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Sustainable supply chain management: using the Sri Lankan tea industry as a pilot study

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Sustainable Supply Chain Management –

Using the Sri Lankan Tea Industry as a Pilot Study

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Abstract

Genuine sustainable supply chain management is now critical to achieve competitive advantage. Risk, uncertainty, strategy, innovation, relationship, infrastructure, regulation and technology are typically historically important areas that have a strong impact on sustainable SCM. These factors have been studied within manufacturing sector in developed countries; there is a lack of research on agri-supply chain in developing countries with respect to the concept of sustainable SCM. Therefore, this research tries to map the tea supply chain and identify the influencing factors and their performance on sustainable SCM in the tea supply chain in Sri Lanka. Importantly, early research suggests that mapping the tea supply chain represents a significant research gap not only in agri-supply chain but also supply networks in general.

Key words*: agri-supply chain, performance, supply chain management, sustainability, sustainable supply chain management, tea*

BACKGROUND

Agriculture based supply networks improve the social wellbeing and reduce poverty in many developing countries (Stamm, Jost, Kreiss, Meier, Pfister, Schukat &Speck 2006). Tea is an important agricultural product, and it plays an important economic role in many developing countries around world (Gesimba, Langat, Liu &Wolukau 2005; FAOSTAT 2010). Sri Lanka is one of the oldest tea producing countries in the world (Fernando 1998). Tea production in Sri Lanka is divided into two supply subsets; that produced by larger estates and produced by smallholdings. The tea industry plays an important role in the Sri Lankan economy where it provides about 15% of the direct employment opportunities, and being the second largest export product, it contributes around 4% of the national GDP (CBSL 2009). Sustainability of tea supply is vital for the Sri Lankan economy, however, it has been facing major issues such as increasing global competition and production cost that reduces tea export earnings and export share in the world market (CBSL 2009). Furthermore, there is a considerable difference in the performance between smallholders and estates as shown in Table 1 (Yogaratnam 2010).

Notably, early research has highlighted that the duality of supply network that provides a symbiotic channel of supply, where each network relies on the other for survival and sustainability, and any improvement initiatives focused only on one channel (to maintain sustainability) would have a detrimental effect on the other, that could cause supply failure overall. Whereas, there is typically a lack of research around agri-supply chain, significantly, there is a deficit of publications related to

sustainable development and supply chain management in the tea industry (Seuring & Müller 2008). Most of the research conducted in the tea industry in Sri Lanka has been focused on social issues (Herath 2002; Herath & Weersink 2003; Herath & Weersink 2006; Herath & Weersink 2007; Herath & Weersink 2009) such as labour (Wickramasinghe & Cameron 2005), health; soil degradation (Wickramasinghe n.d.); and, sales and marketing (Ganewatta, Waschik, Jayasuriya &Edwards 2005; Kasturiratne, Poole, Fritz, Rickert &Schiefer 2006; Kasturiratne 2008). However, these studies have not considered the holistic integration of sustainability concepts within the overall supply network.

As such, this research tries to map the tea supply chain, define sustainable supply and the influencing factors on sustainable tea supply in Sri Lanka. It will develop new concepts and will provide insight to managers in the tea industry to achieve long term sustainability. This study uses the tea industry not only because it is a major tradable agricultural product, but also because of the issues of duality of the supply networks and the gap in the research generally. The overall impact of the work is such that the government and operators will benefit as they can use the identified influencing factors to develop strategies and policies to make more profits and tangible benefits in the sector. Therefore, this paper focuses on sustainable issues and their impact on the performance of the agri-supply chain.

LITERATURE REVIEW

In this section a literature review is presented to identify the gaps between theory and practices in order to develop a theoretical framework for sustainable supply chain management for an agri-supply chain.

Supply Chain Management

Supply chain management can be defined as a combination of integrated planning, coordination and the control of all processes and activities along the supply chain to provide a value added service while reducing the total cost of all stakeholders in the supply chain (Van der Vorst, Beulens & Van Beek 2000). According to the supply chain management definition, it is a series of activities and business processes that share and transfer physical materials, information and cash across the chain (Håkansson & Persson 2004). It can be seen that supply chain management is basically a process-oriented

management approach where the focus is typically on sourcing, production and delivery of goods and services to the end customer (Harland 1996).

In a globalised business environment, supply chain management has become important due to the increase focus on overall revenue growth and performance, instead of merely trying to achieve individual cost reductions (Chandra & Kumar 2000). Many production and servicing firms around the world have identified that transferring cost to other supply chain partners in upstream or downstream nodal points does not increase competitive advantage of the focal firm (Harland 1996). Supply chain management concept typically moves towards redesigning the supply chain to maximise efficiency and effectiveness of materials and information flow (Alvarado & Kotzab 2001). Earlier, more focus has been placed on strategic alliances between partners in the supply chain (Cigolini, Cozzi & Perona 2004; Woods 2004). In the 1980s the basis for competition had been on flexibility in production, time and quality of goods with fewer inventories (Tan 2001). However, with increasing customer awareness, delivering defect free products, faster and on-time, became a necessity to achieve a threshold position and not necessarily a competitive advantage (Mentzer, DeWitt, Keebler, Min, Nix, Smith &Zacharia 2001; Kleindorfer, Singhal & Van Wassenhove 2005). During this period Efficient Consumer Response (ECR) and Customer Relationship Management (CRM) were an important focal point of supply chain management. ECR tries to improve the relationships between producers and distributors (Hill 2000). CRM tries to increase the relationship with the major customers while increasing the value offered to both customers and suppliers (Payne & Frow 2005). Managing the supply chain risk impose extra pressure with increasing the globalisation (Kleindorfer, Singhal & Van Wassenhove 2005). Kleindorfer et al. (2005) pointed out that the current trend has moved towards the sustainability of operations management. Figure 1 illustrates the evolution of value chain restructuring from 1980 – 2010.

Agri-Supply Chain Management

The supply chain management concept has been a major topic in the manufacturing sector to achieve competitive advantage in the globalised context for many years. In more recent times, agri-supply

chain management has gained more attention from academics and practitioners for many reasons, these include; increase in the dependency on the agriculture sector, structural changes, increased competition and customer awareness. The agriculture sector plays a vital role in many developed and developing countries economics. It has been a major income source especially for many Asian Countries where a larger portion of population depends mainly on the agricultural industry (Nee 2008). The agricultural industry is in the middle of major structural changes in areas such as product characteristics, worldwide production and geographically spread of consumption, new technology and size of operation. Controlling food quality and safety, uncertainty due to weather changes and sustainability of the sector are some of the other key issues observed in agri- supply chains (Salin 1998).

Traditionally, the agriculture sector has typically been focused on "growing and harvesting", however, these trends have changed recently. Agriculture is currently considered as a tradable product, the sector now focuses on a wider area consisting of activities such as obtaining farming inputs, value added activities, packaging and distribution etc., which normally occur after harvesting the crops (France 2009). The agri- supply chain can also be described as a value creation process. This also includes other activities such as research & development, logistics activities from farm to the consumer as shown in Figure 2 (Stamm et al. 2006; Ahumada & Villalobos 2009). Therefore, implementing supply chain management practices have essentially become an important element in the agricultural sector (Christien, Jo H.M. Wijnanda, Ruud B.M. Huirne &Olaf Van Kooten 2006). Additionally, supply chain management practices in this sector have gained more attention in society due to the increase of awareness in food quality, food safety (Salin 1998) and ethical issues (Blowfield 2003). Increasingly, following the manufacturing industries lead with forming more tightly aligned value chain or supply chains, there is a high amount of pressure on agri-food supply chains to now follow similar principles such as ccapturing efficiencies and controlling costs, reducing risk (quality, quantity, and safety) and responding to customer demands (Boehlje, Hofing & Schroeder 1999). Globalisation has further increased opportunities and threats as competition has increased between suppliers in the food industry worldwide (ViitahaRju 2008). Increased competition has compelled

producers to maximise their efficiency while improving customer service. As a result, managing the agri-supply chain has become overly complicated (Christien et al. 2006) and the application of better supply chain management strategies in agri-sector is now vital (Van der Vorst, Beulens & Van Beek 2000).

Furthermore, because agriculture is primarily a part of natural resources, it has a strong interconnection with sustainability concepts. The manmade activities in food production and consumption inherently have a greater impact on the environment and sustainability in general (Husti 2006). Therefore, to get a competitive advantage in the market, it is important to focus on supply chain management and its performance (Hill 2000). The performance should be improved in social, environmental and economic aspects. These issues are more critical in an agri- supply chain as products are mostly perishable and have a limited shelf life. Sustainability in agriculture is vital and doubtlessly farmers will obtain more profits and benefits over time by creating sustainable agricultural practices (Reganold, Papendick & Parr 1990).

Sustainability

The modern concept of sustainability or Triple-Bottom-Line concept have been prominent since 1987, when "Our Common Future" report was published by the World Commission on Environment and Development (Mebratu 1998). Sustainability is defined as a development that meets the needs of the current generation without compromising the meeting the demand for future generations (Brundtland 1987). The triple-bottom-lines: environment, economic and social equity has been identified as the major pillars in the sustainability (Vachon & Mao 2008). Sustainability can be achieved only when social, economic and environmental aspects move together to achieve long-term economic performance and benefits (Figure 3) (Carter & Rogers 2008; Styger, L. 2010).

Sustainable Supply Chain Management

Competitive strategy and supply chain strategy has a strong relationship with the sustainability. Depend on the external business environment, supply and demand characteristics, a company needs to define the corporate strategy and the competitive strategy. To achieve the expected competitive

advantage, it is necessary to define the supply chain strategy implemented and it will result in various supply chain operations (Cohen & Roussel 2005). These supply chain operations create more issues in social, environment and economic area with imposing extra pressure on companies to refine their strategies. Therefore, supply chain strategy serves as the bridge between corporate strategy and sustainability (Figure 4). Furthermore, the impact of sustainability goes beyond individual territory (Foran, Lenzen, Dey &Bilek 2005) and the scope of sustainability has expanded beyond the processes and corporate boundaries (Fiksel 2010). For sustainability to occur, consideration must extend beyond the firm's own operations and into the entire supply chain. Glavic and Lukman (2007) highlighted that terms such as minimising waste, pollution control and prevention, global warming, depleting natural resources and minimising the use of natural resources were some terms that were already in use which has conferred extra emphasis on sustainable development (Linton, Klassen & Jayaraman 2007). Carter and Rogers (2008) define sustainable supply chain management as:

> *The strategic, transparent integration and achievement of an organization's social, environmental and economic goals in the systematic coordination of key organizational business processes for improving the long-term economic performance of the individual and its supply chain.*

Typically, sustainable supply chain management is now considered to be the "best way" to improve efficiency in supply chain (Miller 2008). Hence, supply chain managers who were once more concerned with inventory reduction, ECR, CRM practices are now tending to look at more tangible benefits related to the economic, environmental and social aspects in supply chain management (McCue 2010). A firm that implements a sustainability concept not only considers it as a opportunity meet the social needs, but also as strong tool to achieve competitive advantage (Mahler 2007).

Drivers for Sustainable Supply Chain Management and Performance

Supply chain performance is defined as "the degree to which a supply chain meets end-user and stakeholder requirements concerning the relevant performance indicators at any point in time" (Christien et al. 2006). Miller (2008) highlighted that efficiency and environmental friendliness walk

together towards improvement. There are many factors that would have a direct impact on sustainable supply chain management. These factors are discussed below.

Uncertainty and risk

Risk has been an inherent feature of any supply chain. It can be defined as a "threat that faces any supply chain that disrupts the resource flow or events that stop things happening as scheduled" (Waters 2009). Risk can be external which are uncontrollable (such as natural disasters) or internal which are normally related to supply chain operations and often controllable by managers. Risk and uncertainty has become a common feature for all sectors, however, with globalisation, the complexity and the vulnerability to risk in supply chains has increased (Pai, Kallepalli, Caudill &Zhou 2003). Uncertainty in the agricultural sector an important, and extra pressure, is placed on the sector due to: climate change, capacity of farmers, lack of resources, volatile markets and policy changes (Ameseder, Canavari & Cantore 2009). Therefore, addressing the risks in an environmental, social and economic context is a major challenge within a sustainable supply chain management strategy.

Law & regulations

The environment represents the "public good" which is defined as shared benefits for all in the society. Research shows that many market systems easily ignore the public good. Hence government invention is essential to motivate corporations to minimize environmental and social damages from their operations (Bhat 2008). Compliance to law and regulations are now trending in favour of sustainability frameworks, however, environmental laws vary from country to country making the compliance to individual laws complex in a globalised economy (Nidumolu, Prahalad & Rangaswami 2009).

Innovation and knowledge

Innovation is about doing things differently and efficiently. It is the development and exploitation of a new ideas rather than just an inventing a new idea or concept (Tidd & Bessant 2009). Innovation does not need to be associated with sophisticated technology. It can vary from an incremental innovation to radical technological and design driven innovation (Verganti 2009). Innovation should deliver environmental benefits if implemented correctly (Bhat 2008). Nidumolu et al. (2009) emphasises that

innovation in technology, production processes and raw materials offer some opportunities to increase the sustainability of any business, however, innovation appears to be lacking in the grass roots of many supply networks (Styger 2010).

Integration

Efficiency concerns have shifted from individual elements to overall network efficiency (Ahumada & Villalobos 2009). Integration between channel members can be enhanced with the use of information technology and will result in improving the performance measures (Hill 2000). Therefore, integration also plays an important role in achieving the long term sustainability.

Strategy

Supply networks will mutually contain many cultures, values and norms, it is therefore, crucial to have well defined objectives and shared key performance indices to benchmark the performance (Christien et al. 2006). Overall supply chain performance may depend on the performance of individuals in the chain and the weakest link in the chain is the key player on the total chain performance (Lehrer 2003; Christien et al. 2006). Patrick (2007) highlight that sustainable strategies need to be considered, not only on designing and manufacturing of sustainable products, but also for managing business resources sustainably.

Typically, proactive companies consider sustainability as a concept that goes beyond complying to environmental laws or included just to be “green” (Darmanata, Somohano, Saad &Perera 2010). They highlighted that sustainable supply chain management helps to lever business values. However, there are many challenges that a company has to face when handling sustainable issues (Darmanata et al. 2010). It is necessary to establish potential methods to integrate environmental issues and legislation, their impacts and relevant costs under one umbrella when aligning with strategic objectives and goals of the company. Finding out how sustainability would enhance value, increase growth rate of business, promote product differentiation and creating new markets is also vital. Exploring how to align operations with strategy to achieve high return on investment by implementing sustainable initiations as well as finding out which resources and tools would be required to implement sustainable practices and how to measure and analyse the performance of sustainable initiatives are essential.

Relationship and collaboration

Sustainable performance of the supply chain will depend on the relationship between all partners in both downstream and upstream activities (Van der Vorst, Beulens & Van Beek 2000). According to research better organizational relationships between partners in the supply chain enhance the success of each firm. Moreover, many studies show that a new era has begun where competition is now not against firms but against supply chains (Cooper, Lambert & Pagh 1997; Lambert & Cooper 2000). Therefore, better relationships along the supply chain gives opportunities to each partner in the chain to grasp the synergy of integration and collaboration that in turn increases the overall performance and therefore sustainability of the organisation (Lambert & Cooper 2000).

Infrastructure & services

Infrastructure such as production facilities, warehousing, transport infrastructure (roads, airports, shipping ports, train tracks) has enabled organisations to gain access to scarce natural resources to improve product quality and service while increasing the performance along the supply chain (Finch 2008; Swink, Melnyk, Bixby &JHartley 2011). Furthermore, improving agri-supply chain increases the opportunities to develop basic infrastructure such as transport, electricity (Stamm et al. 2006).

Fair trade

Generally, a greater portion of profit on a product is shared by the later parts of the supply chain while primary producers only obtaining a very low return. This has become a major issue for many agricultural producers (Pérez-Grovas, Cervantes & Burstein 2001). The fair trade initiative is facilitating a philosophy of equitable return to primary producers and it would give participants an opportunity to use the return to improve their operations or activities to achieve long term sustainability (social, environmental and monetary).

Social responsibilities

Social responsibility not only focuses on how a company conduct its operations, but also on the final product that it provides. Focusing on operations alone is not adequate. It is essential to consider all stakeholders along the supply chain from the raw material supplier to the final consumer. This

includes employment conditions, basic human needs such as health and safety, preserving cultural values around the firm's operations, social benefits to improve the community needs and leaving the environment in good condition for current and future generations (Roland 2003).

Investment and accounting

In addition to facing ongoing challenges in operations, companies also have to face fiscal challenges. It is essential to have adequate money to maintain the liquidity of the business. In order to achieve corporate objectives by implementing better strategies, it is usually necessary to invest money in the business, as implementation of any strategy will initially add more cost to the business system (Styger, L.E.J. 2010). Barry (2006) shows that better financial supply chain solutions would provide more opportunities to manage receivables, and manage accurate financial forecasting while reducing the capital workings required to implement new sustainable strategies.

PROPOSED THEORETICAL FRAMEWORK

Based on the literature review described above, this study proposes a theoretical framework (Figure 4) to identify the influencing factors on sustainable supply chain management using the Sri Lankan Tea Industry as a pilot study. Based on the previous research that has been conducted within the manufacturing sector, a number of factors have been identified and are used as a guideline to carry out this study. Most of these factors have been identified for manufacturing supply chains operated in developed countries. However, the relevance of these factors must be challenged initially, because the operating and sustainable characteristics of agri- supply chains are different from manufacturing sectors and the influencing factors of developed countries maybe different from developing countries. This has created a need to undertake research on sustainability of agri- supply chain management to establish which factors are relevant in this case.

RESEARCH METHOD

Figure 5 illustrates the research design in order to attempt to answer four main questions. The first three questions aim to explore the influencing factors while the fourth question tries to find out the degree of influence of these factors and their performance in the sustainable tea supply. To answer the

"what" questions, it is necessary to explore the operations in the tea supply chain in depth. Literature shows that a qualitative research approach is more suitable for such situations (Patton 1990; Ellram 1996; Denzin & Lincoln 2000; Cavana, Delahaye & Sekaran 2001; Flick 2002; Neuman 2003). To answer the fourth research question, it is necessary to conduct a survey to measure performance and hence a quantitative research approach is required. Therefore, this study will use a mixed research approach including an explorative and explanatory phases. Group discussions and individual interviews are two major techniques used in qualitative research (Denzin & Lincoln 2000) that can be used in such situations. Interviewing a group of people rather than individuals is popular in social and business research (Veal 2005). Furthermore, the quality of the research depends on the reliability and the validity of the data collected (Neuman 2003; Maughan 2009). In order to reduce researcher's bias, a pretested interview guide and the questionnaires will be used. Additionally, validity is also important and it is about the truthfulness, it ensures whether the transformation is accurate (Stiles 1993). Therefore, various measures have been taken to increase the reliability and the validity as explained below.

The Sri Lankan tea industry is fragmented by nature and shows a duality nature in supply network. The operations considerably vary and they have different supply chain characteristics in both supply chains. Furthermore, there is a high institutional control in tea industry. Veal (2005) explained that a research method is reliable if the same research is done on the same sample but on a different date or with a different sample from the same population. The reliability also depends on the sample size and the representative of the whole population (Goldman 1962). Therefore, considering these factors, the research will be conducted in three phases. In the first phase, semi-structured interviews will be conducted with senior officers in the institutions related to the tea industry given in Figure 6. This phase aims to explore issues in the tea industry and supply chain from an institutional perspective. This phase would give a comprehensive insight of the dynamics of the industry before interviewing industry partners. At least two executives will be selected for interviews from each government institute (altogether around 20-30 officers) to increase the reliability of the data. In the second phase interviews and discussions will be conducted with two focus groups (large companies) to represent the

internal tea supply chain. Each group will consist of 10-15 participants. Furthermore, it is anticipated to have two focus groups to represent the external tea supply chains (including smallholders). All interviews and discussions will be recorded, as it would help to increase the reliability and the validity. After completing the data analysis and developing the supply chain models based on the data collected previously, they will be verified and refined in the third phase as validity can be improved with verifying the results with the participants and by getting their feedback. Furthermore, a survey will be conducted using a structured questionnaire to measure the performance of the identified factors. Furthermore, triangulation of research is another way to increase the validity (Stiles 1993; Anfara, Brown & Mangione 2002). Therefore, all interviews and discussions will be recorded; field visits will be arranged as it would provide an opportunity to cross check the information collected. Additionally, secondary resources will be used to cross check the validity of the data collected (Roberts, Priest & Trynor 2006).

CONCLUSIONS

The tea industry plays an important role in the Sri Lankan economy. However, it has been facing many challenges during last few decades. There is a lack of research in tea supply chains and sustainable supply chain management concepts in agri-supply chain and especially in tea supply chain even though they play an important role on increasing the performance. Therefore, this research tries to fill the knowledge gap and tries to find influencing factors for both internal and external tea supply chains to achieve long term sustainability in the tea industry, particularly focusing on Sri Lanka. It also tries to map the tea supply chain which is very important, because without identifying the supply network, it is impossible to implement any sustainable strategy to improve the sector. The research results will mainly contribute to the knowledge on sustainable supply chain management concepts in agri-supply chain. The new concepts developed will provide insight to both government and operators to increase the profitability and overall sustainability in the sector not only in Sri Lanka but also for other tea producing countries. The results can be also used as a guideline for other agri-supply chains in other countries around the world.

Table 1 : Indicators for Tea Industry by Sector

Indicator	Plantations	Smallholdings
Employment (No. of People)	700,000	350,000
Contribution to National Tea Income (%)	30	70
Land Consumption (% of total Lands)	60	40
Production (%)	39	55
Productivity-Yield (kg/ha)	1,275	2,450
Labour Productivity (persons/ha)	6.14	4.61

Source: (CBSL 2009; SLTB 2010; Yogaratnam 2010)

Figure 1: Value Chain Restructuring 1980 – 2010

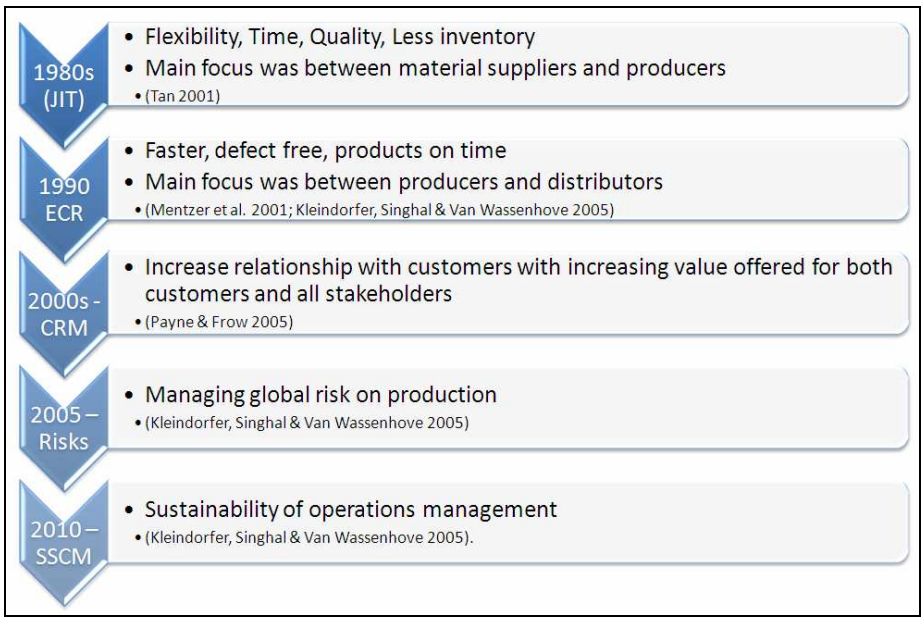
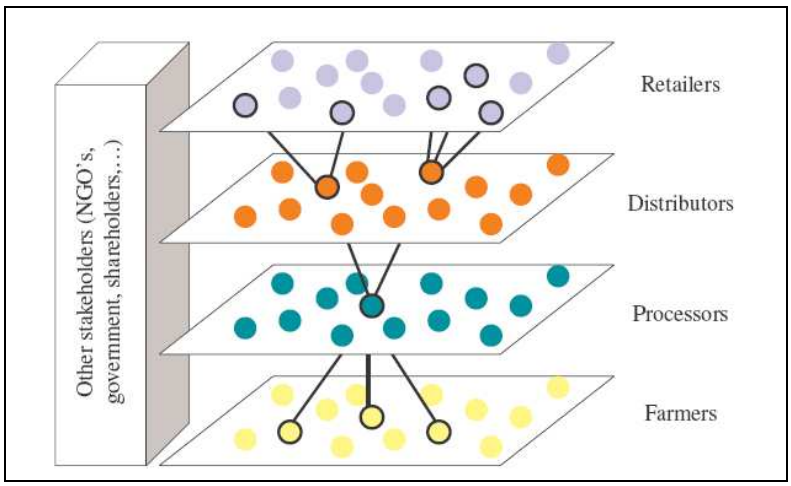
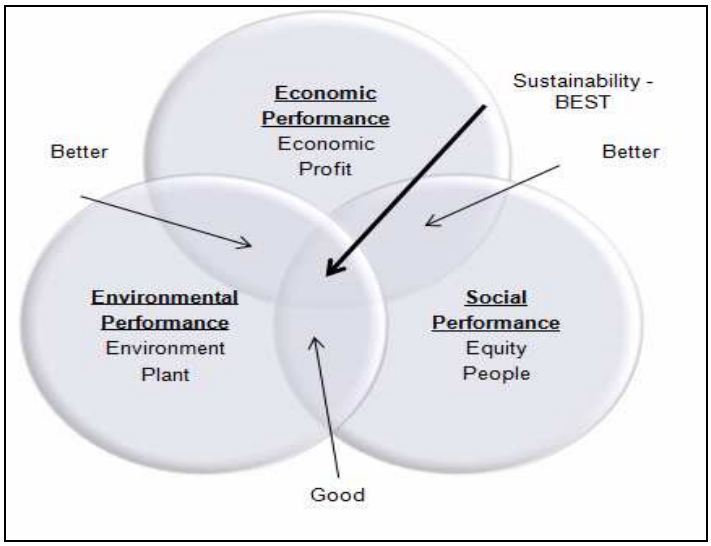


Figure 2: Schematic Diagram of Agri-food Supply Chain



(Van der Vorst, Beulens & Van Beek 2000)

Figure 3: Organizational Sustainability and the Triple Bottom Line



Adopted from (Carter & Rogers 2008)

Figure 4 : Sustainability, Corporate Strategy and Supply Chain Strategy

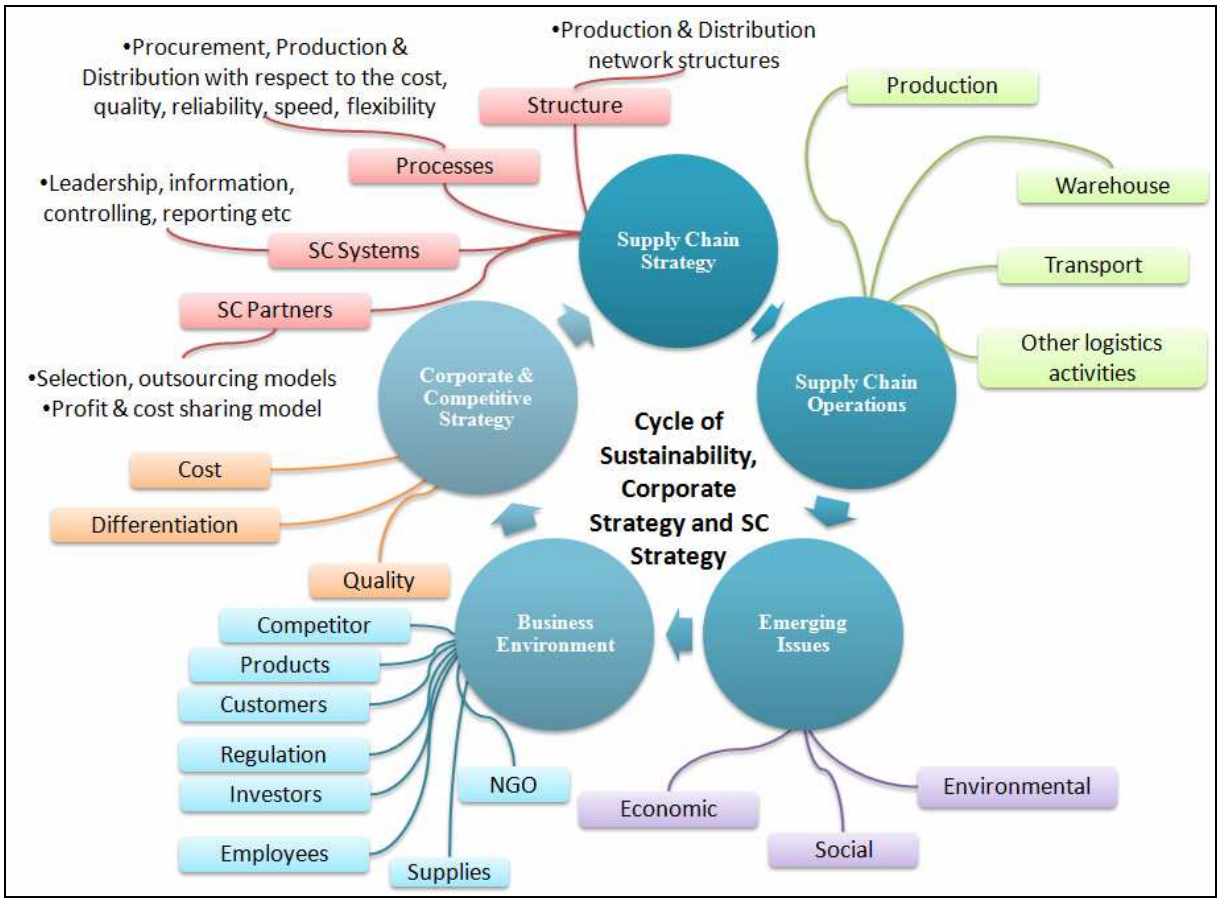


Figure 5 : Proposed Conceptual Framework for integrated Sustainable Supply Chain Management

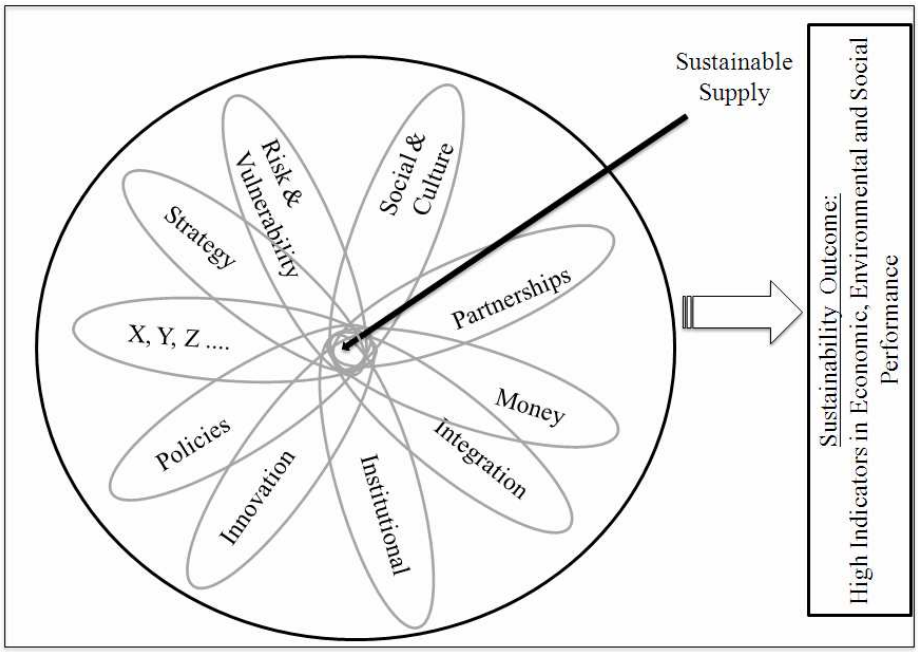


Figure 6 : Detailed Research Design

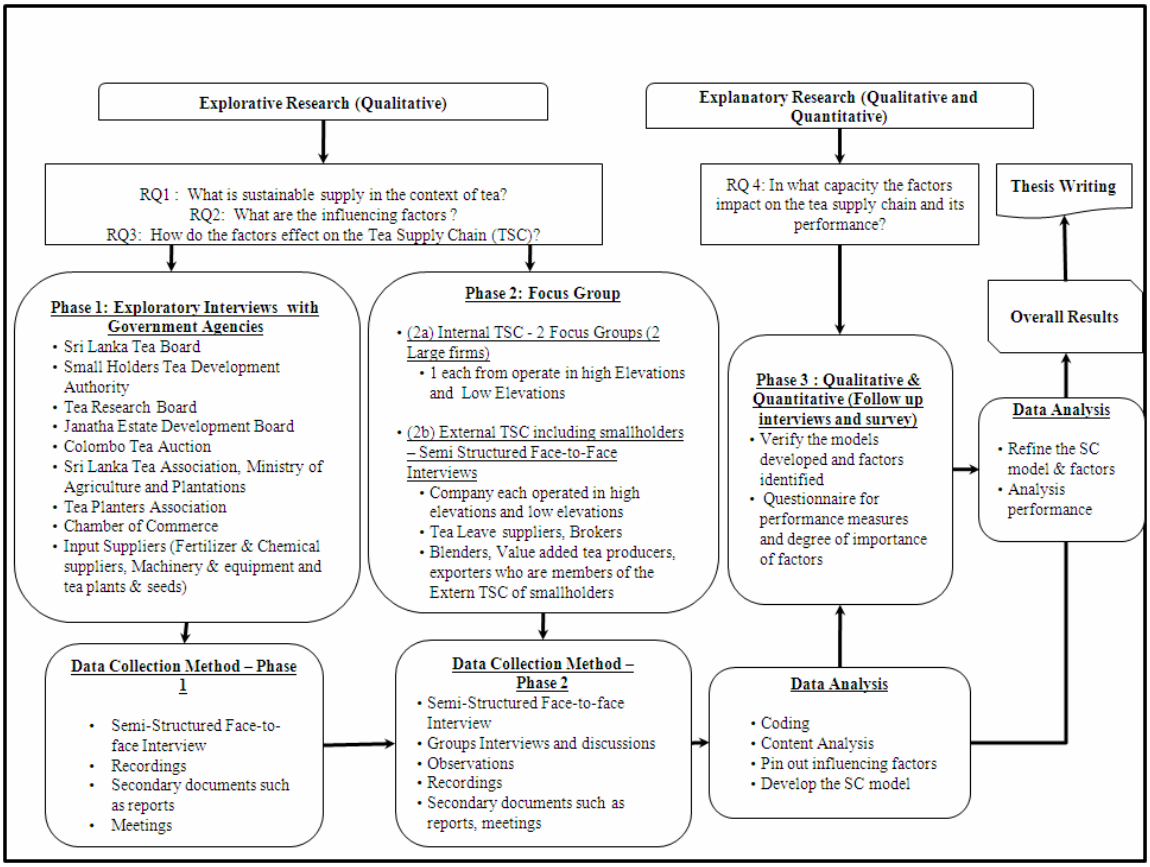
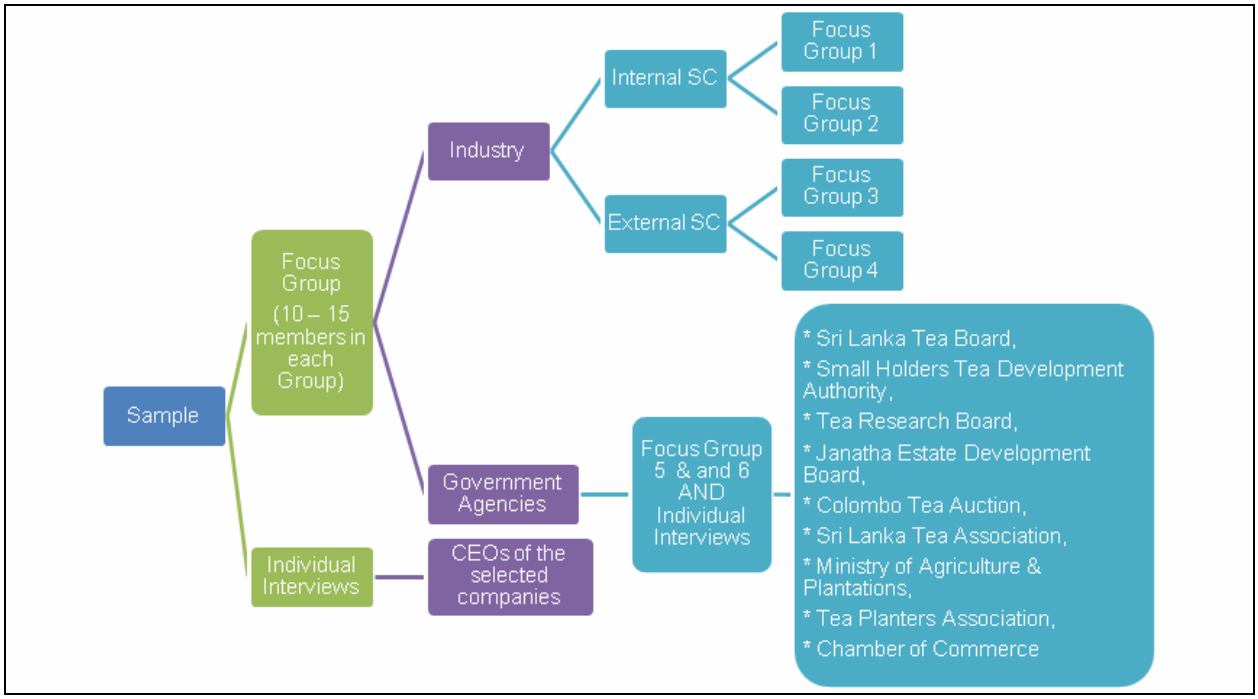


Figure 7 : Sampling Design



REFERENCES

Ahumada, O & Villalobos, JR 2009, 'Application of Planning Models in the Agri-Food Supply Chain: A Review', *European Journal of Operational Research*, vol. 196, no. 1, pp. 1-20.

Alvarado, UY & Kotzab, H 2001, 'Supply Chain Management:: The Integration of Logistics in Marketing', *Industrial Marketing Management*, vol. 30, no. 2, pp. 183-198.

Ameseder, C, Canavari, M & Cantore, N 2009, 'Perceived Risks in Cross-Border Transactions in Agri-Food Chains', European Association of Agricultural Economists.

Anfara, VA, Brown, KM & Mangione, TL 2002, 'Qualitative Analysis on Stage: Making the Research Process More Public', *Educational Researcher*, vol. 31, no. 7, pp. 28-38, http://edr.sagepub.com/content/31/7/28.abstract.

Barry, J 2006, 'The Financial Supply Chain', in JL Cavinato, AE Flynn & RG Kauffman (Eds.) *The Supply Management Handbook*, McGraw-Hill Professional.

Bhat, VN 2008, 'The Rise of Corporate Stakeholders', *EJournalUSA*, vol. 13, no. 3.

Blowfield, M 2003, 'Ethical Supply Chains in the Cocoa, Coffee and Tea Industries', *Greener Management International*, pp. 15-24.

Boehlje, MD, Hofing, SL & Schroeder, RC 1999, 'Value Chains in the Agricultural Industries', Department of Agricultural Economics, Purdue University.

Brundtland, G 1987, 'World Commission on Environment and Development', *Our common future*, pp. 8-9.

Carter, C & Rogers, D 2008, 'A Framework of Sustainable Supply Chain Management: Moving toward New Theory', *International Journal of Physical Distribution & Logistics Management*, vol. 38, no. 5, pp. 360-387.

Cavana, RY, Delahaye, BL & Sekaran, U 2001, *Applied Business Research: Qualitative and Quantitative Methods*, John Wiley & Sons Australia Ltd.

CBSL 2009, 'Annual Report - Central Bank Sri Lanka'.

Chandra, C & Kumar, S 2000, 'Supply Chain Management in Theory and Practice: A Passing Fad or a Fundamental Change?', *Industrial Management and Data Systems*, vol. 100, no. 3, pp. 100-113.

Christien, JMO, Jo H.M. Wijnanda, Ruud B.M. Huirne & Olaf Van Kooten (Eds.) 2006, *Quantifying the Agri-Food Supply Chain*, Spinger, The Netherlands.

Cigolini, R, Cozzi, M & Perona, M 2004, 'A New Framework for Supply Chain Management', *International Journal of Operations & Production Management*, vol. 24, no. 1, pp. 7-41.

Cohen, S & Roussel, J 2005, *Strategic Supply Chain Management: The Five Disciplines for Top Performance*, McGraw-Hill, New York.

Cooper, MC, Lambert, DM & Pagh, JD 1997, 'Supply Chain Management: More Than a New Name for Logistics', *The International Journal of Logistics Management*, vol. 8, no. 1, pp. 1-14.

Darmanata, J, Somohano, C, Saad, S & Perera, T 2010, 'A Sustainability Value System Principle for a Global Supply Chain', *Responsive Manufacturing - Green Manufacturing (ICRM 2010), 5th International Conference on*, 329-334.

Denzin, N & Lincoln, Y 2000, *The Handbook of Qualitative Research* SAGE Publications Inc, California.

Ellram, LM 1996, 'The Use of the Case Study Method in Logistics Research', *Journal of Business logistics*, vol. 17, no. 2, p. 93, http://proquest.umi.com/pqdweb?did=10382216&Fmt=7&clientId=20901&RQT=309&VName=PQD.

FAOSTAT 2010, *Faostat World Food Stratistics*, http://faostat.fao.org/site/342/default.aspx

Fernando, M 1998, *The Success Story of Ceylon Tea (January 1998)*, accessed 14 October, http://www.historyofceylontea.com/Tea_Feature/The_Success_Story_of_Ceylon_Tea.htm

Fiksel, J 2010, 'Evaluating Supply Chain Sustainability', *Chemical Engineering Progress*, vol. 106, no. 5, p. 28, http://proquest.umi.com/pqdweb?did=2037462491&Fmt=7&clientId=20901&RQT=309&VName=PQD.

Finch, BJ 2008, *Operations Now : Supply Chain Profitability and Performance*, McGraw Hills, New York.

Flick, U 2002, *An Introduction to Qualitative Research*, Sage Publications Ltd.

Foran, B, Lenzen, M, Dey, C & Bilek, M 2005, 'Integrating Sustainable Chain Management with Triple Bottom Line Accounting', *Ecological Economics*, vol. 52, no. 2, pp. 143-157, http://www.sciencedirect.com/science/article/B6VDY-4F4H9SX-6/2/f81d9b39146f32cecd45036343d9d711.

France, S 2009, 'Value Chain Linkages in Agribusiness Supply Chains in South Africa', University of Stellenbosch Business School.

Ganewatta, G, Waschik, R, Jayasuriya, S & Edwards, G 2005, 'Moving up the Processing Ladder in Primary Product Exports: Sri Lanka's" Value-Added" Tea Industry', *Agricultural Economics*, vol. 33, no. 3, pp. 341-350.

Gesimba, RM, Langat, MC, Liu, G & Wolukau, JN 2005, 'The Tea Industry in Kenya; the Challenges and Positive Developments', *Journal of Applied Sciences*, vol. 5, no. 2, pp. 334-336.

Glavic, P & Lukman, R 2007, 'Review of Sustainability Terms and Their Definitions', *Journal of Cleaner Production*, vol. 15, no. 18, pp. 1875-1885, http://www.sciencedirect.com/science/article/B6VFX-4N516X3-2/2/da292339022f7c8a3c1619353bce4a62.

Goldman, A 1962, 'The Group Depth Interview', *The Journal of Marketing*, vol. 26, no. 3, pp. 61-68.

Håkansson, H & Persson, G 2004, 'Supply Chain Management: The Logic of Supply Chains and Networks', *International Journal of Logistics Management*, vol. 15, no. 1, pp. 11-26.

Harland, C 1996, 'Supply Network Strategies the Case of Health Supplies', *European Journal of Purchasing & Supply Management*, vol. 2, no. 4, pp. 183-192, http://www.sciencedirect.com/science/article/B6VGR-3XNJN7T-5/2/d03dda4ecfa688137f8e818cf7b0065c.

Herath, D & Weersink, A 2003, 'Vertical Coordination Changes in the Sri Lankan Tea Industry: Transaction, Management, and Production Costs', American Agricultural Economics Association (New Name 2008: Agricultural and Applied Economics Association).

Herath, D & Weersink, A 2006, 'Structural Changes in the Sri Lankan Tea Industry: Family Farms Vs. Plantations', International Association of Agricultural Economists.

Herath, D & Weersink, A 2007, 'Peasants and Plantations in the Sri Lankan Tea Sector: Causes of the Change in Their Relative Viability*', *Australian Journal of Agricultural and Resource Economics*, vol. 51, no. 1, pp. 73-89.

Herath, D & Weersink, A 2009, 'From Plantations to Smallholder Production: The Role of Policy in the Reorganization of the Sri Lankan Tea Sector', *World Development*, vol. 37, no. 11, pp. 1759-1772, http://www.sciencedirect.com/science/article/B6VC6-4X8V59K-1/2/4f28c5a4c37bda472be71a36d84ec308.

Herath, DP 2002, 'An Economic Analysis of Structural Changes in Sri Lankan Tea Industry', National Library of Canada = Bibliothèque nationale du Canada, Ottawa.

Hill, CA 2000, 'Information Technology and Supply Chain Management: A Study of the Food Industry', *Hospital materiel management quarterly*, vol. 22, no. 1, p. 53.

Husti, I 2006, 'The Main Elements of Sustainable Food Chain Management', *Cereal Research Communications*, vol. 34, no. 1, pp. 793-796.

Kasturiratne, D 2008, 'An Overview of the Sri Lankan Tea Industry: An Exploratory Case Study', *The Marketing Review*, vol. 8, no. 4, pp. 367-381.

Kasturiratne, D, Poole, N, Fritz, M, Rickert, U & Schiefer, G 2006, 'Creating Value for Competitive Advantage in Supply Chain Relationships: The Case of the Sri Lankan Tea Industry', European Association of Agricultural Economists.

Kleindorfer, PR, Singhal, K & Van Wassenhove, LN 2005, 'Sustainable Operations Management', *Production and Operations Management*, vol. 14, no. 4, pp. 482-492, http://dx.doi.org/10.1111/j.1937-5956.2005.tb00235.x.

Lambert, DM & Cooper, MC 2000, 'Issues in Supply Chain Management', *Industrial marketing management*, vol. 29, no. 1, pp. 65-83.

Lehrer, M 2003, 'Is There a Weak Link in Your Supply Chain?', *Business Credit*, vol. 105, no. 7, p. 18, http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=10530588&site=ehost-live.

Linton, JD, Klassen, R & Jayaraman, V 2007, 'Sustainable Supply Chains: An Introduction', *Journal of Operations Management*, vol. 25, no. 6, pp. 1075-1082, http://www.sciencedirect.com/science/article/B6VB7-4MV758B-F/2/851f552b73da9172320f09f8858994f3.

Mahler, D 2007, 'The Sustainable Supply Chain', *Supply Chain Management Review*, vol. 11, no. 8, pp. 59-60.

Maughan, ED 2009, 'Validity and Reliability', *NASN School Nurse*, vol. 24, no. 3, pp. 119-120, http://nas.sagepub.com/content/24/3/119.short.

McCue, D 2010, 'Sustainability and the Triple Bottom Line', *World Trade, WT 100*, vol. 23, no. 10, p. 24, http://proquest.umi.com/pqdweb?did=2164458411&Fmt=7&clientId=20901&RQT=309&VName=PQD.

Mebratu, D 1998, 'Sustainability and Sustainable Development: Historical and Conceptual Review', *Environmental Impact Assessment Review*, vol. 18, no. 6, pp. 493-520, http://www.sciencedirect.com/science/article/B6V9G-3V5F819-3/2/9c08e4aa8c221d9f6b6cf835c00763b8.

Mentzer, J, DeWitt, W, Keebler, J, Min, S, Nix, N, Smith, C & Zacharia, Z 2001, 'Defining Supply Chain Management', *Journal of Business logistics*, vol. 22, no. 2, pp. 1-26.

Miller, A 2008, 'Sustainability', *Canadian Transportation Logistics*, vol. 111, no. 11, p. 42, http://proquest.umi.com/pqdweb?did=1623886041&Fmt=7&clientId=20901&RQT=309&VName=PQD.

Nee, AYH 2008, 'Supply Chain Model for Rice in Malaysia–Basics and Challenges', *ECER Regional Conference*, Malaysia.

Neuman, WL 2003, *Social Research Methods : Qualitative and Qunatitative Approaches*, Allyn and Bacon, Boston.

Nidumolu, R, Prahalad, C & Rangaswami, M 2009, 'Why Sustainability Is Now the Key Driver of Innovation', *Harvard business review*, vol. 87, no. 9, pp. 56-64.

Pai, R, Kallepalli, V, Caudill, R & Zhou, M 2003, 'Methods toward Supply Chain Risk Analysis', IEEE, 5**,** 4560-4565.

Patrick, MB 2007, 'Sustainability and the Supply Chain', *Logistics Management*, vol. 46, no. 11, p. 1.

Patton, M 1990, *Qualitative Evaluation Methods*, Sage Publications Beverly Hills, CA.

Payne, A & Frow, P 2005, 'A Strategic Framework for Customer Relationship Management', *Journal of Marketing*, vol. 69, no. 4, pp. 167-176.

Pérez-Grovas, V, Cervantes, E & Burstein, J 2001, 'Case Study of the Coffee Sector in Mexico', *Fort Collins: Fair Trade Research Group, Colorado State University. Manuscript*.

Reganold, J, Papendick, R & Parr, J 1990, 'Sustainable Agriculture', *Sci. Amer*, pp. 112-120.

Roberts, P, Priest, H & Trynor, M 2006, 'Reliability and Validity in Research', *Nursing Standard*, vol. 20, no. 44.

Roland, C 2003, 'Metrics for Supply Chain Sustainability', *Clean Technologies and Environmental Policy*, vol. 5, no. 3-4, p. 240, http://proquest.umi.com/pqdweb?did=706467581&Fmt=7&clientId=20901&RQT=309&VName=PQD.

Salin, V 1998, 'Information Technology in Agri-Food Supply Chains', *International Food and Agribusiness Management Review*, vol. 1, no. 3, pp. 329-334, http://ageconsearch.umn.edu/bitstream/34523/1/01030329.pdf.

Seuring, S & Müller, M 2008, 'From a Literature Review to a Conceptual Framework for Sustainable Supply Chain Management', *Journal of Cleaner Production*, vol. 16, no. 15, pp. 1699-1710, http://www.sciencedirect.com/science/article/B6VFX-4SRDF61-4/2/da60c1d52ee91eaf719ea17aaa5de3d9.

SLTB 2010,

Stamm, A, Jost, C, Kreiss, C, Meier, K, Pfister, M, Schukat, P & Speck, HA 2006, *Strengthening Value Chains in Sri Lanka's Agribusiness: A Way to Reconsile Competitiveness with Socially Inclusive Growth?*

Stiles, WB 1993, 'Quality Control in Qualitative Research', *Clinical Psychology Review*, vol. 13, no. 6, pp. 593-618, http://www.sciencedirect.com/science/article/B6VB8-46630N6-6/2/63b033e7558ca05e57d7f50827564a51.

Styger, L 2010, 'Sustainable Supply Chain Management : (How Healthy Is Your Supply Chain)', *MBA Master Class*, Sydney Business School.

Styger, LEJ 2010, 'Analyzing the Gap between Sustainability and the Supply of New Talented People within the Global Foundry Sector'.

Swink, M, Melnyk, S, Bixby, C & JHartley, J 2011, *Managing Operations : Across the Supply Chain*, McGraw-Hill Companies, Inc., New York.

Tan, KC 2001, 'A Framework of Supply Chain Management Literature', *European Journal of Purchasing & Supply Management*, vol. 7, no. 1, pp. 39-48, http://www.sciencedirect.com/science/article/B6VGR-4183HVK-4/2/9f6e65367b26671915e2decb1d421369.

Tidd, J & Bessant, JR 2009, *Managing Innovation: Integrating Technological, Market and Organizational Change*, Wiley, Hoboken, NJ.

Vachon, S & Mao, Z 2008, 'Linking Supply Chain Strength to Sustainable Development: A Country-Level Analysis', *Journal of Cleaner Production*, vol. 16, no. 15, pp. 1552-1560, http://www.sciencedirect.com/science/article/B6VFX-4SRDF61-3/2/39090ad48cf6ac7b4a36fddc66d56988.

Van der Vorst, J, Beulens, AJM & Van Beek, P 2000, 'Modelling and Simulating Multi-Echelon Food Systems', *European Journal of Operational Research*, vol. 122, no. 2, pp. 354-366.

Veal, A 2005, *Business Research Methods: A Managerial Approach*, Pearson Education Australia, Sydney.

Verganti, R 2009, *Design Driven Innovation: Changing the Rules of Competition by Radically Innovating What Things Mean*, Boston, Harvard Business Press.

ViitahaRju, L 2008, 'Prevailing Challenges in Rural Food Smes in Finland: The Promise of a Relationship Marketing Approach', *LTA*, vol. 4, no. 08, pp. 401-425.

Waters, CDJ 2009, *Supply Chain Management: An Introduction to Logistics*, Palgrave Macmillan, New York.

Wickramasinghe, D n.d., 'British Pounds, Indian Men and Ceylon Soil: A Historical Institutional Perspective on Control Structures of Colonial Tea Plantations in Sri Lanka'.

Wickramasinghe, D & Cameron, D 2005, 'British Capital, Ceylonese Land, Indian Labour: The Imperialism and Colonialism of Evolution of Tea Plantations in Sri Lanka', University of Waikato, Management School, New Zealand.

Woods, EJ 2004, 'Supply-Chain Management: Understanding the Concept and Its Implications in Developing Countries', ACIAR; 1998**,** 18-26.

Yogaratnam, N 2010, 'Economies of Scale Ineffective in Lankan Tea Business ', *Daily News Online*, 18 May 2010. URL: http://www.dailynews.lk/2010/05/18/bus30.asp