg (ppm) (Lanka Business Online, 2006). The case was resolved with the swift intervention by TRI, which convinced the Japanese authorities and buyers with field trials and data that their MRLs were excessive.

Because you have green leaf coming from so many fields, it is manufactured over a couple of days and you have 15-16 grades based on particle size that you will make; so the percentage of each [batch of leaf supply] will be different. For you to sell a commercial lot for sale, [you require] a minimum of one tonne. To make that one tonne, you may be required to use leaf that you are harvesting over two days or maybe three days. So in this whole process, the residue level is well within [limits].

After auction, the exporter also cleans and blends teas before shipping, which further reduces residue levels (if any). Value adding, a feature of processing in Sri Lanka, further reduces the risk of teas exceeding minimum residue being shipped (ASSOC1): 'Residue levels are low due to blending of tea with teas from other estates while further processing of the tea bought from the auctions by exporters removes extraneous matter' (GOV3).

Second, Sri Lanka does not manufacture pesticides but imports its agro-chemicals. All its pesticide requirements are controlled by the Office of Registrar of Pesticides (OPR), which ensures that only high-quality pesticides, least hazardous to human health and environment, enter the market in Sri Lanka⁶. Given that Sri Lanka is an island economy with one international sea port in Colombo, there is considerable control over import of agro-chemicals: 'In Sri Lanka, you cannot apply any chemical; only approved pesticides approved by the Registrar of Pesticides (ROP). Because of that there is some control' (CERT1). In the case of the tea industry, TRI has compiled a list of 27 recommended pesticides for cultivation, and agro-chemical suppliers are allowed to import only those chemicals approved by OPR.

Third, both RPC and smallholder sectors are aware of approved chemicals and GAPs that should be followed in their application; for example, the pre-harvest intervals (PHIs) which should be observed following the spraying of chemicals before tea leaves can be plucked. The TRI has issued guidelines and regularly conducts awareness programmes to educate the stakeholders:

We have awareness programmes to educate especially RPC sector. So we are keeping them aware of the gravity of the problem. More than 95% of the people comply with the TRI [guidelines]. Or else they know they are in trouble. (GOV3)

Fourth, smallholders hardly use agro-chemicals because they are costly. Instead they prefer to do manual weeding using family labour (ASSOC1):

⁶ Under the *Control of Pesticides Act No. 33 of 1980*, the Registrar of Pesticides has control over the import, packing, labelling, storage, formulation, transport, sale and use of pesticides through registration of individual products (Department of Agriculture, 2006).

Agro-chemicals can be very costly and it will impact your cost of production. The usage there sometimes is artificially controlled because people do not want to spend that kind of money on agro-chemicals. If you look at Sri Lanka as a tea-producing country, over 70% of the crop comes from smallholders. They do not want to add to their cost of production using chemicals. Most of the smallholder units are half hectare, so they can do weed control by using manual control methods and ensure that there is adequate cover so that weeds don't require the needed sunlight to grow. Pest and insect controls are by and large controlled. So, our use of agro-chemicals is limited.

In the case of the plantation sector, due to the high cost and scarcity of labour, many estates rely on agro-chemicals for weed, pest and disease management. However, the use agro-chemicals is closely monitored by estates and tested to ensure that residues are low and within acceptable limits. RPCs now provide a letter of guarantee to their buyers, especially Japanese buyers, assuring them that they comply with TRI guidelines and recommendations, including the use and application of approved pesticides in the fields (EX5).

6.2.2 Public, Voluntary Standards

6.2.2.1 ISO9001, HACCP and ISO22000

Two prominent standards are HACCP and ISO22000, which are international food safety management system standards. These were the most frequently cited by exporters and manufacturers as standards that they have obtained and/or in the process of applying for (see Tables 6.2 and 6.3). Many exporters and manufacturers were either compliant or in the process of complying with the standards (in cases where they have more than one factory to upgrade). While these standards are not compulsory at the moment, compliance with either HACCP or ISO22000 is increasingly becoming necessary (Kithsiri, 2008), as tea is now considered a beverage as opposed to a commodity (Ranawaera, 2007), and the world-wide trend towards food safety management systems⁷. Moreover, buyers and markets abroad are increasingly requiring them, and in this respect they can be considered *de facto* mandatory (EX3):

Even though it is not on paper, the buyer requires these [standards]. Before they place the initial order, they request a lot of certificates like ISO22000. Most of the buyers review the documents and after that they place the order.

⁷ Some packaging material suppliers and brokers have obtained ISO22000 certification (ASSOC5).

Buyers are interested in these standards because they provide them with an assurance that the tea has been produced under hygienic conditions: 'Some clients do [require them], because that is the only assurance they would have that the tea has been produced at a particular level or specification. So they can in turn assure their customers' (ASSOC1).

Initially, some companies opted for ISO9001, which is a quality management system (CONS, RPC3), but with the introduction of HACCP, and subsequently ISO22000, many have since applied for HACCP and ISO22000 certifications. The drive towards obtaining these standards in the industry gathered pace when the EU stipulated under Regulation (EC) No. 852/2004 of the European Parliament and the Council that food business operators supplying food (including tea) to the EU, have to put in place, implement and maintain a permanent procedure, based on HACCP principles (LankaNewspapers.com, 2006). This posed a significant challenge to the Sri Lankan tea industry at that time, given that most factories were not geared to meeting HACCP. Faced with a possible loss of market, exporters and manufacturers catering to the EU market responded by upgrading their warehouses and factories, respectively, and worked towards obtaining the certificate. While the EU subsequently did not enforce this condition on tea exports from Sri Lanka (Ingall, 2006), the industry continued to upgrade factories and warehouses and adopt HACCP and ISO22000, as buyers are increasingly inquiring about them.

Awareness of international standards is quite high within the industry; certification agencies (CERT1, CERT2) regularly disseminate information about these standards, while other stakeholders like brokers, the Tea Board and industry associations regularly encourage factories to comply with international certifications. In reference to the widespread awareness of international standards, a consultant (CONS) who advises companies on international certifications commented:

ISO products have been advertised so much that you can go to *Kataragama* [a popular pilgrimage destination frequented by adherents of all religions in Sri Lanka] and the *kademudalali* [shop-owner] will say this is an ISO-certified product. International requirements have spread right down to the *kades* [shop level].

However, awareness of these international standards was low initially, as reported in a local newspaper (Island, 2007b): 'the Ministry... noted the lack of awareness in the tea industry i.e. producers, factory owners, exporters, packers and the general public on the growing trend for quality certification...'. The situation has since changed.

In terms of compliance, there is no proper record of the extent to which the industry has fallen into line with these standards. As is to be expected, the figure of those certified was low at the beginning because 'the majority of factories in the country are old and ill equipped to make the jump to the certified level without incurring huge final debt that they would be able to afford without grant' (Ingall, 2006). The Tea Board does not maintain a record of the number of factories which have complied with either HACCP or ISO22000, as neither is mandatory (GOV2). Nevertheless, a guess-estimate provided by the Tea Commissioner of the Tea Board put the figure for factories that have obtained HACCP or ISO22000 certification at about 150 (out of 694), which is similar to what has been reported in the media in the recent past (Sunday Leader, 2009).

Factories which have obtained HACCP/ISO22000 certificates appear to be mostly RPC-owned located in the higher elevations and producing tea which is predominantly catering to Western buyers and markets. These markets are more concerned about food safety issues as well as quality (ASSOC6):

Naturally that type of tea [high grown] is being mostly taken by the so-called West or the developed countries; they require certification. Therefore, that segment (of the industry) goes for this (certification).

In comparison, the number of private factories that have obtained HACCP/ISO22000 is less, according to interviews, given that they produce low-grown teas that are predominantly shipped to the Middle East, Russia and CIS countries, which are not particular about these standards currently (CONS). Moreover, these factories are bought-leaf operations and buy leaf from smallholders. Thus they have difficulty in ensuring complete traceability of the leaves which is required to comply with these standards. In the case of RPC factories, traceability is not an issue because they mostly process leaves grown on their own estates and keep records of agricultural practices followed in their fields. Nevertheless, there are quality-conscious BLFs that have obtained HACCP/ISO2200 certifications; these maintain records of supplies and have hired extension officers to this end. More importantly, these factories appear to have good relationships with their green leaf suppliers, which have enabled them to comply with standard: 'It is not difficult [to comply] on the condition that, I think you might have been told by PVT3, he has a captive workforce [suppliers]. But not all BLFs can maintain that standard' (CONS).

In the case of tea exporters, a number of companies have adopted the HACCP/ISO22000 standard, especially large and medium export companies. Large exporters took the lead in many cases in adopting these standards, including EX1, the largest:

The situation is that when it all started we were pioneers of the certification. But now lots of other people have got it, because it is almost a necessity for exporters to have the certificate. Clients are asking for it regardless of the [importing] country. Even a small timer [company] would be at a competitive advantage by having the certificate rather than not having it.

However, implementing these management systems requires time and money; they cannot be done 'overnight' (ASSOC3). As EX8 explained, 'You have to be a large company to do this. Each and every one cannot do it'. Even the RPCs are phasing in HACCP and ISO22000, given that they have several factories under their management control, and there is a substantial cost and effort associated in upgrading these to comply with the standards. So far only one management company has obtained HACCP/ISO22000 standard for all its factories, as the Corporate Sustainability Manager of RPC4 said: 'All 13 (factories) are ISO and HACCP certified. I don't think there are other plantations like that. They have done it selectively – one or two estates and factories'. Thus, adoption has been slow in the industry. Moreover, HACCP/ISO2000 is not mandatory at present for tea, unlike in other industries such as fisheries (CONS). Also not all the buyers require them (ASSOC1):

I think the need for us to upgrade all our facilities to a higher level has not been a necessity because it has not been enforced, because the customers or the big volume customers have still not told us that we need, x, y and z [standard]. So the speed of getting these standards and upgrading the facilities has happened slowly.

Companies appear to have obtained the certificates based on their customer and market profiles. Nevertheless, it was stated that, in today's context, a food manufacturing company cannot do international business without complying with these two international standards (CONS).

6.2.2.2 Ceylon Quality Certificate (CQC-QMS)

Most factories which opted for HACCP and ISO22000 certification have initially implemented the Japanese 5S system and Sri Lanka Tea Board's Ceylon Quality Certificate (CQC-QMS) voluntarily; the latter was launched in 1998 (Kithsiri, 2008). These two programmes have helped factories achieve international standards in management and food hygiene (GOV2):

Internationally, [buyers] asked for HACCP and ISO [certifications], but factories cannot go for these standards straightaway. Those days the factories were not up to this. So we decided to develop the factories to get the certifications.

According to the Tea Board, the CQC certificate 'is a quality management system that has been designed for tea factories to help them to achieve an excellent status in quality tea manufacture satisfying all modern customer requirements'. Under the certificate, factories were given a star rating: One Star for Excellence in Tea Factory Organisation, Two Stars for Excellence in Good Manufacturing Practices, Three Stars for Excellence in Good Hygienic Practices, Four Stars for Excellence in Good Quality Management Practices, and Five Stars for Excellence in Total Quality Management. To date, the highest number of stars that the Tea Board has accorded to a factory is three. Hence the programme is often referred to as the Star-programme. Under the CQC, 225 of 694 factories (including RPC1, PVT1, PVT2 and PVT3) were awarded stars according to the Tea Commissioner of the Tea Board. The CQC programme was replaced in 2009 with the launch of the SLSI-SLTB product certification programme (GOV2).

6.2.2.3 SLSI-SLTB Product Certification Programme

Under the Sri Lanka Standards Institute-Sri Lanka Tea Board product certification programme, tea is tested and audited against the ISO3720, SLSI code of practices for the industry and Sri Lanka Tea Board Regulations and Guidelines (Senaweera, 2010). This programme is a continuation of the Product Quality Certification of the Tea Association of Sri Lanka (TASL) and SGS Lanka. Following the termination of the Plantation Development Project (as of the end of 2008), the Tea Board was assigned to take over and continue the TASL-SGS programme (Daily Mirror, 2009).

The SLSI-SLTB programme is concerned with improving the quality of the final product, whereas other standards like ISO9001, ISO22000 and HACCP focus on the process of production or system (CERT1). Under the programme, SLSI as the accredited agency appoints an audit team to conduct an on-site assessment, surveillance audits and draw samples for testing purposes. The programme is voluntary and so far only six factories have obtained certification under the programme; another 25 have applied for certification (as of March 2011) (CERT1). Factories have been offered a grant by the Export Development Board (EDB) for the certification process on a reimbursement basis. According to CERT1, factories that have already implemented the ISO22000 would easily be able to apply for and obtain the SLSI-SLTB Product Certification.

6.2.3 Private, Voluntary Standards

In addition to mandatory and voluntary public standards, there are a number of private standards adopted by tea exporters, manufacturers and producers. The number of private standards governing the industry has proliferated since 2000. These private standards go beyond the realm of public standards for food quality and safety issues, and cover a gamut of issues, including social and environmental concerns. Some well-known private initiatives include the BRC, Organic, Fair Trade, ETP, and GlobalGAP, which have been collectively set and monitored by external agencies. There are also private standards or private codes of conduct, specific to individual buyers; for example, supermarkets (EX4) and fast-food chains (e.g., McDonalds) have their own set of standards and requirements (EX3). The emergence of private standards reflects a growing concern of international buyers (brands and ultimately consumers) about the conditions under which tea is produced. Many brand owners now publicly declare their commitment to make the industry more sustainable and to improve labour and environmental conditions in the chain. These standards not only help to differentiate their offerings to their end-consumers but also enable them to position themselves as socially responsible corporations. For example, Unilever, which commands 12% of the global tea market, has chosen RA as its preferred standard (van Reenen, et al., 2010). While more and more buyers are committed to buying certified tea, all are focused on supplying Western countries. These developments are not unique to the tea industry in Sri Lanka but reflect changes in recent years in the standards environment governing agriculture and food businesses.

While public standards can be both mandatory and voluntary, private standards tend to be voluntary in nature. Nevertheless, compliance with them is increasingly becoming necessary to cater to certain buyers and markets abroad. Exporters, manufacturers and producers are selectively adopting them to cater to their main buyers and markets (see Tables 6.2 and 6.3). For example, EX8, which mainly exports to the EU, has obtained Fair Trade certification to cater to its largest customer, a supermarket chain in the Netherlands:

Our Netherlands buyer insisted that we have Fair Trade. They insisted – it's a requirement. Otherwise, they will not buy from us. [But] some [buyers] don't want anything.

EX5, which also exports to the EU, is applying for BRC certification to sell tea to Tesco, one of the leading supermarket chains in the UK:

Except for BRC, nothing else has been asked for. BRC was required from us. We went into TESCOS in the UK and they wanted us to take it.

In the case of factories and estates, most have met private standards, such as ETP certification, while a select few have opted for Fair Trade (RPC1, RPC2 and RPC5), GlobalGAP (RPC4), BRC (RPC2) and organic certification. Some are also planning on complying with other private standards like Utz (RPC6) and RA (RPC2, RPC3, RPC4, RPC5 and PVT3) certification; the latter mainly to cater to Unilever. Currently, Unilever has been promoting the RA certificate among the estates from which it regularly buys teas. By the end of 2015, Unilever will only source tea for its packs from estates which are RA-certified (ASSOC1): ‘... by 2015, certain [Unilever] brands will only buy from sustainable farms. So if you are not certified, [they] will not buy from you... [even] if it is at the risk of not having Ceylon Tea...’. Given that Unilever is a major buyer at the Colombo auction, some of the high- and medium-grown estates are in the process of adopting the RA standard in order to ensure that Unilever will continue to buy their teas (RPC 3):

We had a discussion with Unilever and they want us to upgrade some of our estates and fall in line. So that they will support us in the future... they gave us an assurance that if we are in, there could be continuity in buying.

According to the manufacturers/producers, a handful of exporters require these private standards on behalf of their principal buyers abroad. They pointed out that these tend to be buyers that export mainly to Western countries, and not necessarily the Middle East, Russia and CIS countries, which are Sri Lanka’s main markets. As explained by General Manager of RPC1, ‘USA, Europe, the UK, Australia and Japan are very much concerned. It’s mostly Western countries; Russia and all others – they are not that much concerned’. It was stated that some exporters send questionnaires to factories/estates to ascertain whether GAPs and GMPs are followed on the field and the factory floor, whether they possess any certificates. According to the CEO of RPC6, these questionnaires

... contain (questions) like ...what are the chemicals we are using... and if the chemicals are recommended by the TRI and other authorized companies? [Whether] we hold any food grade or quality assurance certificates like the ISO 9001 or 22000 or whatever international standards? Have we got any health and safety and ETP standards?

Given that these private standards cater to specific customers and niche markets, their adoption has not been widespread among manufacturers and producers. Moreover, it was pointed out that majority of exporters and overseas buyers do not require such certifications.

By and large most buyers are concerned more about the quality attributes of tea rather than the certificate *per se*, as the owner of private factory, PVT1, explained:

If you take Akbar [the largest tea exporter], they don't care about the standards or anything of that sort. Actually most of these buyers don't care about the standards.

In summary, the interviews with producers, manufacturers and exporters revealed that awareness of public and private standards governing the value chain in Sri Lanka is high in the industry. However, compliance varied depending upon whether the standards are mandatory or voluntary. Where standards are mandatory, stakeholders seem to have fallen in line with them to a large extent, whereas with standards that are voluntary – are public or private – the extent of compliance depended upon end-consumers and markets. Stakeholders who supplied mainly developed countries tended to adopt voluntary standards.

The next section will examine perceptions regarding the benefits and costs of compliance.

6.3 Perceived Benefits and Costs of Standards Compliance

This section examines the costs and benefits of compliance with standards for exporters, manufacturers and producers. To date, most studies have failed to recognise the benefits from complying with standards. Compliance has been seen as almost entirely a cost with few, if any, benefits. As result, studies have tended to overestimate the net costs of compliance (World Bank, 2005). This section will throw light on both costs and benefits of compliance, based on the perception of the three stakeholders in the industry. Tables 6.5-6.8 summarise the benefits and costs of compliance as perceived by exporters and manufacturers/producers.

Table 6.4 Perceived benefits - exporters

	Sales	Marketability	Discipline	Efficiency	Price	Assurance of product	Monitoring	Wastage	Working environment	Reputation	Social & environment	Comments
EX1		x		x		x		x	x	x		
EX2		x	x	x				x		x		
EX3		x	x	x		x		x		x		
EX4		x	x	x		x		x			x	
EX5		x	x	x				x		x		
EX6		x				x						
EX7		x		x		x			x	x		Reduction in wastage: Process already in place
EX8	x	x		x	x			x				Price increase: Only for Fair Trade Sales increase: Only Fair Trade
EX9		x		x	x	x	x	x	x			Price increase: Only for Organic
EX10			x	x	x	x		x				

Source: Interviews

Table 6.5 Perceived benefits – manufacturers/producers

	Sales	Marketability	Discipline	Efficiency	Price	Assurance of product & process	Monitoring	Wastage	Working Environment	Reputation	Social & environmental	Comments
RPC1	x	x		x	x			x			x	Price increase: Only for Fair Trade
RPC2	x	x	x	x	x	x		x	x			Price increase: Only for Fair Trade
RPC3	x	x	x	x		x		x	x			
RPC4		x	x	x		x		x		x		
RPC5		x	x	x	x	x		x	x		x	Price increase: Only for Fair Trade
RPC6		x	x	x				x	x			
PVT1			x	x		x		x		x		
PVT2			x	x		x						
PVT3		x	x	x		x		x	x	x		
PVT4				x		x		x	x			

Source: Interviews

Table 6.6 Perceived costs – exporters

	Capital costs	Audit & certification fees	Loss of production	Consultant fees & training costs	Additional staff and time	Documentation costs	Input costs	Multiplicity of standards	Comments
EX1	x	x	x	x	x	x			Capital costs: 'wasn't huge' Consultant: initially hired
EX2	x		x	x	x		x		Loss of production: negligible Initial increase in staff time
EX3				x					No consultant was hired Trained existing staff
EX4		x		x	x		x		
EX5	x	x	x		x	x	x	x	
EX6		x							
EX7	x			x		x	x	x	
EX8	x	x			x		x		
EX9	x		x	x			x	x	
EX10			x	x	x				

Source: Interviews

Table 6.7 Perceived costs – manufacturers/producers

	Capital costs	Audit & certification fees	Loss of production	Consultant fees & training costs	Additional staff and time	Documentation costs	Input costs	Multiplicity of standards	Comments
RPC1		x		x	x	x			Did not hire a consultant or additional staff but reallocated tasks
RPC2	x	x		x	x	x	x	x	
RPC3	x		x	x	x		x	x	Initially hired a consultant
RPC4	x	x		x	x	x	x	x	
RPC5	x			x	x		x		Did not hire additional staff and staff time initially increased
RPC6	x	x	x	x	x	x	x	x	Did not hire a consultant; externally trained
PVT1	x	x		x	x				
PVT2				x		x			
PVT 3	x			x			x		
PVT4	x	x		x	x	x	x		Input costs: Packing material already sourced from certified suppliers Initially hired a consultant Did not hire additional staff but reallocated tasks

Source: Interviews

6.3.1 Perceived Benefits of Standard Compliance

6.3.1.1 Sales and Marketability of Product/Company

According to interviews with exporters, while it is difficult to attribute an increase in their export sales subsequent to compliance with standards, with the exception of Fair Trade and organic certified teas, it was stated that compliance ensured that exporters were able to access certain buyers and markets that are particular about standards. As EX9 stated: '[Buyers] would have not looked at us if the standards were not there'. In fact, Fair Trade and Organic certifications have helped some companies cater to 'premium' buyers/markets with exacting requirements (EX8, EX9), while compliance with international food safety management systems like HACCP/ISO22000 have opened up potential new markets, as tea is now produced conforming to internationally acceptable standards (CERT1). Some exporters also obtained other certifications like BRC, IFS, etc. as they wanted to cater to new buyers and markets other than Sri Lanka's traditional markets in Middle East and Russia (EX5):

When you are working with countries in the Middle East or Russia, they don't know much about standards. It is only when you export into very developed markets like the US, Canada, Japan, the EU, these are the markets where these certifications are very important and compliance is very important. One of the reasons we went for certain certifications [was because] we wanted to venture into Europe. Tea is not only drunk in the Middle East. There is big business available worldwide. We actually wanted to enter into these markets and we thought having these would definitely help.

Thus standards could potentially help increase the marketability of the company and its product (EX1):

Marketability of our tea as a result of the certification [has] 'sky rocketed'. Everybody is asking for these certificates. Foreign delegates come and look into our food safety systems and our processes and they are highly impressed with the things that we do.

However, it was stated that the marketability of the product and the company because of standard would be temporary – the advantage would be there just as long as there are few certified products/companies in the trade, as the General Manager of EX4 pointed out: 'Our marketability is better [because of standards]. Having said that, I am sure other export companies will also go into this kind of thing. If everyone has it, you are not going to be special after a while'. Even when they are widely adopted by others, it was stated that it would still be advantageous to have the standards in place rather than not, as 'Nobody will pay more if you

have it, but if you don't have it, [buyers] will make a claim as to why they shouldn't pay less for not having it' (EX4).

In the case of manufacturers/producers, it was stated that it is difficult to say that they managed to sell more tea because of the standards, with the exception of Fair Trade and organic certification. For example, the Senior Vice President (Marketing) of EX8 stated that they received more orders from their buyer in the Netherlands after the company obtained Fair Trade certification: 'We started with 80 containers. They gave us (an order for) 100 containers. Now they say it will go up'. The interviews with manufacturers/producers highlighted that compliance with standards also opens up a larger set of buyers and markets that are particular about adhering to standards (RPC3), verifying what the exporters said about standards and their marketability. For example, certain buyers in the auction such as EX9 only buy from estates/factories which are HACCP/ISO22000 certified, while Unilever requires GMPs as the minimum standard when buying from the auctions (ASSOC1). The General Manager of EX9 said that they prefer to buy from certified factories because the teas are cleaner; there is less physical contamination, which reduces their work after they buy from the auction. Tea estates/factories such as RPC2, which exports teas directly, in parallel to the auction, also saw a 'tremendous' marketing advantage in having the standards in selling their teas to buyers abroad.

6.3.1.2 Product Differentiation

Standards also allow exporters and producers/manufacturers to differentiate themselves from their competitors who may not be compliant, as the Chairman of ASSOC4 explained:

It is always good for people like us [exporters] to have [standards] so that we will get ahead [of] others. There are too many urchins [in] the tea export trade. [There are] too many cooks who are spoiling the soup. The cake is the same but the slice has got smaller.

The ability to differentiate is important in a highly competitive industry like the tea trade, with over 300 exporting companies, each fighting for a bigger slice of the cake. Having standards such as ISO9001, HACCP and ISO22000 provides companies with a competitive advantage in the world market until they become a regulatory requirement (Ranawaeera, 2007).

As a country, Sri Lanka has a competitive advantage *vis-à-vis* other tea-producing countries because ISO3720 is strictly implemented and monitored by the Tea Board and the industry, as the Director of GOV3 highlighted:

We have an advantage over other countries because in other countries, [ISO3720] is not compulsory. For Sri Lanka, compliance is compulsory. Each and every IGG [FAO Inter-Governmental Group on Tea] meeting, they say that Sri Lanka is the only country which follows the ISO3720. So we have that advantage.

6.3.1.3 Discipline

The implementation of standards has brought discipline within organisations as well as along the value chain from exporters to right down to smallholders (ASSOC6). According to interviews with exporters, the implementation of the standards has instilled discipline within the workforce of the organisation and, as stated by the General Manager of EX4, 'What I would think is, quite frankly, any kind of certification requires discipline and if you follow good disciplines, it helps your overall business'.

Similarly, manufacturers/producers noted that adoption of standards has brought about discipline within the workplace, as explained by the Director/Chief Executive of RPC2: 'What I can say is, actually it has brought in a lot of discipline; now everything is documented. So rather than having a sort of ad-hoc process, it is a structured way of doing things'. This view was also shared by the CEO of RPC6 who stated that 'From harvesting to factory processing, everything is well managed and well disciplined. And the discipline is now built. The workers' attitudes and staff attitudes are changed'.

6.3.1.4 Efficiency

Despite the costs involved in upgrading the factories, certification fees, etc., the implementation of standards has streamlined work wherever they have been adopted and improved efficiency. EX5 highlighted how the implementation of standards such as ISO22000 has improved efficiency in his company because the quality manual lists the tasks and responsibilities of personnel and departments in the company:

We have a good job description for every individual. We have a good departmental plan, what are the inputs and outputs, which is well written. So any department you go to, they know clearly what they need to do and what they cannot do. So it makes it very clear. They are not confused; they are well within their parameters of what they should be doing. So that increases efficiency.

Similarly, manufacturers also noted an increase in efficiency on the factory floor following the adoption of standards. In fact, the President of ASSOC3, which represents the private factories, stated that the increase in efficiency could potentially reduce the cost of production in long run:

It is cost effective in the long run. Though we have capital outlay, we have not been able to quantify the cost reduction. There is a cost reduction. If the workers are constantly checked by doctors, productivity will go up. Absenteeism will be less. If I didn't have nets, I would have to put a labourer to clean the cobwebs off the [ceiling]. Now with the spraying outside... breeding is reduced. The infestation is reduced in the factory. You use less labour and your maintenance cost is low.

6.3.1.5 Price Increase

Except for Fair Trade and Organic teas, adoption of standards has not led to a discernible price increase, which most exporters have expected. EX8, which supplies Fair Trade teas to its buyer abroad stated that: 'In the case of Fair Trade, we got a price increase. We can tell that customer, if you want this, we will need this much extra and the buyers are generally accommodating'. Fair Trade and Organic certified teas are currently fetching higher prices at the auction because they cater to niche market segments in which consumers are willing to pay higher prices to purchase tea that is produced ethically and sustainably. However, in the case of standards such as HACCP/ISO22000, an increase in price was not visible subsequent to the certification process, as pointed out by EX5: 'No buyer would come and say that they will pay so much because of having ISO'. This is probably because food quality and safety management systems are considered to be necessity and expected by buyers from their suppliers.

Similarly, implementation of standards by factories/estates has not brought about an increase in prices of teas sold at the auction, with the exception of Fair Trade and Organic certified teas, according to interviews with manufacturers/producers. It was stated that there is only limited number of Fair Trade and Organic-certified factories/estates in Sri Lanka, and this would tend to drive up the prices of these teas at the auction (RPC5). However, there is no price advantage for other certificates like HACCP/ISO22000 and the buyers at the auction are not willing to pay more for them (EX4):

I don't pay more because it is ISO-certified or something else. But sometimes if it is Fair Trade-certified we pay more if the buyer requires Fair Trade. When I say pay more means pay relative more even though the tea may not be worth that [much]. Say, for

instance, if under a normal category it was worth Rs.400 (USD3.62), but under the Fair Trade category I would even pay up to Rs.420-450 (USD 3.72-4.07) to secure the tea.

Similarly, the Compliance Officer at EX1, who also works as a lead auditor, observed:

I am also an ISO22000 auditor, and when I went for audits, there were people in the factories who said that just because of this certification we are not getting a better price. That's a comment some of the people have made.

Even if there was a price advantage at the auction, it was stated by the manufacturers/producers that it is difficult to attribute it to standard certification *per se*, because the buyer might buy the tea not necessarily for the standard but because of quality of the tea. As stated by EX8:

... when I go to the auctions, I might buy tea with ISO certifications but somebody else might not want it; he might not want the certificate but he might still need the tea. So he might bid against me to get the tea and in the process push the price up of the tea.

Like exporters, most of manufacturers/producers that adopted standards initially expected a price increase due to certification. This has not happened to date and they are disappointed, since there is a considerable cost associated with obtaining the standards but there is no monetary return in terms of higher price. It was pointed out by one manufacturer (RPC3) that the price advantage of these standards is accrued by buyers who are closest to the consumer in the markets abroad by using them to differentiate themselves from others:

All these standards – ETP, RA or whatever it is – they use to differentiate their product at the retail level and they get the premium price for that. That's their strategic differentiation tool to sell their product.... They demand all these standards but the real benefit is not given to the producer.

In this regard, it was stated the price benefits of these standards do not 'trickle down sufficiently' to the suppliers, though they have to bear the cost of upgrading and certifications (RPC6).

Currently, prices at the auctions are still largely determined by the quality of the tea; certification does not appear to play a significant role in the buying and selling of tea at the auction. It was pointed out that it is quite possible that a factory which is not certified could fetch a higher price than a certified factory because the quality of the tea might be superior in the former, even though both factories may produce tea from the same elevation.

Standards do, however, play an important role in a falling market, when buyers become picky and prefer to pick and choose between tea factories/estates, as the President of ASSOC6 observed: 'In a dropping market, when prices are coming down, I prefer you because you have got certification... Somebody may not get the opportunity'.

In the case of smallholders, they appear to have benefited from a price increase as a result of adhering to standards. Quality-conscious factories are increasingly paying higher prices as incentives to smallholders to attract good quality leaf; the difference in price can be substantial, as SH9 explained: '[There is] more money – around Rs.10 (US 8 cents) more than other factories. Rs.62 (US 50 cents) here and other places between Rs.50 (US 40 cents) and 54 (US 42 cents) a kilo'.

6.3.1.6 Buyer Assurance

According to manufacturers and exporters, implementing quality or safety management systems and obtaining certifications has given them the confidence to assure their buyers about the quality and safety of the product, as continuous audits are conducted by an internal quality assurance team as well as external accredited bodies. As pointed out by EX10, 'Food safety wise we know it is safer'. Similarly, EX9 stated that 'I have a peace of mind and I know that the goods that go out of the warehouses go out with certain requirements. So I know they are slightly above others who don't maintain them'. This is particularly important, as tea is now considered a food product (EX4). Standards have also instilled confidence in the company as well as its products amongst buyers, according to EX10: 'They (buyers) are very much more confident that the product they are getting has met certain methods'. This view was also shared by EX7:

I think that [a standard] is a very good reason for a buyer to consider that you are an established company. Say if you are in the UK and if you are buying from a company in Sri Lanka, and if you know the company has ISO and HACCP certifications, then you are one step more confident that you are buying from a good source.

EX6 also observed that: 'Buyers have confidence in you when you have certifications. They know that you are following certain procedures which are in keeping with ISO and HACCP'.

Similarly, the manufacturers/producers stated that standards provide their buyers with confidence in the product and the conditions under which it was produced. As noted by RPC4, 'If a factory has either HACCP or ISO, then there is a good process in place. If you have a

good process, you won't get a bad product'. Similarly, PVT1 stated: 'We knew earlier how to manufacture good tea but we didn't know how to manufacture good quality tea. Now we can assure that we don't have any iron particles, stones, sand, etc. in our teas'. In fact, these factories have gained the confidence to the extent of opening up their doors to outsiders, as mentioned by the President of ASSOC3, which represents private factories: 'we have been bold enough to open our factory to any foreign visitor because we conform to all international standards'.

6.3.1.7 Monitoring

While the certificates may provide assurance to buyers about the product and the production process, they do not necessarily guarantee the quality and safety of the end-product. Therefore, buyers who are particular about quality and safety such as the Japanese will still continue to monitor the product and conduct their own audits of their suppliers to safeguard their own business interests, as they will be accountable to their own buyers/customers at the end of the day, as explained by the General Manager of EX4:

The certificates would probably reassure me but I am not convinced unless I see the place because in turn I give an assurance to someone else. It is the same concept that my Japanese customer has. He gives an assurance to the supermarket and the consumer. That is why he monitors; it is not that he does not trust me.

There are a handful of international buyers (brands and retailers) and markets (Japan) which have stringent requirements, and they are unlikely to be satisfied by certificates like HACCP/ISO22000 alone and reduce their own ways of monitoring and auditing. Despite the certification and surveillance audits conducted by third-party certification agencies like CERT1 and CERT2, there is also some doubt amongst exporters as to the extent to which certified companies and their workers actually comply with standard requirements. For example, one exporter (EX2), though certified, was doubtful of the actual implementation of standards in his company and stated that there should be stricter enforcement by certification agencies:

I feel that people who give these standards must come *ad hoc* and then do an inspection and take the certificate away if they don't comply. This is not happening. I believe these should do that. If you are not following, you should be penalised. You see what happens is that they come once in six months for an audit. Our people get the place ready two weeks before that. It is a cosmetic exercise.

Similar sentiments were expressed by a consultant (CONS); he was sceptical about the validity of certificates because the surveillance audits are carried out infrequently: 'They (buyers) will

not trust the certification bodies. Audits are done by SGS or SLSI – they come once in 6 months and check'. Monitoring is likely to increase rather than reduce in the future as consumer concerns grow, while the retailers/brands try to safeguard their own business interests, as pointed out by the Director of GOV3:

Reducing will not happen because they are consumer demands and that will grow all the time. That's not reducing. The monitoring part ... will continue to safeguard their interests. I don't think they will reduce that.

The monitoring and auditing of tea factories by a few of the larger exporters that have their own labels or pack for international brands are unlikely to be affected because of certifications. These buyers would continue to monitor the activities of their suppliers. Moreover, the main means of monitoring of teas by exporters remains through sampling of the tea distributed by brokers prior to the auction. This requires an assessment through visual inspection and tasting of the tea to judge their quality and value. This practice has not been affected (RPC6), and is unlikely to be affected in the future, by standards implementation; none of the standards can codify this kind of information. Despite the adoption of certification by estates/factories, teas are still being distributed by brokers prior to the auction for exporter evaluation.

In the case of smallholders, it was reported that monitoring by factories has increased. Some quality-conscious factories are increasingly working closely with smallholders and monitoring their activities, as highlighted by SH10:

We get more advice and help to become prosperous. After the card was given, the factory is having more monitoring. If bad leaf is given, it is written in the card – the leaf is not rejected. The factory will say that leaf is not good and ask us to send better leaf the next time.

6.3.1.8 Reduction in Wastage

Implementation of the standards has reduced wastage in the production process. As there is continuous monitoring and improvements to production, which are the main focus of standards like ISO9001 and ISO22000, the number of rejects and re-works has reduced in production. According to EX1,

Before we went for the standards, we had a lot of re-work and spent a lot of money for re-working. After we got the certification, there was no more re-works... There is some sort of monitoring system which makes us aware what the wastage is.

However, the extent to which there was reduction in wastage depended on how streamlined the production process was initially before the implementation, as pointed out by EX7:

Our processes are anyway streamlined. So in an established set-up, it did not have an impact [on wastage]. Nobody wants to throw material away – that's been at the back of our mind since we started this company. Material costs money and throwing it away is going to cost your money.

Similarly, manufacturers acknowledged that the implementation of standards has cut down on wastage on the factory floor, as noted by RPC 6: 'Wastage, of course, after implementation because of the discipline and everything wastage has reduced'. By reducing wastage, companies managed to make substantial savings, as highlighted by PVT3, which adopted HACPP/ISO22000 standard: 'after conveyerising the rolling room, we find that we have saved a lot on wastage. Otherwise, every day about 40-50 kg of tea was going down the drain... Like that, if you work out for a one year, you can save a few million'.

6.3.1.9 Improvements in Working Environment and Morale of Workforce

In upgrading the factory to meet standards requirements, workers were educated and trained, which helped to change their attitudes towards their job and raise the morale at the workplace, as stated by EX1:

There are requirements for continuous training programmes. So we have regular training programmes pertaining to food safety, (and) food hygiene in order to keep in line with the ISO requirements. The workers are given training and their morale is lifted because they know that they are working at a place which has some sort of method. And they love to come to a place, where there is some orderliness. You can see the worker toilets, locker rooms, place where they take their meals... the working environment and the procedures which are adopted make it easy for them.

EX9 also observed a change in attitude subsequent to adoption of standards:

Orientation of the people has changed. Now they are more quality conscious than before. I think the whole factory changed, though it is difficult to quantify and say that we achieved this due to that. But I see vast improvements all around – people talk about quality after these programmes were introduced.

Similar benefits were observed by manufacturers as well. In this regard, the General Manager of RPC6 noted:

Workers and the staff feel so prestigious to work in our factory. Earlier there were no caps, no uniforms, they [wore] a sarong or 'cheetha' [a cloth], and they will come and

work. So after the ISO, we have given them a set of nice uniforms with caps. I can show you. I have some photographs. And they [were] given gloves. And we built wash rooms with commodes and sinks with soap and everything. [There is a] well-managed canteen. Earlier there was no separate place to eat. Now because of the ISO standard, we have to have a separate restroom where they can have their leisure time.

The manufacturers also noted that workers now feel important and recognised subsequent to certification (RPC2): 'I remember one of our workers saying now they like to come to work. Earlier they didn't realise their importance. Now they feel important because they are recognised'. Consequently, they are now more motivated than before, as PVT4 explained:

People are definitely motivated. The workers have really got it going. I can remember when we first got the ISO22000 award, the certificate was received by a worker – not by myself or a manager. It was a worker who went and collected the certificate.

6.3.1.10 Enhancement of Reputation of the Company and Country

Obtaining standard certification was deemed beneficial for companies which are involved in value-addition production and branding, and for strengthening the good name of Ceylon Tea. EX3, which only packs under its own brand name, highlighted the importance of standards for its brand development and for the industry as a whole: '...our brand focuses a lot on the quality of the product. We are proud to have these kinds of certificates. They strengthen our brand.... it boosts the Sri Lankan industry one step ahead'. Similar sentiments were expressed by EX1: 'Having certification is definitely worthwhile. As an exporter we feel that. It is not a requirement as such – it is not a statutory requirement. If you have it, it is good for the company and you are better recognised in the trade'.

According to manufacturer PVT1, obtaining the standards has contributed to building the reputation of the company, even though there has not been any price advantage: 'Financial-wise – nothing at all. It is only a prestige that is (there) when you take the standards'.

6.3.1.11 Improvements in Quality of Product and Production Process

Implementation of standards such as HACCP and ISO22000 has not only improved the production process but also the quality and safety of the end-product, especially reducing extraneous matter in made tea, as stated by EX3:

[Standards] have done good to the product. Before these things came into implementation, there were so many impurities like iron filings, etc., that we found in

the tea. Because of these certifications, they have reduced a hell of a lot. In our monitoring now we have less things to do...

Similarly, EX7 noted improvements in the product subsequent to adoption of standards which brought about improvements in the processing of the tea:

I can tell you very honestly that they have done a lot of good. For instance, people were not observing the basic hygiene. But today when they enter the blending floor, they will come with their hands washed and they go in wearing blending boots... They wear hats and uniforms, which have no pockets so that a coin or something wouldn't fall and their personal belonging are [kept] in the lockers. So, all that [would] have undoubtedly contributed to the quality of our exports.

While standards such as HACPP/ISO22000 have improved the quality of the tea by reducing biological, chemical and physical contamination, some exporters still clean the teas before shipping them, even if they buy from certified estates/factories, because there is no guarantee that it is free of contaminants (EX3).

Standards such as Fair Trade, ETP and RA also have wider social and environmental benefits beyond the quality and safety of tea to the community at large and to the country. In the case of Fair Trade, RPC5 noted that:

One good thing about Fair Trade is that it comes back to the workers; a certain premium comes back to the workers and that's good.

Fair Trade tea sells at a premium price, and part of this selling price goes to a fund, which is administered by the workers for their welfare and to improve their socio-economic conditions. The fund has been used to set up a loan scheme, purchase an ambulance, provide electricity to households, etc. (Sunday Times, 2009). As for RA, which Unilever will require from estates by 2015, there are environmental benefits, as highlighted by RPC5:

Though Unilever buys 12% and we don't depend on it, we feel that Rainforest is something that we should adopt, where the environment is concerned... We feel that it's good thing for the environment. These are the things that were neglected over the years, like soil conservation and all.

6.3.2 Perceived Costs of Standard Compliance

6.3.2.1 Capital Costs to Upgrade Infrastructure

To comply with standard requirements, exporters and manufacturers had to incur a number of costs. The largest and the most significant was the initial capital cost involved in upgrading warehouses and factories to meet standard requirements. For example, ensuring a unidirectional flow of material to prevent cross-contamination between raw materials and processed materials required extending or changing the entire layout of the warehouse/factory. As EX5 explained, 'It changes your layout costs to some extent. So there is a cost element and we had to do radical changes within the company'. These upfront capital costs can be substantial, especially for smaller companies. EX1 questioned the financial capability of smaller exporters to comply: 'For us it is not much money to get ISO standards – we are a big company. But for the small people, to get the ISO standard involves a lot of money'.

However, the capital costs involved in upgrading warehouses were considered by many as an investment, as highlighted by EX8: 'But of course finally it becomes an asset. You take a building; no one is going to take it away. You have something better. Only thing is the expense'.

Similarly, substantial improvements had to be undertaken at factories to meet standard requirements, which included, amongst others, tiling of floors, installing bird nets or meshes to windows, fixing magnets to machines, laminating glass, buying plastic crates to store tea, installing belt guards on machines to cover exposed moving parts, fixing ceilings, installing air curtains, foot baths, new wash basins, and purchasing of staff uniforms, etc. (RPC6). Tiling the floors of factories or specific areas such as the rolling, drying and shifting rooms was often mentioned by interviewees as measures they undertook to upgrade their factories. Most had wooden or cement floors which could lead to extraneous matter like sand getting mixed with the tea during the manufacturing process (CERT1). In order to prevent this problem, most factories were advised to tile their floors, or at least some sections of the factories where tea could be contaminated, and this was a huge cost on its own.

Indeed, factories appear to have required substantial upgrading and larger capital outlays compared to exporters, as most factories were built more than 100 years ago, especially those under the management control of RPCs. RPCs inherited these factories following the

privatisation of the plantations and they were neglected during the time of nationalisation (CONS). In the case of low- and medium-country factories, privately owned ones, because they are relatively new and modern, they did not require extensive upgrading of their infrastructure. Thus their capital costs were modest (CERT1). On average Rs.3-4million (USD27,132-36,177) was required to upgrade the infrastructure, inclusive of certification costs, which could add 2-3% to the cost of production, according to the Human Resource Manager of RPC3. Given the high cost involved, most RPCs selectively upgraded the factories under their management. So far only one RPC has obtained ISO22000 certification for all of its 13 factories. It was reported that it spent in total Rs.100million or USD90,440 (RPC4).

The cost of warehouse/factory upgrading by exporters and manufacturers varied, depending on its initial state and the extent to which standard requirements have been already implemented or practised. Some of the large exporters had already undertaken some of the ground work towards meeting standard requirements, which made upgrading easier and less expensive, as explained by the Head of the Quality Assurance Division of EX1:

When it comes to EX1, since the infrastructure was already in place, it wasn't a huge additional cost. But I recall Mr X [the auditor] saying that, if a company was going to do it from scratch, it would be a humongous cost.

Similarly in the case of manufacturers, some factories were already following the Japanese 5S system or had implemented the Tea Board CQC programme, which helped in adopting HACCP/ISO22000, as explained by the General Manager of RPC5:

This is something that we have been doing for a long time – we went for Japanese 5S system and with that we developed into ISO and others.

Despite the cost involved, both exporters and manufacturers acknowledged the need to fall into line with the standards, especially relating to food safety, to ensure the sustainability of the industry, as explained by the President of ASSOC4: 'It is a large capital outlay. Anyway we need to do this for the future. Otherwise we cannot survive'.

6.3.2.2 Testing, Auditing and Certification Costs

Exporters and manufacturers also had to pay for certification, which is valid for a specified period of time, and for surveillance audits, which are conducted regularly during the validity of the certification. For example, in the case of HACCP/ISO22000, the certificates are valid for three years and audits are conducted every six months. Audit/certification fees vary,

depending on the standard in question. For example, the ETP certificate and audits are free (RPC1), while the HACCP/ISO22000 certificate costs approximately Rs.150-200,000 (USD1327-1769) and the surveillance audit amounts to Rs.75,000-80,000 (USD663-708) for a factory (EX1). In addition, depending on how many other standards that factories have obtained, they have to pay for their certification and surveillance audits, which multiplies the cost of certification substantially. As EX1 explained, the various certifications can add up to quite a lot of money, especially for a small business:

Just for the certification why should we pay so much money? Just to keep the certification going, we pay the auditors a lot of money, I think. Every six months it is Rs.75,000 for a surveillance audit. So we pay about Rs.150,000 [a year] – that is, US\$1500 just for them to come and look around. For a small person (or business), it is a huge cost.

Some exporters and manufacturers also had to bear the travel and accommodation expenses of the auditors, if the certification agency they have chosen is not based in Sri Lanka or if there are no qualified auditors in the country to carry out an audit for a particular standard. Some companies interviewed had hired auditors from the region, usually India and Pakistan. And in one case it was reported that there were no auditors in the country qualified to carry out an audit for IFS certification (EX1).

However, the certification costs were not as expensive as the cost of upgrading factories to meet the standard, as pointed out by the Senior Vice President of Marketing of EX8: 'Actually it is not the cost of the certification; it is the cost that you have to incur to bring it up to the standard. Sometimes they insist on painting the building, doing the floors, etc. That's the cost factor. It is not the certification'. Moreover, some RPCs that have a number of factories under its management control have opted for group certification, which is allowed in some of the standards, thereby further lowering the cost of the certification compared to obtaining certification for individual factories, as explained by the General Manager of RPC1: 'In Fair Trade, you have individual certification or multi-estate certification; we have gone for multi-estate certifications and that's cheaper'.

6.3.2.3 Loss of Production

In upgrading warehouses and factories, some interviewees reported that there were many structural changes required, especially in the case of old tea factories and training of staff prior

to the first audit. Consequently there was some disruption to production and a loss of production at the beginning, as EX1 commented:

There would have been [loss of production in the interim period of adoption] but they were minor disturbances. For quality training, the whole factory shuts down for a couple of hours. The first audit was huge task. We had to prepare ourselves for a number of days. But now if the audit is tomorrow, it is not much of an issue

Similarly, in the case of tea factories, there was also disruption to the production process during the upgrading of the infrastructure, as explained by RPC6:

The process takes time, we can't do the manufacturing, because we have to send the leaf out. Let's say [after] withering... you come to the rolling, then the dryer and after the dryer the sifting... If the sifting room is [being] tiled, we can't sift the tea; [so] we have to send it out, for one month or three weeks. Or else we will have to work day and night. If a particular department is being tiled, say, the dryer room, we can't work in the factory, because we can't do the withering, because we need the hot air... So you'll have to close the factory. See the loss?

In cases where there was extensive infrastructural upgrading, which took 6-8 months to undertake, during that time green leaf was sent elsewhere to be processed into made tea. It was also pointed out that not only was production process disrupted but they received a lower price for the teas, because they were processed in a factory which usually fetches low prices at the auction (RPC6). Nevertheless, some factories managed to upgrade without much interruption to their production process, as the upgrading was a gradual process, but it was stated that it was 'inconvenient' (PVT4).

6.3.2.4 Consultant Fees and Training Costs

Almost all exporters hired a consultant to advise and train their staff on what needs to be done to comply with the standards. EX2 acknowledged the assistance extended by consultants: 'We had to hire a consultant as well as train people in order to implement the standards'. However, once the companies acquired the necessary knowledge and skills to implement and maintain the standard, they undertook the task by themselves and did not have to get outside help, as explained by EX1:

Now the situation is that we are highly qualified in the area. We don't need to get people to train us. We are capable of doing the training. And even I have undertaken ISO auditing training, where you sit for the exams and the papers are sent to the UK; only few people pass in Sri Lanka. So we have a highly qualified staff. Typically most people

get internal audit officers from outside... [Now] we have a cross-functional team that do them.

Similarly, most factories hired a consultant to train the staff and undertake activities towards complying with the standards, as pointed out by RPC6: 'Most factories have consultants because they feel like it's something new. So they will hire a person to do the work because they don't know'. In terms of cost, it was stated that a consultant could charge between Rs.250-300,000 (USD 2261-2713) as fees (RPC3).

Alternatively, some companies sent their staff to be trained (RPC2) or trained them internally in order to conduct internal audits in preparation for certification, as explained by the Compliance Officer at RPC6:

I got a good training from our parent company and the quality assurance department. Up to the certification, I'm the one who is doing everything. Then I hand it over to SGS auditor so they come and do the audit and they will certify. So we never dealt with a private consultant. There are so many companies who do it (get a consultant) but we did it on our own

Both SLSI and SGS Lanka, which are the leading certification agencies, conduct regular auditing training programmes on international standards such as ISO9001, HACCP and ISO22000.

6.3.2.5 Additional Staff and Time

All the companies have established a department/division within the company and hired staff towards complying with standards and their requirements. The size of the quality assurance department varied according to the size of the business. EX5, which is a medium-sized exporter, stated that:

We have to hire staff to look into certification. We have a quality assurance manager who basically looks after all the systems and keeps all the documents, records, have management reviews, channels the audits. Not only for ISO but for all the standards.

Factories also had to hire staff or re-allocate existing people within the organisation after training them to work full-time on maintaining records and ensuring compliance with standard requirements. For example, officers were assigned to work full-time to monitor and record details of the production process starting from the receiving point to check the raw material (leaf count) up to the point of dispatch of made tea. In some factories there are two or three people working on the standards, as there are a number of critical monitoring points and checklists to fill. According to RPC6,

In each factory, there is a separate officer for the ISO22000 standard, a quality controller/quality officer. Above that, there is a region-wise quality assurance officer/executive. And I'm also monitoring each factory [from the head office].

In the case of smallholders, it was reported that it took them more time and effort to follow GAPs. For example, rather than applying chemicals to control weeds, smallholders now undertake manual weeding (SH1). In fact, this is more costly and time-consuming than using chemicals. Nevertheless, they recognise their benefit, as pointed out by SH3: 'It's a difficult procedure and menace for us but it is good'.

6.3.2.6 Documentation Costs

In addition, both exporters and manufactures complained that they spent a lot of time on maintaining records 'but once you get into the habit, then it is not an issue' (EX2). The paperwork can be enormous when it comes to record keeping which is required to comply with standards. Both exporters and manufacturers had to hire extra people or reallocate staff to ensure there was detailed record keeping and filing (EX7). Many complained about the additional time and effort associated with this (EX8). As EX5 explained,

There were a lot of issues with regard to paper work. There was a lot of paperwork. We managed to reduce it but there is still paper work. A lot of companies have stopped it because when they grew, the amount of paper work also went up. But I think we have been quite successful and it is going on well.

Similar complaints about documentation were voiced by manufacturers but one interviewee (RPC4) pointed out that such activities are not new to the tea industry, because they were practised in the past:

The tea industry has a lot of documentation. Everything is documented. Everything was recorded in the past: sunshine, rainfall, humidity levels, etc. We are not using those things now... So we [have] re-introduced the same with the standards.

Similarly, RPC3 highlighted that they were already documenting information prior to the implementation of the standards:

Now there are many records that you should maintain. Some of the records we are already maintaining... A critical control record is the moisture of the tea that is being packed. Anyway we care capturing that in the invoice books. You don't need another filed called CCP [critical control points] records and put the same figure there. A person at that level should have the common sense to maintain the minimum possible [number of] records.

6.3.2.7 Increase in Input Costs

Input costs have gone up as exporters and manufacturers now have to source food grade material (food grade ink and gum for packaging material, food grade grease to oil machinery in the factory, paper sacks to pack made teas, plastic crates to transport and store tea) from certified suppliers to comply with the standards. RPC6 acknowledged the increase in input costs to production due to ISO22000 certification:

Specifically if it's an ISO-certified factory, we can't use [usual] ink and normal bags. It [should be] food grade ink, food grade gum and even the paper sacks should be from an ISO certified company... the grease which you are using should be food grade grease.

These food grade materials from certified suppliers cost more, according to RPC3:

There are two or three companies which supply [packing material]. The companies which have got certified have marked up their prices even though we have not. The packing material suppliers have got an advantage on it. Their prices are high compared to non-certified companies.

The difference in cost between a certified and non-certified paper sack was said to be Rs.5-10 per sack (US 5-10 cents) (RPC3). However, some factories like PVT4 were already buying from certified suppliers and as such they did not have to switch to new suppliers.

One manufacturer, RPC6, also observed that the cost of green leaf has increased subsequent to the implementation of standards because producers now have to use TRI-approved agro-chemicals as well as observe GAPs, especially Pre-Harvesting Intervals (PHIs). This has affected yields, as they cannot go for very close plucking rounds but must observe PHIs of 7-8 days after spraying of agro-chemicals. Similarly, exports who buy Fair Trade and Organic tea have to pay more at the auctions to obtain certified teas, as explained by RPC2: 'Input costs have definitely gone up because we buy from Fair Trade factory. Earlier we could just go to the auction and buy tea at the cheapest. Now we pay a premium and buy. So costs have gone up'. EX2 also commented that they pay 'premium' for organic teas.

6.3.2.8 Multiplicity of Standards

The proliferation of standards has brought confusion amongst exporters and manufacturers alike, given that they have to obtain certification for various standards. For example, when tea is exported to Iran, the Iranian government requires GMP certification (CERT1). Even if the exporter has ISO22000 certification, which covers GMPs, Iran is not satisfied. However, an

exporter that is ISO22000-certified can obtain either HACCP or GMP certification, after paying a nominal fee. In this regard, interviewees complained that there is duplication of effort and time, in terms of maintaining separate records, as well as costs involved in obtaining various certificates, though they are essentially the same, as explained by EX7:

If you take ISO22000 and BRC, the BRC covers all ISO22000 requirements and more. So we are wondering why we are paying for two. This is a valid concern. Lots of exporters and factories have been complaining about this and we also agree. There has to be a common platform.

The manufacturers also face a similar predicament, as highlighted by RPC4: 'different buyers ask for different standards. Some need HACCP. Some ask for ISO. Some need GMP'.

Proliferation of standards increases the cost of production to both exporters and manufacturers and this could be a constraining factor, given that they do not necessarily get better prices for their tea, as RPC6 pointed out: 'There are so many certificates and we do not know which is required. And by trying to do everything you are spending unnecessarily and we are not getting a premium for that'. A glaring example of duplication of effort and cost is that of organic tea, which one exporter described as the 'the biggest joke' (EX7). Each country has its own organic standards: the USA (USDA), the EU, Australia (NASA), and Japan (JAS). Exporters not only need to be certified under these different organic standards but also source from suppliers which are certified by them, as explained by EX7.

For example, if we buy camomile, which is EU organic, you can't use it for USDA organic. You have to buy separate camomile to meet the US standard. Imagine our product portfolio if we are selling in these regions: Australia, EU, Japan and the USA? We have to duplicate all our purchases, which is impossible. This is a joke.

In this context, many expressed the need for a common standard – a standardization of standards (RPC6). Towards addressing the duplication of standards, the CTTA, the apex industry body, is attempting to come up with a home-grown solution to this problem by formulating a Sri Lanka tea standard which would incorporate all the key requirements of various standards affecting the tea trade. CTTA has already set up a committee to work on the issue so that exporters and producers can have only one certificate (Ceylon Tea Traders Association, 2011).

6.3.3 Net Benefit of Standards Compliance

On the balance weighing the benefits and costs of compliance, views varied on the overall benefit of complying with standards. Most thought benefits were greater than costs, while others thought they were neutral (Tables 6.8-6.9). However, it is important to note that none thought costs outweighed benefits. The stakeholder's point of view on the issue depended on how they valued the overall benefits stemming from the standards, both tangible and intangible. Those who did not see a net benefit from complying with standards argued so because there was no monetary gain (a tangible benefit), that is, they did not get a higher price subsequent to certification, whereas those who saw a net benefit from standards valued the positive intangible benefits they brought to the organisation, like improvements in motivation of workers and morale at the workplace, which cannot be easily measured, as pointed out by BR1: '... there will be a lot of hidden benefits if you acquire these certifications. Some of these are not quantifiable, you know...'. Most of the companies (exporters, manufacturers/producers) also took a more long-term view in regard to standards. They anticipate that standards adoption will be beneficial in the long term despite the substantial compliance costs in the short term.

Table 6.8 Perception of net benefits from standards compliance – manufacturers/producers

	Positive	Neutral	Negative	Comment
RPC1	x			In the long run I believe there is a net gain.
RPC2	x			
RPC3	x			In the short-term, it might be a nuisance to you. But you have to look at the long-term point (of view) also. People are becoming more and more health conscious. That's why these standards are having a major role.
RPC4	x			Advantages. And it is long term.
RPC5		x		I think there are advantages in terms of worker education and relationships. But monetarily I don't think there is any advantage.
RPC6	x			We felt that it was another burden for us. To be honest you know it was costing us but I feel it is necessary now because it has sort of ... systemized way of doing. Initially, I mean naturally when an added cost comes, we resent it. But now we accept it is a good thing.
PVT1		x		I think it's balanced. We did not gain anything.
PVT2		x		Perhaps if we have a better working knowledge of the entire thing for which we need the guidance of certifying bodies with proper consultants, we should be able to do better.
PVT3	x			We are not getting a big advantage price-wise but over all, if you ask whether it is a Yes or No, I would say - Yes.
PVT4	x			Definitely, I think it is an advantage – there is a net advantage because I value the motivation side quite heavily. Definitely worth it.

Source: Interviews

Table 6.9 Perception of net benefits from standards compliance – exporters

	Positive	Neutral	Negative	Comment
EX1	x			The cost of getting the certification is minute in comparison to the benefits and total earnings.
EX2	x			The cost is not very significant. The benefits far outweigh the costs of having that certificate
EX3	x			
EX4	x			
EX5	x			
EX6				N/A
EX7				N/A
EX8	x			Benefits are greater; you come to a better level. Of course you must have the finances
EX9	x			They will complain about the cost but their returns are much more. It is only a fraction of the money they make that has to go into modernisation
EX10	x			Depends on how you look at it. For us, cost-wise there is less wastage but overall when you think of it, look at the output and client satisfaction, you can't put it down money wise. It is always advantageous to do.

Source: Interviews

6.4 Perceived Challenges of Standards Compliance

In complying with the standards, both government and the industry face a number of challenges. This section will highlight the main challenges the industry faces in complying with both public and private standards, which are summarised in Table 6.10.

Table 6.10 Main challenges in complying with standards in the tea industry

	Government	Exporters	Manufacturers	Producers
Regulation	x			
Infrastructure	x			
Human resources	x			
Shortage of green leaf			x	x
Compliance costs		x	x	
Know-how			x	
Lack of return on compliance		x	x	
Changing mindset of workers		x	x	x
Supplier compliance			x	
Proliferation of standards		x	x	
Practical problems			x	x
Transforming mindset of smallholders				x
Shortage of skilled labour				x
Transforming mindset of collectors				x
Lack of extension services			x	x

Source: Interviews

6.4.1 Challenges Facing the Public Sector

6.4.1.1 Weak Regulations

There is a need to strengthen existing laws to improve the standard of tea production and manufacturing, giving greater powers to the Tea Board to take punitive action against errant parties to ensure that standards such as GAPs and GMPs are met (GOV1). It was stated that the existing laws are not stringent enough, and, as a result, some tea producers and manufacturers tend to produce tea without adhering to recommended standards (Senadheera, 2007a). It was also pointed out that collectors transport green leaves without much care, which affects the standard of made tea (Senadheera, 2007a):

the cultivators are not concerned about the quality of the tea but only interested in the price offered for a kilo. Therefore they are not bothered about plucking the correct part of tea plant and transporting them safely to the factory.

It has been reported that nearly 30% of the tea harvest goes to waste due to post-harvest damage, such as improper plucking and transporting methods (Senadheera, 2007). According to the Director General of GOV 1, this would be addressed in new Tea Act, which has been drafted. New laws aim to increase the standard of tea and reduce post-harvest damage in the tea industry.

6.4.1.2 Lack of Laboratories Facilities

Although there are a number of laboratories, both government and privately run, they are not accredited to undertake tests for certain chemicals, as GOV3 explained: 'Even though we have the infrastructure, some of the labs are not accredited to test certain chemicals'. The Tea Board has recently set up a state-of-the-art laboratory equipped with a Liquid Chromatography Mass Spectroscopy at a cost of Rs.32million (USD289,409), but it is not yet accredited (Daily News, 2010), while the other government-run laboratory (ITI) can analyse only for certain chemicals (GOV3). Privately owned SGS Lanka also undertakes product testing in its laboratories but it is also accredited to do tests for certain chemicals. Nevertheless, it has the capability to do tests in its laboratories abroad, either in Singapore or India (CERT2). Currently, some exporters send samples to be tested in these countries, which is quite expensive, as explained by the Chairman of the Tea Board: 'Doing the tests abroad is very expensive. The testing is also time-consuming. So when they have to be sent abroad it would take a lot of time. The delay can hold up exports, affecting orders' (Samaraweera, 2008). Given the present circumstances and demand for product testing of MRLs, the Director of GOV3 pointed out: 'What we need is an accredited laboratory'.

6.4.1.3 Lack of Skilled Personnel

The absence of accredited laboratories is compounded by a lack of qualified personnel to conduct tests as well as undertake research and development activities. A glaring case in point is the TRI, which 'was one of the best tea research institutes among the tea growing countries'. Currently it is increasingly finding it difficult to retain its scientific staff (ASSOC3). As the Director of GOV3 explained:

The only major problem is manpower. Once you train them, you cannot retain them. You can't pay peanuts and keep people. You have to pay salaries comparable to the private sector. Now the private sector also has analytical facilities and they charge very high amounts and remunerate their staff [accordingly].

Consequently all the top scientists have left the Institute – they have either joined the private sector or gone abroad – and it is finding it difficult to attract qualified scientists without offering a good remuneration package (GOV3). As a government institution, it is constrained from doing this due to lack of funds allocated by the Treasury. Unfortunately, this is hampering its research activities and its ability to serve the industry (ASSOC3).

In the case of Tea Board, not only is the laboratory not accredited but the Analytical Laboratory Division does not have qualified scientific staff, despite the 'huge demand to get samples screened'. The laboratory is currently capable of providing certification for ISO3720 only but is not capable of doing tests for other parameters, as pointed out by the Director of GOV3:

For ISO3720, they provide a good service. Microbiology, I would say, is more or less okay. On the MRL issue, they don't have the capacity. The person in charge is not an expert in that area. We need somebody with that knowledge to run that place for MRLs.

Moreover, the Tea Board is not able to recruit competent staff because it is unable to offer competitive salaries, which are above government salaries (Daily News, 2010). In order to address the situation, the TRI is currently assisting the Laboratory Division of the Tea Board, and there are plans to recruit scientists to run the laboratory (GOV3).

According to stakeholder interviews, the capacity to monitor GAPS and GMPs within the industry by the Tea Board also needs to be strengthened. Currently, this is weak due to insufficient numbers of officers to do the job (PVT2): for example, there are about 75 personnel within the Tea Commissioner's Division to undertake this task. This makes it 'quite impossible to monitor each and every manufacturing origin' (Morrell) given the large number of factories. As pointed out by the Director General of GOV2,

It is difficult to monitor requirements relating to quality of raw material, made tea, factory and manufacturing process because of the lack of involvement of the Tea Board at the regional and field levels. Stakeholders, especially manufacturers of tea, processors of refuse tea, green leaf dealers and exporters [take advantage of the situation].

Given the limited capacity to monitor, the Tea Board expects the industry to adhere to set standards/regulations, as explained by Chairman of the Tea Board: 'We expect them to act with responsibility' (Morrell, 2009a).

In this context, it is imperative to build capacity of the public institutions supporting the industry, not only their infrastructure but also their human resources, to ensure that they are able to assist the industry to comply with standards.

6.4.2 Challenges Facing Exporters, Manufacturers and Producers in Complying with Standards

6.4.2.1 Shortage of Raw Material

Given the shortage of green tea leaf and expansion in the number of factories and their capacities, there is intense competition for green leaf amongst the BLFs (ASSOC3). Under these circumstances, factories are increasingly finding it difficult to adhere to various standard requirements, as explained by the President of the ASSOC3:

They have to have an adequate supply of leaf. Then they are free to do all this. Financing is not an issue. We can borrow. But after doing all that, if we don't have our regular supply of raw material, then servicing the loan will be a problem. That is what is holding a lot of people back. Otherwise they will go ahead.

6.4.2.2 Lack of Know-how

While lack of awareness is usually a problem in other countries, this is not in the case with the tea industry in Sri Lanka with respect to standards. In fact, awareness of various standards is 'very high' across the value chain amongst stakeholders. This is because the industry is 'an outward looking industry' and 'very competitive' (ASSOC5). In addition, Sri Lanka, compared to other tea producing countries, has focused on value addition and ships tea in various forms of packages ready for consumption (ASSOC1), making it more responsive to international food standards. In addition, there are numerous government institutions and private associations that keep stakeholders in the value chain informed. Nevertheless, it was pointed out that, in some cases, stakeholders need more knowledge and guidance to adopt standards, especially with food safety management systems like ISO22000, as explained by PVT1:

We need more knowledge for sure. In these certifications there are some big terms that we do not understand by ourselves. Sometimes we do not understand the audits and such things have to be upgraded. We need more knowledge for sure.

Similar thoughts were expressed by the owner of PVT2, who had difficulty in implementing ISO22000 in his factory: 'Proper guidance. Professional advice. That's enough.'

6.4.2.3 High Compliance Costs

The most common challenge faced by exporters and manufactures was the cost of complying with the standards. These costs can be particularly significant for smaller companies (RPC3):

With these international standards, there are other requirements like uniforms, boots, etc. Ok fine we like to do that but it has a cost – training, certification, auditing. And you know when you do ISO or something to a normal average factory, [it costs] at least 2 million rupees and adds at least 4-5 rupees to cost of production.

Given the huge cost associated with complying, manufacturers are getting their factories certified over time. This is particularly a challenge even for management-owned companies which have a number of old factories under their control. As explained by RPC6, it is upgrading its factories in stages:

Only the large and prominent factories and marks first. Then we go down; now this year, we are going to do another four. We phase it out. We go with the large and more profitable ones and prominent marks.

Adopting standards has been a costly exercise for manufacturers because the buildings and machinery are old (RPC5):

[It is] tough because we are an old industry. If you see our factories, unlike the modern garment factories you see around, our buildings are very old, and it is surprising that we are still complying with the standards.

6.4.2.4 Lack of Monetary Return on Compliance

Whilst both exporters and manufacturers were quite willing to bear the costs associated complying with standards, they found it frustrating at times that there was little or no monetary return on their investments in terms of higher prices for certification. According to exporter EX1, this is the most important challenge facing his company in terms of complying:

It is mainly the cost. When you pay for the improvement you get a return. When you pay for the standard, you don't get anything back; it is just that you are BRC, etc. certified and does not give you any value when you look at it that way.

Similarly, manufacturer RPC3 complained that they do not get a higher price at the auction for certification, which makes adoption a difficult task:

There is no benefit on the price that we get.... none of these standards have done anything for our benefit. In the garment industry, you comply with the buyer's requirements to get your premium price. But in our case it is not so. Even if you comply with their requirement, it is up to them to buy it or not. Since it's not a merchandise product but a commodity, they will try to bargain to the maximum despite the certificate you have.

Moreover, both exporters and manufacturers argue that they have to bear the whole cost associated with complying, as they cannot pass on the additional cost to buyers because it would make them uncompetitive (EX4):

Cost is a huge disadvantage because there is no way of recovering of that cost. Say for instance, Fair Trade, we pay an annual fee and only our UK office takes the tea. Can we put all that into our price to the UK? If we do that we may find ourselves being uncompetitive against another. We have not put a separate charge as such for these certifications into any of our products.

Exporters and manufacturers feel that, whilst they have to bear the burden of the cost of upgrading the factory and other costs associated with complying, the price benefits are enjoyed by upstream agents in the chain, that is, overseas buyers, who are using them to their own advantage to differentiate themselves from the competition in their markets (RPC3).

6.4.2.5 Transforming the Mindset of Workers

Many companies also faced internal resistance to adopting standards. Exporters and manufacturers alike had difficulty at first in changing the mindset of workers to fall into line with the standard requirements, though they are now more or less compliant. As exporter EX4 explained:

Changing the mindset of people was one of the biggest challenges. I wouldn't call it a problem but a challenge. When I say mindset of people, I meant people at all levels – right down to the worker because you can't have a proper standard in place unless those right at the bottom also contribute towards achieving that. So it's a huge thing to change the mindset of such a vast number of people. That was the greatest challenge.

Similarly, manufacturer RPC2 observed:

Initially you find difficulties when there are major changes. Once you get used to it, it becomes a way of life. Say a simple thing. We ask them to wear a mask because the standards specify that. They are not used to wearing masks. The moment they put it on, they say they can't breathe. Then life becomes difficult. After some time, they get used to it. So, that is the initial reaction. We asked them to put headgear. The females didn't like to wear uniforms. They think that we are making them a piece of the machinery. They like to show their colours.

In order to overcome these teething problems, people at all levels had to be trained. A tremendous effort and time were required (EX2). The companies conducted regular training programmes for staff to ensure that they understand the standards and comply with their requirements. As explained by EX4, 'We had to have training programmes, get them into groups and talk to them. We did a lot of things internally'. The training was continuous, as workers tended to revert to their old ways, which EX2 complained about:

We got consultants spending a lot of money to come and implement but you find two weeks later that they have gone back. So it has been a process and a continuous thing... Human beings are such that he wants to go back to their old ways. It's better but still not perfect.

6.4.2.6 Monitoring of Suppliers

Not only did the workers in certified warehouses and factories have to comply with the standards but also their suppliers. In order to comply with standards like ISO22000, the BLFs had to monitor smallholder leaf and ensure that they adhere to GAPs on their plots and keep a record of their activities. In this regard, factories found it challenging to monitor bought leaf because thousands of smallholders supply the factories and the latter do not have direct control over the activities of the smallholders (RPC3):

The most difficult part is monitoring the pre-harvesting intervals; if you are getting bought leaf from 10 divisions, you need to ensure that the crop – what's being taken inside the factory - is on the correct pre-harvesting period. If I spray copper, up to 7 days, you can't harvest that crop, or they will be (above) your minimum residual levels.

Factories also found it difficult to convince the smallholders to adhere to GAPs, given the highly competitive environment in which they operate; there are a number of BLFs that are willing to buy leaf without any requirements, as explained by the President of ASSOC3:

... talking to [smallholders] and convincing them was difficult. When you have 1000 smallholders, they all have different ways of looking... Getting them to think on the same wave length was difficult. It takes time. It is not like implementing in the factory.

These are their own plots. So to get them to fall in line may be more difficult than giving [leaf] to factory which doesn't have these standards.

To ensure that smallholders comply with GAPs, a number of quality-conscious factories have hired extension officers to work closely with the smallholders and monitor them (RPC3):

We need to go and tell these guys. That's the most difficult process I told you. You have to go there and tell them. The other advantage is that most of the smallholders don't spray much. They don't use chemicals as we do. So you are safe in that sense. But still you need to frequently meet them and tell them: 'Ok if you spray for blister blight, don't pluck for 7 days.'

With regard to some standards like ETP, Fair Trade, and RA, however, some factories have excluded smallholder leaf from the certification process because they cannot monitor and ensure the compliance of their suppliers with certain standard requirements (RPC4):

That's why we dropped [smallholders] in RA. When you are having half acre or something, after leaving the school, he or she (might) come and pluck the tea. It is a family. If somebody takes a photograph and put into the internet and say RPC4's smallholders are using child labour that will be the end of that certificate.

This is problematic for BLFs compared to own-leaf factories (RPCs). The latter have control over how the tea is grown (PVT4) and can closely monitor and record agricultural practices in the fields. Therefore they can ensure that they comply both on the field and at the factory, which BLFs find challenging.

In the case of exporters, supplier compliance was not such an issue. Exporters who require certified tea to comply with a standard can confine their buying to certified estates and factories which are listed in the broker's catalogue. Exporters are already sourcing other inputs like package materials from certified suppliers (EX1):

As a matter of fact, [packing] material suppliers – some of them have certification themselves. Normally we use food grade packing materials. A lot of suppliers have ISO certification also and we deal with them, as it is our requirement. Just like tea factories are audited, the material suppliers are also audited for standards.

6.4.2.7 Proliferation of Standards

The proliferation of standards also multiplies costs and effort. EX7 explained the challenging situation that they now face in terms of complying with the standards in the market:

HACCP and ISO did immense good – [they] highlighted the fact that there so many shortcomings on our side, particularly in matter of hygiene, but now it has gone too far. Not only is there duplication of efforts but also a duplication of expenses. You can become totally uncompetitive.

EX9 echoed similar sentiments about the proliferation of standards:

If you take ISO22000 and BRC, BRC covers all of ISO22000 requirements and more. So we wonder why we are paying for two. That is a valid concern. If there is another party, for example, from Japan, who comes to us and say we have to have this [other standard] and keep insisting on it, that becomes a problem. It means, it is another cost and that is when we look at these things in a cost dimension. Because there is no value addition and you don't get anything out of it. You provide another piece of paper for the same facilities. Lot of exporters have been complaining about this and we also agree. There has to be a common platform.

To add to an already 'confusing' scenario , exporters and manufacturers are disillusioned that different versions of the same standard are brought out regularly, requiring them to continuously upgrade to comply with the latest versions of the standard and thereby incurring additional cost (RPC3). In this regard, EX5 stated:

It has become a big business now. For example, we get the ISO9000 for one of our companies, after one year they come and say this standard is out-dated now and have been replaced by another and you have to pay to get this certificate. This is very annoying. We understand that there are changes involved but don't try to make a big business out by bringing out different versions of the same standard. If you keep doing it, you feel that they are just there for the money. ...It has become dirty, I am not happy with the way these certifications have been done over the last few years.

However, there have been some efforts towards harmonisation of standards; for example, now if a company is Fair Trade-certified, it can also obtain an ETP certificate (RPC1), while RA is collaborating with ETP to streamline RA certification and complement the monitoring work of ETP (Morrell). Similarly, discussions are taking place at the international level with regard to harmonisation of MRLs between countries. Sri Lanka and India have jointly lobbied for a common standard for minimum pesticide residue levels for tea. The issue has been discussed at the FAO Inter-Governmental Group (IGG) on Tea (Island, 2006).

6.4.2.8 Practical Problems

Some of the standard requirements are not practical for processing. For example, PVT1 pointed out:

There is a requirement that you have to put mess in the windows. Once you put the leaves on the withering floor of the factory you should have the air flow for withering to take place. If the air flow gets lower and withering doesn't happen the whole production can get damaged. That is one example. There are so many examples like that.

Similarly, manufacturer RPC5 noted:

Workers have to wear hats, goggles, coats, and gloves and boots. In this climate, it is not very practical to get these workers to do this – quite impossible. They are used to doing without these for such a long time. One auditor wanted them to use fork and spoon to eat because the tea can get contaminated.

6.4.2.9 Transforming the Mindset of Smallholders

Generally speaking, smallholders are aware of the need to comply with GAPs. Smallholders also know that, if better quality leaf is given to factories, they will get better prices at the auction. However, it was stated that some smallholders have no motivation to supply quality leaf, given that prices paid by certified and non-certified factories are quite similar at present, due to intense competition for green leaf in the low country. Thus some smallholders do not pay much attention when plucking leaf and opt for easy money by plucking whatever they can. They also do not pay much attention to minimizing post-harvest damage by handling and transporting the plucked leaf properly. In many areas, it was reported that there are no proper collecting points that are elevated and covered. Some smallholders overstuff the leaves into gunny bags, stuffing as much as 50kg into a bag which could carry 20kg. They then carry the bags over long distances and dump them on the ground to be collected by lorries. Such carelessness leads to leaf spoilage and contamination, as sand and grit get mixed with the leaves.

6.4.2.10 Transforming the Mindset of Collectors

Most smallholders depend on leaf dealers to collect their leaf as some of them live in faraway places. Even if good quality leaf is collected from smallholders, the leaf sometimes gets damaged during transit if proper care is not taken in transporting the leaf. Due to the intense competition for leaf, lorries travel great distances to collect leaf. So that by the time the leaf is finally delivered to the factory, it has fermented – a process which should only take place in the factory under controlled conditions. And if racks are not installed in the lorries to store the leaves whilst being transported, the leaves could also get crushed and damaged whilst being delivered to the factory.

6.4.2.11 Shortage of Skilled Labour

Another major issue is the shortage of a skilled labour force, which affects the ability to pick leaf according to the plucking cycle. This affects the ability to follow the 5-7 day cycle recommended for tea plucking. This affects RPCs and smallholders who have larger extent of land and rely on workers to cultivate and harvest tea, as explained by the Chairman of ASSOC4, which represents the smallholder sector:

As I see there are problems among farmers who have about five acres. They have a labour problem to maintain quality. The very small farmers do not have that problem because plucking is done by themselves. The farmers above five acres will have labour problems in maintaining standards and they find it difficult to give [good leaf].

This problem is compounded by the fact that plucking of quality leaf is time-consuming and there is no incentive for the workers to pluck quality leaf, since most are hired by smallholders on a casual basis and are paid according to volume of leaf plucked. For example, a trained plucker can pick around 12-18 kilos of leaves but a plucker who pays little or no attention to quality of plucking can pick more between 22 and 25kg a day. Thus his wages are higher. Naturally, workers prefer to go to a place where they can earn the most.

While smallholders with smaller extents of land do not have labour problems, since they depend on family members to work it, they too have problems in plucking quality leaf on time as they work elsewhere to supplement their incomes from tea. They do not depend on income from tea cultivation alone. Therefore they cannot sometimes adhere to the plucking cycles to ensure the factory-desired leaf quality.

6.4.2.12 Lack of Extension Services

Some factories have hired extension officers to improve the standard of leaf quality but not all factories offer such support to smallholders. Even factories which maintain standards find it difficult to expand their extension services due to costs involved – ‘you need to have more vehicles, usually motor bikes for extension officers and then the extra expenditure on gasoline’. Some factories have over 1000 smallholders supplying green leaf and it is not practical for extension officers to visit all farms individually. However, some well-maintained factories that are concerned for leaf quality have introduced a system of numbering bags brought to the factory. If the factory finds that a certain bag has bad leaf, it will be able to identify the supplier and send an extension officer to advise the farmer.

6.5 Summary

As discussed in this chapter, both public and private standards govern the length of the tea value chain in Sri Lanka, from cultivation to export, and affect producers, manufacturers and exporters in the chain. Interviews with stakeholders revealed that awareness of both public and private standards is high within the industry, while compliance varies, depending upon the standards in question. Compliance with mandatory, public standards (GAPs, GMPs, ISO3720, and standards relating to foreign matter, micro-biological contamination, heavy metal and pesticide residue limits, appears to be high, given that they are mostly required by regulation and monitored by the Tea Board.

Compliance with voluntary, public standards (ISO9001, HACCP, ISO22000, etc.) and private standards (ETP, Fair Trade, Organic, etc.) varied in the tea industry. Though public standards like HACCP and ISO22000 are voluntary at present, these standards are increasingly becoming *de facto* mandatory, because tea is now considered a beverage and there is a global trend towards food safety management systems. A number of factories and exporters have either adopted or are in the process of adopting HACCP/ISO22000. In the case of private standards, exporters and manufacturers/producers have selectively adopted them, based on their end-buyers and markets. Currently, voluntary, public and private standards appear to be more relevant in catering to markets in developed countries than in developing countries (the Middle East, Russia and CIS countries), which are Sri Lanka's biggest export markets for tea. According to the interviews, the tea chain in Sri Lanka seems to be predominantly governed by mandatory, public standards, though voluntary standards are increasingly becoming important in accessing particular buyers and markets.

According to stakeholder interviews, compliance with standards has brought about a number of benefits in terms of marketability of the tea, discipline within the company, efficiency gains, buyer assurance, reduction in wastage, improvements in working environment, morale of the workforce, enhancement of the company's reputation and improvements in the quality of the product and production process. Contrary to expectations, compliance has not resulted in higher sales, prices or even reduction of monitoring, with the exception of Organic and Fair Trade-certified. By adopting Organic and Fair Trade standards, few stakeholders managed to enjoy higher sales and price. At the same time, there have been costs associated with complying with standards, due to capital costs in upgrading factories/warehouses, testing, auditing and certification costs, loss of production, consultant fees, additional staff and time,

training costs, documentation costs, increase in input costs, and multiplicity of standards. Despite these costs, most stakeholders thought that the benefits of compliance outweighed them. Thus the situation is not as problematic and is less pessimistic than it is usually portrayed by stakeholders (Jaffee & Henson, 2005; World Bank, 2005).

Nevertheless, the industry still faces a number of challenges in complying with the standards, and these need to be addressed by government and stakeholders of the industry. The interviews revealed that government needs to strengthen regulations governing standards, obtain accreditation for laboratories to conduct product testing and recruit personnel for relevant government organisations in order to undertake product testing, and monitor compliance with standards. The main challenges identified by exporter, manufacturer and producer interviews in complying with standards were shortage of green leaf to operate factories, lack of know-how to adopt food safety management systems, high cost of compliance in upgrading infrastructure, lack of monetary return on compliance in terms of higher sales and prices, transforming the mindset of workers, smallholders and collectors, monitoring suppliers, and the proliferation of standards. These challenges have made standard compliance a difficult task for stakeholders.

Chapter 7 Implications of Food Standards for Governance in the Sri Lankan Tea Value Chain

7.1 Introduction

Chapter 6 examined how the exporters, manufacturers and producers perceived food standards governing the tea value chain in Sri Lanka. The changing standards environment imposed significant costs as well as brought a number of benefits. In this context, it is imperative that stakeholders take a strategic view of standards, identifying their requirements, assessing the options and then responding (Henson & Jaffee, 2008). This chapter examines how the tea industry in Sri Lanka has responded to emerging standards, which is the third research question (RQ3).

Complying with standards also has implications for governance in the chain. It may either lead to market/arm's length or to hierarchical relationships in the chain. However, empirical literature on the impact of standards on chain governance is mixed and unclear (Nadvi, 2008). Therefore this chapter also examines how complying with standards has affected governance within the tea value chain in Sri Lanka, which is the fourth research question (RQ4). This chapter is based on information collected through interviews with stakeholders in the industry as well as observations in the field. The full list of relevant themes and subthemes (i.e. comply, voice, exit, etc.) in relations to the research questions are presented in Appendix 10.

This chapter has three sections: Section 7.2 examines how tea exporters, manufacturers and exporters in Sri Lanka responded to emergence of standards; Section 7.3 analyses the implications of compliance with standards for governance in the chain; Section 7.4 concludes with a summary of the findings.

7.2 How did the Sri Lankan Tea Industry Respond to Food Standards?

When faced with international standards, developing countries most often decide to comply and fall in line with the requirements of the export markets. However, as Henson and Jaffee (2008) point out, building on Hirschman (1970), developing countries have room for manoeuvre, as discussed in Chapter 2. They could: 1) 'comply' with the standards, 2) 'exit'

from the market, or 3) 'voice' their protest and seek to influence the standard (Table 2.9). In this framework, 'compliance' entails falling in line by adoption of legal/regulatory reforms, restructuring supply chains, changing technologies, etc. Countries and/or suppliers can also 'exit', switching to other, less demanding markets or buyers; they can also adopt a strategy of 'voice' to seek to influence standards.

Such strategies can be adopted 'reactively' or 'proactively' (see Table 2.9) (Henson & Jaffee, 2008). The most advantageous is a combination of 'voice' and 'proactivity'. This is most likely to turn the challenges associated with complying into a competitive advantage and bring about benefits (World Bank, 2005). Conversely, it would be disadvantageous to 'exit' and 'react', as there would be considerable associated costs. Hence it is necessary to enhance the ability of developing countries to be 'proactive' and 'voice' their concerns (World Bank, 2005). This framework is used here to analyse how the tea industry stakeholders have responded to growing food standards.

7.2.1.1 Response of Exporters

Faced with emerging voluntary standards, most interviewed tea exporters 'complied' (Table 7.1), by upgrading their warehouses, training workers, hiring consultants and additional staff to implement food safety management systems, procuring food grade inputs, etc. Despite the significant costs involved in complying, which were borne by the companies, all exporters interviewed took the challenge of compliance positively because the world was moving in that direction (EX2): 'The world is constantly changing and to that extent we will be flexible to come up with whatever requirements are asked for'. In addition, they saw it as a means of improving themselves:

We firmly believe we must take more steps to improve, rather than complain and not do anything. We have to somehow work our way to improve... At least you have to set a timeframe and continuously improve because you would not get anywhere. We will continue to remain a developing country. (EX9)

Table 7.1 Strategic responses to food standards - exporters

	Reactive	Proactive
Exit		
Comply		<p>EX1: ‘... when it all started we were pioneers of the certification. But now lots of other people have got it, because it is almost a necessity for exporters to have the certificate’</p> <p>EX2: ‘We need to go for it because the world was moving in that direction and we need to have it’</p> <p>EX3: ‘We don’t wait till the standard becomes mandatory. But the standards have to be out for us to act’</p> <p>EX4: ‘We always had a vision to develop and improve and lift the standards right across (the company). Having that in mind, these were welcomed’</p> <p>EX5: ‘We actually wanted to get into these [European] markets and we thought having these [certifications] would definitely help’</p> <p>EX6: ‘We did not challenge or show any reluctance’</p> <p>EX9: ‘From the beginning we didn’t complain about standards. We went into it ourselves rather than people forcing us’</p>
Voice		<p>EX7: ‘We felt it was the general trend which we could not see any reason why we should not adopt. But if you tell me to get other standards, I can’t see why I should do that’</p> <p>EX8: ‘We had to tell him [the buyer], because Fair Trade certification took some time. So we said we are ready [to comply] but we need time. So they went without Fair Trade till we got the certification’</p>

Source: Interviews

Hardly any exporters interviewed resisted or adopt a strategy of ‘voice’, other than requesting time to comply with some standards when they had problems in meeting them. For example, in the case of Fair Trade certification, exporter EX8 wanted time to comply with the certification process and its buyer accommodated this request. Or in the case of EX7, the company ‘voiced’ and negotiated with one of its UK buyers that required Fair Trade-certified teas. Rather than obtaining the Fair Trade certificate for the company and paying for certification fees, etc. the exporter instead guaranteed that he would source from Fair Trade-certified estates at the auction and thus reached a compromise with its buyer:

Now we have a situation where in certain markets, the consumer has begun to look for FLO but when we are asked about Fair Trade, we give them a guarantee that we buy

from FLO certified company. But at the point of packing, we don't have FLO packing permission to put the seal on our packs. If it becomes necessary to do that we will have to do about 6 packs. So I would rather not sell. Just to please one client, we are not going to introduce these things. (EX7)

No exporter interviewed stopped supplying a particular buyer or market (adopting a strategy of 'exit') because of a standard, despite the numerous challenges they faced in compliance: 'We have not challenged the standards. We were happy to go ahead with the certification other than the problems that I mentioned... We did not stop any supply' (EX6).

In complying with voluntary standards, exporters were 'proactive' when it came to adopting them as and when they emerged, to ensure that they were complying and did not wait for buyers to enforce them: '... before the buyer demanded we go for it, so we could say, look at the certificate' (EX2). Or they complied before the standards became mandatory. Even in the two instances where exporters adopted a strategy of 'voice', they were proactive and managed to negotiate with buyers. However, in the case of public, mandatory standards, they mostly complied reactively at the time of standards coming into force.

7.2.1.2 Response of Manufacturers and Producers

Most tea factories and producers interviewed decided to 'comply' rather than resist ('exit') or negotiate ('voice'), except in the case of the ETP standard (Table 7.2). In the case of ETP, the industry as a whole 'voiced' its concerns about the standard and its assessment of the country *vis-à-vis* other tea-producing countries (RPC6). Generally speaking, most manufacturers/producers decided to 'comply' with the voluntary, public and private standards, as the Director/CEO of RPC2, which has obtained a number of certificates for its factories/estates under its management, explained: 'My thinking is .. if somebody tells us this is the way he wants, don't question, you comply'. Manufacturers and producers have undertaken measures to comply with standards, including upgrading factories and machinery, training workers and smallholders, and hiring consultants to help with the implementation of management systems.

Almost all factories and plantations interviewed have adopted one standard or another (ISO9001, HACCP/ISO22000, Fair Trade, ETP, etc.) over time. Given that most of their product is exported and the domestic consumption is not substantial, producers and manufacturers have responded positively by complying. Although voluntary, some of these are increasingly required by overseas buyers and markets abroad (RPC6):

Now we have to conform because 95% of our tea is being exported. It is not consumed domestically. So we have no choice but to dance to the whims and fancies of the consumers at the other end [of the chain]. Mainly it's the wholesalers and retailers because they brand [the tea]. They say ISO, etc., and they brand our effort and sell.

Table 7.2 Strategic responses to food standards - manufacturers/producers

	Reactive	Proactive
Exit		
Comply		<p>RPC1: 'we are getting ourselves prepared for a situation like that (when they become mandatory). These you can't overnight implement and get certification; it is a process that needs to be built up with time'</p> <p>RPC2: 'If somebody tell us this is the way he wants, don't question – you comply'</p> <p>RPC4: 'We complied with standards'</p> <p>RPC5: 'Before Unilever request, we did some work. We did a gap analysis.... When Unilever called and asked: 'Are you going for RA?' We were already half way [there]'</p> <p>RPC6: 'We have to conform because 95% of our tea is being exported. It is not consumed domestically. So we have no choice but to dance to the whims and fancies of the consumer at the other end'</p> <p>PVT3: 'We thought that it might have some advantages'</p> <p>PVT4: 'We jolly well knew that this was not applicable to us. There was no doubt in our minds regarding the non-applicability. But we felt that one day Middle East countries, particularly the richer countries are following Europe... will want this. So it was a case of getting ready'</p>
Voice	None, with the exception of ETP	RPC5: 'We negotiated with them [Fair Trade] about maternity benefits and... working hours'

Source: Interviews

Factories and plantations that complied responded *proactively* on their own initiative or before buyers asked (RPC3). Most factories took it upon themselves to fall into line with standards like HACCP/ISO22000, which are increasingly becoming *de facto* mandatory (RPC3). For example, RPC2 has been proactive:

My view was very proactive because when they insisted on the ISO standard, I had the certificate. When the buyers were insisting on HACCP, I was ready with it. Now, I am ready with the other standards. Before other buyers come and say, “*look, from tomorrow, Fair Trade*”, I have it. If any standard a buyer insists, I will go for it. I don’t wait. When I go out, I constantly look at other brands – major brands. I carefully look at their certifications.

Or in the case of PVT4, which complied despite its tea going to markets like the Middle East where the buyers are not yet particular about standards and certification:

Now ISO22000 types of things are required by the EU. Now none of our low-country teas are going to the EU at all. But we have a feeling that one day these things will be required by Russia ... and Middle Eastern countries – particularly the richer countries are following Europe.

However, not all companies responded proactively. Others took a ‘wait and see’ approach, given the significant costs involved in upgrading infrastructure, etc. Some eventually complied or are in the process of complying when they realised that there was no point in delaying the inevitable (RPC6): ‘[Buyers] put some pressure and all the companies started. Anyway we knew it was going to come sooner or later. So we thought, okay might as well go for the standards’.

Interviews revealed that there are ‘quite a lot of factories which are not bothered about these [standards]’ and are yet to be certified. Indeed, some doubt the extent to which some certified companies actually comply with the standards (CONS). De Silva (2006, para 7) commented:

The present state is for the industry to look for certification ‘cheap in quality’ and to meet the bare minimum in trying to meet EU requirements. Other stakeholders providing support services (certification, testing and advisory services) both in the state and private sector are merely trying to exploit this [situation], thereby losing direction. It appears that the industry prefers to ... meet the minimum requirement to qualify by having HACCP, a heap of paper(s) as one CEO of a RPC referred to. Many had already sought HACCP certification just to meet the EU requirement.

Due to the substantial cost involved in upgrading factories to comply, most plantation companies that have several factories under their management control are implementing food safety management systems over time. For example, RPC3 has obtained ISO22000 certificate for two of its factories so far and the company is in the process of obtaining certification for the remaining seven. The absence of a tangible benefit in the form of higher prices at the auction for compliance has hampered the pace of adoption of standards amongst the companies. PVT4 complained:

When we first thought of doing this, I mean ... out of the four [factories], three went full blast, hired a consultant, did the training, within about 6 months we managed to get the whole thing. After that we slowed down, I must say because of absence of [any gain].

7.2.1.3 Response of Smallholders

Smallholders to a large extent complied with GAPs, receiving assistance from the factory, TSHDA, tea smallholder societies and the TRI. A number of certified factories interviewed are providing extension services to inform and educate farmers to cultivate and harvest tea according to GAPs. Some have introduced a booklet in conjunction with TSDHA and smallholder societies for farmers to regularly enter details of their practices in order to ensure they comply with the standard requirements and for factories to monitor them more closely: '(We are) required to record everything – from the day of planting, when fertilizer was applied and when plucking was done and when agro-chemicals were used, etc.' (SH2).

Smallholders supplying certified factories were able to fall into line, as they had been supplying the factories for a long time and these factories have been particular about quality of the tea. Thus smallholders had sufficient time to adapt to the factory's requirements. Nevertheless, smallholders mentioned that they now have to devote more time to look after their land, etc. (SH9, SH10). While smallholders are aware of the benefits of complying with GAPs, they do not at present have an incentive to adhere to them. They know that, whether they supply good or bad leaf, there are several factories that will buy regardless of quality, due to intense competition between BLFs in the low country. According to SH2, most smallholders consider the supply of good leaf a nuisance at best. The only way smallholder can be encouraged or compelled to supply good leaf is for factories to stop buying poor quality leaf and accept only good quality leaf (ASSOC4). This will compel smallholders to adhere to supplying leaf according to standards required to produce a good quality tea.

In summary, the predominant response of the industry to emerging standards has been compliance, which has been the strategy of other agro-food industries in developing countries (Henson & Jaffee, 2008). While in the case of voluntary, public and private standards, the stakeholders complied 'proactively', they complied 'reactively' with mandatory standards. The next section examines how such compliance affected governance in the tea value chain.

7.3 How Did Standards Compliance Affect Tea Value Chain Governance?

The introduction of a new standard can have two possible diametrically opposite outcomes for governance in the value chain: market/arm's length or hierarchical forms of governance between firms in the chain (Nadvi, 2004).

On the one hand, suppliers can be supported by buyers from within the chain. Buyers may provide technical support to suppliers to fall into line with standards that they require from their suppliers. This is most likely to happen when buyers set the standards (Nadvi, 2004) and/or when there is widespread supplier incompetence in the chain (Humphrey & Memodovic, 2006). Once buyers are assured that suppliers conform to stipulated standards, they may also further cooperate or even collaborate with suppliers, as compliance with the standards can be viewed by buyers as an indication of supplier capability to assume greater responsibilities (Quadros, 2004). This will result in closer ties within the chain and governance can become more hierarchically-oriented.

On the other hand, standards might lead to arm's length relationships in the chain, reducing the need for direct monitoring by buyers and thereby pushing associated costs upstream to suppliers. If there are a large number of certified suppliers, buyers can shop around and pick and choose between suppliers, driving prices down. Consequently, standards, by reducing transaction costs for buyers and providing key information regarding suppliers and the product, promote arm's-length relationships in the chain. In this process, small suppliers, particularly farmers, can be marginalised, as buyers tend to prefer to source from suppliers that can meet their requirements, including complying with standards (Humphrey & Memodovic, 2006). Marginalisation can occur because monitoring costs associated with using small firms/farmers increases as a result of introduction of a standard. For example, the introduction of process standards such as ISO22000 by buyers tends to increase their monitoring of suppliers. If the standard creates difficulties for suppliers, buyers will not only have to increase their monitoring but also increase their assistance to suppliers. This may potentially lead to exclusion of smaller suppliers from value chains, as buyers will prefer to work with fewer and larger suppliers who are well established and competent (Humphrey & Memodovic, 2006).

Studies have documented consolidation and tightening of coordination following the introduction of stricter food standards (Humphrey & Memodovic, 2006). When importing countries and buyers tighten their standards, large suppliers who are capable of meeting them remain in exports, while small firms and farmers unable to do so are forced out of business or into other markets that have lower safety requirements.

So, how did compliance with food standards affect inter-firm relationships in the tea chain in Sri Lanka? Did the introduction of standards lead to market/arm's length or hierarchical forms of governance? Analysis of information collected from fieldwork indicates that neither has happened in the case of forward linkages in the chain with buyers abroad; the implementation of food standards by exporters did not lead to greater or lesser coordination with their buyers abroad.

Despite exporters' longstanding relationship with their international buyers, the latter were not an important source of support for complying with standards, other than informing exporters of their requirements, including the standards they wanted met. Most certified exporters interviewed reported that buyers provided little or no assistance in implementing standards, other than advising what standards to adhere to (EX9). The exception to this was when exporters had to comply with a buyer's own code of practice, in which case the buyer assisted the exporter to fall into line with requirements (EX4):

When our customers come here for audit, they share a lot of experience with us. They advise us on a lot of corrective action and they are systematic. Sometimes they have a reason to complain and come back to you and say we got this complaint and we would like you to take remedial action... They have got a Quality Control Division and the Head of Quality Control speaks one on one with me.

However, not all buyers have their own codes of practice: most often they require exporters to comply with international standards such as HACCP/ISO22000, etc., which are audited and certified by third parties, thereby reducing their cost of monitoring.

In most cases, exporters on their own have obtained relevant information regarding standards: for example, through their offices overseas (EX3, EX9) or by attending international exhibitions (EX5). Exporters also acquired information through a combination of other sources, including certification agencies such as SGS Lanka and the Sri Lanka Standards Institute (SLSI), which regularly conduct awareness programmes (Sri Lanka Standards Institution, 2007), government institutions such as the Sri Lanka Tea Board, and private industry associations like the CTTA.

Technical advice and know-how for implementation of standards mainly came from local consultants, and third-party certification bodies such as SGS Lanka and SLSI which carried out the audits and certification. Almost all exporters interviewed hired consultants to adopt the standards and train workers (EX4):

We had consultants that worked with us, a private consultancy. They helped us writing up manuals, developing processes and even changing our own mindsets. Some of these things when you look at it, it sounds Greek to you. But there was someone who was able to translate. You know... this is what it means, and this is what you need to do, this is how you set about getting a certificate.

A number of exporters also sent staff for training conducted by leading certification bodies; both SLSI and SGS Lanka regularly conduct training programmes for one to three days (EX4). In fact, over time staff became proficient enough to undertake internal training and audit themselves without the need to hire a consultant (EX1). Some exporters also helped others to comply, even though they were competitors (EX9): 'While we upgrade ourselves we have helped others to upgrade their facilities. Even where competitors are concerned, we have been one company which shares knowledge... even product knowledge with others...'

International buyers also did not share in the costs associated with the certification process or pay higher prices for produce. No exporter received any form of financial help from outside, whether from buyers or the government: 'Not a cent from anybody' (EX7). All exporters funded their own upgrading and they did this quite willingly as they saw it as an investment (EX4): 'It was out of our interest and pocket. We thought it was an investment for the long term. So we paid for it and got it done'. EX8 indeed stated that they would rather not obtain assistance from their buyers, even if offered, as it would confine them to supplying that particular buyer, which they were reluctant to do.

There was also no evidence of greater cooperation or collaboration between exporters and their buyers subsequent to implementation of standards, other than for information exchange, which has improved. In fact, all exporters stated that buyers did not extend a price premium for the certifications obtained, or buy more tea from them, other than for Fair Trade and Organic teas (EX8). However, they stated that having the standard would have helped to instil some confidence in their buyers about the product and the conditions under which tea was produced, and to this extent it helped strengthen their relationship (EX9):

Because there is an internationally recognised certificate involved, the way the consumer will look at the same problem will change. When you have a certificate, the

way the consumer looks at the problem changes. He looks at the problem with a different perception now. Obviously, with more confidence...

However, Japanese buyers, whilst commending the company for its compliance, still insisted that they do their own monitoring of the facilities and products. In the case of other buyers also certification has not affected their monitoring (EX3): 'there is no increase or decrease of visits because of certification but they still come to visit, not to check'. Thus the implementation of standards did not lead to arm's length or hierarchical relationships between exporters and their international buyers.

What has been the implication of standards for inter-firm relationships upstream in the tea value chain in Sri Lanka between exporters and manufacturers? Implementation of standards by exporters has not affected their relations with manufacturers, neither improving nor reducing their ties, with the exception of Fair Trade, Organic and ETP certifications, in which case exporters bought tea from certified manufacturer/producers.

None of the factories/estates received any assistance from exporters to comply with the standards with the exception of Unilever, which provided information to selected producers and manufacturers (smallholders and private factories) with regard to the Rain Forest Alliance standard that it is currently promoting in Sri Lanka (RPC3). For example, it has been reported that Unilever has carried out training for estate managers, conducted estate audits and developed and distributed sustainability awareness material for 12,000 farmers (Island, 2011). At most, what exporters did was inform about standards that they required and this was mostly conveyed through brokers to factories and estates. In fact, the main source of information about these standards came from brokers, the Tea Board, certification bodies, consultants and private industry associations like the CTTA, PA, PFTOA and TASL (LankaNewspapers.com, 2006). Also some manufacturers keep track of trends in the industry through participation in international trade fairs and exhibitions (RPC2, RPC4). Lack of support from exporters is unsurprising, since there is no direct relationship between them and manufacturers, because tea is bought and sold through the auction system. Most exporters do not have a vested interest in the production side of tea industry unless they own their own estates and factories. The technical know-how for adopting the standards was mostly provided by consultants hired by manufacturers or was done in-house after training (PVT4):

We are doing HACCP [for] ... four factories. We hired a consultant who did the training for us and helped us to do the books and stuff like that. After doing three, I think we have developed adequate in-house skills. Now this time we have to do another two

(factories). We are not going to have a consultant – an external consultant. One of our boys will be competent enough to do the training.

No factory received financial assistance from buyers for standards compliance. Most self-financed their infrastructure upgrading to meet standard requirements. Some also made use of financial assistance provided by the government for factory modernisation. The MPI arranged for private factory owners and RPCs to access credit facilities through the banking system. For private factory owners, this was through the Revolving Fund established under the Tea Development Project; for RPCs it was through the Plantation Development Project (PDP) (LankaNewspapers.com, 2006). Under PDP, 60% of the cost of factory upgrading and certification/training fees was reimbursed (RPC3). Some RPCs and private factory owners interviewed made use of these facilities to upgrade their factories and acquire certification. Although funds were available under the PDP and the Revolving Fund, it was reported they remained underutilised as recipients were unable to raise the counterpart funds for the approved projects (Sri Lankan Exporter, 2008). More recently, Rs.100 million (USD850,000) was made available from the Cess Fund for the rehabilitation and modernisation of tea factories (private and corporate owned) and for replanting of estates (Sri Lanka Tea Board, 2009).

Despite complying with the standards, factories/estates have neither received a higher price nor more sales. As PVT1 commented, there was no change in terms of buying at the auction because of certification: 'To my knowledge, no change. May be they consider that X has these things [certifications]... [but] nobody told us that he is buying more from us because of these standards'. In fact, many of the certified factories/estates also complained that buyers do not pay a higher or premium price for certification. Exporters agreed: for example, EX4 stated: 'We don't give them 10 cents more just because they have ISO'. The only exception was Fair Trade and Organic tea, in which case exporters have to confine their purchases to a limited number of certified factories/estates at the auctions and pay higher prices (EX8): 'Some buyers require tea from plantations that are aligned to ETP... there is a list of ETP certified estates; we would only buy from those'. He then went on to mention Fair Trade: '... now we look at the list of Fair Trade-certified estates and we support those more than those without Fair Trade'.

But this appears to be the exception when buying tea at the auction. Most exporters agreed that they do not pay much attention to whether the factories/estates have obtained certification or not when bidding at the auction, despite the fact that the brokers' catalogues list certificates obtained. An exporter's decision to buy at the auction is very much determined

by quality rather than certificate *per se* (EX10): 'It doesn't matter for me whether it's HACCP or not, it's the quality of the tea.'

While implementation of standards did not lead to a strengthening of linkages between exporters and factories, it also did not weaken their relationship (PVT4): 'Definitely not weakening; maybe it has increased but not that visible. They know that we are certified ISO factories. I don't think there is nothing negative about it'. Despite the certification and the assurance given to buyers about product and the conditions under which it is produced, monitoring of the tea by buyers through sampling has not been affected (RPC5). Buyers still need to assess the quality of the tea by tasting prior to bidding at the auctions (RPC1):

They have their own ways of monitoring; their main way of monitoring is by looking at the tea. They see our tea; 'OK, so you are certified and you have systems in place but we want to see a better product'. That's their sole way of monitoring rather than coming into the factory and seeing the systems in place.

Most exporters do not require certification for a number of reasons. First, their decision to buy is purely based on quality, assessed by sampling prior to auction. Second, exporters have no direct relationship with the estates. Third, exporters clean the tea after they buy from the auction to ensure that that it is free of contaminants (EX1). Fourth, exporters are unable to limit their purchases to certified estates alone because there are insufficient certified factories/estates to meet demand (EX1, EX2). Fifth, exporters rely on the Sri Lanka Tea Board to undertake monitoring of production to ensure tea is produced under suitable conditions and up to an acceptable standard for human consumption, although there is dispute about how effective this is (PVT1). Sixth, a number of the standards are only required by a few international buyers, especially in industrialised countries, whereas most buyers and markets do not require any form of certification.

In contrast, implementation of standards led to the relationship between BLFs and smallholders becoming closer and tighter. Quality-conscious factories are increasingly assisting smallholders to comply with standard requirements and they are monitoring them more closely than before (RPC4). To this end, training programmes are being conducted by factories to educate smallholders to produce good quality leaf and reduce post-harvest damage and some factories have hired extension officers to visit smallholders and advise them on GAPs (PVT1). In some cases smallholders were given a record book by factories to enter information such as date of planting, application of fertilisers, and chemicals such as weedicides, plucking of leaf, etc. in order to ensure that they comply with GAPs and increase their monitoring

(SH10). These activities have resulted in closer relationship between the smallholders and the factories, as Director of PVT1 explained:

We are very much closer now. There was a big gap before; we didn't have an extension officer before. There was a big void between us. But after we got the standards, we got an extension officer and educated drivers, cleaners, etc. After that the relationship grew a lot.

Smallholder (SH10) also concurred: 'Our relationship with the factory has increased vastly with certification.'

Generally speaking, it appears this book is not regularly kept by all smallholders and with the exception of a few factories, there is little monitoring of smallholder farms by BLFs. Only a few factories have started monitoring smallholders through their extension services (SH1):

Two or three factories in Ratnapura have now started. They have appointed a person to visit areas that do not provide good leaf. They are called extension officers and they visit and provide instructions. They maintain a book, as it necessary for extension officers to maintain records. There some recording is done.

Such factories are also increasingly paying more to smallholders to source better quality of leaf (CONS). According to RPC1, smallholders are also increasingly cooperating and collaborating with the factories to improve their leaf and in turn the prices that they receive: 'He comes and speaks to us and asks what more he can do to improve the price of green leaf. This wasn't there in the past'.

Marginalisation of smallholders has not occurred as a result of introduction of standards, since these have been introduced gradually and awareness created amongst smallholders. To date, there does not appear to have been exclusion of smallholders due to adoption of standards (RPC3): 'No marginalization. Somehow they also comply like us whether they like it or not. They try their best to be on board without being left out'. Similarly, the General Manager of GOV4 was of the opinion that some quality-conscious factories already had specific requirements, including adhering to supplying good leaf quality and GAPs when buying leaf from smallholders. Thus, getting smallholders to fall into line with the standards was not problematic, since they were already complying to a large extent:

What I feel is, whichever factory went for these standards, they would have already had certain requirements on leaf quality. If you take tea quality, they would have right throughout accepting good quality leaf and it would have been very easy for them to go [for] these standards. In those instances there could not have been marginalization.

Smallholders would have adjusted to the requirements of the factory. But I don't think any factory which accepted bad leaf would have gone for these standards immediately.

Even if there was marginalization of smallholders subsequent to adoption of standards it was suggested that it was not widespread; the numbers would have been small or insignificant (PVT3). Moreover, smallholders would have easily found other factories with less stringent requirements to buy their leaf (PVT3): 'When somebody falls away from me, there are another 100 people lined up to take delivery'.

In summary, the findings from the fieldwork indicate that compliance with standards has neither strengthened nor weakened exporter relationships with their international buyers. Buyers have made no substantial effort to help exporters conform, despite the fact that some buyers are increasingly requiring compliance. Certification is not a prerequisite for buying teas at the moment for most international buyers and especially in Sri Lanka's major export markets (the Middle East, Russia and the CIS). What matters most for international buyers is the ability of exporters to supply the required quality of tea on time and at a competitive price. Similarly, when most exporters buy tea at the auction, they do not buy it on the basis of a certificate but quality required to meet their orders. The exception to this are Organic and Fair Trade teas, but the volumes of such teas, which are bought on the basis of certification, are quite low in comparison to the majority of the tea traded at the Colombo Auctions. Thus exporters' relationship with tea manufacturers/producers has not changed as a result of standards implementation. In contrast, smallholder relationships with BLFs appears to have strengthened and become closer subsequent to adoption of standards, with assistance extended and closer monitoring of supplies.

7.4 Summary

In the face of increasing numbers of public and private standards governing the tea value chain, stakeholders in the industry largely decided to 'comply', which is predominantly the strategy adopted by other developing countries (Henson & Jaffee, 2008). In the case public, mandatory standards, exporters, manufacturers and producers complied 'reactively', whereas in the case of public and private voluntary standards, most stakeholders interviewed complied 'proactively', adopting the standards as and when they emerged to ensure that they were in compliance before buyers enforced standards. Hardly any stakeholders stopped supplying a buyer or market because of a standard (an 'exit' strategy) though some negotiated a compromise with buyers ('voice'). Generally speaking, most stakeholders saw the benefit of

compliance and fell into line. While the stakeholders benefited from compliance, it would have been more advantageous if the industry combined a strategy of 'voice' and 'proactivity', thereby influencing the standard and changing the 'rules of the game' (Jaffee, 2005).

Complying with standards has neither affected the relationship between international buyers and exporters nor the relationships between exporters and manufacturers/producers. However, in the case of smallholders, interviews revealed that they are increasingly working closer with BLFs to comply with standards. Exporters and manufacturers/producers complied with standards with little or no help from their buyers. Thus governance in the downstream part of the tea value chain in Sri Lanka remained largely unchanged, despite the introduction of stringent and complex food standards.

Chapter 8 Conclusion

8.1 Introduction

The central argument of this study is that inter-firm governance in Sri Lanka's tea value chain remains largely unaffected by the tightening and proliferation of public and private food standards governing tea production, manufacturing and trading.

There was no indication of strengthening or weakening of inter-firm governance in the chain, at least between international buyers and their immediate suppliers (exporters). Nevertheless, compliance with the standards has created information requirements and compliance challenges further upstream in the chain, leading to closer relationships between manufacturers and producers (smallholders). There was no indication of marginalisation of smallholders due to increasing complexity of standards governing the chain. Complying with standards has not only imposed costs but also brought benefits to exporters, manufacturers and producers in the chain, contrary to expectations. While compliance is often seen by stakeholders in the industry as a costly exercise, or at best a nuisance, with little or no benefits, and this in turn affects strategic responses to standards, in the case of the tea industry in Sri Lanka most stakeholders acknowledged the importance of complying with standards and responded positively, despite an initial show of reluctance and resistance. They are all conscious that standards will be crucial for the sustainability of the industry in the future, with increasing competition from emerging producers globally and high cost of production domestically.

This chapter summarises the main findings in relation to the four research questions, highlights the contribution of the study, discusses the implications of the research for the industry in Sri Lanka, examines limitations of the study and proposes future research directions

8.2 Key Findings of the Research

The four research questions of the study were (Chapter 1):

RQ1: How is the Sri Lankan tea value chain governed?

RQ2: How do stakeholders in tea industry in Sri Lanka perceive food standards governing the tea value chain?

RQ3: How did the Sri Lankan tea industry respond to emerging food standards in the major export markets?

RQ4: How did complying with standards affect governance in the tea value chain in Sri Lanka?

This section summarises the main findings to answer these questions, which were derived from a review of literature on standards and governance (Chapter 2).

8.2.1 Governance in the Tea Value Chain in Sri Lanka

Using contextual information (Chapter 3) and in-depth interviews with stakeholders in the tea chain (Chapter 4), this study mapped the structure of the chain in Sri Lanka from production to the point of export (Chapter 5). The value chain consists of a number of stakeholders (smallholders, collectors, RPCs, private factories, brokers and exporters) undertaking various tasks (cultivation, collection, manufacturing, packaging, exporting and marketing) and adding value to tea as it moves along the chain. Producers, which include smallholders and RPCs, are involved in the cultivation and harvesting of leaves, which are then processed into made tea by privately- and RPC-owned factories. The made tea is primarily sold through the Colombo Auction by brokers, who sell on behalf of the factories. The buyers at the auction include exporters, who ship it abroad in bulk and value-added forms, as well as local traders supplying the domestic market. In the case of value-added teas, exporters sell it in various packages (tea bags, tea packets, etc.) to buyers abroad under their own labels or labels owned by the buyers; bulk tea goes abroad unbranded, in loose form in tea chests. International buyers in markets abroad may include retailers, traders, packers, brand-owners, distributors, and government procurement agencies.

Chapter 5 detailed the governance structure of the tea chain in Sri Lanka. While the overall chain can be best characterised as *buyer-driven*, different parts of it are governed in distinct ways. At the production level, smallholders are linked to BLFs under a *relational* form of governance. In the case of the plantation sector, the cultivation/harvesting and manufacturing of tea are both undertaken by RPCs, which not only own plantations but also factories, processing their own leaf as well as bought leaf from smallholders. Here the relationship can be best described as *hierarchical*, because the two stages of production are undertaken internally within the companies. At the manufacturing level, the governance structure between factories and exporters is characterised by *market* structure, because made tea is

mainly traded through the auction system and is sold to the highest bidder, facilitated by brokers. At the point of export, the relationship between exporters and international buyers can be characterised as being *market* in the case of bulk tea exports and *captive or relational*, depending on whether exporters pack and ship under their own labels or buyers' labels, commonly referred to within the industry as contract packing in which the buyer specifies the product and process parameters, including the food standards that need to be met.

8.2.2 Perceptions of Food Standards Governing the Tea Value Chain

Currently, the tea industry in Sri Lanka not only has to meet stringent public quality and safety standards that are mostly mandatory but also process standards set by the buyers and/or international third-party organisations ('private standards') (Chapter 6). These private standards are more complex than public standards, going beyond quality and safety concerns. Though they are voluntary, private standards are increasingly becoming important for accessing some global value chains, notably in high-value markets in developed countries. Indeed, some are increasingly becoming *de facto* mandatory standards for those who want to sell to particular buyers or markets. Awareness of public and private standards is 'very high' in the industry across the value chain, from smallholders to exporters. However, compliance varies, depending on whether standards are mandatory or not. As was to be expected, compliance with public, mandatory standards is high. In the case of public, voluntary standards and private standards, compliance varies by virtue of these standards not being mandatory. Adoption by producers, manufacturers and exporters has been more selective, dependent on consumers and end-markets.

Thus public standards remain the dominant form of food quality and safety standards governing the value chain, but private standards are increasingly becoming more relevant in accessing specific markets in developed countries where supermarkets dominate and there are brands with high levels of concentration downstream in the chain. However, private standards are not necessary in supplying to all developed country markets: only few buyers require exporters to comply with private standards. In the case of developing countries, the importance of private standards tends to be low; buyers are predominantly interested in the quality of tea, which is very subjective and based on the evaluation of tea tasters – it cannot be codified.

According to stakeholder interviews, compliance brought a number of tangible and intangible benefits to companies, including access to high-value markets, discipline at the factory floor/field, reduction in wastage and costs due to enhanced efficiency and productivity, improvements in staff morale, reputational gains and enhancement of product quality (Chapter 6). However, compliance did not result in higher prices and sales nor did it affect the level of monitoring by buyers, which was anticipated. In terms of costs, stakeholders stated that they incurred additional costs in upgrading processing facilities and farms, procuring certified inputs, obtaining laboratory tests, paying for audits and certification, implementing management systems such as HACCP/ISO22000, hiring consultants, training staff and documenting procedures. Weighing costs and benefits, most stakeholders thought benefits were greater; a few thought they were equal on balance, largely because there was no tangible gain in terms of a price increase. Importantly no stakeholders cast food standards in a negative light, despite the challenges of compliance. Thus the situation is not as pessimistic as is widely presented in the literature on agro-food standards, lending support to the position of those who argue that standards can have a positive role (Henson & Jaffee, 2008).

Notwithstanding compliance with publicly mandated standards and adoption of voluntary public and private standards, the industry faces a number of challenges. Compliance is challenging because of weak supply-side capacities in the public and private sectors. In the public sector, this includes weak regulations, lack of human resources, and poor infrastructure, which affect industry ability to comply. The main challenges facing the private sector are lack of green leaf (raw material), compliance costs, absence of a price premium, resistance to change (mindsets), supplier compliance, and proliferation of food standards.

8.2.3 Strategic Responses of the Tea Industry to Emerging Food Standards

The changing and increasingly complex regulatory and commercial environment poses significant challenges and opportunities for export-oriented value chains in developing countries (World Bank, 2005). The government and the private sector thus need to adopt a strategic perspective on standards.

When faced with new standards, most interviewed stakeholders (exporters, manufacturers, and producers) opted to 'comply' rather than adopt a strategy of 'voice' or 'exit' (Chapter 7). They complied proactively or reactively to emerging standards. The strategic response to food

standards varied within the chain, reflecting prevailing capacities and perspectives on these emerging requirements (Henson & Jaffee, 2008).

Exporters responded positively and complied with emerging standards because the world was increasingly moving in that direction. Hardly any exporters interviewed resisted or 'voiced' against any of the standards, other than requesting time to comply whenever they had problems in falling into line with a new standard. No exporter stopped supplying a particular buyer or market ('exit') because of a standard *per se*. Large exporters were proactive in responding to standards: these firms had the foresight and resources to upgrade and comply.

Similarly, manufacturers and producers decided to 'comply' rather than resist ('exit') or negotiate ('voice'), with the exception of one standard, Ethical Tea Partnership, to which producers at first objected. Not all manufacturers and producers responded proactively when it came to adoption of standards. A number took more of a 'wait and see' strategy, given the significant costs involved in upgrading facilities and farms. Nevertheless, most complied subsequently, and others are in the process of complying. However, there remain a large number of factories that have not opted for international standards such as HACCP/ISO22000, , because tea is now considered a beverage, not a commodity.

The industry can be considered successful in responding to the increasingly complex environment of food standards. First, Sri Lanka has managed to maintain access to existing markets and enter new markets for tea. Second, compliance has brought benefits which exceeded costs, according to stakeholder interviews. Third, compliance has enabled the industry to maintain its competitiveness in international markets. Fourth, there was no indication of standards affecting smallholder participation. Fifth, there were positive social and economic spillovers, including improvement in food and worker safety. Nevertheless, the industry in Sri Lanka needs to actively engage in the setting of international standards governing tea. Such a strategy is likely to pay dividends as being 'proactive' and exhibiting 'voice', ensuring that the interests of the country and its stakeholders will be taken into account when standards are set.

8.2.4 Implication of Food Standards for Governance in the Tea Value Chain in Sri Lanka

Complying with standards did not change exporter relationships with their international buyers, which is characterised by 'market', 'relational' or 'captive' forms of governance. Compliance did not lead to greater or lesser coordination in the value chain (Chapter 7). While international buyers were an important source of information on standards, which they specified along with other requirements, exporters complied with standards without assistance from their buyers. Exporters received no form of financial help from buyers. Most companies hired consultants or sent their staff for training in order to implement food safety management systems. They also received support from certification agencies, the Tea Board, and industry associations with regard to information. The only exception to this was where the buyers required exporters to comply with their own codes of practice, in which case buyers assisted exporters fall into line. But this was rare. More often, buyers specified international standards, which are audited and certified by third-party organisations, reducing the need for monitoring of their suppliers and costs associated with that monitoring.

Similarly, compliance with standards has not affected governance between exporters and manufacturers, as tea is sold and brought through the auction system which is characterised by 'market' relationships. Exporters at most provided information with regard to the standards they required, which is then passed down to producers through brokers who deal with exporters. Technical know-how for standards adoption was again provided by certification agencies and consultants hired by manufacturers. The lack of support from the exporters is unsurprising, since there is no one-to-one relationship between exporters and factories, because tea is traded through the auction system. No factory received financial assistance from buyers. Most factories self-financed upgrading to meet standard requirements. Some also made use of financial assistance provided by government for factory modernisation. Despite falling into line with standards, factories have neither received a higher price nor more sales from buyers, according to interviews with manufacturers. At the same time, none of the manufacturers seem to have lost out by not complying with the standards required by exporters. The auction system appears to smooth out the demand and supply of tea in the value chain in Sri Lanka.

While the governance between international buyers and exporters and that between exporters and factories were unaffected by implementation of standards, the relationship

between factories (BLFs) and producers (smallholders) appear to have become closer and tighter. BLFs are increasingly assisting smallholders to comply and are monitoring them more closely than before. Moreover, factories are increasingly paying more to smallholders to encourage them to adhere to standards and thereby supply better leaf quality.

8.3 Contributions of the Study to the Existing Literature

This study makes a number of contributions.

First, it contributes to the growing literature on global value chains, especially on the tea value chain, where empirical studies have been lacking to date with respect to Sri Lanka. Existing studies on tea value chains have been on Tanzania (Locanto, 2010a, 2010b, 2010c) and India (Neilson & Pritchard, 2010; Neilson, Pritchard and Spriggs, 2006). This study adds to this literature by mapping the tea value chain in Sri Lanka and examining the various governance types in the chain. The study supports the proposition that a chain cannot be described by a single governance structure. As pointed out in this study, the governance type varies from one stage or level of the chain to another (Gereffi & Fernandez-Stark, 2001; Humphrey & Schmitz, 2001; Sturgeon, 2008; Ponte & Gibbon, 2005).

Second, the study documents the various standards governing the tea chain and the perceptions of main stakeholders in the tea industry in Sri Lanka. The study has provided a typology of food standards (product/process, public/private and voluntary/mandatory) governing the tea industry in Sri Lanka. In addition, this research has reinforced taking a more balanced view on the costs and benefits of standards in relation to agro-food exports from developing countries. Despite the emerging standards environment (tightening of public mandatory standards, importance of private standards, shift from product to process standards and increasing scope of standards), the situation with regard to standards in the tea industry in Sri Lanka is not problematic at this current juncture according to tea producers, manufacturers, and exporters in the industry.

Third, the literature on standards assumes developing countries are usually 'standard takers', with little or no options in terms of compliance. The case study on the Sri Lankan tea value chain corroborates this view. Most of the stakeholders interviewed for the study decided to comply rather than adopt a strategy of exit or voice by either leaving a buyer/market or negotiating a compromise with a buyer/market. Given the export-oriented nature of the industry,

the stakeholders saw the overall benefit of complying despite the costs and challenges involved in falling into line.

Fourth, GVC literature on the implications of standards for governance in the value chains is not clear; standards can either lead to strengthening or weakening of linkages within a chain. The findings from the study has further contributed to this debate by highlighting that compliance can affect governance more than one way while various parts of the chain can be affected in different ways. While downstream linkages in the tea chain in Sri Lanka remained more or less the same (unchanged), linkages between manufacturers and smallholders have become closer and tighter subsequent to the introduction of standards.

8.4 Implications of the Research for the Tea Industry in Sri Lanka

Given the growing importance of standards in global value chains, the Sri Lankan government and industry associations should provide necessary support to the industry to meet the challenge of standards and hence ensure that it maintains continued access to global value chains. This is not likely to be an easy task, requiring a multi-pronged approach by all stakeholders in the industry, and includes the following initiatives.

8.4.1 Promoting Awareness amongst Stakeholders

Given that there has been an increase in the pace, variety and complexity of standards in recent times (Kaplinsky, 2010), it is important that government, through institutions such as the Tea Board, ensures that stakeholders are informed of emerging standards. The Tea Board and private industry associations, such as the apex body, CTTA, and other specialised service providers such as consultants and certification bodies, have played an important role in this regard. While awareness may be high amongst stakeholders about the different standards, more needs to be done in terms of providing proper knowledge and guidance to comply with them.

Stakeholders also should be made aware of the importance of complying to safeguard the good name of Ceylon Tea, which is internationally reputed for quality, and hence ensure industry sustainability. Extension services through the TSHDA, smallholder societies and BLFs targeting smallholders and collectors should be strengthened, so GAPs are observed and thereby harvest and post-harvest damage is reduced.

8.4.2 Providing Financial Assistance to Comply with International Standards

Usually a key driver of standards is the international buyers in global value chains. However, where such buyers do not engage in upgrading the chain, as in the case of the tea industry in Sri Lanka, a key challenge for domestic policy makers is to ensure that incentives are provided to encourage the adoption of standards by companies or farmers who want to access global value chains. This is especially important because many stakeholders are currently not receiving a monetary return after investing resources in upgrading infrastructure and production processes. When asked what needs to be done to encourage the industry to comply with emerging standards, RPC3 explained:

Basically financial assistance is required, because any company would invest expecting some kind of return. Without any return, to invest Rs.5-6million (USD45,220-54,264) on capital development doesn't make business sense. If [there is no]... an impact on price, capital development funding has to be there.

This is particularly important for small-scale exporters, manufacturers and producers. Complying with standards is a relatively costly exercise (Jaffee & Henson, 2005), irrespective of scale of operation, and the costs weigh heavily on small stakeholders:

I think capital development or funding. For us it may not be such a big issue, but there are some people who will probably do these things only if they have the capital help by way of soft loans or grants or whatever, though it is not an issue for us. (PVT4)

One way of overcoming this is to share the cost of certification and pursue group certification, which some standards now allow. However, this will only go so far in reducing disadvantage confronting smaller stakeholders rather than removing it.

8.4.3 Continuous Training of Workers

In order to ensure that companies comply with standards, it was observed that it is necessary that they continuously provide training for employees at all levels, from top management right down to the factory floor or field level. As indicated by interviews with stakeholders, workers otherwise tended to revert to their old ways and not adhere to requirements for standards compliance. While this proved to be problematic at first, most stakeholders stated that they eventually fell into line. However, this required workers to be trained on a regular basis. In this regard, most companies either hired consultants or sent some of their staff for training to become trainers in turn.

8.4.4 Improving Institutional Capacity

In addition, the government should improve the capacity of local institutions, the Tea Board, TRI and TSHDA, to better cater to industry needs. More specifically, regulations governing the industry should be strengthened, giving greater powers to the Tea Board to carry out its regulatory activities and more funds should be devoted to the three institutions from the Tea Cess Fund. All three institutions do not have sufficient human resources at present to monitor stakeholders (Tea Commissioner's Division of the Board), undertake testing (Tea Tasting Unit of Tea Board), provide extension services (TSHDA) and conduct research and development (TRI). Closer monitoring of stakeholders, especially manufacturers, is required, given the intense competition for green leaf in some tea-producing regions in the country, and is making it difficult for factories to comply with recommended GAPs and GMPs.

8.4.5 Targeting Low-income Markets

In general, low-income markets are less standards-intensive than high-income markets, providing opportunities for stakeholders in the industry to cater to these markets. Small-scale exporters, manufacturers and producers can target low-income markets, whilst others capable of meeting stringent and complex standards can cater to high-income markets, thereby maximising participation in the global economy. Since Sri Lanka exports to diverse markets, this has afforded the industry the time and space to comply with international food standards, rather than being forced to meet them. This has minimised or delayed negative impacts on the value chain, especially on smallholders. Nevertheless, standards across countries are likely to converge over time (Jaffee & Masakure, 2005), and it is therefore important to build the capacity of stakeholders in the chain to comply with emerging food standards.

8.4.6 Harmonisation of Standards and Participation in Standard-Setting Bodies

The tea industry in Sri Lanka is confronted with a variety of standards that exporters, manufacturers and producers have to meet at considerable cost. Given standards proliferation, there is an urgent need to harmonise them, since there is duplication of costs and effort to comply with different requirements of countries and buyers. To address duplication, the CTTA is currently attempting to develop a home-grown solution to this problem by formulating a Sri Lanka tea standard which will incorporate all the key requirements of standards affecting the tea trade at present. Whilst such an initiative should

be commended, it remains to be seen whether overseas buyers and markets will be willing to accept it, as the Secretary of ASSOC1 commented: ‘Hopefully we will be able to convince and persuade the international tea community that this standard could accommodate all their requirements’

Meanwhile, Sri Lanka, together with other tea-producing countries, needs to participate actively in standard-setting relating to the industry. At the country level, Sri Lanka is already engaging with a number of consumer countries with regard to minimum residual levels (MRLs) together with other producing countries through the FAO Inter-Governmental Group on Tea to ensure that producer countries’ interests are taken into account. Sri Lanka should also participate with other standards-setting bodies, such as non-governmental ones, because private standards are increasingly governing the value chain. This will help Sri Lanka maintain its position as a world leader in the export of tea.

8.5 Limitations of the Study and Future Research Directions

Given the complexity of the food standards and the tea value chain, this study has a number of limitations, which need to be addressed in a future research agenda. One of the major limitations is that it does not cover the entire tea value chain beyond Sri Lanka – how the value chain is structured from the point of export to consumption, which is not transparent and accessible (Chapter 5). Lack of time and resources precluded this. Mapping downstream activities and various agents (traders, packers, brands, retailers, etc.) in the value chain would have provided a wealth of information on the end markets and a more nuanced understanding of various governance types (market, relational and captive) present at the distribution and retail sides of the chain. Consequently this would have provided a complete picture of how the whole chain is organised and governed. Thus future studies should aim to extend this study to cover the entire value chain so as to include end-markets in developed and developing countries.

Another limitation is the focus on food standards, particularly pertaining to food safety, because this issue has been a cause of concern for all stakeholders in the chain. However, increasingly standards governing the environment and social conditions such Fair Trade and the Rainforest Alliance are becoming important in the industry (Chapter 2). While these standards do not currently play a prominent role in the governance of the chain in Sri Lanka, and account for a small share of the market, their importance is rapidly growing. Thus any

future study on the tea value chain should aim to increase the coverage of food standards beyond issues of food safety.

This study examined the implications of standards for value chain governance in the industry based on interviews with stakeholders (Chapter 4). This reported the experience of stakeholders in Sri Lanka only. By extending the coverage of the value chain beyond Sri Lanka, future research can also incorporate the perception of downstream agents in the value chain by interviewing select buyers in major markets which are increasingly requiring standards compliance. Interviews with buyers in the main markets abroad would complement the current study and add another dimension to the findings.

The findings of this study may also be substantiated by conducting a sample survey of stakeholders to assess the extent of their awareness of standards, adoption levels, the costs and benefits of compliance and the impact of adoption on inter-firm relationships in the chain. This would have enabled the study to capture a greater number of stakeholders and broader range of responses representative of the industry as a whole and thereby helped to generalise the findings.

Future research would also benefit from examining the experience of other tea-producing countries like Kenya and India with food standards. Other countries may have different experiences with implementation, since their value chains and governance structures may differ from those of Sri Lanka. Thus a comparative case study which includes other major producing countries would provide a better understanding to how food standards have affected the industry in general.

Appendices

Appendix 1 List of Participants Interviewed in Sri Lanka

	Code	Key informant	Date of interview	Position
1	EX1	Exporter	03/12/10	Director, Executive Director & Head of Quality Assurance
2	EX2	Exporter	08/02/11	Director/CEO
3	EX3	Exporter	12/05/11	Head of Quality Assurance, Manager Food Technology, Customer Service Manager
4	EX4	Exporter	01/01/11	General Manager & Compliance Officer
5	EX5	Exporter	02/02/11	Business Development Manager
6	EX6	Exporter	23/12/10	Managing Director
7	EX7	Exporter	22/02/11	Managing Director
8	EX8	Exporter	31/01/11	Senior Vice President - Marketing
9	EX9	Exporter	25/01/11	Director/General Manager
10	EX10	Exporter	11/02/11	Managing Director
11	BR1	Broker	08/02/11	CEO
12	BR2	Broker	07/02/11 & 11/2/11	Director
13	RPC1	Manufacturer & producer	20/04/11	General Manager
14	RPC2	Manufacturer & producer	02/03/11	Director/CEO
15	RPC3	Manufacturer & producer	21/03/11	Human Resource Manager
16	RPC4	Manufacturer & producer	10/03/11	Corporate Sustainability Manager
17	RPC5	Manufacturer & producer	22/02/11	General Manager
18	RPC6	Manufacturer & producer	01/03/11	Director/CEO
19	PVT1	Manufacturer & producer	14/03/11	Director
20	PVT2	Manufacturer	26/03/11	Proprietor
21	PVT3	Manufacturer & producer	30/03/11	Chairman/Managing Director
22	PVT4	Manufacturer & producer	08/03/11	Assistant Vice President
23	SH1	Producer – smallholder	24/02/11	Smallholder and Ratnapura District Representative of Smallholder Association
24	SH2	Producer – smallholder	07/04/11	Smallholder

25	SH3	Producer – smallholder	29/03/11	Smallholder and Kegalle District Representative of Smallholder Association
26	SH4	Producer – smallholder	09/03/11	Smallholder
27	SH5	Producer – smallholder	15/03/11	Smallholder and National Chairman & Matara District Representative of Smallholder Association
28	SH6	Producer – smallholder	09/03/11	Smallholder
29	SH7	Producer – smallholder	07/04/11	Smallholder
30	SH8	Producer – smallholder	31/01/12	Smallholder
31	SH9	Producer – smallholder	13/02/12	Smallholder
32	SH10	Producer – smallholder	13/02/12	Smallholder
33	GOV1	Government	20/01/11 & 04/05/11	Director General & Tea Commissioner
34	GOV2	Government		Director
35	GOV3	Government	10/05/11	Director
36	GOV4	Government	13/01/11 & 10/05/11	General Manager - Current & Former
37	ASSOC1	Private Association	06/01/11 & 12/01/11	Chairman & Secretary
38	ASSOC2	Private Association	01/02/11	Assistant Secretary General
39	ASSOC3	Private Association	09/01/10	Chairman & Secretary General
40	ASSOC4	Private Association	11/01/11	Chairman
41	ASSOC5	Private Association	10/01/11 & 13/01/11	Chairman
42	ASSOC6	Private Association	09/2/2012	Chairman
43	CONS	Consultant	22/04/2011	Managing Director/Consultant
44	CERT1	Certification Agency	06/05/11	Director & Senior Deputy Director
45	CERT2	Certification Agency	21/01/11	Country Manager

Appendix 2 Explanatory Statement

MONASH University



June 2011

Explanatory Statement

Title: Implications of standards on the tea industry in Sri Lanka

This information sheet is for you to keep. My name is Janaka Wijayasiri and I am conducting a research project under the supervision of Prof. Owen Hughes in the Department of Management towards obtaining a PhD at Monash University. This means that I will be writing a thesis which is the equivalent of a 300 page book. As an important stakeholder of the tea industry, you have been chosen to participate in this study.

The aim of this study is to find out the implications of stringent and multiple food safety standards on the tea industry in Sri Lanka with a focus on exporter, processors and producers. The tea industry has increasingly been confronted by complex standards demanded by buyers, reflecting broader changes in standards governing agri-food exports from developing countries. Despite the importance of the issue to the industry, very little is known about how standards have affected the tea industry, especially the linkages between different firms within the industry. A better understanding of standards and their implications will assist the industry and the government to put in place strategies to meet emerging standards.

The study involves semi-structured interviews which will take approximately 1 hour of your personal time. Although there is no inconvenience/discomfort foreseeable during the interview, you may avoid answering any questions that are deemed too personal/intrusive. Your participation in this study is completely voluntary and you are under no obligation to consent to participation. However, if you do consent to participate, you may withdraw from the interview at any stage. Please note that you will not be paid for your participation in this research

In order to respect your privacy and protect your confidentiality and anonymity, the data will only be collected, and handled by Janaka Wijayasiri. While the findings from the study may be submitted for publication or used for other research purposes, the identity of individual participants will not be revealed in these cases. In keeping with University regulations, collected data will be stored in University premises in a locked cupboard/filing cabinet for 5 years. If you would like to be informed of the aggregate research findings, please contact Janaka Wijayasiri on [REDACTED]. The findings will be accessible mid 2013.

<p>If you would like to contact the researchers about any aspect of this study, please contact the Chief Investigator:</p> <p>Prof. Owen Hughes Deputy Dean, Faculty of Business and Economics Monash University - Caulfield Campus PO Box 197 Caulfield East VIC 3145</p> <p>[REDACTED]</p>	<p>If you have a complaint concerning the manner in which this research CF10/2047 – 2010001137 is being conducted, please contact:</p> <p>Executive Officer Monash University Human Research Ethics Committee (MUHREC) Building 3e Room 111 Research Office Monash University VIC 3800</p> <p>[REDACTED]</p>
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Thank you.

Mr. Janaka Wijayasiri
PhD Student

A/Prof. Ramanie Samaratunge
Supervisor/Chief Investigator

Appendix 3 Consent Form

Consent Form

Title: Implications of standards on the tea industry in Sri Lanka

NOTE: This consent form will remain with the Monash University researcher for their records. Please return the completed form to: Mr. Janaka Wijayasiri, Tel: +94 777 719 646 (mobile), Fax: +94 112 431 395; Email: [REDACTED]

I agree to take part in the Monash University research project specified above. I have had the project explained to me, and I have read the Explanatory Statement, which I keep for my records. I understand that agreeing to take part means that:

- | | | |
|--|------------------------------|-----------------------------|
| I agree to be interviewed by the researcher | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| I agree to allow the interview to be audio-taped | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| I agree to make myself available for a further interview if required | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalised or disadvantaged in any way.

I understand that any data that the researcher extracts from the interview for use in reports or published findings will not, under any circumstances, contain names or identifying characteristics.

I understand that I will be given a transcript of data concerning me for my approval before it is included in the write up of the research.

I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party.

I understand that data from the interview will be kept in a secure storage and accessible to the research team. I also understand that the data will be destroyed after a 5 year period unless I consent to it being used in future research.

Participant's name:

Signature:

Date:

Appendix 4 Interview Guide - Exporters

Section 1: Background

1. When was the business established and who owns it?
2. How large is your business? (probes: number of staff, annual sales)
3. What are the main activities that you perform? (probes: collect, storage, quality control, transport)
4. Are you involved in activities other than exporting tea?
5. What are your major inputs into your production process?
6. What are the types and forms of tea do you export? (probes: bulk, packets, tea bags, instant teas)
7. Under whose brand do you export the product? How much do you export under your brand?

Section 2: Relationship with Buyer/Client

8. What are your 5 major markets? (probes: local, export markets?) How important are domestic sales and exports (percentage-wise)?
9. Who are your clients/buyers (probes: importers, supermarkets, food processors, wholesale, etc.)? How do you market your products? Have these changed over the last 5 years? If so, how and why?
10. How many clients/buyers do you have? How many are principal buyers? How much do they account for?
11. How frequently do the buyers/clients change? What are the main reasons for the changes in buyers/clients?
12. What are your clients/buyers main requirements? (probes: quality, price, reliability, standards etc.)?
13. How do you learn about your client's preferences? (probes: quantities, quality, standards, delivery dates). Do they specify the product?
14. Do you have a contract/agreement with your buyers/clients? What do these contracts/agreements specify?
15. In thinking about one or two of your principal clients, how long have you been dealing with them?
16. How would you characterize your relationships with your principal clients in terms of level of cooperation? (probes: independent, close/collaborative, difficult, considerable information exchange, client is in charge)
17. How has your relationship with your principal buyers changed over time?
18. Would you say that in your relations with your clients there is a lot of trust, there is some trust or there is no trust? Why?
19. What are the main difficulties that you face in dealing with clients/buyers?
20. Do your buyers/clients monitor your activities?

21. Do you receive any assistance/help from your clients/buyers (probes: advances, credit, information, inputs, technical assistance, recommendations)

Section 3: Relationship with Suppliers

22. What are all the ways in which you source your tea supplies from?
23. Who are your main suppliers (probes: RPCs, private tea factories, etc.)? Have supplies from these different sources changed over the last 5 years? If so, how and why?
24. How many suppliers do you work with? How many are your principal suppliers?
25. How frequently do the buyers/clients change? What are the main reasons for the changes in buyers/clients? What are your requirements when you buy tea?
26. How do you communicate information to your suppliers regarding your requirements, in terms of quality, volume, delivery dates, standards, etc.? Do you specify them?
27. Do you have a contract/agreement with your suppliers? What do these contracts/agreements specify?
28. In thinking about one or two of your principal suppliers, how long have you been dealing with them?
29. How would you characterize your relationships with your principal suppliers, in terms of levels of cooperation? (probes: independent, close/collaborative, difficult, considerable information exchange, client is in charge)
30. How has your relationship changed with these suppliers over time?
31. Would you say that in your relationship with your supplier there is a lot of trust, there is some trust or there is no trust? Why?
32. What difficulties do your suppliers have in meeting your requirements?
33. Do you monitor your suppliers' activities?
34. Do you provide give any assistance/help to your suppliers? (probes: advances, credit, information, inputs, technical assistance, recommendations)

Section 4: Standards and regulations

35. What are the standards relating to food safety and product quality that is required when exporting?
36. Who requires them? (probes: clients/buyers, import/export regulations)
37. Are they mandatory? For which markets are they mandatory?
38. Where do you obtain information on these requirements? (probes: buyers/clients, industry organizations, government, consultants, etc.)
39. Do you think these requirements are justified/necessary? Or are they barriers to trade in your opinion?
40. When did you adopt them? Are you planning to adopt any other in the future? Why?
41. Do you require your suppliers to comply with these standards? Why?
42. What specific problems did you and your suppliers experience in meeting these standards?
43. How adequate do you consider your capacity to meet the standard requirements?

44. How adequate do you consider your suppliers capacity to meet the standard requirements?
45. Have any of your exports been rejected because of non-compliance with the standards? What were the reasons?
46. Have you rejected any tea supplies due to non-compliance with the standards? What were the reasons?
47. Who inspects and certifies the standards? (probes: first, second, third party)
48. How frequently are you inspected and certified? And how much does it cost to inspect and certify?
49. What are the main disadvantages involved in complying with the standards? (probes: input costs, processing costs, packaging costs, storage/distribution costs, procurement costs, labelling costs, capital investment, staff time, external services, loss of production)
50. What are the main advantages of compliance? (probes: market access, enhanced efficiency, reduction in wastage, reduction in product inspection/detention, higher prices)
51. Do the disadvantages offset the benefits in your opinion?

Section 5: Compliance strategy

52. When faced with standard requirements in export markets, how did you respond? (probes: complied with the standards, stopped supplying that particular market, challenged the standard)
53. In this regard, did you respond reactively or proactively?
54. How successful do you think you were in your response?
55. Did you receive any assistance to comply with the standards?

Section 6: Implications for governance in the tea chain

56. How has your relationship with your clients/buyers changed due to implementation of standards? Has it weakened or strengthened the relationship? Why?
57. How has your relationship with the suppliers changed due to standards? Has it weakened or strengthened the relationship? Why?
58. Has the implementation of standards reduced monitoring? (probes: clients/buyers, suppliers)
59. Has the implementation of standards led to greater cooperation? (probes: clients/buyers, suppliers). Did you receive assistance from your buyers to comply? Did you provide assistance to your suppliers to comply?

Section 7: Map of tea chain in Sri Lanka

60. Show and explain the tea value chain map. What do you think of this illustration? How does it seem to you? What changes/improvements do I need to make to improve it?

Appendix 5 Interview Guide – RPCs/ Private Factories

Section 1: Background

1. When was the business established and who owns it?
2. How large is your business in terms of number of staff? How many estates do you own? What is the extent of these estates and much of the land is under tea cultivation? What is the annual green leaf production of all the estates? How many factories do you own and how much of tea is produced annually?
3. What are the main activities that you perform? (probes: cultivate, harvest, collect, process, storage, transport)
4. Are you involved in activities directly related to the tea industry other than growing and manufacturing of tea?
5. What are your major inputs into your production process?
6. What are the types and grades of tea do you produce? (probes: black/green)
7. What types of manufacturing do you do? (probes: orthodox, orthodox-rotavane, CTC)
8. Is the product sold under your brand name in the final market?

Section 2: Relationship with Buyer/Client

9. What are your major markets? (probes: local, export markets?) How important are these markets? Do you know where the tea that you sell ends up? If so, what are these markets?
10. Who are your clients/buyers (probes: exporters, importers, local traders, etc.)? How do you market your products (probes: auctions, direct, private sales)? Have these changed over the last 5 years? If so, how and why?
11. How many clients/buyers do you have? How many are principal clients/buyers? How much do they account for?
12. How frequently do buyers/clients change? What are the main reasons for the changes in buyers/clients? Do they maintain a list of buyers/clients?
13. What are your clients/buyers main requirements? (probes: quality, price, reliability, standards etc.)?
14. How do you learn about your client's/buyer's preferences? (probes: quantities, quality, standards, delivery dates)
15. Do you have a contract/agreement with your buyers/clients? What do these contracts/agreements specify?
16. In thinking about one or two of your principal clients, how long have you been dealing with them?
17. How would you characterize your relationships with your principal clients/buyers in terms of level of cooperation? (probes: independent, close/collaborative, difficult, considerable information exchange, client is in charge)
18. Has your relationship with your principal buyers changed over time? If so, how has it changed?

19. Would you say that in your relations with your clients there is a lot of trust, there is some trust or there is no trust? Why?
20. What are the main difficulties that you face in dealing with clients/buyers?
21. Do your buyers/clients monitor your activities?
22. Do you receive any assistance/help from your clients/buyers (probes: advances, credit, information, inputs, technical assistance, recommendations, etc.)

Section 3: Relationship with Suppliers

23. What are all the ways in which you source your tea supplies from? (probes: own estates, collectors, smallholders from the surrounding areas)
24. Who are your main suppliers (probes: own estates, tea collectors, smallholders from the surrounding areas)? Have supplies from these different sources changed over the last 5 years? If so, how and why?
25. How many collectors/smallholders do you work with? How many are your principal suppliers? On what basis, are they principal suppliers?
26. Do you frequently change collectors/smallholders? If so, how frequently? What are the main reasons for the changes in collectors/smallholders?
27. How do you communicate information to collectors/smallholders regarding your requirements, in terms of quality, volume, delivery dates, standards, etc.?
28. Do you have a contract/agreement with collectors/smallholders? What do these contracts/agreements specify?
29. In thinking about one or two of your principal collectors/smallholders, how long have you been dealing with them?
30. How would you characterize your relationships with your principal collectors/smallholders, in terms of levels of cooperation? (probes: independent, close/collaborative, difficult, considerable information exchange, client is in charge)
31. Has your relationship changed with these collectors/smallholders over time? If so, how has it changed?
32. What is the level of trust in your relationship with your collectors/smallholders ?
33. What difficulties do collectors/smallholders have in meeting your requirements?
34. Do you monitor collectors/smallholders' activities?
35. Do you provide give any assistance/help to collectors/smallholders? (probes: advances, credit, information, inputs, technical assistance, recommendations)

Section 4: Standards and regulations

36. What are the standards relating to food safety, product quality, social and environment required by buyers when producing tea?
37. Who requires them? (probes: clients/buyers, import/export regulations)
38. Are they mandatory? For which markets are they mandatory?
39. Where do you obtain information on these requirements? (probes: buyers/clients, industry organizations, government, consultants, etc.)
40. Do you think these requirements are justified/necessary? Or are they barriers to trade?
41. When did you adopt them? Are you planning to adopt any other in the future? Why?

42. Do you require your suppliers to comply with these standards? Why? How do you ensure that suppliers meet these requirements?
43. What specific problems/difficulties did a) you and b) your suppliers experience in meeting these standards? Give an example. What did you do to address the problem/difficulty?
44. How adequate do you consider your capacity to meet the standard requirements?
45. How adequate do you consider your suppliers capacity to meet the standard requirements?
46. Have any of your supplies been rejected because of non-compliance with the standards? What were the reasons? How often does this happen?
47. Have you rejected any tea supplies due to non-compliance with the standards? What were the reasons? How often does this happen?
48. Who inspects and certifies the standards? (probes: first, second, third party)
49. How frequently are you inspected and certified? And how much does it cost to inspect and certify?
50. What are the main disadvantages of compliance with the standards? (probes: input costs, processing costs, packaging costs, storage/distribution costs, procurement costs, labelling costs, capital investment, staff time, external services, loss of production)
51. What are the main advantages of compliance? (probes: market access, enhanced efficiency, reduction in wastage, reduction in product inspection/detention, higher prices)
52. Do the disadvantages offset the benefits in your opinion?

Section 5: Compliance strategy

53. When faced with these standard requirements in export markets, how did you respond? (probes: complied with the standards, stopped supplying that particular market, challenged the standard)
54. In this regard, did you respond reactively (delay the implementation as long as possible) or proactively (complied ahead of time)?
55. How successful do you think you were in your response? What factors contributed to the success?
56. Did you a) receive any assistance (probes: government, industry associations, clients/buyers, etc.) or b) provide any assistance to suppliers comply with the standards? Give an example.
57. What kind of assistance do you require to comply with the standards in the future?

Section 6: Implications for governance in the tea chain

58. How has your relationship with your clients/buyers changed due to implementation of standards? Has it weakened or strengthened your position in the relationship? Why?
59. How has your relationship with the suppliers changed due to standards? Has it weakened or strengthened your position in the relationship? Why?

60. Has the implementation of standards reduced monitoring within the industry?
(probes: clients/buyers, suppliers)
61. Has the implementation of standards led to greater cooperation within the industry?
(probes: clients/buyers, suppliers)

Section 7: Map of tea chain in Sri Lanka

62. Show and explain the tea value chain map. What do you think of this illustration? How does it seem to you? What changes/improvements do I need to make to improve it?

Appendix 6 Interview Guide – Smallholders

Section 1: Background

1. How long have you been growing tea?
2. Do you own land? If yes, how much of land do you own and how much tea do you cultivate on the land?
3. How much green leaf do you produce? How old are the tea bushes planted in your land? (probes: VPs, seedlings)?
4. Do you hire workers to work on the land? If yes, how many people do you hire? (probes: permanent, casual)
5. What are the main activities that you perform? (probes: cultivation, harvest, collect, storage, transport)
6. Are you involved in any activities other than growing tea? Is tea cultivation the main source of income?
7. What are your major inputs into growing tea (probes: natural/artificial fertilizers, pesticides, weedicides, etc)? Where do you get these from?
8. How far away are you from the factory/factories that you supply?

Section 2: Relationship with Buyer/Client

9. Who are your clients/buyers (probes: tea collectors, RPC/pvt. factories, cooperatives, etc)? How much of tea do you sell to these clients/buyers? Has this changed over the last 5 years? Why?
10. What are the advantages and disadvantages of selling to these clients/buyers?
11. How many clients/buyers do you have (probes: tea collectors, RPC/private factories, cooperatives, etc.)? How many are principal clients/buyers? How much do they account for?
12. Do buyers/clients change frequently? What are the main reasons for the changes in buyers/clients?
13. What are your clients/buyers main requirements? (probes: quality, price, reliability, standards, etc.)?
14. How do you learn about your client's/buyer's preferences? (probes: quantities, quality, standards, delivery dates)
15. Do you have a contract/agreement with your buyers/clients? What do these contracts/agreements specify?
16. In thinking about one or two of your principal clients, how long have you been dealing with them?
17. Is there cooperation between you and your buyers? How would you characterize your relationships with your principal clients/buyers in terms of level of cooperation? (probes: independent, close/collaborative, difficult, considerable information exchange, client is in charge)

18. Has your relationship with your principal buyers changed over time? If so, how has it changed?
19. Would you say that in your relations with your clients there is a lot of trust, there is some trust or there is no trust? Why?
20. What are the main difficulties/problems that you face in dealing with clients/buyers?
21. Do your buyers/clients monitor your activities? If yes, how do they monitor?
22. Do you receive any assistance/help from your clients/buyers (probes: advances, credit, information, inputs, technical assistance, recommendations, etc.)?

Section 3: Relationship with Suppliers

23. What are the different ways in which you source your inputs (VPs, fertilizers, pesticides, etc.)? (probes: tea collectors, factories, cooperatives, etc.)
24. Who are your main suppliers (probes: tea collectors, factories, cooperatives, etc.)? Have supplies from these different sources changed over the last 5 years? If so, how and why?
25. How many suppliers do you work with? How many are your principal suppliers?
26. Do suppliers change frequently? If so, how frequently? What are the main reasons for the changes in suppliers?
27. Do you communicate information to your suppliers regarding your requirements, in terms of quality, volume, delivery dates, standards, etc.?
28. Do you have a contract/agreement with your suppliers? What do these contracts/agreements specify?
29. In thinking about one or two of your principal suppliers, how long have you been dealing with them?
30. How would you characterize your relationships with your principal suppliers, in terms of levels of cooperation? (probes: independent, close/collaborative, difficult, considerable information exchange, client is in charge)
31. Has your relationship changed with these suppliers over time? If so, how has it changed?
32. Would you say that in your relationship with your supplier there is a lot of trust, there is some trust or there is no trust? Why?
33. What difficulties do you face in dealing with your suppliers?
34. Do you receive any assistance/help from your suppliers? (probes: advances, credit, information, inputs, technical assistance, recommendations)

Section 4: Standards and regulations

35. Are you are aware of the standards relating to food safety, product quality, social and environment required (probes: ISO22000, ISO14000, ISO9000, HACCP, ETP, Fair Trade)?
36. Do any of them affect you? If so, how?
37. Who requires them? (probes: tea collectors, factories, government, etc.)

38. Where do you obtain information on these requirements? (probes: buyers/clients, industry organizations, government, etc.)
39. When did you adopt them? Are you planning to adopt any other in the future? Why?
40. What specific problems/difficulties did you experience in meeting these standards? What did you do to address the problem/difficulty?
41. How adequate do you consider your capacity to meet the standard requirements?
42. Have any of your supplies been rejected because of non-compliance with any of the standards? What were the reasons? How often does this happen?
43. Who monitors the standards? How are you monitored?
44. How frequently are you monitored? Who pays for the monitoring?
45. In your opinion, what are the main disadvantages of compliance with the standards? (probes: input costs, packaging costs, storage/distribution costs, capital investment, staff time, external services, loss of production)
46. In your opinion, what are the main advantages of compliance? (probes: market access, enhanced efficiency, reduction in wastage, reduction in product inspection/detention, higher prices)
47. In your opinion, do the disadvantages offset the advantages?

Section 5: Compliance strategy

48. When faced with these standard requirements, how did you respond? (probes: complied with the standards, stopped supplying that particular market, challenged the standard)
49. In this regard, did you respond reactively (delay the implementation as long as possible) or proactively (complied ahead of time)? Why did you adopt such a strategy?
50. How successful do you think you were in your response? Would you have done things differently?
51. Did you receive any assistance to comply with the standards? Give an example.

Section 6: Implications for governance in the tea chain

52. How has your relationship with your clients/buyers changed due to implementation of standards? Has it weakened or strengthened your position in the relationship? Why?
53. How has your relationship with the suppliers changed due to standards? Has it weakened or strengthened your position in the relationship? Why?
54. Has the implementation of standards reduced monitoring within the industry? (probes: clients/buyers, suppliers)
55. In your opinion, has the implementation of standards changed your relationship with other growers/association?

Section 7: Map of tea chain in Sri Lanka

56. Show and explain the tea value chain map. What do you think of this illustration? How does it seem to you? What changes/improvements do I need to make to improve it?

Appendix 7 Interview Guide – Private Associations/Government Institutions

Section 1: Background

1. How long has the association/institute been in existence?
2. What are the major objectives of the association/institute?
3. What are the main activities of the association/institute? What are the benefits for its members/stakeholders?

Section 2: Relationship with members/beneficiaries

4. Who are your members/beneficiaries? How many members/beneficiaries do you have?
5. How do you communicate information with your members/beneficiaries?
6. How would you characterize your relationships with your members/beneficiaries in terms of level of cooperation?
7. How has the relationship with members/beneficiaries changed over time?
8. What are the main difficulties the association/institute faces in dealing with its members/beneficiaries?
9. Do you monitor your members'/beneficiaries activities?
10. Do you provide any assistance to your members/beneficiaries?

Section 3: Standards and regulations

11. What are the standards relating to food safety and product quality that is required when exporting tea?
12. Who requires them? (probes: clients/buyers, import/export regulations)
13. Are they mandatory? For which markets are they mandatory?
14. Where do exporters obtain information on these requirements? (probes: buyers/clients, industry organizations, government, consultants, etc.)
15. When did your members/beneficiaries adopt them? Are they planning to adopt any other in the future? Why?
16. Do you think these requirements are justified/necessary?
17. Do you require them to comply with these standards? Why?
18. What specific problems did exporters experience in meeting these standards?
19. How adequate do you consider exporters' capacity to meet the standard requirements?
20. Have any tea exports been rejected because of non-compliance with the standards? How frequently does this happen?
21. Who tests, audits and certifies the standards? (probes: first, second, third party)
22. How frequently are you inspected and audited?

23. What are the main disadvantages involved in complying with the standards? (probes: input costs, processing costs, packaging costs, storage/distribution costs, procurement costs, labelling costs, capital investment, staff time, external services, loss of production)
24. What are the main advantages of compliance? (probes: market access, enhanced efficiency, reduction in wastage, reduction in product inspection/detention, higher prices)

Section 4: Compliance strategy

25. When faced with standard requirements in export markets, how did the association/institute respond? (probes: complied with the standards, stopped supplying that particular market, challenged the standard)
26. In this regard, did the association/institute respond reactively or proactively?
27. How successful do you think the association/institute was in its response?
28. Did the association/institute receive any a) assistance or b) provide any assistance to comply with the standards?
29. What kind of assistance did you a) receive or b) provide to comply? (Probes: disseminate information and know-how, managerial and technical services, accreditation, develop new standards, etc.)
30. What more can be done to comply with the standards? (probes: government, private associations, buyers/clients, etc.)

Section 5: Implications for governance in the tea chain

31. How has your relationship with your members/beneficiaries changed due to implementation of standards? Has it weakened or strengthened the relationship? Why?
32. Has the implementation of standards reduced monitoring? (probes: clients/buyers, suppliers)
33. Has the implementation of standards led to greater cooperation within the industry to jointly address the challenges?

Section 6: Map of tea chain in Sri Lanka

34. Show and explain the tea value chain map. What do you think of this illustration? How does it seem to you? What changes/improvements do I need to make to improve it?

Appendix 8 Interview Guide – Certification Agencies

Section 1: Background

1. How long has the organisation been in existence?
2. What are the major objectives of the organisation?
3. What are the main activities of the organisation?

Section 2: Relationship with customers

4. Who are your customers in the tea industry?
5. How many customers do you have from the tea industry?
6. How do you communicate information with customers?
7. How would you characterize your relationships with the tea industry in terms of level of cooperation? (probes: independent, close/collaborative, difficult, considerable information exchange, client is in charge)
8. How has the relationship with the tea industry changed over time?
9. What are the main difficulties that the organisation faces in dealing with the tea industry?
10. Do you provide any assistance/help to the tea industry? If so, how do you provide such assistance?

Section 3: Standards and regulations

11. What are the standards relating to food safety, product quality, social and environment that is required when exporting?
12. Who requires them? (probes: clients/buyers, import/export regulations)
13. Are they mandatory? For which markets are they mandatory?
14. How adequate do you consider tea industry's capacity to meet the standard requirements?
15. Do these standards require suppliers to comply? If so, which standards?
16. How adequate do you consider your suppliers capacity to meet the standard requirements?
17. What specific problems did the tea industry experience in meeting these standards?
18. Have any tea exports been rejected because of non-compliance with the standards? How frequently does this happen?
19. How frequently are these standards audited?
20. What are the main disadvantages involved in complying with the standards? (probes: input costs, processing costs, packaging costs, storage/distribution costs, procurement costs, labelling costs, capital investment, staff time, external services, loss of production)

21. What are the main advantages of compliance? (probes: market access, enhanced efficiency, reduction in wastage, reduction in product inspection/detention, higher prices)

Section 4: Compliance strategy

22. When faced with standard requirements in export markets, how did the organisation respond?
23. In this regard, did the organisation respond reactively or proactively?
24. How successful do you think the organisation was in its response?
25. Did the organisation receive any a) assistance or b) provide any assistance to comply with the standards? What role did the organisation play in terms of complying with the standards?
26. What kind of assistance did you a) receive or b) provide to comply? (Probes: disseminate information and know-how, managerial and technical services, accreditation, develop new standards, etc.)
27. What more can be done to comply with the standards? (probes: government, private associations, buyers/clients, etc.)

Section 5: Implications for governance in the tea chain

28. How has your relationship with tea industry change due to implementation of standards? Has it weakened or strengthened the relationship? Why?
29. Has the implementation of standards changed the level of monitoring in the industry? (probes: clients/buyers, suppliers)
30. Has the implementation of standards led to greater cooperation in the industry? (probes: clients/buyers, suppliers)

Appendix 9 Descriptive Themes

Exporter's profile		
• Year of establishment	• Main activities	• Export composition
• Ownership	• Warehouses	• Own versus private labels
• Export volume	• Production inputs	Related activities

Manufacturer's profile		
• Year of establishment	• Made tea production	• Type of production & elevations
• Ownership	• Extent of land	• Production inputs
• Staff	• Number of estates & factories	• Related activities
• Green leaf production	• Main activities	

Smallholder's profile		
• Yrs. of cultivation	• # of workers	• Production inputs
• Ownership	• Extent of land	• Related activities
• Green leaf production	• Main activities	

Appendix 10 Analytical Themes and Sub-themes

RQ 1: Chain governance		
Relationship with sellers & buyers		
<ul style="list-style-type: none"> Markets 	<ul style="list-style-type: none"> Characteristic of relationship 	<ul style="list-style-type: none"> Assistance
<ul style="list-style-type: none"> Type of suppliers/buyers 	<ul style="list-style-type: none"> Trust 	<ul style="list-style-type: none"> Monitoring
<ul style="list-style-type: none"> # of suppliers & principals 	<ul style="list-style-type: none"> Product & process specifications 	<ul style="list-style-type: none"> Difficulties
<ul style="list-style-type: none"> Length of relationship 	<ul style="list-style-type: none"> Information 	
<ul style="list-style-type: none"> Frequency of change 	<ul style="list-style-type: none"> Agreement 	

RQ 2: Perception of food standards governing tea value chain		
<ul style="list-style-type: none"> Standard – public, mandatory, public voluntary, private voluntary 	<ul style="list-style-type: none"> Benefits (sales, marketability, discipline, efficiency, price, assurance of product, monitoring, wastage, working environment, reputation, social & environment) 	<ul style="list-style-type: none"> Challenges (compliance cost, lack of return, changing mindset of workers, proliferation of standards)
<ul style="list-style-type: none"> Awareness 	<ul style="list-style-type: none"> Costs (capital, audit & certification fees, loss of production, consultant fees & training costs, additional staff & time, documentation costs, input costs, multiple standards) 	
<ul style="list-style-type: none"> Compliance 	<ul style="list-style-type: none"> Net benefit (positive, negative, neutral) 	

RQ 3: Compliance strategy		
<ul style="list-style-type: none"> Comply 	<ul style="list-style-type: none"> Exit 	<ul style="list-style-type: none"> Reactive
<ul style="list-style-type: none"> Voice 	<ul style="list-style-type: none"> Proactive 	

RQ 4: Implication for governance		
<ul style="list-style-type: none"> Market/arm' s length 	<ul style="list-style-type: none"> No change 	<ul style="list-style-type: none"> Assistance
<ul style="list-style-type: none"> Hierarchy 	<ul style="list-style-type: none"> Monitoring 	

References

- Abdeen, S. M. J. (2004, November 16). Centenary auction of Colombo Brokers' Association. *Daily News*. Retrieved from <http://www.dailynews.lk/2004/11/16/bus06.html>
- Abeyakoon, R. (2007, January 18). Tea exporters aim at improving quality and quantity. *Daily News*, p.19.
- Abila, R. O. (2003). *Case study: Kenyan fish exports*. Retrieved from International Food Policy Research Institute website:
<http://www.ifpri.org/sites/default/files/publications/focus10.pdf>
- Ali, R., Choudhry, Y. A., & Lister, D. W. (1997). *Sri Lanka's tea industry: Succeeding in the global market* (Discussion Paper No. 368). Washington D.C.: World Bank.
- Amarasuriya, M. (2012, October 21). Whither the plantation industry - way forward? *The Sunday Times*. Retrieved from <http://www.sundaytimes.lk/121021/business-times/whither-the-plantation-industry-way-forward-16679.html>
- Arumugam, O. (1995, September). Recent trends in industrial relations in the plantation sector. *Economic Review*, 19-21.
- Arunatilake, N., Gunawardena, A., Marawila, D., Samaratunga, P., Senaratne, A., & Thibbotuwawa, M. (2008). *Analysis of the fisheries sector in Sri Lanka. Guided case studies for value chain development in conflict-affected environments*. Retrieved from Institute of Policy Studies of Sri Lanka website:
http://www.ips.lk/research/fishery_sector_020708/research%20_highlight_fishery_sector.pdf
- Athukorala, P.-C., & Jayasuriya, S. (2003). Food safety issues, trade and WTO rules: A developing country perspective. *The World Economy*, 26(9), 1395-1415.
- Bain, C. (2010). Governing the global value chain: GLOBALGAP and the Chilean fresh fruit industry. *International Journal of Society of Agriculture and Food*, 17(1), 1-23.
- Bair, J. (2005). Global capitalism and commodity chains: Looking back, going forward. *Competition & Change*, 9(2), 153-180.
- Banyard, P. J. (1981). *A history of the tea trade*. London, U.K.: Thompson Llyod & Ewart.
- Barrientos, S., Dolan, C., & Tallontire, A. (2003). A gendered value chain approach to codes of conduct in African horticulture. *World Development*, 31(9), 1511-1526.
- Barry, I. N. (2007). *A value-chain analysis for the Sri Lankan rambutan subsector*. (Research Report No. 2). Retrieved from Crops for the Future website:

<http://www.cropsforthefuture.org/publication/position-paper/A%20value%20chain%20analysis%20for%20the%20Sri%20Lankan%20rambutan%20subsector.pdf>

- Barry, I. N. (2008). *A value-chain analysis for the Sri Lankan beli and woodapple subsectors*. (Research Report 4). Retrieved from Crops for the Future website: <http://www.cropsforthefuture.org/publication/position-paper/A%20value%20chain%20analysis%20for%20the%20Sri%20Lankan%20beli%20and%20woodapple%20subsector.pdf>
- BBC. (2010, January 25). Tainted milk scandal resurfaces in China. Retrieved from <http://news.bbc.co.uk/2/hi/8478195.stm>
- BBC. (2013a, August 3). New Zealand recalls dairy products over botulism fears. Retrieved from <http://www.bbc.co.uk/news/world-asia-23558830>
- BBC. (2013b, April 10). Q&A: Horsemeat scandal. Retrieved from <http://www.bbc.co.uk/news/uk-21335872>
- Beghin, J. C., & Bureau, J.-C. (2001). *Quantitative policy analysis of sanitary, phytosanitary, and technical barriers to trade* (Working Paper 01-WP 291). Retrieved from Iowa State University website: <http://www.econ.iastate.edu/research/journal-articles/p1885>
- Calvin, L., Flores, L., & Foster, W. (2003). *Case study: Guatemalan raspberries and cyclospora* (Brief 7). Retrieved from International Food Policy Research Institute website: <http://www.ifpri.org/publication/food-safety-food-security-and-food-trade>.
- Caswell, J. A. (2003). *Trends in food safety standards and regulation: Implications for developing countries* (Brief 4). Retrieved from International Food Policy Research Institute website: <http://www.ifpri.org/publication/food-safety-food-security-and-food-trade>.
- Caswell, J. A., Bredahl, M. E., & Hooker, N. H. (1998). How quality management metasystems are affecting the food industry. *Review of Agricultural Economics*, 20(2), 547-557.
- Cato, J. C., & Subasinghe, S. (2003). *Case study: The shrimp export industry in Bangladesh* (Brief 8). Retrieved from International Food Policy Research Institute website: <http://www.ifpri.org/publication/food-safety-food-security-and-food-trade>
- Central Bank of Sri Lanka. (2009). *Annual report 2008*. Colombo, Sri Lanka: Author.
- Central Bank of Sri Lanka. (2012). *Annual report 2012*. Colombo, Sri Lanka: Author.
- Ceylon Tea Traders Association. (2011). *Annual report & accounts 2009/2010*. Colombo, Sri Lanka: Author.

- Coe, N. M., Dicken, P., & Hess, M. (2008). Introduction: Global production networks - debates and challenges. *Journal of Economic Geography*, 8(3), 267-269.
- Colombo Tea Traders' Association, & Sri Lanka Tea Board. (n.d.). *Colombo international tea convention 2012 (Press Release)*. Retrieved from <http://www.colomboteatraders.nz.wb.gs/press-release-citc2012>
- Creswell, J. W. (1994). *Research design: Qualitative & quantitative approaches*. Thousand Oaks, CA: SAGE.
- Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: SAGE.
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd. ed.). Thousand Oaks CA: SAGE.
- Daily Mirror. (2009, September 18). Product quality certification of tea. Retrieved from <http://www.highbeam.com/doc/1P3-1861495501.html>
- Daily News. (2007, November 9). Proposed automation of the Colombo tea auction, p.VI.
- Daily News. (2010, August 10). Clean certificate for Ceylon tea. Retrieved from <http://www.dailynews.lk/2010/08/10/bus24.asp>
- Dayananda, M. (2008). Valuation and marketing of tea. In A. K. N. Zoysa (Ed.), *Handbook on tea* (1st ed.). Takawakelle, Sri Lanka: Tea Research Institute of Sri Lanka.
- De Alwis, H. (2001, July/August). Tea export diversification and international market segmentation. *Economic Review*, 23-24.
- De Alwis, H. (2011 January 30-February 1). *Sri Lanka tea industry*. Paper presented at the Twentieth Session of the Intergovernmental Group on Tea, Colombo, Sri Lanka.
- De Silva, C. (2010). Smallholders target 300 million kilograms of tea this year. *Daily News*, p.I.
- De Silva, C. R. (1987). *Sri Lanka: A history*. New Delhi, India: Vikas House.
- De Silva, K. M. (1973). Economic development in the plantation sector: 1900 to 1947. In K. M. De Silva (Ed.), *History of Ceylon* (Vol. 3). Peradeniya, Sri Lanka: University of Ceylon
- De Silva, K. M. (1981). *A history of Sri Lanka*. New Delhi, India: Oxford University Press.
- De Silva, L. I. (2013, July 7). Sustaining Sri Lanka's tea sector is important for the country's future. *Sunday Times*. Retrieved from <http://www.sundaytimes.lk/130707/business-times/sustaining-sri-lankas-tea-sector-is-important-for-the-countrys-future-51156.html>

- De Silva, S. L. (2006, March 12). The need for ISO22000 for the tea industry. *Sunday Times*. Retrieved from <http://www.sundaytimes.lk/060312/ft/19.html>
- Denzin, N. K. (1978). *The research act: A theoretical introduction to sociological methods* (2nd ed.). New York, NY McGraw-Hill.
- Department of Agriculture. (2006). *Office of the Registrar of Pesticides*. Retrieved September 1, 2013, from <http://www.agridept.gov.lk/index.php/en/institutes/430>
- DFID. (2002). *Better livelihoods for poor people: The role of agriculture*. Retrieved from <http://dfid-agriculture-consultation.nri.org/launchpapers/roleofagriculture.pdf>
- Dissanaike, T. (2000, June). Promoting the virtues of Ceylon Tea. *LMD*, 59-67.
- Dolan, C., & Humphrey, J. (2000). Governance and trade in fresh vegetables: The impact of UK supermarkets on the African horticulture industry. *Journal of Development Studies*, 37(2), 147-176.
- Dolan, C., & Humphrey, J. (2004). Changing governance patterns in the trade in fresh vegetables between Africa and the United Kingdom. *Environment and Planning A*, 36(3), 491-509.
- Dunham, D. (1998). The future of tea estates. *Pravada*, 5(6), 13-15.
- Economic Review. (1995, September). The smallholder's dilemma. *Author*, 15-17.
- Economist Intelligence Unit. (2003, June 18). Sri Lanka drinks: Tea producers form landmark association. Retrieved from http://www.eiu.com/index.asp?layout=ib3Article&article_id=1776216977&pubtypeid=1122462497&country_id=900000290&page_title=
- Edirimuni, D. (2007, March 18). Plantation jobs unattractive to children of workers. *Sunday Times*, p.10.
- Eheliyagoda, K. J. (2009, May 5). Some manufacturers tarnishing the image of Lankan tea. *Sunday Times*, p.3.
- Ekanayake, A. (1995, September). Sri Lanka's tea plantation economy: Future prospects and threats. *Economic Review*, 23-27.
- Emmet, A. E. J. (1967). Ceylon Tea - 100 years and now. *Journal of the Royal Society of Arts*, 115(5133), 726-741.
- Ethulgala, C. V. (2009). *Governance: An evaluation of the tea sector of Sri Lanka*. (Unpublished MPhil dissertation), Monash University, Melbourne, Australia.

- FAO. (1988). *Food quality and safety systems: A training manual on food hygiene and the Hazard Analysis and Critical Control Point (HACCP) system*. Retrieved from <http://www.fao.org/docrep/W8088E/W8088E00.htm>
- FAO. (2007). *A practical manual for producers and exporters from Asia: Regulations, standards and certification for agricultural exports*. Retrieved from <http://www.fao.org/docrep/010/ag130e/ag130e00.htm>
- FAO. (2012a). *Contribution of smallholders to the tea sub-sector and policies required to enhance their livelihoods* (CCP:TE 12/CRS 2). Retrieved from http://www.fao.org/fileadmin/templates/est/COMM_MARKETS_MONITORING/Tea/Documents/IGG_20/12-CRS2-Smallholders.pdf
- FAO. (2012b, February 29). *Firm tea prices set to continue: Demand driven by growth in Asia*. Retrieved January 18, 2013, from <http://www.fao.org/news/story/en/item/124221/icode/>
- Feenstra, R. C. (1998). Integration of trade and disintegration of production in the global economy. *Journal of Economic Perspectives*, 12(4), 31-50.
- Fernando, M. (2000). *The story of Ceylon Tea*. Colombo, Sri Lanka: Mlesna.
- Fernando, M. (2003). Diversity: The hallmark of Ceylon Tea. In W. W. D. Modder (Ed.), *Twentieth century tea research in Sri Lanka* (pp.393-397). Talawakelle, Sri Lanka: Tea Research Institute.
- Fernando, M. J. (2007, August 14). Dilmah and its initial struggle – Letter. *Sunday Times Online*. Retrieved from <http://www.sundaytimes.lk/071014/FinancialTimes/ft309.html>
- Fernando, R. (1994, December 1-3). *Impact of privatisation on the plantations industry in Sri Lanka*. Paper presented at the Agriculture and Plantation Industry - 15th National Conference, Colombo, Sri Lanka.
- Fernando, R. (1995, September). Tea sector today - its relative importance and contribution with special reference to the private sector. *Economic Review*, 4-7.
- Forbes & Walker. (2006). *Cultivation of tea*. Retrieved September 1, 2013, from http://www.forbesteaportal.com/Insidepages/AboutTea/CULTIVATION_OF_TEA.html
- Forrest, D. M. (1967). *A hundred years of Ceylon Tea 1867-1967*. London, U.K.: Chatto & Windus.
- Fulponi, L. (2006). Private voluntary standards in the food system: The perspective of major food retailers in OECD. *Food Policy*, 30(2), 115-128.

- Fulponi, L. (2007). *Private voluntary standards and developing country market access: preliminary results (G/SPS/GEN/763)*. Retrieved from European Commission website: http://ec.europa.eu/food/international/organisations/sps/docs/g-sps-gen_763.pdf
- Ganewatte, G. (2002). *The market for value added tea products of Sri Lanka: An economic analysis*. (Unpublished PhD dissertation), La Trobe University, Melbourne, Australia.
- Gardner, R. (2012, October 3). Serious 'sustainability'. *The Wall Street Journal*. Retrieved from http://online.wsj.com/article/SB10000872396390443768804578034624070688536.html?mod=dist_smartbrief
- Gereffi, G. (1994). The organization of buyer-driven global commodity chains: How U.S. retailers shape overseas production networks. In G. Gereffi & M. Korzeniewicz (Eds.), *Commodity chains and global capitalism* (pp.95-121). Westport, Conn.: Praeger.
- Gereffi, G. (1995). Global production systems and third world development. In B. Stallings (Ed.), *Global change, regional response: The new international context of development* (pp.100-142). New York, NY: Cambridge University Press.
- Gereffi, G., & Fernandez-Stark, K. (2011). *Global value chain analysis: A primer*. Retrieved from Centre on Globalization, Governance & Competitiveness website: http://www.cggc.duke.edu/pdfs/2011-05-31_GVC_analysis_a_primer.pdf
- Gereffi, G., Humphrey, J., Kaplinsky, R., & Sturgeon, T. (2001). Introduction: Globalisation, value chains and development. *IDS Bulletin*, 32(3), 1-8.
- Gereffi, G., Humphrey, J., & Sturgeon, T. (2005). The governance of global value chains. *Review of International Political Economy*, 12(1), 78-104.
- Gereffi, G., & Korzeniewicz, M. (Eds.). (1994). *Commodity Chains and Global Capitalism*. Westport, CONN: Praeger.
- Gereffi, G., & Lee, J. (2009). *A global value chain approach to food safety and quality standards* (Global Health Diplomacy for Chronic Diseases Prevention Working Paper Series). Retrieved from Center on Globalization, Governance & Competitiveness website: http://www.cggc.duke.edu/pdfs/GlobalHealth/Gereffi_Lee_GVCFoodSafety1_4Feb2009.pdf
- Gibbon, P., Bair, J., & Ponte, S. (2008). Governing global value chains: an introduction. *Economy and Society*, 37(3), 315-338.
- Gibbon, P., & Lazaro, E. (2010). Agro-food standards and Africa: An introduction. In P. Gibbon, S. Ponte & E. Lazaro (Eds.) *Global Agro-food trade and standards: Challenges for Africa* (pp.1-20). Basingstoke, U.K.: Palgrave Macmillan.
- Gilchrist, V. J., & Williams, R. L. (1999). Key informant interviews. In B. F. Crabtree & W. L. Miller (Eds.), *Doing qualitative research* (pp.71-88). Thousand Oaks, CA: SAGE.

- Global Value Chains Initiative. (2006a). *Concepts & tools*. Retrieved July 30, 2013, from <http://www.globalvaluechains.org/concepts.html>
- Global Value Chains Initiative. (2006b). *Researchers*. Retrieved July 30, 2013, from <http://www.globalvaluechains.org/researchers.html>
- Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report*, 8(4), 597-607.
- Goonetilleke, A. (2006, March 27). Building the tea industry of Sri Lanka to meet global food quality standards. *Island*, p.5.
- Government of Sri Lanka. (1995). *Report of the president commission on the tea industry and trade 1995* (Sessional Paper No. 11-1995). Colombo, Sri Lanka: Government Publications Bureau.
- Grandy, G. (2010). Instrumental case study. In A. Mills, G. Durepos & E. Wiebe (Eds.), *Encyclopedia of case study research*. (pp.474-476). Thousand Oaks, CA: SAGE doi: 10.4135/9781412957397.n175
- GTZ. (2007). *ValueLinks manual: The methodology of value chain promotion*. Retrieved from http://www2.gtz.de/wbf/4tDx9kw63gma/ValueLinks_Manual.pdf
- Hammoudi, A., Hoffman, R., & Surry, Y. (2009). Food safety standards and agri-food supply chains: An introductory overview. *European Review of Agricultural Economics*, 36(4), 469-478.
- Hathurusinghe, C. P., Vidanapathirana, R., Rambukwella, R., & Somarathne, T. G. (2013). *Study on value chain of pineapple and banana in Sri Lanka*. Retrieved from HARTI website: http://www.harti.gov.lk/index.php?option=com_content&view=article&id=197%3Aa-study-on-value-chain-of-pineapple-and-banana-in-sri-lanka&catid=45%3Apublications&Itemid=117&lang=en
- Henderson, J., Dicken, P., Hess, M., Coe, N., & Wai-Chung Yeung, H. (2002). Global production networks and the analysis of economic development. *Review of International Political Economy*, 9(3), 436-464.
- Henriksen, L. F., Riisgaard, L., Ponte, S., Hartwich, F., & Kormawa, P.(2010). *Agro-food value chain interventions in Asia*. (Working Paper November 2010). Retrieved from United Nations Industrial Development Organization website: http://www.unido.org/fileadmin/user_media/Publications/Pub_free/WorkingPaper_VC_AsiaFinal.pdf
- Henson, S. (2003). *Food safety issues in international trade* (Brief 5). Retrieved from International Food Policy Research Institute website: <http://www.ifpri.org/publication/food-safety-food-security-and-food-trade>

- Henson, S. (2004). *Standards and trade: An overview*. Retrieved from World Bank website: http://siteresources.worldbank.org/INTRANETTRADE/Resources/Topics/Accession/Standards&TradeOverview_Eng.doc
- Henson, S. (2006, May 28-30). *The role of public and private standards in regulating international food markets*. Paper presented at the IATRC Summer Symposium on Food Regulation and Trade: Institutional Framework, Concepts of Analysis and Empirical Evidence, Bonn, Germany.
- Henson, S., & Caswell, J. A. (1999). Food safety regulation: An overview of contemporary issues. *Food Policy*, 24(6), 589-603.
- Henson, S., & Humphrey, J. (2010). Understanding the Complexities of Private Standards in Global Agri-Food Chains as They Impact Developing Countries. *Journal of Development Studies*, 46(9), 1628-1646.
- Henson, S., & Jaffee, S. (2006). Food safety standards and trade: Enhancing competitiveness and avoiding exclusion of developing countries. *The European Journal of Development Research*, 18(4), 593-621.
- Henson, S., & Jaffee, S. (2008). Understanding developing country strategic responses to the enhancement of food safety standards. *The World Economy*, 31(4), 548-568.
- Henson, S., & Loader, R. (2001). Barriers to agricultural exports from developing countries: The role of sanitary and phytosanitary requirements. *World Development*, 29(1), 85-102.
- Henson, S., & Mitullah, W. (2004). *Kenyan exports of Nile Perch: The impact of food safety standards on an export-oriented supply chain* (Working Paper 3349). Retrieved from World Bank website <http://elibrary.worldbank.org/deliver/3349.pdf?itemId=/content/workingpaper/10.1596/1813-9450-3349&mimeType=pdf>
- Henson, S., & Reardon, T. (2005). Private agri-food standards: Implications for food policy and the agri-food system. *Food Policy*, 30(3), 241-253.
- Henson, S., Saqib, M., & Rajasenan, D. (2005). *Impact of sanitary measures on exports of fishery products from India: The case of Kerala* (Agriculture and Rural Development Discussion Paper 17). Retrieved from World Bank website: http://siteresources.worldbank.org/INTARD/Resources/India_Fish_final.pdf
- Hettiarachchi, L. (2007, August 19). Tea industry - everyone has problems. *Sunday Times*, p.2.
- Hirschman, A. O. (1970). *Exit, voice and loyalty: Responses to decline in firms, organisations and states*. Cambridge, M.A.: Harvard University Press.

- Hodkinson, P., & Hodkinson, H. (2001, December 5-7). *The strengths and limitations of case study research*. Paper presented at the Learning and Skills Development Conference: Making an Impact on Policy and Practice, Cambridge, U.K..
- Hopkins, T. K., & Wallerstein, I. (1986). Commodity chains in the world-economy prior to 1800. *Review, 10*(1), 157-170.
- Humphrey, J. (2006). Policy implications of trends in agribusiness value chains. *The European Journal of Development Research, 18*(4), 572-592.
- Humphrey, J. (2009, May 13-15). *Private standards in Kenya horticulture: Did donors respond effectively to the challenge?* Paper presented at the Towards Priority Actions for Market Development for African Farmers, Nairobi, Kenya.
- Humphrey, J., & Memodovic, O. (2006). *Global value chains in the agrifood sector*. Retrieved from United Nations Industrial Development Organization website: http://www.unido.org/fileadmin/import/60026_01_global_value_chains_agrifood_sector.pdf
- Humphrey, J., & Schmitz, H. (2001). Governance in global value chains. *IDS Bulletin, 32*(3), 19-29.
- Humphrey, J., & Schmitz, H. (2008). Inter-firm relationships in global value chains: trends in chain governance and their policy implications. *International Journal of Technological Learning, Innovation and Development, 1*(3), 258-282.
- ILO. (2013). Value chain development (VCD). Retrieved July 25, 2013, from <http://www.ilo.org/empent/areas/value-chain-development-vcd/lang--en/index.htm>
- Ingall, R. (2006, July 9). Focus on tea: Lack of fertilisers taking its toll, *Sunday Times*, p.II.
- Institute of Food Research. (n.d.). *The EU General Food Law and food hygiene legislation*. Retrieved August 7, 2013, from <http://www.foodallergens.info/Legal/General/General.html>
- Institute of Policy Studies. (2001). *Liberalising imports of foreign orthodox teas for value addition in Sri Lanka tea exports*. Colombo, Sri Lanka: Author.
- Institute of Social Development (2008). *SustainabiliTEA: Report on the Sri Lankan tea industry*. Retrieved from Somo website: http://somo.nl/publications-en/Publication_3095
- International Institute for Environment and Development. (2010). *In focus: PIP on private voluntary standards and emerging debates on food miles and carbon*. Retrieved from http://www.agrifoodstandards.net/es/articles/global/in_focus_pip_on_private_voluntary_standards_and_emerging_debates_on_food_miles_and_carbon.html

- Islam, M. S. (2008). From pond to plate: Towards a twin-driven commodity chain in Bangladesh shrip aquaculture. *Food Policy*, 33(3), 209-223.
- Island. (2006, September 1). Indo-Lanka trade deal to set standards on MRL in black tea. Retrieved from <http://www.island.lk/2006/01/09/business5.html>
- Island. (2007a, January 18). HACCP certification for tea to be subsidized. Retrieved from <http://www.island.lk/2007/01/18/business6.html>
- Island. (2007b, January 16). HACCP certification to be subsidised. Retrieved from <http://www.island.lk/2007/01/18/business6.html>
- Island. (2010, October 20). Regional plantation companies shower high productivity. p.5.
- Island. (2011, March 22). Tea: Unilever Sri Lanka aims to double business halve environmental impact. Retrieved from http://www.island.lk/index.php?page_cat=article-details&page=article-details&code_title=21297
- Island. (2012, March 14). Tea industry calls for higher productivity and market development: To ride out market uncertainties. Retrieved from http://www.island.lk/index.php?page_cat=article-details&page=article-details&code_title=47446
- ITC. (2011). *Impact of private standards on global value chains: Literature review series on the impacts of private standards* (MAR-11-198.E). Retrieved from <http://www.intracen.org/WorkArea/DownloadAsset.aspx?id=37609>
- Jaffee, S. (2003). *From challenge to opportunity: Transforming Kenya's fresh vegetable trade in the context of emerging food safety and other standards in Europe* (Agriculture & Rural Development Discussion Paper 2). Retrieved from World Bank website: http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2005/01/24/000112742_20050124135734/Rendered/PDF/310100revised0ARD1DP11KE.pdf
- Jaffee, S. (2005). *Delivering and taking the heat: Indian spices and evolving product and process standards* (Agriculture and Rural Development Discussion Paper). Retrieved from World Bank website: <http://siteresources.worldbank.org/INTRANETTRADE/Resources/Topics/Standards/IndiaSpices.pdf>
- Jaffee, S., & Henson, S. (2005). Agro-food exports from developing countries: The challenges posed by standards. In M. A. Aksoy & J. Beghin (Eds.), *Global agricultural trade and developing countries*. Washington D.C.: World Bank.
- Jaffee, S., & Masakure, O. (2005). Strategic use of private standards to enhance international competitiveness: Vegetable exports from Kenya and elsewhere. *Food Policy*, 30(3), 316-333.

- Kaplinsky, R. (2000). Globalisation and unequalisation: What can be learned from value chain analysis? *Journal of Development Studies*, 37(2), 117-146.
- Kaplinsky, R. (2010). *The role of standards in global value chains* (Policy Research Working Paper 5396). Retrieved from <http://elibrary.worldbank.org/deliver/5396.pdf;jsessionid=526obmc2ge7gd.z-wb-live-01?itemId=/content/workingpaper/10.1596/1813-9450-5396&mimeType=pdf>
- Kaplinsky, R., & Morris, M. (2001). A handbook for value chain research. Brighton, U.K.: Institute of Development Studies.
- Kaplinsky, R., & Terheggen, A. (2010). *What happens when the market shifts to China? The Gabon timber and Thai cassava value chains*. Washington, D.C.: World Bank.
- Karunanayake, S. (2005, September 25). New direction for the tea industry. *Financial Times*. Retrieved from <http://sundaytimes.lk/050925/ft/9.html>
- Kindleberger, C. P. (1983). Standards as public, collective and private goods. *Kyklos*, 36(3), 377-395.
- Kirindeniya, P. B. (2008, February 12). Manual workers a snag for tea smallholders/vegetable cultivators. *Daily News*, p.3.
- Kithsiri, K. (2008, June 16). Ceylon tea quality certificate for sustainable quality system. *Island Online*. Retrieved from <http://www.island.lk/2008/06/16/business2.html>
- Knoefal, J., Mascarenhas, M., & Hatanaka, M. (2005). Governance in the global agro-food system: Backlighting the role of transnational supermarket chains. *Agriculture and Human Values*, 22(29), 291-302.
- Ladduwahetty, R. (2012, May 15). Tea exporters defend imports for value addition. *Island*. Retrieved from http://www.island.lk/index.php?page_cat=article-details&page=article-details&code_title=51986
- Lanka Business Online. (2006, June 6). Safe cargo: Local tea industry draws up new standards on exports to Japan. Retrieved from <http://www.lankabusinessonline.com/fullstory.php?nid=304695787>
- Lanka Business Online. (2008, July 5). Sri Lanka tea exporters bemoan lack of funds for promotion. Retrieved from <http://www.lankabusinessonline.com/news/sri-lanka-tea-exporters-bemoan-lack-of-funds-for-promotion/2128762232>
- Lanka Business Online. (2010a, June 21). Leaf competition: Sri Lanka tea trade calls for limit on new factories. Retrieved from <http://www.lankabusinessonline.com/fullstory.php?nid=577363677>

- Lanka Business Online. (2010b, April 17). Sri Lanka launches new tea certification scheme. Retrieved from <http://www.lankabusinessonline.com/news/sri-lanka-launches-new-tea-certification-scheme/1892515281>
- Lanka Business Online. (2010c, June 21). Sri Lanka tea trade calls for limit on new factories. Retrieved from <http://www.lankabusinessonline.com/news/sri-lanka-tea-trade-calls-for-limit-on-new-factories/577363677>
- Lanka Business Online. (2011, December 6). Tea talk: Sri Lanka tea meet to seek common standard. Retrieved from <http://www.lankabusinessonline.com/news/sri-lanka-tea-meet-to-seek-common-standard/1774492253>
- Lanka Business Online. (2012a, August 16). Leaf market: Sri Lanka losing Arab market, tea exporter warns. Retrieved from <http://www.lankabusinessonline.com/fullstory.php?nid=1766580378>
- Lanka Business Online. (2012b). Sri Lanka tea exporters say they do not want low quality imports. Retrieved from <http://www.lankabusinessonline.com/news/sri-lanka-tea-exporters-say-they-do-not-want-low-quality-imports/1214580165>
- LankaNewspapers.com. (2006, March 6). Quality certification for tea. Retrieved from <http://www.lankanewspapers.com/news/2006/3/5879.html>
- Lee, J., Gereffi, G., & Beauvais, J. (2012). Global value chains and agrifood standards: Challenges and possibilities for smallholders in developing countries. *Proceedings of the National Academy of Sciences*, 109(31), 12326-12331.
- Loader, R., & Hobbs, J. E. (1999). Strategic responses to food safety legislation. *Food Policy*, 24(6), 685-706.
- Loconto, A. (2010a). *Sustainability: shaping sustainability in Tanzanian tea production*. (Unpublished PhD dissertation), Michigan State University, Michigan.
- Loconto, A. (2010b). Sustainability performed: Reconciling global value chain governance and performativity. *Journal of Rural Social Science*, 25(3), 193-225.
- Loconto, A. (2010c, October 27-30th). *Value chains and chains of values: tracing Tanzanian tea*. Paper presented at the 116th EAAE Seminar Spatial Dynamics in Agri-food system: Implications for Sustainability and Consumer Welfare, Parma, Italy.
- Maertens, M., & Swinnen, J. F. M. (2009). Trade, standards, and poverty: evidence from Senegal. *World Development*, 37(1), 161-178.
- Manikam, P. P. (1995). *Tea plantations in crisis: An overview*. Colombo, Sri Lanka: Social Scientists' Association.

- Martinez, M., & Poole, N. (2004). The development of private fresh produce safety standards: implications for developing Mediterranean exporting countries. *Food Policy*, 29(3), 229-255.
- Martinez, R., & Wijayapala, R. (2007, March 8). New regulations timely to protect the tea industry. *Daily News*, p.6.
- Mather, R. (2005, March). Dilmah - quality is an obsession. *Business Today*, 14-22.
- Mathews, K., Bernstein, J., & Buzby, J. (2003). International trade of meat/poultry products and food safety issues. In J. Buzby (Ed.), *International trade and food safety: Economic theory and case studies* (pp.48-75). Retrieved from www.ers.usda.gov/publications/aer828/
- Mathison, S. (1988). Why triangulate? *Educational Researcher*, 17(2), 13-17.
- Matthias, T. (2003, March 16). Ensuring the quality of Ceylon Tea. Retrieved from <http://www.sundaytimes.lk/030316/ft/feat1.html>
- McCluskey, J. J., & Winfree, J. (2009). Pre-empting public regulation with private food quality standards. *European Review of Agricultural Economics*, 36(4), 525-539.
- McCormick, D. (2001). Value chains and the business system: Applying a simplified model to Kenya's garment industry. *IDS Bulletin*, 32(3), 105-115.
- Melrose, S. (2010). Naturalistic generalization. In A. Mills, G. Durepos & E. Wiebe (Eds.), *Encyclopedia of case study research* (pp.600-602). Thousand Oaks, CA: SAGE doi: 10.4135/9781412957397.n224
- Merriam, S. B. (1988). *Case study research in education: A qualitative approach*. San Francisco, CA: Jossey-Bass Inc.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: SAGE.
- Miller, W. L., & Crabtree, B. F. (1999). Clinical research: A multimethod typology and qualitative roadmap. In B. F. Crabtree & W. L. Miller (Eds.), *Doing qualitative research* (2nd ed.). Thousand Oaks, CA: SAGE.
- Ministry of Plantation Industries. (2009). *Statistical information on plantation crops - 2008*. Colombo, Sri Lanka: State Printing Corporation.
- Ministry of Plantation Industries. (2010, September 7). Tea Smallholdings Development Authority - Programme to distribute a 50 kg mixed fertilizer bag for Rs. 1,000 for matruw tea lands of tea smallholders under Mahinda Chinthana fertilizer subsidy programme [Advertisement]. *Daily News*, p.IX.

- Ministry of Plantation Industries. (2012). *National plantation industry policy (NPIP) framework : Performance 2012*. Colombo, Sri Lanka: State Printing Corporation
- Ministry of Plantation Industries. (n.d.). *Tea Shakthi Fund*. Retrieved July 3, 2013, from www.plantationindustries.gov.lk/dwnlds/english/5%20-%20TSF_en.pdf
- Modder, W. W. D. (1999). Sociology for the tea industry: A Sri Lankan perspective. *Journal of National Institute of Management*, 15(1&2), 43-60.
- Modder, W. W. D. (2001, July/August). Success and trends in tea research. *Economic Review*, 13-16.
- Modder, W. W. D. (2003). Editorial foreward. In W. W. D. Modder (Ed.), *Twentieth century tea research in Sri Lanka* (pp.v-ix). Colombo, Sri Lanka Tea Research Institute.
- Mohamed, M. T. Z., & Zoysa, A. K. N. (2008). An overview of the tea industry in Sri Lanka. In A. K. N. Zoysa (Ed.), *Handbook on tea*. Talawakelle, Sri Lanka: Tea Research Institute of Sri Lanka.
- Mohamed, M.T.Z. (2007, August 30) *Market imposed requirements for export of tea and its implications on the tea industry in Sri Lanka*. Paper presented at Colombo International Tea Convention, Colombo, Sri Lanka.
- Morrell, S. (2006a, April 29). Tea industry in shock: Director TRI arrested?, *Island Financial Review*. Retrieved from <http://www.island.lk/2006/04/29/business2.html>
- Morrell, S. (2006b, February 28). TRI strapped for funds but continues to function. *Island*, p.7.
- Morrell, S. (2009a, October 26). Chairman Tea Board wallops producers: Tea on the brink of disaster. *Island*. Retrieved from <http://www.island.lk/2009/10/26/business1.html>
- Morrell, S. (2009b, August 3). Shocking revelations at TRI E&E Committee Meeting. *Island*, p.1.
- Morrell, S. (2009c, August 17). Sri Lanka left out in the cold: Rainforest Alliance and Ethical Tea Partnership announce collaboration. *Island*. Retrieved from <http://www.island.lk/2009/08/17/business2.html>
- Morrell, S. (2010a, March 25). Poor blend: Stones and grit packed with tea: Tea Board says producers are careless. *Island* p.l.
- Morrell, S. (2010b, September 4). Sri Lankan tea should regain its lost no. 1 slot as the world's best. *Sunday Island*. Retrieved from http://www.island.lk/index.php?page_cat=article-details&page=article-details&code_title=5984
- Morrell, S. (2012, February 28). Greed of tea smallholders, factories ruining Ceylon tea: Tea commissioner warned of 'war' in industry. *Island*. Retrieved from

http://www.island.lk/index.php?page_cat=article-details&page=article-details&code_title=46336

- Morrell, S. (2013, August 10). Tea industry in crisis: Rising debt threaten closure of factories, *Island*. Retrieved from http://www.island.lk/index.php?page_cat=article-details&page=article-details&code_title=85574
- Nadvi, K. (2004). The effect of global standards on local producers: a Pakistani case study. In H. Schmitz (Ed.), *Local enterprises in the global economy*. Cheltenham, U.K.: Edward Elgar.
- Nadvi, K. (2008). Global standards, global governance and the organization of global value chains. *Journal of Economic Geography*, 8(3), 323-343.
- Nadvi, K., & Waltring, F. (2004). Making sense of global standards. In H. Schmitz (Ed.), *Local enterprises in the global economy: Issues of governance and upgrading*. Cheltenham, U.K.: Edward Elgar.
- Neilson, J. (2008). Global private regulation and value-chain restructuring in Indonesian smallholder coffee systems. *World Development*, 36(9), 1607-1622.
- Neilson, J., & Pritchard, B. (2007). Green coffee? The contradictions of global sustainability initiatives from an Indian perspective. *Development Policy Review*, 25(3), 311-331.
- Neilson, J., & Pritchard, B. (2009). *Value chain struggles: Institutions and governance in the plantation districts of South India*. Oxford, U.K.: Wiley-Blackwell.
- Neilson, J., & Pritchard, B. (2010). Fairness and ethicality in their place: The regional dynamics of fair trade and ethical sourcing agendas in the plantation districts of South India. *Environment and Planning A*, 42(8), 1833-1851.
- Neilson, J., Pritchard, B., & Spriggs, J. (2006). Implementing quality and traceability initiatives among smallholder tea producers in southern India. *Acta Horticulturae*, 699(1), 327-334.
- News360.lk. (2010, June 1). Tea sector to face productivity drop. Retrieved July 4, 2013, from <http://www.news360.lk/economy/tea-sector-to-face-productivity-drop>
- Norton, G. W., Sanchez, G. E., & Clarke-Harris, D. (2003). *Case study: Reducing pesticide residues on horticultural crops* (Brief 10). Retrieved from International Food Policy Research Institute website: <http://www.ifpri.org/publication/food-safety-food-security-and-food-trade>
- OCED. (2007). *Private standard schemes and developing country access to global value chains: Challenges and opportunities emerging from four case studies*. (AGR/CA/APM(2006)20). Retrieved from [http://search.oecd.org/officialdocuments/displaydocumentpdf/?cote=agr/ca/apm\(2006\)20/final&doclanguage=en](http://search.oecd.org/officialdocuments/displaydocumentpdf/?cote=agr/ca/apm(2006)20/final&doclanguage=en)

- OECD. (2006). *Interaction of public and private standards in the food chain* (AGR/CA/APM(2006)21). Retrieved from www.oecd.org/tad/agricultural-trade/45013504.pdf
- Okello, J. (2011). Exit, voice and loyalty in Kenya's french bean industry: What lessons can we learn from smalholder farmer's past response to international food safety standards? *African Journal of Food Agriculture Nutrition and Development*, 11(1), 4460-4475.
- Otsuki, T., Sewadeh, M., & Wilson, J. S. (2000). *A race to the top? A case study of food safety standards and African exports* (Policy Research Working Paper 2563). Retrieved from World Bank website: http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2001/03/30/000094946_01032007445741/additional/121521323_20041118125908.pdf
- Oxfam. (2002). *The tea market: A background study*. Retrieved from http://www.globalcitizen.net/topic_1042_Tea/knowledge_papers_42688_The%20Tea%20Market%20%E2%80%93%20A%20Background%20Study/
- Patton, M. Q. (1991). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: SAGE.
- Pitigala, M. (2000). Plantations in Sri Lanka's economy. In B. Sivaram (Ed.), *Plantation management in the new millenium* (pp.22-50). Colombo, Sri Lanka: National Institute of Plantation Management.
- Plahe, J. K. (2008). *TRIPS and the political economy of the rice value chain: A focus on small producers in north-western India*. (Unpublished PhD dissertation), Monash University, Melbourne, Australia.
- Planters' Association of Ceylon. (2010). *Annual report 2009-2010 and minutes of the one hundred and fifty fifth annual general meeting*. Colombo, Sri Lanka.
- Planters' Association of Ceylon (2011). *About the Planters' Association of Ceylon*. Retrieved July 1, 2013, from <http://www.planterassociationofceylon.org/History.htm>
- Ponte, S. (2002). *Standards, trade and equity: Lessons from the speciality coffee industry*. (Working Paper Subseries on Globalisation and Economic Restructuring in Africa No. XXI). Copenhagen, Denmark: Centre for Development Research.
- Ponte, S. (2004). *Standards and sustainability in the coffee sector*. Retrieved from International Institute for Sustainable Development website: http://www.iisd.org/pdf/2004/sci_coffee_standards.pdf
- Ponte, S. (2007). *Governance in the value chain for South African wine* (tralac Working Paper No 9/2007). Retrieved from tralac website: <http://www.tralac.org/2008/05/21/governance-in-the-value-chain-for-south-african-wine/>

- Ponte, S. (2009). Governing through quality: Conventions and supply relations in the value chain for South African wine. *European Society of Rural Sociology*, 49(3), 236-257.
- Ponte, S., & Gibbon, P. (2005). Quality standards, conventions and the governance of global value chains. *Economy and Society*, 34(1), 1-31.
- Porter, M. E. (1985). *Competitive advantage: Creating and sustaining superior performance*. New York, NY: Free Press.
- Porter, M. E., & van der Linde, C. (1995). Towards a new conception of environment-competitiveness relationship. *Journal of Economic Perspectives*, 9(4), 97-118.
- QSR International. (2013). *NVIVO*. Retrieved July 8, 2013, from http://www.qsrinternational.com/products_nvivo.aspx
- Quadros, R. (2004). Global quality standards and technological upgrading in the Brazilian autocomponents industry. In H. Schmitz (Ed.), *Local enterprises in the global economy*. Cheltenham, U.K.: Edward Elgar.
- Rainforest Alliance. (2003). *About us*. Retrieved 25 July, 2013, from <http://www.rainforest-alliance.org/about>
- Ranasinghe, S. (1995, September). Land Reform in the 1970s, its impact and subsequent changes in the management. *Economic Review*, 10-12.
- Ranawaeera, S. (2007). Future of Sri Lankan tea is value addition. *Sunday Times* p.7.
- Ratnayake, J. (2009, August 2). Productivity of Sri Lanka's tea lands very low compared to competitors in global trade. *Sunday Island*. Retrieved from <http://www.island.lk/2009/08/02/news10.html>
- Raynolds, L. T. (2002). Consumer/producer links in fair trade coffee networks. *Sociologia Ruralis*, 42(4), 404-424.
- Raynolds, L. T. (2004). The globalization of organic agro-food networks. *World Development*, 32(5), 725-743.
- Raynolds, L. T. (2009). Mainstreaming fair trade coffee: From partnership to tracerbility. *World Development*, 37(6), 1083-1093.
- Razak, A. (2010, May 20). Import liberalization will not threaten Ceylon Tea – TEA. *Nation*. Retrieved from <http://www.nation.lk/edition/business/item/6213-import-liberalization-will-not-threaten-ceylon-tea-tea.html>
- Reardon, T., Codron, J.-M., Busch, L., Bingen, J., & Harris, C. (2001). Global change in agrifood grades and standards: Agribusiness strategic responses in developing countries. *International Food and Agribusiness Management Review*, 2(3/4), 421-435.

- Reardon, T., & Farina, E. (2002). The rise of private food quality and safety standards: Illustrations from Brazil. *International Food and Agribusiness Management Review*, 4(4), 413-421.
- Riisgaard, L. (2008). Global value chains, labour organization and private social standards: Lessons from East African cut flower industries. *World Development*, 37(2), 326-340.
- Roberts, D., & Unnevehr, L. (2005). Resolving trade disputes arising from trends in food safety regulation: The role of the multilateral governance framework. *World Trade Review* 4(3), 469-497.
- Salay, E. (2003). *Case study: Reducing mycotoxins in Brazilian crops* (Brief 15). Retrieved from International Food Policy Research Institute website: <http://www.ifpri.org/sites/default/files/publications/focus10.pdf>
- Samaraweera, D. (2008). Tea Board to spend Rs.30 million on new lab for MRL testing. *Sunday Times*. Retrieved from <http://www.sundaytimes.lk/080629/FinancialTimes/ft330.html>
- Schmitz, H., & Knorringa, P. (2000). Learning from global buyers. *Journal of Development Studies*, 37(2), 177-205.
- Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. New York, NY: Columbia University.
- Senadheera, A. (2007a, September 13). New laws to increase quality tea production. *Island - Financial*, p.4.
- Senadheera, A. (2007b, June 26). Programme to absorb new generation into tea industry, *Island*. P III.
- Senaweera, L. (2010, August 31). Product certification for black tea. Retrieved from <http://www.dailynews.lk/2001/pix/PrintPage.asp?REF=/2010/08/31/bus19.asp>
- SGS. (n.d.). *About SGS - SGS in brief*. Retrieved 14 July, 2013, from <http://www.sgs.com/en/Our-Company/About-SGS/SGS-in-Brief.aspx>
- Shanmugaratnam, N. (1997). *Privatisation of tea plantations. The challenge of reforming production relations in Sri Lanka: An institutional historical perspective*. Colombo, Sri Lanka: Social Scientists' Association.
- Sivaram, B. (2003). Remembering James Taylor. In W. W. D. Modder (Ed.), *Twentieth century research in Sri Lanka* (pp. 383-384). Colombo, Sri Lanka: Tea Research Institute.
- Sommerville, Q. (2009, January 22). Little comfort in milk scandal verdicts. BBC, Retrieved from <http://news.bbc.co.uk/2/hi/asia-pacific/7845545.stm>

- Sri Lanka Standards Institution. (2007, July 17). Nation conference on food safety management system/HACCP (Advertisement). *Daily News*, p.31.
- Sri Lanka Tea Board. (2007, March 8). Star rating system for tea. *Daily News*, p.24.
- Sri Lanka Tea Board. (2008a). *Sri Lanka Tea Board standards/guidelines for tea (Sri Lanka Tea Board Law No.14 of 1975)* (Circular No: AL/MQS/08). Colombo, Sri Lanka: Author.
- Sri Lanka Tea Board. (2008b). *Statistical bulletin*. Colombo, Sri Lanka: Author.
- Sri Lanka Tea Board. (2009). *Annual report 2009*. Colombo, Sri Lanka Author.
- Sri Lanka Tea Board. (2010). *Sri Lanka Tea Board standards/guidelines for Tea (Sri Lanka Tea Board Law No.14 of 1975)* (Circular No: AL/MQS-Rev/2010). Colombo, Sri Lanka.
- Sri Lanka Tea Board. (2011). Legal & statutory information. Retrieved July 2, 2013, from http://www.pureceylontea.com/index.php?option=com_content&view=article&id=141&Itemid=239&lang=en
- Sri Lanka Tea Board. (2012a, September 5). *Cultivation*. Retrieved August 18, 2013, from http://www.pureceylontea.com/index.php?option=com_content&view=article&id=120&Itemid=228&lang=en
- Sri Lanka Tea Board. (2012b, September 15). *The history of Ceylon Tea*. Retrieved January 29, 2013, from http://www.pureceylontea.com/index.php?option=com_content&view=article&id=110&Itemid=237&lang=en
- Sri Lanka Tea Board. (2012c, September 5). *Manufacturing*. Retrieved August 18, 2013, from http://www.pureceylontea.com/index.php?option=com_content&view=article&id=119&Itemid=251&lang=en
- Sri Lanka Tea Board. (2012d, September 5). *The Sri Lanka Tea Board*. Retrieved August 7, 2013, from http://www.pureceylontea.com/index.php?option=com_content&view=article&id=135&Itemid=246&lang=en
- Sri Lanka Tea Board, & Planters Association of Ceylon. (n.d.). *Ceylon Tea Museum* [Brochure]. Kandy, Sri Lanka.
- Sri Lankan Exporter. (2008, January 19). Tea industry past, present and future. *Island*. p.III.
- Stake, R. (1995). *The art of case study research*. Thousand Oaks, CA: SAGE.
- Stamm, A. (2004). *Value chains for development policy: Challenges for trade policy and the promotion of economic development*. Eschborn, Germany: GTZ.

- Stamm, A., Jost, C., Kreiss, C., Meier, K., Pfister, M., Schukat, P., & Speck, H. A. (2006). *Strengthening value chains in Sri Lanka's agribusiness: A way to reconcile competitiveness with socially inclusive growth* (Studies 15). Retrieved from Deutsches Institut für Entwicklungspolitik website: www.die-gdi.de/CMS-Homepage/openwebcms3.../Studies%2015.pdf
- Stenbacka, C. (2001). Qualitative research requires quality concepts of its own. *Management Decision*, 39(7), 551-555.
- Sturgeon, T. (2001). How do we define value chains and production networks? *IDS Bulletin*, 32(3), 9-18.
- Sturgeon, T. (2003). *Exploring the risks of value chain modularity: Electronic outsourcing during the industry cycle of 1992-2002* (IPC Working Paper Series). Industrial Performance Centre. M.A.: MIT.
- Sturgeon, T. (2008). From commodity chains to value chains: Interdisciplinary theory building in an age of globalization. In J. Bair (Ed.), *Frontiers of commodity chain research*. Stanford, CA: Stanford University Press.
- Sunday Leader. (2009, August 16). Tea: Trouble brewing. Retrieved from <http://www.thesundayleader.lk/archive/20090816/ralahami.htm>
- Sunday Leader. (2012, April 1). More than a storm in a tea cup. Retrieved from <http://www.thesundayleader.lk/2012/04/01/more-than-a-storm-in-a-teacup/>
- Sunday Observer. (2007). Lanka's tea industry gains competitive advantage. Retrieved from <http://www.sundayobserver.lk/2007/03/11/fin02.asp>
- Sunday Observer. (2012, March 18). Tea industry calls for higher productivity and market development. Retrieved from <http://www.sundayobserver.lk/2012/03/18/fin31.asp>
- Sunday Times. (2007a, September 23). Opportunity for Sri Lankan Brands. p.II.
- Sunday Times. (2007b, September 23). Tradition and ethics instead of price competition for Ceylon Tea. Retrieved from <http://www.sundaytimes.lk/070923/FinancialTimes/ft330.html>
- Sunday Times. (2009, November 18). Fair trade concept growing across the world. Retrieved from <http://www.sundaytimes.lk/091018/FinancialTimes/ft25.html>
- Sunday Times (2012, February 19). Lankan tea smallholders facing major crisis. Retrieved from <http://www.sundaytimes.lk/120219/BusinessTimes/bt16.html>
- Sunday Times Online. (2007, January 14). HACCP certification for tea to be subsidized. Retrieved from <http://www.sundaytimes.lk/070114/FinancialTimes/ft330.html>

- Tallontire, A., Opondo, M., Nelson, V., & Martin, A. (2011). Beyond the vertical? Using value chains and governance as framework to analyse private initiatives in agri-food chains. *Agriculture and Human Values*, 28(3), 427-441.
- Tea Research Institute. (2010a). *Advisory and extension*. Retrieved July 3, 2013, from <http://www.tri.lk/technology-dissemination/advisory-and-extension>
- Tea Research Institute. (2010b). *History*. Retrieved July 1, 2013, from <http://www.tri.lk/about-tri/history>
- Tea Research Institute. (2010c). *Major research areas*. Retrieved July 2, 2013, from <http://www.tri.lk/research-and-development/major-research-areas#>
- Tea Small Holdings Development Authority. (2010a). *Functions of the authority*. Retrieved July 3, 2013, from http://www.tshda.gov.lk/web/index.php?option=com_content&view=article&id=60&Itemid=61&lang=en
- Tea Small Holdings Development Authority. (2010b). *Overview: About us*. Retrieved January 31, 2013, from <http://www.tshda.gov.lk/web/index.php?lang=en>
- Tea Smallholdings Development Authority. (2009). *Annual report 2009*. Battaramulla, Sri Lanka: Author.
- Tharenou, P., Donahue, R., & Cooper, B. (2007). *Management research methods*. New York, NY: Cambridge University Press.
- Thenuwara, I. (2003, February 23). Making Ceylon Tea a global market force. *Sunday Observer*. Retrieved from <http://www.sundayobserver.lk/2003/02/23/bus17.html>
- Thomas, G. (2011). *How to do your case study*. London, U.K.: SAGE
- Thordarson, G. (2008). *Value chain of yellow-fin tuna in Sri Lanka*. (Unpublished MSc dissertation), Bifrost University, Bifröst, Iceland.
- TradeStandards.org. (n.d.). *Quality standards in the tea sector mitigate the negative impacts of oversupply*. Retrieved July 15, 2009, from www.tradestandards.org/en/Topic.15.aspx
- UNESCAP. (1999). *Institutional arrangements and mechanisms at sectoral level (ST/ESCAP/1946)*. Retrieved from <http://www.unescap.org/drpad/publication/integra/volume3/srilanka/3sr000ct.htm>
- UNESCAP. (2011). *Enabling environment for the successful integration of small and medium-sized enterprises in global value chains: Country studies on Bangladesh, Nepal and Sri Lanka (Studies in Trade and Investment 70)*. Retrieved from www.unescap.org/tid/publication/indpub2610.pdf

- UNIDO. (2009). *Value chain diagnostics for industrial development: Building blocks for a holistic and rapid analytical tool*. Retrieved from http://www.unido.org/fileadmin/user_media/Publications/Pub_free/Value_chain_diagnostics_for_industrial_development.pdf
- Unnevehr, L. (2000). Food safety issues and fresh food products from LDCs. *Agricultural Economics*, 23(3), 231-240.
- Unnevehr, L. (2003). *Food safety in food security and food trade: Overview* (Brief 1). Retrieved from International Food Policy Research Institute website: <http://www.ifpri.org/sites/default/files/publications/focus10.pdf>
- USAID. (n.d.). *Using the value chain development Wiki*. Retrieved September 3, 2013, from <http://microlinks.kdid.org/using-value-chain-development-wiki>
- van der Wal, S. (2008). *Sustainability issues in the tea sector: A comparative analysis of six leading producing countries*. Retrieved from SOMO website: http://somo.nl/publications-en/Publication_2548/at_download/fullfile
- van Reenen, M., Panhuysen, S., & Weiligmann, B. (2010). *Tea barometer 2010*. Leiden, Netherlands: Tropical Commodity Coalition for Sustainable Tea, Coffee, Cocoa.
- Vidanagamachchi, S. (1987, August/September). Development constraints in the Sri Lankan tea industry with special reference to the smallholder sector. *Economic Review*, 12-14.
- Walsh, F. (2013, February 13). Horsemeat - food fraud, not food safety. *BBC*. Retrieved from <http://www.bbc.co.uk/news/health-21482127>
- Weeraratne, C. S. (1987, August/September). Role of smallholders in plantation crops. *Economic Review*, 5-14.
- Wilson, J., & Abiola, V. (2003). *Standards and global trade: A voice for Africa*. Washington, D.C.: World Bank.
- Wimaladharma, S. (2003). Tea cultivation, the Tea Research Institute and its extension services: Progress from 1925 to 2000. In W. W. D. Modder (Ed.), *Twentieth century tea research in Sri Lanka*. Colombo, Sri Lanka: Tea Research Institute.
- World Bank. (2001). Standards, developing countries and the global trade system. In World Bank (Ed.), *Global economic prospects and the developing countries 2001*. Washington, D.C.: Author.
- World Bank. (2005). *Food safety and agricultural health standards: Challenges and opportunities for developing country exports* (Report No.31207). Retrieved from <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/TRADE/0,,contentMDK:20334931~menuPK:634021~pagePK:148956~piPK:216618~theSitePK:239071,00.html>

- WTO. (2005). *World trade report 2005: Trade, standards and the WTO*. Retrieved from http://www.wto.org/english/res_e/booksp_e/anrep_e/world_trade_report05_e.pdf
- WTO. (2013). *Understanding the WTO: The agreements*. Retrieved July 27, from http://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm4_e.htm
- Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Thousand Oaks, CA: SAGE.
- Yogaratnam, N. (2007, April 17). Tea industry's competitiveness in cost and quality need strengthening. *Daily News*. Retrieved from <http://www.dailynews.lk/2007/04/17/fin07.asp>
- Yogaratnam, N. (2009, August 9). Mitigating challenges of an uncertain future for tea. *The Nation*. Retrieved from <http://www.nation.lk/2009/08/09/busi3.htm>
- Yogaratnam, N. (2010a). Development in global tea trade. *Journal of the National Institute of Plantation Management*, 24(2), 59-66.
- Yogaratnam, N. (2010b, May 22). Economies of scale ineffective in Sri Lankan tea business. *Daily Mirror*. Retrieved from <http://print2.dailymirror.lk/business/127-local/11186-economies-of-scale-ineffective-in-sri-lankan-tea-business.html>