

CHAPTER ONE

INTRODUCTION

1.1 Chapter Overview

The aim of this chapter is to describe the purpose of this study and to provide the overview of the concept, objectives, importance and limitation of the study and various other features of the topic of the research carried out. This chapter will also present the structure of the of the thesis.

1.2 Background of the Study

Construction industry is a key player in the economy of any nation. The Sri Lankan construction industry is on an upward trend, due to the post conflict scenario in the country. The end of the island's ethnic war in 2009 has revived the economic activities and has resulted in an infrastructure building boom. Significant reconstruction activities have been undertaken in the North and the East of the country. The other regions of the country are also expected to see significant development activities. In 2010, Sri Lanka's Gross Domestic Product (GDP) growth was 8 % as compared to 3.5 % in 2009. In the coming decade, the Sri Lankan Government aims to sustain economic growth rate at over 8 %. The construction industry occupies an important position in the Sri Lankan economy as in any other developing economy (Observer, 26 Feb. 2012)

Nevertheless, there are major impacts on the society, economy and environment due to the construction activities irrespective to its nature and the scale of the development. As Holton, Glass and Price (2008) points out that not only does it have some of the biggest direct effects on water, resources, land use, and greenhouse gas emissions and indirect effects on the environment by affecting transport systems, but it also affects communities and even public health.

Facing daunting social and environmental challenges that come along with decades of rapid economic developments, many organizations in developed countries go beyond their essential economic functions and attempt to address social and environmental concerns through their Corporate Social Responsibility (CSR) and sustainable supply chain development activities Addis and Talbot (2001). In Sri Lanka, this is yet to be

popularised. We are either just starting to learn about these concepts, or are totally ignoring them.

To capture the types and effectiveness of Sri Lankan construction companies' initiatives in the area, this research summarizes the current status and understanding of CSR in construction and sustainable approaches. The literature review substantiates that implementing CSR activities in an appropriate way is the one of key steps to be taken in to consideration by construction professionals, developers, consultants, designers, contractors, government and non-government organizations for achieving sustainable construction.

1.3 Problem Statement

As any other businesses, the construction industry does not operate in a vacuum. It is located in a highly complex social, political, cultural and institutional context that bears a resemblance to a web like grid of societal interrelationships. Being a corporate citizen, it constantly transacts with various stakeholders. In the process of generating value to the society, knowingly or unknowingly it misuses or abuses tangible and intangible wealth of society. Thus, conventional economic wisdom of profit maximization is fast becoming unsuitable and in the emerging world corporate order is sustainable existence.

Socially undesirable ways of exploiting the resources of society is short term, as it would end up in the overall deterioration of the social fabric in which the construction firms operate. Therefore, socially irresponsible behavior of construction firms is certain to backfire and is certain to pose a threat to the existence of these firms. Therefore, it is essential that a construction organization must discharge its social responsibility with a view to ensure sustainable existence, which does not upset the ecological, social, cultural and political balances of a nation. It is in this context that the notion of CSR has emerged (Jenkins, 2005).

In Sri Lanka, CSR finds a place in the agenda of academic discussions at undergraduate and postgraduate levels and according to the study carried out by Khan and Beddewela (2008), it was found that CSR does not adequately addressed in day to day business operations in Sri Lanka. Whether the intellectual discussions on CSR have filtered down to socially responsible actions at every level of construction is yet to be addressed.

This is why it is important to assess the level of implementation of CSR initiatives in field of construction in Sri Lanka.

1.4 Significance of the Study

The construction process, right through from planning and design to use and demolition, has a major impact on society. The construction industry in general has a poor ethical reputation, being widely regarded by public as a sector with corrupt parties, health and safety failures, and environment – polluting activities. The relationship between construction and the environment is well recognized. Environment Sustainability (ES) is not well addressed in construction and at present it makes a number of repercussions in global arena (Kuhtz, 2007).

It ES, is a context driven concept and different societies tend to define it based on their own values, needs and expectations. The philosophy of ES is to leave the earth in as good or better shape for future generations than we found it for ourselves. According to the literature review on Sustainable Development and Sustainable Construction, human activity is only environmentally sustainable when it can be performed or maintained indefinitely without depleting natural resources or degrading the natural environment (Pitt et al. 2009).

In the current era of globalization, Corporate Social Responsibility has become the primary prescription for business and governments in dealing with social ills (O'Dwyer, 2003). CSR is an increasingly important construct in academia, as well as a pressing item on the practical corporate agenda. CSR has become a major point of interest for development practitioners (Jenkins, 2005). Many scholars have contended that CSR can be a viable promotional strategy that leads to broader company benefits beyond immediate purchase behaviors. CSR is seen as a potential source of competitive advantage. Socially responsible business behavior is an effective and necessary strategy to ensure survival in a chaotic, competitive and ever-changing environment.

Given the impact of construction activity on society, the economy and the environment, and the significance of the construction industry as an employer and provider of work, the construction industry has more reasons to focus on sustainability than most others.

After ending the 30 years ethnic conflict, Sri Lanka is now on a fast developing track, with the construction sector itself is booming than ever before: New Expressways,

Highways, Rails, Ports, Power Plants Water and Irrigation systems are only few sections to name. These have got the momentum of the fast development. But sustainability in construction is yet to be addressed.

The concept, CSR was identified for it's significant benefits to the sustainability of both business and society based on the developed countries viewpoint. Also, prior researches have disclosed that the social and environmental related activities are affected by the growth and the survival of the firms. Therefore, this study attempts to identify the benefits achieved and discussed by the developed world through CSR actions, and then to study how they could be incorporated in Sri Lankan construction Industry for its sustainability.

1.5 Research Aim and Objectives

The primary aim of this dissertation it's to demonstrate the importance of CSR in the Sri Lankan construction industry through its implementation as a core business strategy.

The objectives are;

- ❖ to find out the critical obstacles faced by the construction industry in adopting CSR into the business strategies
- ❖ to identify the level of implementation of CSR in Sri Lankan construction industry

1.6 Research Methodology

The research method and the design adopted are summarized as follows;

Literature Review

The significant and relevant literature (books, journals, reports, websites and proceedings) on the subject were comprehensively reviewed in order to;

- ❖ describe the sustainability in construction.
- ❖ describe the concept of CSR.
- ❖ explain importance of CSR activities to the organization and the society.
- ❖ elaborate the CSR in sustainable construction in developed countries.
- ❖ describe the CSR practice in Sri Lanka.

Data Collection

As a quantitative research tool, a field survey was carried out using a series of structured questions derived from the literature survey and distributed among the construction companies registered under Institute of Construction Training and Development (ICTAD).

Data Analysis

Quantitative research method was adopted to scrutinize the data derived at different stages of the study. Statistical analyze was used to examine the summary questionnaire.

1.7 Research Limitation

In this postgraduate dissertation there are some limitations which subsequently hindered the research undertaken. The main problem was the limitation of time exclusively set for this research, meaning survey responses and reviewing of the literature was restricted and resulted in less responses and time dedicated to researching. In this study the sample is limited to ICTAD Grade C1, C2, C3 and C4 contractors who represent the Major Contractor category in NCASL. Other limitations are unwillingness of respondents to provide much needed data and lack of data related to CSR activities in construction companies. The posted questionnaire is not fully returned and this has restricted the analysis of the findings. Lastly, reliability of data is limited based on the capacity of the respondent in the organization.

1.8 Dissertation Structure

The Dissertation comprises the following chapters.

Chapter 1- Introduction

This chapter introduces the reader to the theme of the study and background information about the importance of CSR initiatives in construction industry. Further, it elaborates on the aim of the study and how the set objectives for the research will be attained.

Chapter 2: Literature Review

This chapter emphasizes the identification of CSR, importance of CSR, implementing CSR and benefits to the organizations as well as to the society, environment how CSR is elaborated in Sustainable construction.

Chapter 3- Research Methodology

This chapter aims to justify the research methodology selected and to describe how the data was collected and the way it was analyzed.

Chapter 4- Research Results and Analysis

In this chapter the research results are presented and interpreted using the analysis methods selected and by comparing the results with the literature review and similar previous works.

Chapter 5- Recommendations & Conclusions

Resulting from the investigation stages the conclusions and recommendations chapter outlines the overall findings of the dissertation based on the aim and objectives previously set out by the author. The recommendations for further research and actions are given based on the conclusions drawn from the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Chapter Overview

This chapter mainly focuses on the overview of impact of construction industry on environment, social and economic, sustainable development through sustainable construction. The latter part of this chapter illustrates the global concept of CSR and how it has been fostered and developed over the centuries to become an international phenomenon adopted by businesses not only as an important ethical practice, but also to achieve economical intentions.

2.2 Construction Industry

The construction industry is a broad collection of industries and sectors which add value in the creation and maintenance of fixed assets within the built environment. It produces a wide range of products, from individual houses to major infrastructure such as roads, power plants and petrochemical complexes. In most countries output is roughly equally divided between housing, other buildings and civil engineering projects. Although attention is mostly focused on new construction, the renovation and maintenance of existing structures accounts for almost 50% of total construction output in some of the more developed economies and an even greater share of employment (Behm, 2008).

Engineering and construction companies are changing to meet the growing demands of infrastructure, with the traditional general engineering providers and contractors giving way to larger, more diversified businesses with specialized skills. Winning new contracts is increasingly about having the right expertise, so the battle for skilled resources is likely to intensify even further, with a possible rise in acquisitions to buy that expertise. New infrastructure projects are likely to be on a huge scale, particularly in emerging markets such as India, China and Brazil, so size and global reach will also matter (Dlamini, 2012).

The industry forecast shows that the most vibrant development for construction will come from emerging markets like China, India, South and Central America, Middle East, Africa, Asia Pacific and parts of East Europe. On the other hand, the developed countries will only grow from 4.2 trillion dollar market to a 5.7 trillion market. As an

outcome of this conflicting development, up-and-coming markets will make up more than half of the global construction market by the end of the next decade. India and China are expected to show the highest growth in construction over the next decade and China is expected to lead the world construction industry by 2020. Because of the existing constraints on public capital, India is looking for increases in private financial support in the provision of much of the new infrastructure required. Japan is likely to spend a significant amount in construction expenses by 2015 as the tsunami and earthquake rebuilding efforts take place. Saudi Arabia, the largest construction market in the Middle East, is estimated to grow vigorously because of rising oil prices across the world (Ofori, 2000).

Construction Industry is one of the biggest industries in the whole world. The contribution of this industry towards the global Gross Domestic Product (GDP) revolves around one-tenth of the total amount (Observer, 26 Feb. 2012). It is also a potential employment generator and provides work to almost 7% of the total employed person in the whole world. The extent of this industry has become so vast that the energy, in the form of electricity or fuel, consumed by it hovers around two-fifth of the total energy consumed all over the globe. The resources that are utilized in World Construction Industry is also staggeringly high and itself consumes fifty percent of the total world resources (Economywatch.com, 2013).

In Sri Lanka Construction is the second largest development sector (Observer, 26 Feb. 2012). We are a country which involve in a significant development in construction industry via different forms at the present time. According to Chitkara (2009) construction activities are representing 6-9% of the GDP in most of the countries. A recent document published by Central Bank of Sri Lanka (2013) has confirmed that Sri Lankan construction Industry is also performing within the particular range of similar to other countries, by having 8.7% share of the GDP during 2013 (Central Bank, 2013)

Moreover, the speed of growth in Sri Lankan construction industry has been provoked by the accretion of private sector and foreign investors' involvement in construction industry for residential, hotel and commercial building construction projects, etc. As stated by Pathirage (2008) establishment of a separate Ministry for construction industry in 2007 was a milestone in Sri Lankan construction sector.

2.3 Significance of Construction in the Sri Lankan Economy

The relationship between construction and the national economy has been studied by researchers in the past (Rameezdeen and Ramachandra, 2008). They found that the construction industry has always been closely related to the national economy. Sri Lanka continues to experience strong economic growth following the end of the 30-year conflict. The government has been pursuing large-scale reconstruction and development projects supplemented with private investment in its efforts to spur growth in war-torn and disadvantaged areas, develop Small and Medium Enterprises (SME) and increase agricultural productivity.

Value added in the construction sub sector grew by 21.1% during the first half of 2014 as compared to 18% recorded during the corresponding period of 2013, continuing the positive growth momentum experienced within the sector. The growth momentum in the construction sector is predominantly driven by the public sector which was supported by the private sector construction activities. Public sector investments in transport sector development projects such as highways and expressway development contributed in sustaining the growth momentum observed within this sector (Central Bank, 2013).

Sustaining the high growth momentum recorded during the past year, the construction sub sector recorded an impressive growth of 39.3% by the end of 2012 and 25.6% in 2013. This is the highest growth registered by the sub sector in the past ten years. The sub sector contributed to 10.4% of the overall GDP and 42.6% of the change in GDP growth from 2011 to 2014 becoming the growth driving sub sector in the Industry sector. Compared to the share of 6.6% and contribution to the change of 10.3% in 2009, indicates the improved performance of this sector after the ending of the war. The growth in the sub sector is reflected through the increase in imports of investment goods and building materials by 21.7% and 13.5% in volume terms in 2012. Furthermore, loans and advances by the commercial banks to the private sector for construction activities grew by 22.9% in 2013, compared to 14.5% in 2011. As per the price index compiled by the ICTAD, the cost of construction activities had increased by 12.2% during the year compared to the increase of 5.4% in 2011 (Central Bank, 2013).

The Table 2.1 shows the Gross National Product by Construction at current prices of Major Economic Activities (Rs. Million)

Table 2. 1: Gross National Production of Major Economic Activities

Year	2008	2009	2010	2011	2012	2013	2014 (Q3)
Construction	328,137	366,248	423,414	511,220	712,272	894,683	728,863
Total GDP	4,410.682	4,835,293	5,604,104	6,544,009	7,578,554	8,673,870	6,991,907

Source: Central Bank Annual Report 2014

Table 2.2 shows the annual growth rate which shows sustain momentum achieved by the growth from year 2002 to 2013.

Table 2. 2: Annual Economic Growth in Sri Lanka

Year	Growth Rate %
2002	2.4
2003	5.5
2004	6.6
2005	8.9
2006	9.2
2007	9
2008	7.8
2009	5.6
2010	8.5
2011	7.1
2012	8.1
2013	8.7

Source: Central Bank Annual Report 2013

According to the Figure 2.1 and 2.2 shows the annual GDP growth rate of the Sri Lankan compared that with European Union and US. It implies that the growth rate of our GDP is consistent and well above, with a percentage of 8.7%. Figure 2.3 shows the projected GDP growth is for the coming five years.



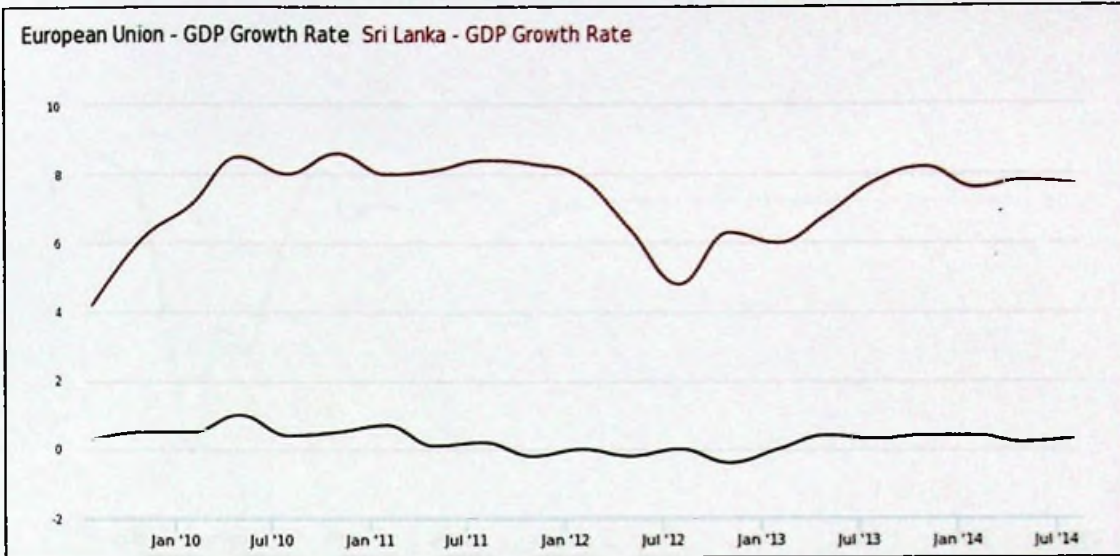


Figure 2. 1:European and Sri Lankan GDP Growth
 Source: IECONOMICS E-Magazine

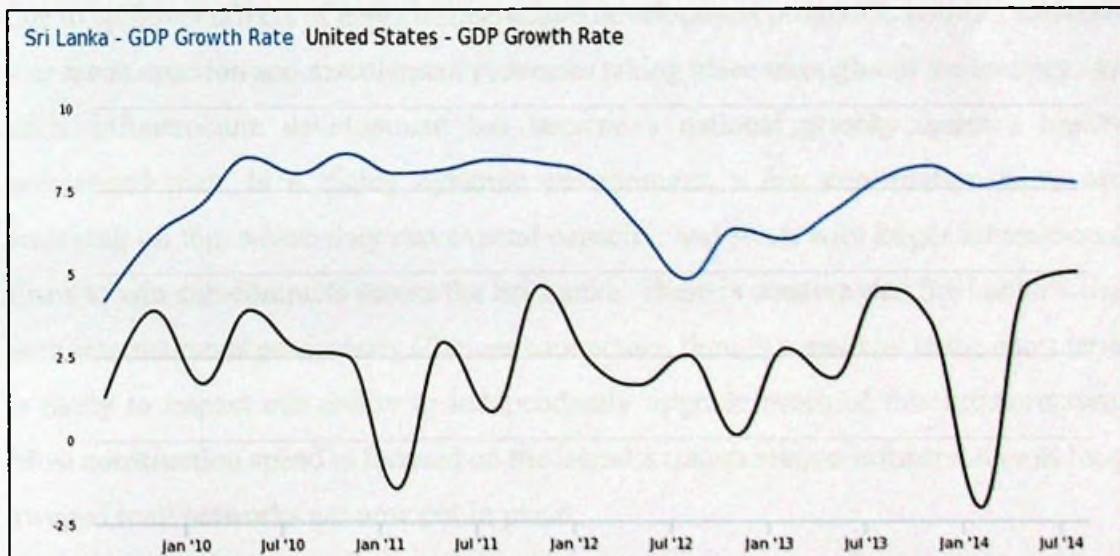


Figure 2. 2: US and Sri Lankan GDP Growth
 Source: IECONOMICS E-Magazine

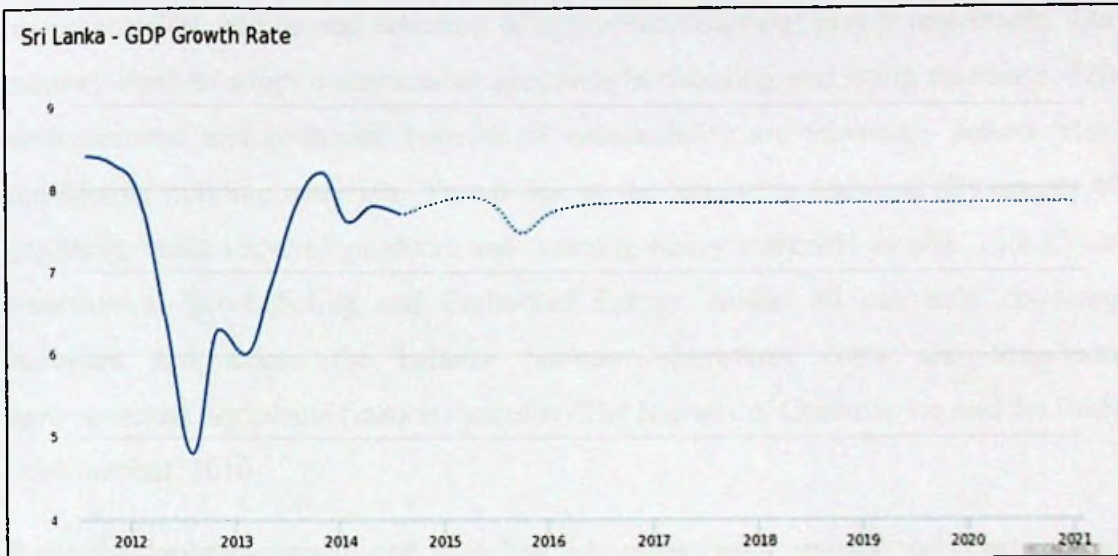


Figure 2. 3: Sri Lankan GDP Growth Forecast
 Source: IECONOMICS E-Magazine

The Growth in the construction industry has been second only to the tourism sector, due to spillover effects of mega infrastructure development programs, housing and post war reconstruction and resettlement processes taking place through-out the country. As such, infrastructure development has become a national priority under a highly accelerated plan. In a highly dynamic environment, a few construction firms are emerging on top, where they can expand capacity, and work with larger international firms to win sub-contracts across the Sri Lanka. There is concern that Sri Lanka's ties with internationals particularly Chinese contractors, though beneficial in the short term is likely to impact our ability to independently upgrade much of this infrastructure. Most construction spend is focused on the island's transportation infrastructure as long awaited road networks are now put in place.

2.4 Construction Impacts

The major impacts of construction are excessive energy use, global warming and climate change. Energy is consumed when extracting raw materials, producing materials (manufacturing process), transporting materials, transporting workforce, building structures, using and powering structures, maintaining structures and demolishing. In addition, energy is also required for the operation of any structures (Ahmed, 2012).

In construction, choice and selection of appropriate material play a major role. The industry need to adopt a sustainable approach in choosing and using materials. The environmental and economic benefits of sustainability are inherently linked when considering building materials. This is due to the long-term financial advantages of recycling, using recycled products and sourcing heavy materials locally. Life-Cycle Assessment, Eco-Labeling and Embodied Energy Audits all can help choosing materials and assess the balance between short-term costs and long-term environmental, social and financial benefits (The Impacts of Construction and the Built Environment, 2010).

Resource depletion, waste and recycling are other major impacts of construction. Material extraction of the primary resources cause major environmental impacts through loss of habitat and ecosystem, damage to the landscape, potential subsidence problems, release of methane, transportation of material, Construction and Demolition wastes and its disposal or processing/recycling of waste. The other major impact is due to pollution generation and presence of hazardous substances in the natural and built environment. Pollution arising from the built environment includes sewage, waste etc., pollution caused during the manufacture of materials and products, pollution and hazards from the handling and use of materials and actual construction and site related activities. Considerable pressure can be placed on the local road network and neighboring uses by quarrying operations (Hill and Bowen, 1997).

The construction industry is often considered as a key sector for achieving sustainable development goals. In carrying out its activities the construction industry generates significant impacts on the natural environment, human society, as well as, the economy of a nation (Faniran and Caban, 1998).

2.5 Economic Impact

The construction industry encompasses a variety of activities and is a vital sector in any economy. Construction is strongly linked to most of the other economic activities of a country (Rameezdeen and Ramachandra, 2008). It is considered to be an important partner in economic growth and to mirror the stage of economic development. There is, however, high variability in the relationships between construction and national economies. Han and Ofori (2001) suggest that mature economies have larger construction industries that contribute 5%–8% to-the GDP, whereas the construction

industries in developing countries contribute only 3%–5%. Lopes (1998) have found that less developed countries require only minimum levels of construction output for long term and sustainable growth. In contrast, Low (1994) suggests that in most developing countries, the capital formation in construction accounts for 7%–13% of the GDP, whereas that in most industrialised countries accounts for 10%–16% of the GDP.

Clarkson (1995) points out, the construction sector has not only a significant role in the EU economy. The construction impacts are the totals aggregated over the entire period of construction. The construction industry (in its narrow definition) is the largest industrial employer in the world with 111 million employees worldwide. Of these, 74% are in the low-income countries. Since low-income countries produce only 23% of the global construction output, it is clear that the "Employment Intensity" of construction activities is much higher in low-income countries than in the high-income ones (Pitt et al, 2009). The construction industry and its employment conditions can therefore play a major role in human development and improving the quality of life for the poor.

Each construction activity is divided into four components: employment, labor income, total value added (includes labor income), and output. The employment impact measures the number of jobs attributed to the activity. The labor income is the amount of wages and salaries, proprietors' income, and other compensation generated by the activity. The total value-added impact represents the additional revenues generated in the economy. Finally, the output impact estimates the total value of all the goods or services generated as a result of the activity (Han and Ofori, 2001).

There are three types of economic impacts from the construction: direct effect, indirect effect, and induced effect. Direct effects are the jobs, incomes, value added, and output resulting from the activity itself. Indirect effects are jobs, incomes, value added, and output generated by businesses which provide goods and services that are necessary for the activity. They may be thought of as "Supplier" impacts. Induced effects are the jobs, incomes, value added, and output that result from the spending of the incomes received by the direct and indirect employees on such items as food, housing, transportation, entertainment, etc. This spending will have impacts throughout the economy (Abs.gov.au, 2014).

Over and above the direct contribution of construction activity to the economy, it has 'flow-on' impacts on the activities of other industries. The possible size of these impacts

can be illustrated using multipliers based on inter-industry flows. For the construction industry the multipliers can be characterised as follows:

The initial effect - an initial one million of extra output of the construction industry, and related employment in the industry to produce that output;

- ❖ a production induced effect - the combination of;
 - i. the first round effect - the amount of output and employment required from all industries that supply goods and services to the construction industry in order for that industry to produce the initial \$1m of extra output;
 - ii. an industrial support effect - the induced extra output and employment from all industries to support the production of the first round effect;

- ❖ a consumption induced effect - the subsequent inducement for extra output and employment due to increased spending by the wage and salary earners across all industries arising from the compensation received for their labour as part of the other effects above (Abs.gov.au, 2014).

2.6 Social Impact

Where a new development is planned, there are a range of activities that could potentially cause environmental harm and result in social impacts. Impacts that may arise at the construction phase and need to be planned. Social issues can be associated with the above impacts, but can also arise in their own right and need to be considered in a construction planning process. Loss of community cohesion and values may be at risk with the introduction of migratory workforces, and competition for local resources. Noise and dust may also be issues where the development is close to human habitation, and health issues have been known to arise when local communities are exposed to outside influences (Ding, 2008).

UNEP (2011) estimates that over their lifespan, buildings are responsible for 25–40% of the world's energy use, 30–40% of the world's solid waste generation, 30–40% of the world's global greenhouse gas emissions, 33% of the world's resources, and 8–12% of water use.

The major impacts to the environment directly harm the society as well. Mainly, usage of material and land, waste generation, emission of GHG and depletion of renewable resources which cause serious damages to humans and ecosystems, impacts such as waste, noise, dust, and hazardous emissions still arise throughout the construction (Li, Zhu and Zhang, 2010).

The growth of number of construction of new buildings and other structures, may impact on the human ecosystems and society as well (Li, Zhu and Zhang, 2010). Hence, the people who are living close by to the construction site areas are facing many troubles such as, dust, vibration and noise due to the construction activities. The land acquisition, disposal of excavated materials, demolition and waste material disposal, are also important issues that arise due to the construction towards the society. Construction activities may cause soil compaction, substantial increase in the soil level, opening of ditches and trenches, removal of the superficial soil layer, loss or damage to the roots, and damaging of the trunk and leaves. Trees are natural elements of urban landscape, and must be preserved on construction sites. Human are losing the beauty of their environment and natural green system due to all these activities (Li, Zhu and Zhang, 2010).

2.7 Environmental Impact

Environmental protection is an important issue throughout the world. Compared with other industries, construction is a main source of environmental pollution (Shen et al., 2005). The impact of construction activities on the environment has recently been recognized the world over, and the evaluation of the environmental impacts of construction activities is currently required by law in many countries (Cole, 2000). Construction of Buildings, Roads and Infrastructure has significant impact on the environment. Direct impacts include, use of land and material, product of solid waste, depletion of non-renewable resources and emission of Green House Gases (GHG).

Enhancing the identification of the major environmental impacts of construction processes will help to improve the effectiveness of environmental management systems. Furthermore, prediction of the correlated environmental impacts of construction before the construction stage, will lead to improvements in the environmental performance of construction projects and sites. The determination of major environmental impacts will assist to consider a range of on-site measures in order

to mitigate those (Gangoells et al., 2011). Construction sites may cause damage to the environment, and also interfere in the daily lives of local residents. The environmental impacts across construction processes consist of ecosystems impact, natural resources impact, and public impact (Li, Zhu and Zhang, 2010).

Ecosystems Impact: The accumulated amount of adverse environmental impacts like waste, noise, dust, and hazardous emissions still occur during the construction process which cause serious damages to humans and ecosystems (Chen, Li and Wong, 2005). With the rise in the number of construction of new buildings, the ecosystems impact of construction has become an important issue.

Natural Resources: Various natural resources namely “Energy”, “Land”, “Materials” and “Water” are used during the typical construction process (Shen et al., 2005). Moreover, several construction equipment operations involve consumption of natural resources, such as electricity and/or diesel fuel. The building industry is responsible for using a high volume of natural resources and generation a great amount of pollution as a result of energy consumption during extraction and transportation of raw materials (Li, Zhu and Zhang, 2010).

Public Impact: Most construction projects are located in a densely populated area. Thus, people who live at or close to construction sites are prone to harmful effects on their health because of dust, vibration and noise due to certain construction activities such as excavation (Li, Zhu and Zhang, 2010).

The construction industry will continue to impact the physical environment as long as the industry demands natural resources, and this will assume huge environmental significance with the rapid growth in population and the attendant implications for natural resources (Ofori, 2000). Housing and infrastructural development which are very resource intensive, will so much negatively impact the physical environment. The call for sustainable construction is in the realization of the construction industry's capacity to make a significant contribution to environmental sustainability because of the enormous demands it exerts on global resources (Du Plessis, 2007). Sustainable development must account for the integration of social needs, economic and environmental impacts of the sustainability to choose the strategy (Kuhtz, 2007).

Although, the relationship between construction activities and the environment has been extensively studied, and has become of strategic importance in the developed countries, the situation is different in many developing countries like Sri Lanka.

2.8 Corporate Social Responsibilities (CSR)

The prevailing interpretation of a modern organization has significantly transformed with the infiltration of societal expectancies now motivating predominant aspects of an organizations business model. Ethical practices are fast becoming a responsible requirement in the business environment and have progressed beyond the philanthropic recognition that it historically procured responsible business practice. Focus has surpassed the principle bottom line of social, Economical and Environmental and the undeniable growing emphasis on the non-financial accountability of a company. Investigating the global organizations practices instigates the principle importance that CSR has in the business environment (D'Amato, Henderson and Florence, 2009).

2.8.1 Defining Corporate Social Responsibility (CSR)

The framework of CSR has already been established in the 1950's and 60's. Hill and Bowen (1997) defined CSR in 1953 as one of the first as, "... an obligation to pursue policies to make decisions and to follow lines of action which are compatible with the objectives and values of society...". In the beginning, however, the term Social Responsibility was rather used than CSR. Social Responsibility assumes that economic and legal duties of the companies should be extended by certain responsibilities to society. Carroll (1979) argues that Social Responsibility exists of four components such as economic, legal, ethical and discretionary expectations that society has of a company and that companies have to decide which layer they focus on.

CSR is a concept whereby companies integrate social and environmental concerns in their business operations and stakeholder relations on a voluntary basis; it is about managing companies in a socially responsible manner (Holland and Boon Foo, 2003).

Despite numerous efforts to bring about a clear and unbiased definition of CSR, there is still some confusion as to how CSR should be defined. Dahlsrud (2008) points out on a wide range of issues corporations are encouraged to behave both socially responsibly. Both in the corporate and the academic world there is uncertainty as to how CSR should be defined. Some go as far as saying, 'We have looked for a definition

and basically there isn't one (Petrovic-Lazarevic, 2008). This is not quite true; the problem is rather that there is an abundance of definitions, which are according to Van Marrewijk (2003) often biased toward specific interests and thus, prevent the development and implementations of the concept.

According to the Heslin and Ochoa (2008) definitions for CSR are plentiful. But, if more comprehensible definitions are to be chosen from for the sake of clear understanding of CSR concept, following two would unarguably be perfect as such at the outset. CSR is a theme that engages in economically sustainable business activities that go beyond legal requirements of the business to protect the well-being of employees, communities, and the environment. As per the World Business Council for Sustainable Development, 'CSR is a continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large' (World Commission on Environment and Development, 1987).

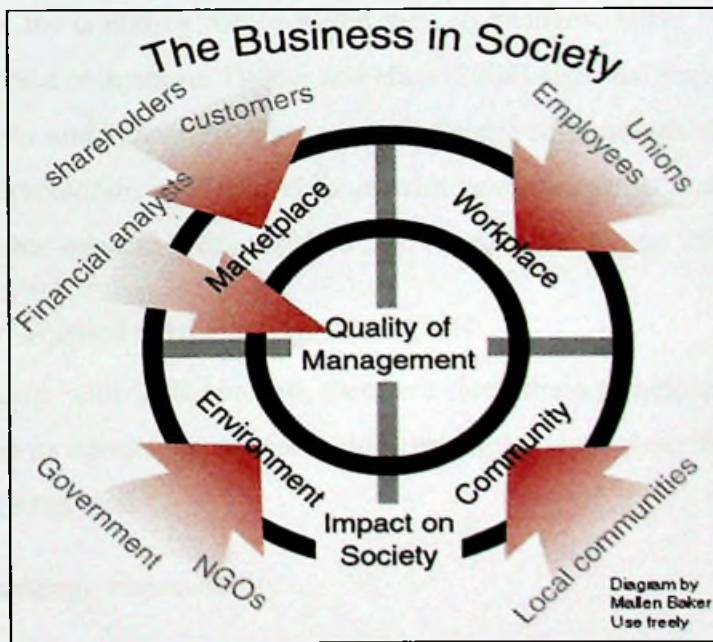


Figure 2. 4: The Business in Society

Source: Malen Baker (2004)

In addition to the above two, it is useful to see Malen Baker's illustration in Figure 2.4 to understand the CSR concept. Two circles in the Figure shown two aspects of the business operations. The inner circle quality of the management express quality of the people and the process therein. Outer circle, represent the impact on the society in various areas by nature and quantity.



Stakeholders are outside the outer circle having a look at the outer circle and their interest as usual is on types of products and services business provided by i.e. what impact business are delivering on environment and local communities. In other way, how the business could treat and develop their workforce. From stakeholders' point of view, past financial performance and quality of management are key indicators to the future performance (Baker, 2004).

The recent comment made by Barthorpe (2010) is simply giving a comprehensive idea about CSR concept. It is, that CSR can be considered as maintaining of; environmental sustainability, business ethics, governance, public relations, stakeholder analysis and relationship marketing as an umbrella for a business.

In western academia, the practice of CSR is subject to much criticism and debate. One classic argument, for instance Ding (2008), is that the only social responsibility of a corporation is to make profit. In other words, corporations are only responsible to their stakeholders and not to society as a whole. As to the society, corporations should obey the laws of the countries within which they do business. Other than that, they do not have any other obligations. Diddler and Huet (2008) also challenge the motives of CSR as insincerity and hypocrisy. They argue that some corporations start CSR programs to raise their reputation with the public or with government, so that they eventually can earn more commercial benefits (Malovics, Csigene and Kraus, 2008).

2.8.2 Principles and Practices of CSR

In accordance with CSR concept, there are three main principles to be adopted by a business on its operations, the same three principles some described as responsibilities of a business as well.

- ❖ Economic responsibility
- ❖ Social responsibility
- ❖ Environmental responsibility

(Clarkson, 1995).

Predictably every business has an economic responsibility towards its stakeholders, market, customers etc. Besides these traditional business objectives or rather responsibilities, CSR principles draw attention to some other novel aspects which

deviate from traditional business objectives. Social and environmental responsibilities also should be added to the business operations and strategies to run the business being responsible for the very important social and environment aspects which any business survive and prospect through.

Meanwhile, Business Impact (2000) has expressed their perspective on key CSR principles by elaborating above three principles to further extent as follows:

- ❖ Treat employees fairly and impartially
- ❖ Operate within the ethical frame work with integrity
- ❖ Respect basic human rights
- ❖ Sustain the environment for future generations
- ❖ Taking care of neighbors surrounded by.

The literature points to some principles that could frame a CSR governance program, and proposes a number of practices that Boards could and should adopt for effective CSR governance. A view was expressed that Boards should deal with CSR in their routine business agenda, rather than as an add-on. Key practices found within the documents, that could form the basis of a CSR governance road-map include:

- ❖ Purpose, values and policies (Consider external guidelines and international codes)
- ❖ Develop strategy, targets and key performance indicators (KPIs); monitor performance and implementation
- ❖ Set up accountabilities to monitor performance (E.g. Board committees, designated Board portfolio to independent director)
- ❖ Identify and manage material SEE (social, environmental and ethical) risks and opportunities (have processes and controls in place to manage and/or leverage them)
- ❖ Integrate CSR considerations into major acquisitions or investments

- ❖ Identify and address stakeholder issues
- ❖ Consider stakeholder engagement
- ❖ Include CSR consideration in CEO recruitment/succession planning
- ❖ Link remuneration to both financial and non-financial metrics
- ❖ Board recruitment, evaluation and training
- ❖ Disclosure and reporting

Didder and Huet (2008)

The above describes what aspects to be taken into consideration under CSR principles. In addition to the financial aspects to be taken care of, more actions relating to human and environmental aspects are also given due precedence.

2.8.3 Benefits of CSR

It is not only the society and environment benefit from CSR but the company or the business as well. CSR can take any company to height of success while making business profitable. A survey carried by Price Water House Coopers (2002) has found that 70% out of 1200 of chief executives, business leaders of the companies have agreed with potentiality of the CSR. As long as long term wealth of the companies is considered, CSR is hastily and evidently now becoming the one of the basic factors being the precise thing to do in the present business environment.

From business strategic point of view, CSR can also be integrated with business strategies of a company or a corporation to increase market share, mitigating and controlling risks, attract qualified professionals and staff, stimulate innovative products or services depending on the business deals with, gain access to cash, reduce costs and improve competitiveness (Clarkson, 1995).

The potential benefits CSR can be divided into two such as, internal and external benefits to the business. Improve financial performance and profitability, reduce operating cost, long term sustainability for companies and their employees, increase staff commitment and involvement, enhance capacity to innovate are few internal benefits whereas good relations with government and communities, better risk and crisis management, enhance reputation and brand value, and the development of closer

links with customers and greater awareness of their needs are the few external benefits CSR can focus externally, Addis and Talbot (2001). According to the commission of the European communities CSR is being widely recognized among companies in the modern business culture, as it is act of an important element which is instrumental to respond to the changes of overall business environment (Ball, Farshchi and Grilli, 2000). It is important and worthwhile to keep in mind that CSR is not an exercise to feel good of doing something to society and environment but it is a financially and strategically important paradigm to every business (Clarkson, 1995).

No matter what the Size of the business in respect of CSR performances in a company as one survey carried out in year 2000 focusing SME business entities has revealed that 90% out of 200 Managing Directors whom participated to the survey have agreed that CSR would gradually become significant to a business over the next five years. The same perspective, not only the larger company but SME also get the same benefits of CSR, is pointed out by Gyves and O'Higgins (2008). Figure 2.5 below illustrate the business benefits from the CSR as Monetary and Non monetary which can be devided into Qualitative and Quantitative catogaries.

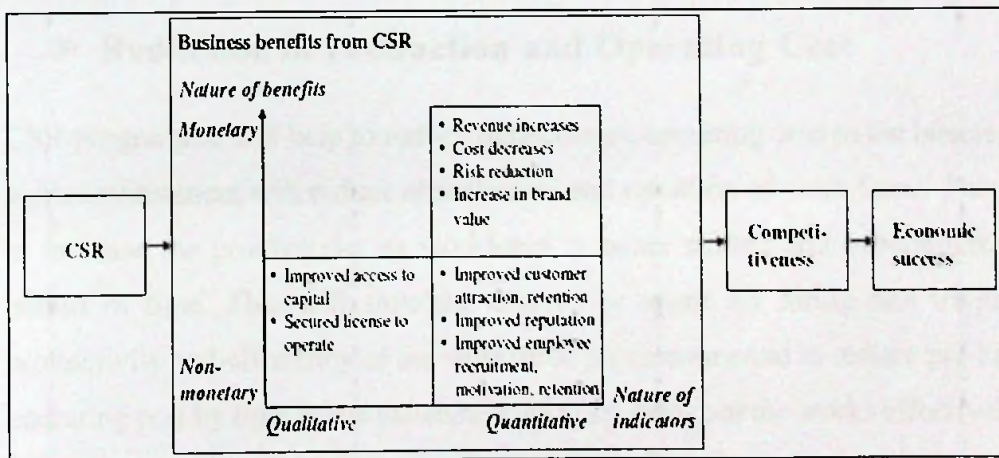


Figure 2. 5: CSR Impact Model

Source: (Were, 2003)

2.8.4 Internal Benefits

➤ Increase Sales

Companies get publicity and recognition both locally and internationally by means of free advertising as a result of CSR. This may be through both print and electronic media including radio, television, newspapers, trade journals, and magazines. This may be some time through word of mouth. The people rather customers from business point of view react quickly and will tend to buy particular products of the company that got the publicity (Jones, Comfort and Hillier, 2006). In addition, it is a natural phenomenon that people believe that they are also responsible for sensitive issues like environmental protection, human rights, social welfare so they want to contribute to that. According to the survey done by IBM Institute, in respect of CSR has found that 68% out of 250 worldwide business leaders are now focusing CSR for their new revenue streams and 54% out of same number of group believed that CSR activities are already giving them an edge over their top competitors (IBM, 2013). So, these findings confirmed that companies started understanding that CSR can give competitive differentiation or edge to their business when business is integrated with CSR.

➤ Reduction of Production and Operating Cost

CSR programme will help to reduce unnecessary operating cost in the business as safe work environment will reduce absenteeism and retention of work force. This will lead to increase the productivity as workforce is rather skilled and experienced over the period of time. This will save the cost to be spent for hiring and training. High productivity and efficiency of the workforce are instrumental to reduce production and operating cost by time as the efficient workforce carry out the works effectively. Above all are related to wellbeing of human beings thus the payoff is cost (Gyves and O'Higgins, 2008).

➤ Increase Employee Motivation, Involvement and Innovation

When a company has a frame work or criteria to take care of well-being of the employee, company is, as per all motivation theories or philosophies, fulfilling basics of human needs. The result is needless to explain. Employees motivate themselves as they move on much better safe living path. It is natural phenomenon that employees

feel that their present and the future are being well secured and those are free of insecurities. Motivation, innovation and involvement come into motion when employees are happy. The end result is high productivity though the effectiveness, efficiency and innovations of the work force. Eventually, company receives the benefits in terms of high productivity, low production & operating cost and the quality products. This will also lead to reduce the cost needed for extra performance evaluation and measurement system. Low employee turnover, retaining talent become meaningful terms for the company due to CSR. This is a long term benefit to the company in terms of the cost and skilled labour turn over (Douglas, Doris and Johnson, 2004).

➤ **Attract and Retain More Qualified Personnel**

It is important and a need for a company to recruit and retain highly skilled personnel Rogoff and Rogoff (2010). Attract and retain highly skilled personnel in a company is not an easy task when they have a huge demand in the market. The employees always need to be well secured in terms of all basic needs. Companies that already adopt strong CSR policies are experiencing that recruitment and retaining of employees are fairly easier, especially in the tight labour market, than other companies those who do not adopt CSR policies at all (Douglas, Doris and Johnson, 2004). This will help the company other way around as it saves the cost at recruiting and training of the new employees.

A research carried in 1997 by Net impact, among group of 2,100 students in the US has found that half of them would prefer to work in the companies which adopt strong CSR policies. The same survey also revealed quite astonishing fact that younger generation are willing to work in socially and environmentally responsible organizations yet at lower salaries. This is somewhat surprising finding but, indirectly given the message that companies ought to improve CSR in order to recruit and retain quality workforce (Steurer and Konrad, 2009).

2.8.5 External Benefits

➤ Reduce Pollution Level

Environment is a very important component of CSR. Environmental sustainability is addressed under this component. Environmental pollution can happen in many ways. However, water and air pollution are the main concerns to be prevented from. Until recent past environmental sustainability is confined to books and reports though it was widely discussed. Now, relatively, not every individual but majority of people have understood the benefits of protecting of environment thus they organize themselves to support this through a viable mission. When this mission comes along with mission and values of a company, it is really viable and can make almost all individuals in the company contribute to the effort. When institutions organize themselves for the mission of environment protection, they tend to find some solutions to minimize environmental foot print of their operations and productions. There are plenty of ways and means to accomplish the task while doing their core business. Green building concept is a widely recognized approached by everyone where energy usage being minimized as maximum as possible. When the usage is minimized, waste or emission of original energy source is automatically reduced. Waste management, recycling waste, minimizing energy use are few of well-known practices being adopted nowadays (Heslin and Ochoa, 2008). In addition, corporate can work together with the society to plant trees or make green patches wherever possible which absorb the dust and harmful gas emissions. However, the important thing is how company receives the benefits from this commitment. The benefits may receive both in short and long term. In short term, increase of sales, free publicity may correlate to this act. On the other hand, in long term, clean environment and healthy society can benefit the company.

➤ Enhance Reputation and Brand Value

Image and reputation for a product or a brand is important element in the business success (Jones, Comfort and Hillier, 2006). No doubt this is a fact and then what role CSR can play to get a good reputation, brand value or an image for the corporate in the market. Every corporate has their own values which their strategies been set for. These values may serve for company only. When CSR is incorporated with those values, company would benefit the society and the environment in addition to the company itself. This will be instrumental for making and having a good image or a personality

for the company in the market (Gyves and O'Higgins, 2008). Once succeeded, a company would get the benefit of ability to enter into the new markets and be stable in the talent wars. This external benefit would correlate with other benefits of increasing market share and the sales. Illustrate in Figure 2.6 how CSR can be linked to corporate reputation and business performance.

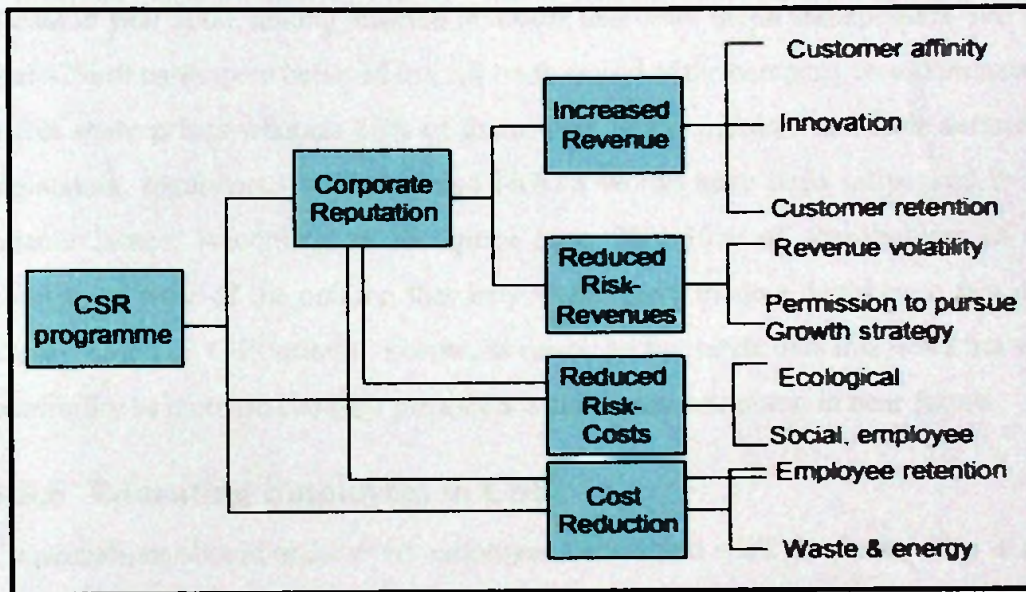


Figure 2. 6: CSR Link to Corporate Reputation and Business Performance
 Source: (Knox, 2004)

➤ **Development of Closer Links with Customers and Greater Awareness of Their Needs**

When a company frequently connects with society, the bond between company and the society is so solid, gradually developing closer link. The effect would have doubled, when the company includes the society and the environment to their mission statement through CSR. The bond reaches to its high and become resilient. As a result, society and company would engage in productive conversation like proposals, constructive criticisms etc. Then the company would be aware of society needs followed by subsequent changes or modification to be adopted on their product or the services offered. This will definitely be supportive to business sustainability (Gyves and O'Higgins, 2008).

➤ **Increase Earning Potential and Investor's Attraction**

There is mounting trend that investors invest their money in the companies which are socially responsible (Holland and Boon Foo, 2003). Yet another trend, CSR performance of organizations attracts the financial analysts and investors and would have an impact on investment decisions. A survey carried by Burson-Marsteller of media in year 2000, among selected investors and other major stakeholders, has found that 42% of participant believed in CSR track record of the company would increasingly affect share prices whereas 89% of them were of the opinion that their decisions as legislators, regulators, journalists and NGO's would have been influenced by CSR related issues. According to the globs scan 20%-30% of shareholders of some companies were of the opinion that they would have made a decision to buy or sell shares, based on CSR criteria. People, as usual, go by trends thus this trend has widest possibility to increase earnings prospects and investor attraction in near future.

2.8.6 Educating Employees in CSR

Organizations should make every employee understand what the CSR policy is and to what extent they would be able to contribute, individually and as a team, to the company to be successful in CSR objectives. To fulfill this purpose, companies can include company CSR policy and performance objectives in Job Descriptions of each employee depending on their roles and duties in the company. Providing newsletters and training program are very effective way of educating on the above purpose. If the company has been properly equipped, online training and education program can also use for this having received clear idea of CSR, every employee should pay their attention to minimize the chances of missing or neglecting their duties and responsibilities to be considered under CSR implementation. This process will benefit the company as Employees' knowledge of CSR would make a positive impact on society about the business. This will also help each individual to improve their skill by helping managers to find more efficient ways of doing business (Ball, Farshchi and Grilli, 2000).

2.8.7 Implement Stakeholder Dialogue

This is the key to holding social capital and benefits from CSR. Keeping stakeholders informed and having regular meeting with them will help to earn their trust. Dialogue with stakeholders should be maintained throughout the process. Satisfying stakeholders will have an effect on changing the expectation of business (Steurer and Konrad, 2009). Hediger (2010) points out customers, investors, regulators, community groups, environmental activists, trading partners and others are now in an affinity so they are asking detailed CSR performance report from the companies before entering in to the business with them. According to a survey carried out by Price water house Coopers (2002), among group of 1,200 business leaders, 25% of them stated that they have issued public report of their CSR performance. 14% of them stated that they are already planning to issue their report in the future. According to the business impact 2000 ‘Interacting with its stakeholders can help a company understand its capacities and limitations to behave in a way that reflects the needs and aspiration of society’ (Hill and Bowen, 1997). Having regular meeting and discussing policies and actions with stakeholders, representatives from regulatory agencies and members of the local community are necessarily important for running a business smoothly. These dialogues are also very important to the business to prevent from bad press and complaint by creating mutual understanding. Good relationship with communities, pressure groups and local press will lead in achieving business targets more promptly, and resolve dispute between parties more easily and amicably.

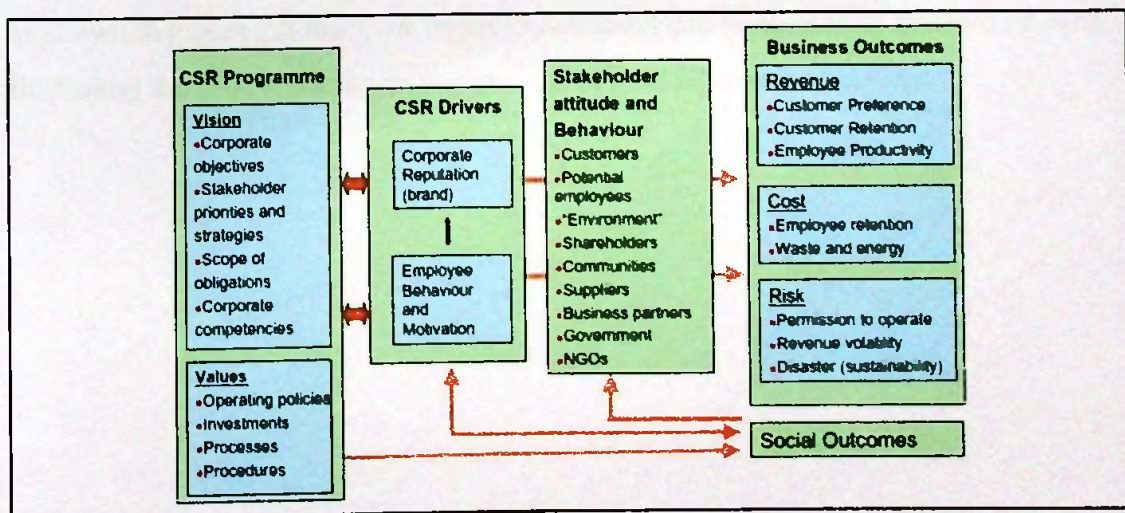


Figure 2. 7: Framework Linking CSR with Outcomes

Source: (Knox, 2004)

2.8.8 Measuring and Assessing CSR

The importance of linking CSR activities to the company vision, mission and values when setting CSR objectives is described in Figure 2.7 Knox and Maklan (2004), has also explained the process of CSR such as identifying primary stakeholders and obligations, scope as well as employee awareness of developing programme and highlight the link between as discussed throughout this chapter.

Measurement, tracking and reporting is an important aspect of CSR programs. Measurement provides a way to gauge the progress towards the set goals, tracking helps to monitor progress and continually improve, and reporting allows communicating it to staff or other stakeholders.

According to Knox and Maklan (2004) a comprehensive CSR assessment should include the evaluation of monetary as well as non-monetary business benefits. In Figure 2.5 the first three monetary benefits identified in the CSR impact model are revenues, costs and risk Joyner and Raiborn (2005) points out the the fourth monetary benefit, brand value, is rather represents a Key Performance Indicator (KPI) for the future sales. Further, the non-monetary benefits identified in the CSR impact model that can be measured with quantitative indicators also represent KPIs for future monetary impacts. As monetary CSR benefits often occur after a time lag, a comprehensive CSR impact assessment should not only focus on the calculation of the CSR Value Added but also on the development and measurement of these KPIs (Joyner and Raiborn, 2005).

As shown in Figure 2.8 this CSR impact assessment can be seen as an assessment cycle illustrating the time sequence to perform the individual assessment steps.

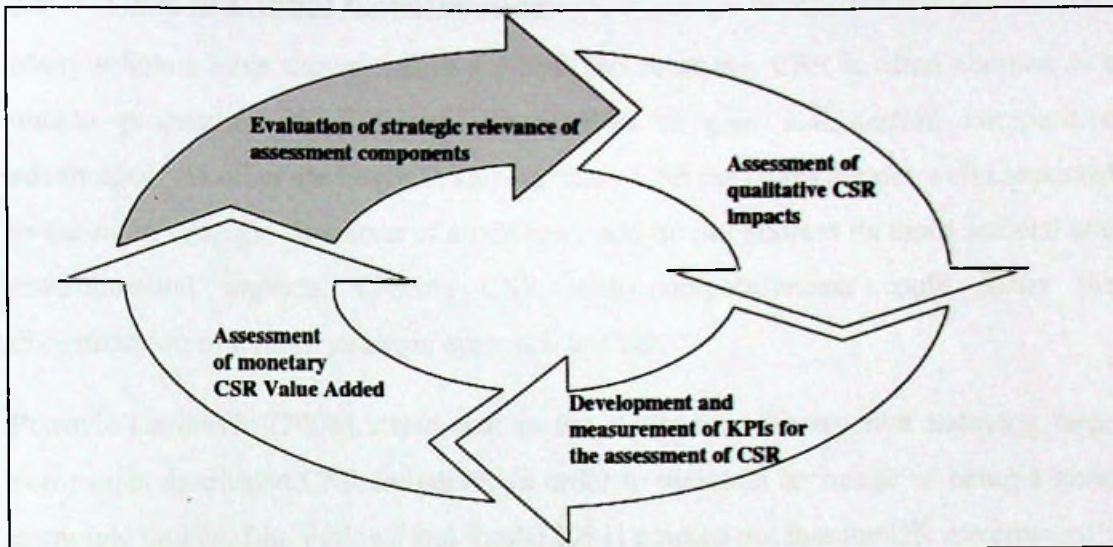


Figure 2. 8: CSR Impact Assessment
 Source: (Joyner and Raiborn, 2005)

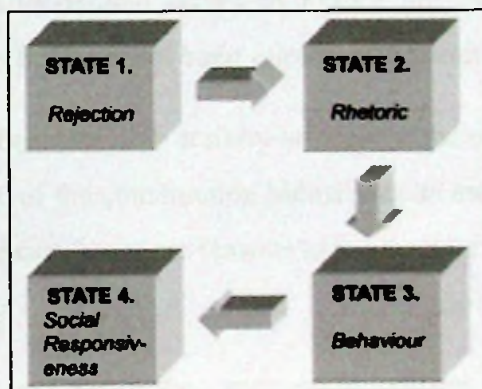


Figure 2. 9: Four State Schemes for Corporate Social Reporting
 Source: (Douglas, 2004)

Douglas, Doris and Johnson, (2004) classify four-state scheme for corporate social reporting such as rejection, rhetoric, behavior and social responsiveness as shown in Figure 2.9 First state will not convince of any benefits from CSR, second state there are lacks coherence and direction in value terms, Reporting will be only inside the organization there is no external verification even limited in third state and fourth state organizations are having an experience and can change attitude and need to make policy statement as well as CSR reports can derive outside the organizations.

2.9 CSR in Global Construction

Many scholars have shown that in a globalized economy, CSR is often claimed as a unique proposition of Europe's construction to gain and sustain competitive advantages. As other studies have shown, many CSR measures are not well connected to the main strategic decisions of a company and do not address its main societal and environmental impacts. Linking CSR with competitiveness could foster the dissemination of a more strategic approach to CSR.

Petrovic-Lazarevic (2008) stated that in the Australian construction industry, large companies developed CSR initiatives in order to maintain an image of being a good corporate citizen. Liu, Fellows and Tuuli (2011) pointed out that the UK government's Department of Trade and Industry is promoting CSR as a business contribution to sustainable development; many have argued that corporate citizenship takes shape at the point of government failure in the facilitation of citizens' rights. According to Didier and Huet (2008) CSR-related issues in France are discussed in higher education engineering courses but have not been implemented within the industry.

Given the impact of construction activity on society, the economy and the environment, and the significance of the construction industry as an employer and provider of work, the construction industry has more reasons to focus on its CSR than most others Murray and Dainty (2009).

Empirical research on CSR of the construction industry remains insufficient. If more, empirical research can prove that CSR implementation is beneficial to organizational performance, it will provide an incentive for companies to adopt CSR practices of their own accord, particularly for companies in the construction industry. A better understanding of the long-term benefits of CSR could be helpful in encouraging industry-wide implementation of CSR practices.

Cost, time, and quality are very often perceived as traditional success parameters in this sector. Malovics, Csigene and Kraus (2008) underlined that the economic performance of construction companies correlates positively with the construction business cycle.

Knox and Maklan (2004) offered an analysis of CSR-competitiveness at the sectorial level. They concluded that both competitiveness and CSR issues are highly sector specific - these differences cannot be ignored. In case of the construction sector, the

most important CSR issues are health and safety conditions, sustainable construction, and anti-corruption measures. On the competition side there is fierce price competition, high labor intensity, and a long lifetime of the end product. When trying to verify the relation between CSR and competitiveness in the construction sector, these factors should be analyzed and linked.

Some of the studies have pointed out the growing importance of responsible behavior by construction companies as an integral part of the business or a source of a competitive advantage. A case study of the UK construction industry conducted by, Jones, Comfort and Hillier (2006), indicates that the consideration of CSR can help to reduce costs by reducing energy use, water use, and by applying health and safety measures and training of workers in order to complete contracts on time and to budget. Nevertheless, it is pointed out that due to fierce competition in the construction industry, companies need to balance CSR commitments with their commercial goals (Jones, Comfort and Hillier, 2006).

With the influences of external schemes and incentives such as Global Reporting Initiatives, Sustainability Indexes, Social Responsible Investment and Management systems the construction industry has become a forceful partner of CSR in the economy (Ball, Farshchi and Grilli, 2000). Industrially, CSR concepts are absorbed in concerns relating to how the construction business might affect people and environment in which it is operating. In Europe and UK, Governments have also strongly initiated the importance of this development for the Environment illustrating that 'Green Firms' will be given priority in competing and selection for all government contracts in the future. 'Green Firms' relates to the CSR activities in respect to environmental benign, the organization community collaboration and utilization of sustainable products.

Focusing on the industrial leaders in the area of CSR, specifically Skanska, the Royal BAM Group and Carillion PLC, this section of the literature review aspires to outline the factors that have influenced the transition of these companies towards a sustainable perspective. Focusing on the dynamics that have subjectively prompted companies to restructure their strategies, incorporate more socially sustainable practices, to improve industrial power, enhance stakeholder values, and demonstrate a competitive edge. The literature will conclude with the evolving process of the company and the techniques

required when implementing the new environmental ethics of the company, as described by Chen, Li and Wong (2005) this transition is a 'marathon not a sprint'.

CSR activities in the construction sector focus on occupational health, security and safety on the one hand, and on sustainable construction and accordingly eco compatible buildings on the other. Public CSR policies in the construction sector should set a good example in public procurement processes, establish standards (e.g. for energy consumption), enforce the implementation of existing norms and regulations (e.g. occupational health and safety), and combat corruption (Ball, Farshchi and Grilli, 2000).

Carillion PLC is one of the most successful construction companies in the area of CSR practitioner. It developed their sustainability strategy in 2005, and reviewed its sustainability impacts to ensure to direct resources where it could really make a difference (Carillion PLC, 2009). Carillion's review involved consultation with the Board, business units and the Sustainability Advisory Committee, as well as the conclusions from regular risk reviews. An informative diagram Figure 2.10 below, to illustrate the processes they understand to be the principle KPI's to successful implementation and guidance under corporate responsibilities. The 'sun diagram' has helped with affective delivery of their business objectives, across the four priority areas of the UK Government's sustainable development strategy. In order for them to help their business units deliver their targets, developed a Sustainability Excellence Model (SEM). Each of the 12 issues has a policy, together with a vision of excellence and four steps namely; Awareness, Delivery, Improvement and Excellence to realize it (Carillion PLC, 2012).

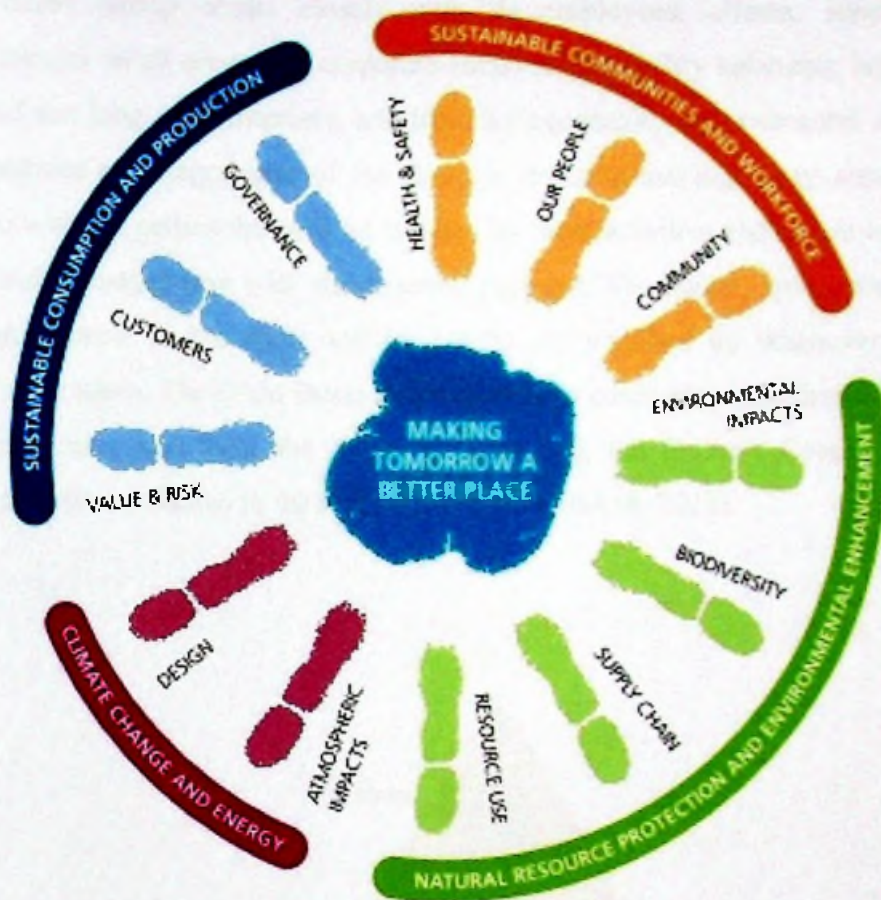


Figure 2. 10: Carillion "SUN DIAGRAM"
 Source: (Carillion, 2012)

Skanska developed its CSR strategies based on the bad business ethics and reputation of the construction industry along with some environmental incidents that have occurred, such as the Hallandsasen scandal. Since the late 1990s, Skanska has been exploring and defining how it can, within its direct sphere of influence, contribute to a more sustainable world. Since 2002 this commitment has been built into corporate policies including their Code of Conduct Five Zero vision – zero loss-making projects, zero environmental incidents, zero work-place accidents, zero ethical breaches and zero defects. These values drive what they try to do to contribute to a more sustainable world. Skanska has developed its own Sustainability Agenda to better focus strategies and actions that balance the never-ending trade-off between Economic, Social and Environmental considerations; the so-called “Triple Bottom Line.” (Skanska, 2009)

Royal BAM Group works closely with its employees, clients, suppliers and subcontractors on all aspects of corporate social responsibility balancing between the short and the long term interests, and to make economic, environmental and social considerations an integral part of the strategic decision-making. They aim for open dialogue with the parties that will be affected by their activities and communicate in a timely and effective way with the external partners. The social, environmental and economic aspects in the short and long term are weighed up whenever strategic decisions are taken. The BAM Business Principles, or core values, are derived from the strategic agenda and form the basis for managing the Group's Corporate Social Responsibilities as shown in the Figure 2.11 (Royal BAM, 2010).

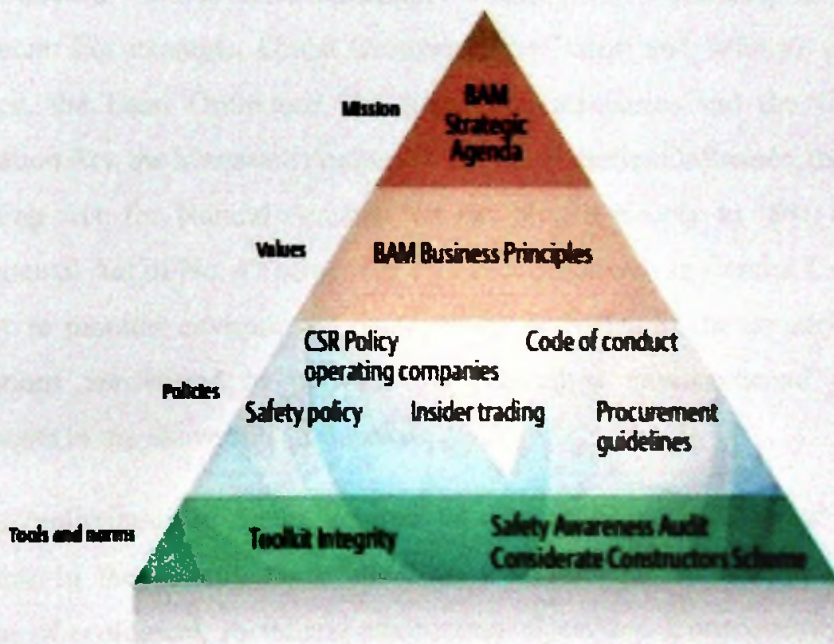


Figure 2. 11: BAM Business Principles
 Sporce: (Royal BAM, 2012)

2.10 Corporate Social Responsibility in Sri Lanka

The industrial sector in Sri Lanka began to expand rapidly through local and foreign investments when it introduced liberalize open economic policies in 1977. During the last three decades, many free trade zones, many foreign business entities including multi-national companies, and local manufacturing companies emerged resulting in large numbers of factories in various types of industries. Expansion of industrial activities have largely contributed to the economic growth of the country, but operations of these factories caused many damages to the physical environment and ecological footprint of the country in numerous ways (by discharging waste material, polluted water and chemicals etc. into the environment). However, stakeholders' awareness of environmental impact on industrialization of Sri Lanka has increased during last few years (Rajmanthri, 2005). Recent Governments and even by the colonial governments have introduced various environmentally friendly Acts enabling to protect the environment. For example, Forest Ordinance, the Forest and Wildlife Conservation Ordinance, the Land Ordinance, the Irrigation Ordinance, and the Coastal Zone Conservation Act, the Mahaweli Authority Act, the Fisheries Ordinance, the Geological and Mining Act, the Natural Aquatic Act etc. Yet, it is only in 1980 the National Environmental Act of No. 47 came into existence empowering Central Environmental Authority to monitor environment management activities of the country. Therefore, organizations are bound to perform the prescribed environmental management requirements in the above Act (Rajapakse, 2002).

With the proliferation of non-governmental organizations (NGOs) and other social movements in the country there has been a significant increase in stakeholders' awareness of ecological, social and environmental matters. Consequently, there is an increasing trend of stakeholders' demand for environmental management and sustainable development information of business organizations. In Sri Lanka there is neither prescribed professional standard nor legal framework addressing the issues of environmental reporting. Thus, most business organizations, disclose only financial information although there is an increasing trend of stakeholders' concern and demand for environmental management and sustainable development information of their business organizations (Rajapakse, 2002).

CSR research in Sri Lanka is limited (Khan and Beddewela, 2008). Rajmanthri (2005) investigated the CSR status of Sri Lankan private sector organizations and concluded that; CSR is a novel concept to many organizations, employees and to civil activists in Sri Lanka, the most common understanding of CSR relates to sponsorships of community activities and donations to good causes. Thus, most people are ignorant of the broader objectives of CSR. He investigated fifty private sector firms covering a wide range of industries in Sri Lanka and observed that there does not seem to be consensus in the corporate sector as a whole on what is socially responsible behavior. Pertaining to the implementation of CSR agendas in Sri Lankan private sector firms, he concludes that there is little evidence of internal CSR policy level operations by firms, since these areas are not popular areas or themes of public interest. International Alert (2004) concluded that the understanding of CSR is still at a very low level among the private sector in Sri Lanka, and that although most organizations were aware of the short-term benefits arising from the practice of CSR, few were aware of the long-term benefits, including those of sustainable development.

According to the study on SME in Sri Lanka by Rajmanthri (2005) result revealed that the main barrier preventing firms from CSR is lack of money and attitude of no benefit in short run.

2.11 Sustainability

Sustainability is yet a hot debatable issue over the world, constantly being discussed by people all over the world and its issues and purposes have been discussed by many authors. The author Kutzt (2007) defines sustainability as the simple idea of ensuring a better quality of life for everyone now and for generations to come. The term incorporating with environmental, social and economic issues and makes the balance between them to achieve the overall sustainability (Whittingham, Griffiths and Richardson, 2003).

There is growing realization among leading scientists, the public and politicians that we are using the planet's resources in ways which exceed its long-term capacity of use and undermines the vital life support system of the planet. In the last decade the difference in living conditions between rich and poor people, both between and within countries, has also widened, exacerbating environmental damage. Form this scenario it is evident that sustainability is not only a "hear-say" scenario, but also it has its effects

on both the local and global populace. Therefore, sustainability is considered as a global issue and further, it requires a global solution (Ugwu and Haupt, 2007). There is increasing pressure on the need to achieve sustainability and the relevant authorities must formulate effective ways to achieve sustainability and to be implemented as a cornerstone for future policies (Kuhtz, 2007). This is what makes sustainability an important issue being debated in large scale of interests all over the world.

Most scholars use the definition that emerged from the Brundtland Commission "Our Common Future" with regards to sustainability. This concept focuses equally on the economic, environmental and social values making it the benchmark definition that has been adopted by various publications to base ideas, claims and support sustainability related findings (Ding, 2008).

2.11.1 Sustainable Construction

It is clear that the various activities of the construction sector have to be regarded and analyzed when considering sustainable development. On one side, the built environment constitutes one of the main supports (infrastructures, buildings) of economic development, and, on the other side, its construction has significant impacts on resources (land, materials, energy, water, human/social capital) and on the living and working environment. Hence the construction industry has significant direct and indirect links with the various aspects of sustainable development (Ding, 2008).

The First International Conference on Sustainable Construction (SC) held in Tampa in 1994 introduced the following definition of sustainable construction 'the creation and responsible maintenance of a healthy built environment based on resource efficient and ecological principles' (Kuhtz, 2007).

The term 'sustainable construction' is used to describe the application of sustainability principles to the activities of the construction sector. However, despite the broad appeal of the concept, there is little specificity on its meaning. As Du Plessis (2007) points out 'sustainable' and 'construction' are both complex concepts, which are open to much debate. The placing of these two terms together, to form a new phrase 'sustainable construction, therefore, further magnifies this 'interpretive dilemma' (Du Plessis, 2007).

The Pearce report Myers (2005) argued that before the construction industry can proceed towards contributing to sustainable development it needs to adopt a more holistic definition for sustainable construction. Nevertheless, attempts at developing a generally accepted definition for SC have been so far unsuccessful (Du Plessis, 2007), (Ball, Farshchi and Grilli, 2000). An international project was carried out by the CIOB Working Commission to compare the visions and perceptions of different countries in relation to sustainable development in the construction industry. The project has revealed a wide range of views and interpretations of the definition of SC in developed, transition and developing countries (Bourdeau, 1999). However, the attempt to come up with a consistent, generally accepted definition was not fulfilled. In the research carried out by Du Plessis, (2007) points out that, some of the available definitions for SC put forward by various authors have been scrutinized to identify the following four key aspects of SC:

- ❖ SC addresses issues throughout the complete life-cycle of a construction using a cradle-to-cradle approach.; the model which is sustainable and considerate of life and future generatioins.
- ❖ SC focuses on achieving synergy between all three environmental, economic and social dimensions, thereby addressing both hard and soft issues of sustainable development.
- ❖ SC meets the needs of all present end-users, while having the ability to be flexible to address the changing societal and organizational needs of stakeholders throughout the life cycle. This in turn requires an integrated decision process through the effective cooperation and participation of all relevant stakeholders.
- ❖ SC requires the application of not just technological solutions and design directed measures, but also changes to the traditional institutional structures and values and attitudes of stakeholders.

Bueren and Priemus (2002), points out that, the problems of poverty and underdevelopment or social equity are sometimes ignored in the definitions of sustainable construction. In addition to economic prerequisites or social questions, numerous other variables and their importance vary from country to country. Features



such as density and demography of population, national economy and standard of living, geography and natural hazards, availability of land and water, energy production and supply, the structure of the building sector or the quality of the existing building stock, etc., all have an influence and interpretation in national definitions of SC.

Figure 2.12 tries to illustrate how traditional engineering will be widened, when environmental demands are considered (Du Plessis 2007). The economic and socio-cultural issues are presented in the global context together with the environmental issues.

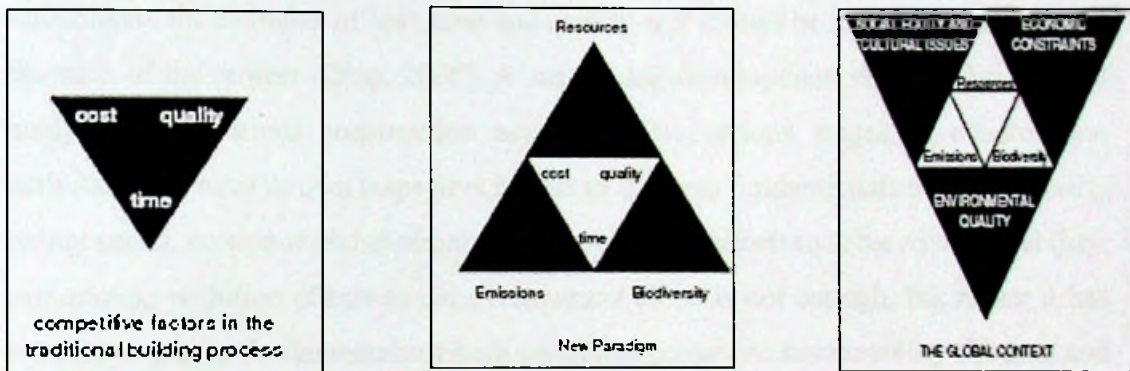


Figure 2. 12: Widening of Traditional Engineering with Environment
Source: (Du Plessis, 2007)

Du Plessis (2007) defined sustainable construction as ‘a holistic process aiming to restore and maintain harmony between the natural and the built environments, and create settlements that affirm human dignity and encourage economic equity’. This definition takes sustainability further than just reducing negative impact, as implied in the earlier definitions, by introducing the idea of restoring the environment, as well as highlighting the social and economic aspects of sustainability, explicitly defining what the goals for these aspects are.

This definition is not wholly satisfactory, but it serves to outline three aspects of sustainable construction:

- ❖ It requires a broad interpretation of construction as a life cycle assessment, involving many more role players than just those traditionally identified as making up the construction industry.

- ❖ It emphasizes both environmental protection and value addition to the quality of life of individuals and communities.
- ❖ It embraces not just technological responses, but also the non-technical aspects related to social and economic sustainability.

Though the construction industry is considered important for the progress of a society but at the same time it should pay attention for environmental protection in order to achieve sustainability (Ding, 2008). Application of the sustainability concept to project development requires great effort from different disciplines with every project undertaken; the elements of cost, time and quality will always be in play throughout the duration of the project (Ding, 2008). A sustainable development should take account analyzing the various construction activities. The various stages in construction activities each have its own respective impact to the three fundamentals of sustainability being; social, economic and environment. Therefore, in efforts to achieve sustainability, minimizing pollution effects to the environment alone is not enough, but rather it has to incorporate the fundamentals of both social and economic sustainability (Bueren and Priemus, 2002).

2.11.2 Main Goals of Sustainable Construction

The main objectives are to;

- ❖ minimize the CO₂ emission of energy consumption of the buildings to the environment. This will reduce the global warming and the risk of people's health and biodegrading, Reduce chemical compounds emission using in construction to minimize the damages to ozone layer which prevent human being from hazardous sun waves.
- ❖ minimize waste or residual through material recycling or their re-use. Waste of steel, plastic, paper, wood can be recycled or re-used. Protect and enhance local ecology by preventing from construct buildings in ecologically valuable sites.
- ❖ facilitate better indoor environment in buildings to reduce risk of health of occupants.

- ❖ and avoid potentially harmful building materials, minimize noise, provide better air circulation this would lead to minimize sickness rate. Optimize the use of limited resources such as energy, land, minerals and other natural material. Use renewable resources such as wood as a main building material, solar energy for heating of houses. Use wind and water for generating energy (Sobotka and Wyatt, 1998).

Construction Industry should line up with above objectives, under sustainable construction. failing which, the needs and rights of future generation could not compromise for the needs of present generation (Baldwin, 1996).

2.11.3 Triple Bottom Line and Construction

There are three main components in sustainability such as Economic, Social and environmental which is also known as triple bottom line (Malovics, Csigene and Kraus, 2008). Similarly and more descriptively the main three pillars of the concepts of sustainable construction are Environmental protection, social well-being and economic prosperity (Zainul Abidin, 2010) explained in Figure 2.13.

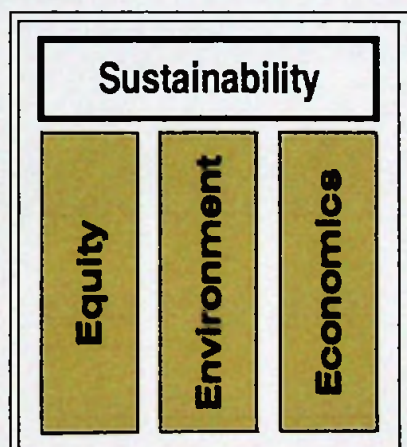


Figure 2. 13: The Three Pillars model of Sustainability
Source: (Zainul Abidin, 2010)

Environmental protection means protecting of both built and natural environment. The built environment is activities within the construction which is concerned impact to the environment due to mismanage and misuse of raw materials to the construction industry. Natural environment protection is concerned extraction from natural resources. Social well-being is concerned the human feelings (security, satisfaction,

safety and comfort) and human contributions (skills, health, and knowledge) and motivation. Finally, economic sustainability is concerned with the monetary gains from the project in favor of the owners or clients, construction players, public and the government (Zainul Abidin, 2010).

Construction industry has jumped to a new era of alternate ways of sustainable approach to fulfill current levels of consumption. Sustainable construction is supported by the triple-bottom line by following objectives;

- ❖ being more profitable and more competitive
- ❖ delivering buildings and structures that provide greater satisfaction, well-being and value to customers and users
- ❖ respecting and treating its stakeholders more fairly
- ❖ enhancing and better protecting the natural environment
- ❖ minimizing its impact on the consumption of energy (especially carbon-based energy) and natural resources.

(Zainul Abidin, 2010)

2.12 Chapter Summary

This chapter summarizes the role played by construction industry towards the development of the mankind and conversely the adverse impacts on society, economy and environment and how to mitigate it on each of above through sustainable construction practices. Sustainability has been the vision and the roadmap for developing it for many of the business organizations and the construction industry in globe have been playing part in embedding sustainability into their agendas, however, developing countries faces many challenges in addressing sustainability.

Conversely, business ethics are now fast becoming a responsible requirement and the literature identifies the global organizations practices to instigate the principle importance of CSR. There are many benefits those can be achieved through CSR and can be categorized as external and internal. Despite the various views and disparities in the literature, it can be said the importance of high ethical values in society is an inevitable cause for recognition in a 'Stakeholder' culture. The CSR has played an important role in shaping the business strategies while addressing the triple bottom line concept of sustainability.

CHAPTER THREE

RESEARCH APPROACH AND METHODOLOGY

3.1 Chapter Overview

The intention of chapter three is to identify the principal method for collecting and establishing effective and conversant information to aid with the findings and conclusion of this study. Using the various established methodologies it is desired to underline and select the research methods that will provide the greatest informative evidence that justifies and determines the proposed proposition and outcome of this dissertation.

Selecting the best fit research methodology in order to achieve a reliable and sensible supposition for the outlined hypothesis is the fundamental foundation for which to begin academic investigation and also the study to provide valid and reliable conclusions which are free from false assumptions. According to, Zikmund and Babin (2007), research methodologies range from philosophical to experimental and practical, and should be carefully adapted depending on the type of study.

3.2 Research Design

A research design is the logic that links the data to be collected to the initial questions of study and prescribed that when developing the research design, the scope of the research, the availability of resources, and time constraints must be taken into consideration (Yin, 2003). In order to fulfill the research objectives, a survey was used to get an in-depth understanding of CSR practices by construction companies in Sri Lanka. Fundamentally, this method is used to collect, describe, measure, analyse and interpret CSR data in the light of the pertinent problems identified in the study. The design is most appropriate to answer the research objectives i.e. what challenges do these institutions face in an attempt to implement CSR programs. For purposes of obtaining sufficient and relevant information in a short time, this study is cross-sectional in nature where a survey is carried out. Cross-sectional studies are useful where the researcher faces budget and time constraint (Cooper, Emory and Emory, 1995).

3.3 Sampling Technique and Sample Sizing

There are 4,210 numbers of contractors registered at ICTAD under the National Registration and Grading Scheme for Construction Contractors with grades from C1 to C10 as at the end of year 2012. Only grades C1, C2, C3 and C4 are qualified for registration under Major Contractor's category of National Construction Association of Sri Lanka. Therefore the study is focused only on C1 to C4 grade contractors. The population of the study and the sample size is shown in the Table 3.1 for each category. The sample is determined using the sample size formula given by Bulus and Nuhu (2012) as follows;

$$n = \frac{NZ^2 * 0.25}{d^2 * (N - 1) + (Z^2 * 0.25)}$$

Where,

n = the sample size required

N = total population size

d = precision level (0.10)

Z = number of standard deviation units of the sampling distribution corresponding to the desired confidence level of 95%

Table 3. 1: The Population of the Study and the Sample Size

ICTAD Grading	Population	Sample size with 10% precision level
C1	53	34
C2	36	26
C3	69	40
C4	170	62
Total	328	162

Source: Primary Data

3.4 Design of Questionnaires

The questionnaires were designed to deliver a user friendly approach which exhibits a prompt completion time, through structured and stimulated selections for the majority of the questions. The questions were premeditated to outline the prominence of CSR activities, attitudes of professionals and where relevant to the respondent, organizational implementations. The survey was developed in three sections and included 15 relevant questions in the area of CSR. These sections encompassed:

- ❖ Background Information
- ❖ Personal Opinion and Views
- ❖ CSR in the Company

In order to address the data requirements of this study, this research made use of a modified questionnaire, which was adapted from the State of Corporate Citizenship Survey Questionnaire developed and structured by the Center for Corporate Citizenship in Boston College (Rochlin, Witter and Mirvis, 2003). The questionnaire is supplemented with a cover letter which provides a brief description about the study, a commitment to share the findings and a complete anonymity of the respondents and the firms. Closed ended questions are used with a Likert rating scale and this is the most popular form of multi-item scales and has been used widely by researchers analyzing ethical practice and Corporate Social Responsibility of business (Nuhu, 2012).

3.5 Administering of Questionnaires

One hundred and sixty two structured questionnaires were sent to each category of contractors and two weeks duration was given to respond to the questions. Questionnaires were administered personally to respondents by the researcher. The study used primary data obtained through closed-ended questionnaire. The aim of the questionnaire was to gather information about the construction organizations CSR activities and the various challenges they encounter when they try to implement the CSR programs. The persons to fill-in the questionnaire is the Director of the organization or a Senior Manager of the establishment who is responsible for the subject matter.

3.6 Data Collection Instrument and Analysis Tools

The instrument used in collecting the data for this study was a 5 point Likert type questionnaire. This is because it guarantees a high degree of anonymity of individuals as well as ensures the use of standardized questions for all the respondents (Olabisi, 2010). The use of Chi-Square test for Likert-Scale questions analysis is justified by the study of Boone, Jr. and Boone (2012).

The Chi-Square method is calculated as thus:

$$X_c^2 = \sum \frac{(O - E)^2}{E}$$

Where,

X_c^2 = Chi-Square

O = Observed frequencies

E = Expected frequencies

In case $X_c^2 = 0$; it shows agreement between the observed and the expected frequencies. However, if $X_c^2 > 0$, there is no agreement. In essence, the greater the value of X_c^2 , the greater is the variation between the observed and the expected frequencies.

The Hypothesis tested in the research is;

- i. H_0 : Sri Lankan construction sector do not effectively and efficiently adopt CSR practices.
- ii. H_1 : Sri Lankan construction sector effectively and efficiently adopt CSR practices.
- iii. $\alpha = 0.05$

Results elaborated using different type of charts where appropriate tables further explain the trends attitudes and opinions of the respondents. Different techniques were used for analysis as suitable such as frequency distribution, ranking and rating (Naoum,1998). To analyze the results frequency technique used using mean, standard deviation, index and rating calculated as shown below;

$$M = \sum (X) / N$$

$$SD = \sqrt{\sum (X - M)^2 / N}$$

$$IV = M + M/SD$$

Where,

X = Value, N = Number of values, M = Mean, SD = Standard Deviation, IV = Index Value

Ranking is done based on the Index Value in descending order. Scales are assigned as 1,2,3,4 and 5 for response. Calculation tables are presented in each question analysis of the respondents.

3.7 Chapter Summary

Chapter three outlines the basic methods used in obtaining the information required for successfully achieving the final results and concluding main objectives of this dissertation. Well-structured questions were identified from the literature review, internet search from similar studies and all the valuable information and data were developed into a questionnaire for the main survey. The research questions were developed according to the theoretical framework. The appropriate methodology was developed as possible to answer those questions. Further, this chapter discussed data collection methods, target sample, methods of data analysis used for the research. The research findings will be illustrated in the proceeding chapter.

CHAPTER FOUR

ANALYSIS AND DISCUSSION

4.1 Chapter Overview

The chapter focuses on the quantitative research approach selected and discussed in the previous chapter. It summarizes and discusses the finding of the selected candidates for questionnaire survey as a generic research approach, focusing on ICTAD Grade C1, C2, C3 and C4 contractors.

4.2 Survey Findings

4.2.1 Section 1: General information about the respondents

A total of 162 questionnaires depending on the total sample size of each category contractors were administered for the survey. A total of 105 questionnaires were returned and summarized in the Table 4.1

Table 4. 1: Summary of responses

ICTAD GRADING	Population	Sample size	No of response received	As a % of sample	As a % of total response
C1	53	34	32	94.12	30.48
C2	36	26	22	84.62	20.95
C3	69	40	28	70.00	26.67
C4	170	62	23	37.10	21.90
Total	328	162	105		100.00

Source - Primary data

It is clear from the above table that there was a healthy response rate from C1, C2 and C3 contractors having 94.12%, 84.62% and 70.00% respectively. The returns from C4 were poor with 37.10%. The responses were further analyzed to determine the demography of respondents. The large segment within this sample represents those firms with C1 classification. These represent 30.48% of the responses. Responses from C2 and C4 grades have relatively equal weights and the contributions from C3 grades are slightly higher with 26.67% of the total returns.

4.2.2 Section 2: Awareness of the subject-sustainable construction

Question 1: Are you familiar with sustainability and green building concepts?

Table 4.2 shows the response pattern on the extent of familiarity with Sustainability and Green Building Concepts of selected 105 construction companies. This indicates 4% of respondent companies are not aware of the concept. Interestingly, a total of 32 i.e. 30.5% of the sample respondent have confirmed that they know the concept clearly and have knowledge on it while 45 companies are of the view that they only heard it and not familiar with the subject matter which nearly half of the sample. The responses from 56 companies have confirmed that they are aware of the subject matter but this can be justified by the response pattern of the next question. Knowledge about the subject is one of the key elements in the path for achieving sustainable construction (Zainul Abidin, 2010).

Table 4. 2: Response pattern on the extent of familiarity with Sustainability and Green Building Concepts

ICTAD GRADES	Responses Provided					Total
	Don't Know, never heard	Heard, but not very familiar	Know the concept	Have full knowledge, but never practice	Have full knowledge & in practice	
C1	0	2	8	17	5	32
C2	0	8	6	7	1	22
C3	0	18	8	2	0	28
C4	4	17	2	0	0	23
Total	4	45	24	26	6	105
Percentage	3.81	42.86	22.86	24.76	5.71	100.00

Source - Survey data 2014

Question 2: In your opinion, which one is the most important element of sustainable construction?

Here the questionnaire deliberately asked for this information with the purpose of wanting to justify the answer given in the above question. A contradiction is noted with the answers given to the first question. Only 19% of the respondents have identified the concept clearly as against the responses of 30.48% from question one. Most importantly 79% of the respondent have selected environment as the most important element and 1% for social while no responses for economic. The results clearly indicate that the construction sector is lack of knowledge in sustainability or green building concepts. Nevertheless, they are concerned about the environment. As Sri Lanka's carbon emissions is at higher level and understanding the importance of impact on environment is crucial. Construction is the major contributor of carbon emission and these results received from professionals in same industry and they are the responsible parties.

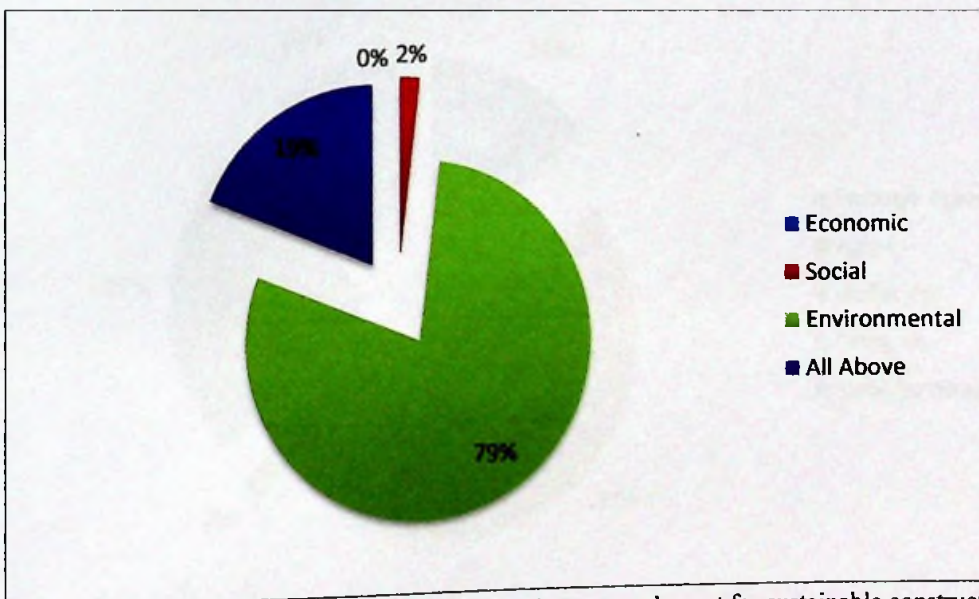


Figure 4. 1: Understanding of respondent in most important element for sustainable construction

Source primary data 2014

Question 3: Climate change is a very serious global risk for which construction industry contributes with major share by both consumption of maximum energy and emission of GHG (Green House Gas). Are you agree with this statement?

This question is forwarded to test the understanding of the industry on the use of maximum energy and emission of GHG by construction sector. Responses were measured using Likert five point-scale of; strongly agree to strongly disagree. The responses of the examinees are presented in Figure 4.3. Out of all responses 61% of the respondents are of the view that construction sector is liable for the major share by both consumption of maximum energy and emission of GHG. At the same time 37% are against the statement. Only 2% is undecided. Built environment is the one of largest contributor of CO₂ and can lead to the global warming and climate change (Didier and Huet, 2008).

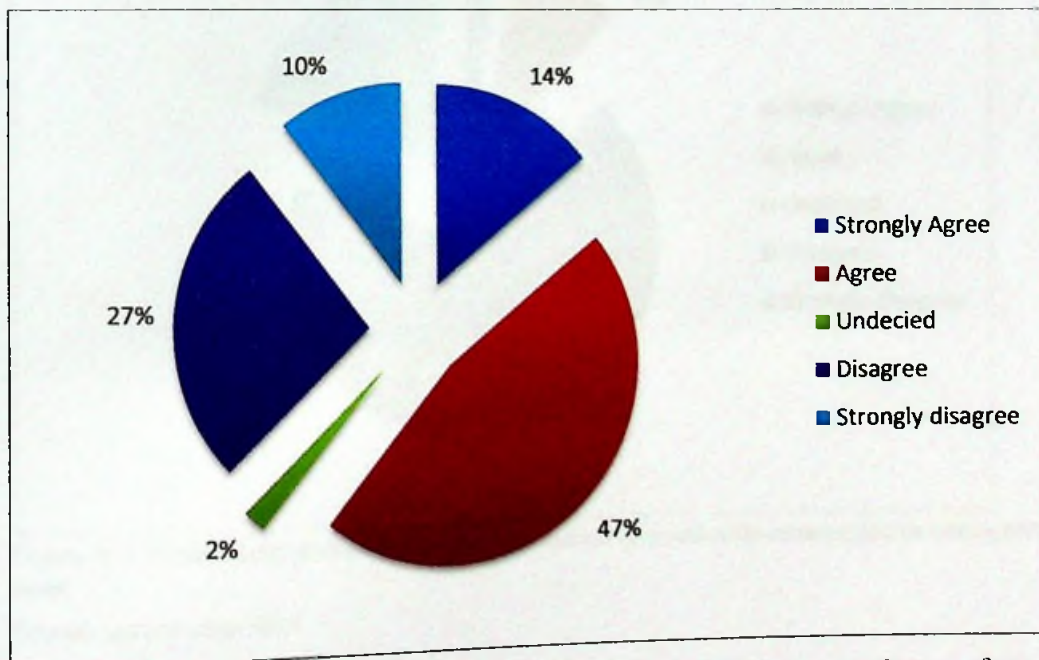


Figure 4. 2: Understanding of respondent on industry contribution with major share by way of maximum energy consumption and emission of GHG

Source - survey data 2014

Question 4: Do you think that the government is working towards the promotion of sustainable construction in Sri Lanka by raising awareness and developing new regulations?

Analysis for the question is shown in Figure 4.4. This question is set to test the perception of contractors on government contribution towards sustainable construction. Regardless of the grading of the companies altogether 92 respondents disagree with the statement which is 88% of the sample. An average of 13% of the respondents agreed or strongly agreed with the above statement. The government contribution towards sustainability is a vital aspect but, as of the results it reveals that more efforts from the government are needed with respect to the construction industry.

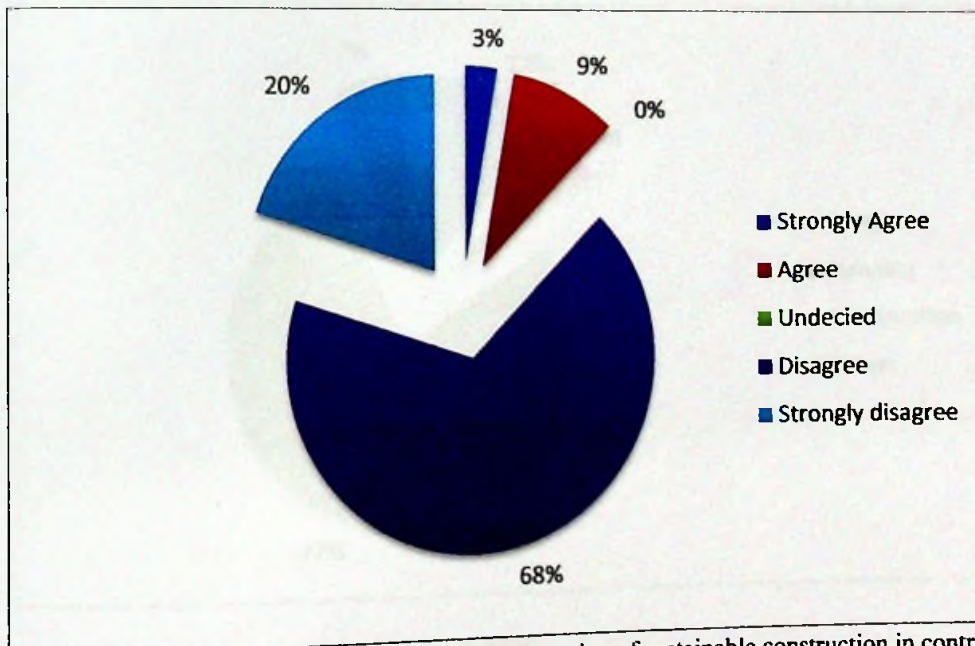


Figure 4. 3: Government contributions for the promotion of sustainable construction in contractors view point

Source survey data 2014

Question 5: At which stage of the project do you think most significant barrier to green building exist?

Based on results for the Question 4, higher percentage 77% i.e. 81 responses out of 105 have confirmed that construction stage of the project is the most significant barriers exist to green building while 12%, i.e. 13 firms of the sample have selected as the design stage. 11% of the respondents have considered planning or the other stage is crucial for green building constructions. Contrastly, in literature outlines the design stage has been identified as the critical stage for green building construction stakeholders participation at this design stage is vital for energy minimization in the proposed construction methodologies., Figure 4.5 shows the distribution pattern of the responses.

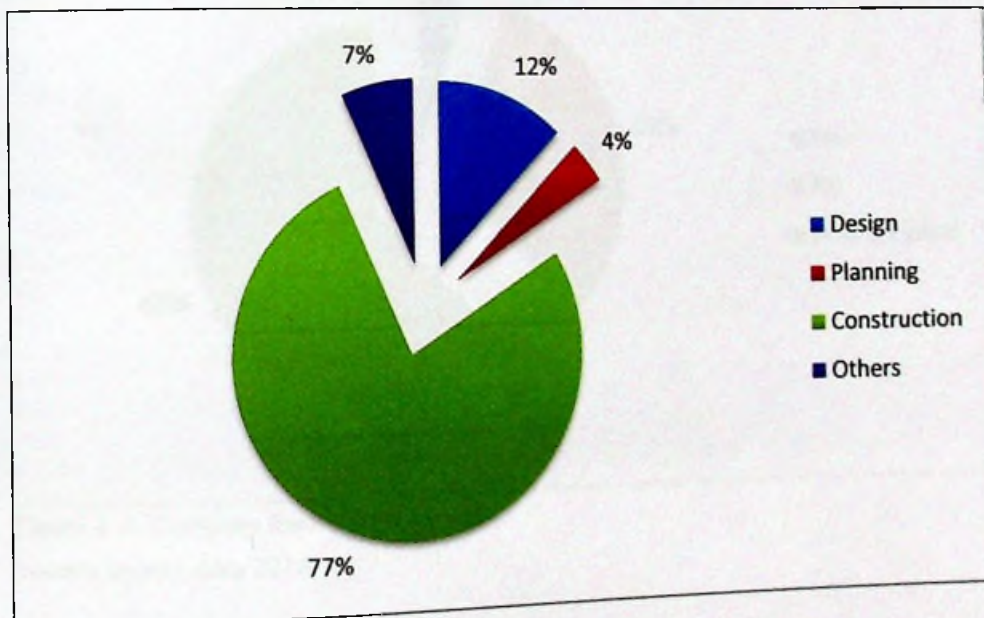


Figure 4. 4 :Response pattern for barriers in GBC
Source survey data 2014

Question 6: Has your company been involving in the construction of a green building project?

There are only 5% of the respondents are currently being engaging in green building projects. However, 63% of the companies have confirmed that they are to adopt green building concept in their future projects. A higher segment such as 32% of the construction industry are yet consider for green building projects. Although, ICTAD conduits National Construction and Green Construction Awards annually, more awareness programs are required in order to emphasise the importance of the concept.

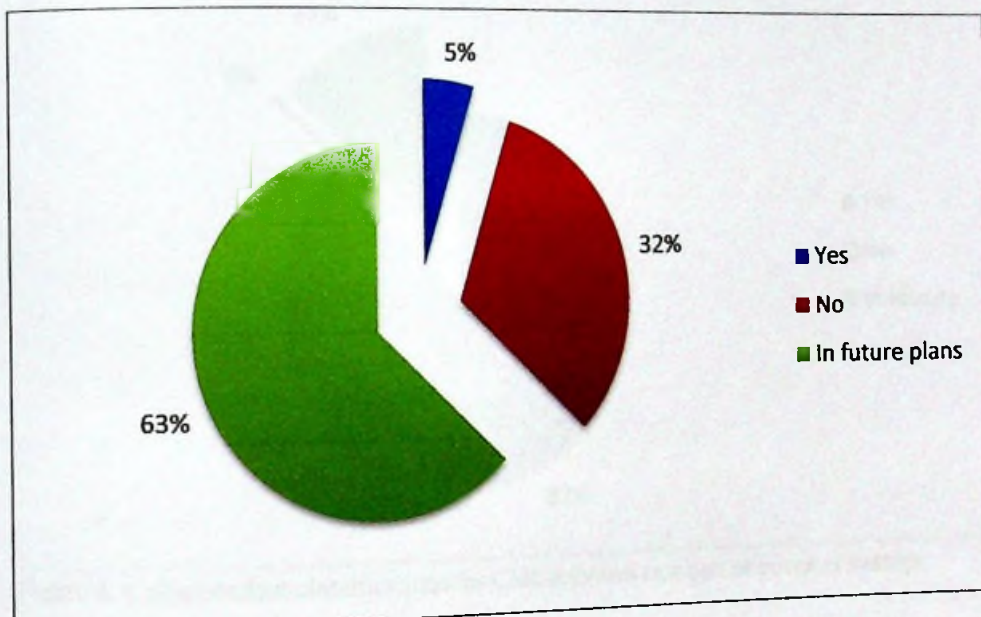


Figure 4. 5: Company involvement in GBC
Source survey data 2014

4.2.3 Section 3: Awareness and activities of CSR

Question 7: Does your Organization involve in CSR activities as a part of business strategy?

The majority of the respondent identified that they involved in CSR activities as an integral part of their business strategy. I.e. 87% and no one has said that they are not sponsoring for CSR. However, 13% are of the view that they would incorporate CSR in to the future plans.

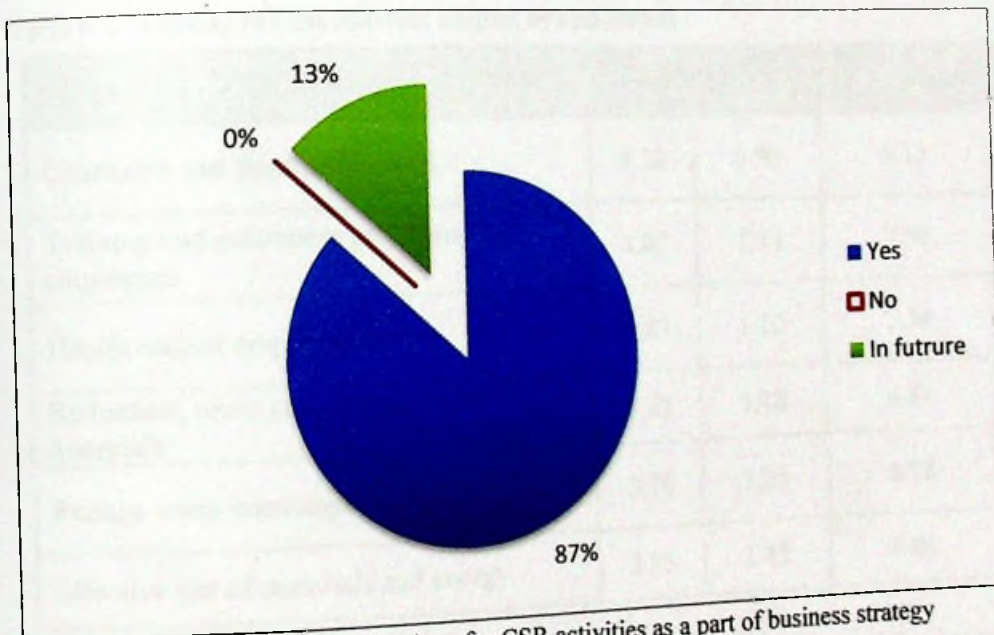


Figure 4. 6 :Respondent classifications for CSR activities as a part of business strategy

Source survey data 2014

Question 8: Following are the activities that construction organizations adopt as CSR initiatives. How do you rank them according to your construction CSR programme undertaken.

Strongly guided by the objectives, previous research questions and CSR reports of construction industry in worldwide, this section of the questionnaire sought to find out the activities or programs that construction organizations in Sri Lanka carryout or are usually lined up for their undertaking as corporate social responsibility. It was found out that firms engage in CSR activities as listed in the Table 4.3 below;

Table 4. 3: Ranking of CSR activities adopted by respondents

CSR activities	Avg.	Std. Div.	Index Value	Rank
Charitable and fundraising work	4.32	0.90	9.13	1
Training and awareness programs for employees	4.07	1.16	7.58	2
Health care of employees	3.89	1.12	7.34	3
Reduction, reuse and recycle waste materials	3.72	1.18	6.89	4
Reduce water consumption	3.76	1.25	6.78	5
Effective use of materials and energy	3.55	1.42	6.05	6

Source survey data 2014

Respondents identified their involvement in CSR as “Charitable and fundraising work” at the first place with an Index Value (IV) of 9.13 which is a very high value compared to the mean value of 7.30 of all IV values. “Training and awareness programs for employees” and “Health care of employees” are at second and third ranking with IV 7.58 and 7.34, being just above the mean IV. “Reduction, reuse and recycle waste materials”, “Reduce water consumption” and “Effective use of materials and energy” which are more prominent accepts have taken lower rankings.

Question 9: How important are the below parties to fulfill the Corporate Social Responsibility in your organization?

Answers on the Likert Scale were analyzed and tabulated in Table 4.4 below. With highest IV of 9.06 Management commitment has taken the first place. The second place is taken by Employees of the organization and thirdly the Government contribution. Local community and Stakeholders have taken fourth and fifth positions with relatively equal IV values. This is contradicting with Literature, as it says stakeholders are the most important party fulfilling CSR in an organization since they are the key to holding social capital and key driving force of CSR (Clarkson, 1995)

Table 4. 4: Ranking of important parties to fulfill the CSR of respondents

Important parties	Avg.	Std. Div.	IV	Rank
Management	4.23	0.88	9.06	1
Employees	3.91	0.93	8.14	2
Government	3.99	1.17	7.40	3
Local Communities	3.46	1.07	6.69	4
Stakeholders	3.73	1.27	6.66	5

Source survey data 2014

Question 10: In order to protect the environment, followings are the strategies adopted by a business. What is the level of importance given by your company to each of them?

Table 4. 5: Ranking of strategies adopted to protect environment by respondents

Strategies adopted by a business to protect the environment	Avg.	Std. Div.	Iv	Rank
Compliance with relevant environmental legislation	4.08	1.14	7.64	1
Prevention of pollution	3.88	1.15	7.24	2
Minimization of waste and emissions to air and water	3.76	1.19	6.92	3
Environmental awareness of all employees	3.72	1.18	6.89	4
Efficient use of natural resources	3.78	1.22	6.88	5
Continual improvement in environmental performance	3.77	1.22	6.86	6
Effective monitoring of environmental performance	3.72	1.22	6.77	7

Source survey data 2014

According to the analysis, it is evident that the organization gives their importance “Compliance with relevant environmental legislation” “Prevention of pollution” “Minimization of waste and emissions to air and water” expect first and second items all other fall below the mean value of IV i.e. 7.03. This indicates that other aspects are set aside in day to day operation.



Question 11: Do you think that the implementation of CSR would help the organization in the following ways?

In this question the respondents were asked to rate the economic benefits achievable through CSR activities. Table 4.6 highlights the findings after the analysis.

Table 4. 6: Ranking of responses on economic benefits achievable through CSR by respondents

Economic benefits achievable	Avg.	Std. Div.	IV	Rank
Enhance reputation and brand value	4.10	1.11	7.80	1
Improve financial performance and profitability	4.04	1.09	7.73	2
Reduce operating cost	3.96	1.15	7.42	3
Long term sustainability for companies and their employees	3.94	1.26	7.08	4
Increase staff commitment and involvement	3.90	1.25	7.01	5
Better risk and crisis management	3.77	1.22	6.86	6
Enhance capacity to innovate, good relations with government and communities	3.74	1.39	6.44	7

Source survey data 2014

Based on the above results it's confirmed that "Enhance reputation and brand value" is taken the highest position while "Improve financial performance and profitability" and "Reduce operating cost" have taken the second and third. The most concern element by organizations is towards the monetary benefits. Customers, investors, regulators, community groups, environmental activists, trading partners and others are now in an affinity so they are asking detailed CSR performance report from the companies before entering in to the business with them.

Question 12: In order to minimize the environmental impacts, following are the proactive approaches adopted by a business. What is the level of priority given by your company to each of them?

This question is set to understand the ranking of activities that the construction organizations are likely to undertake in terms of environmental stewardship. Respondents were asked scale each of the proactive measure on the Likert Scale from 5 to 1 and the analysis of the results are shown in the Table 4.7 below.

Table 4. 7: Ranking of environmental stewardship through CSR by respondents

Environmental Stewardship through CSR	Avg.	Std. Div.	IV	Rank
Waste reduction and recycling	4.10	1.11	7.79	1
Reduction of hazardous and toxic substances	4.03	1.09	7.72	2
Reducing water consumption	4.01	1.17	7.45	3
Improving the quality of waste water	3.89	1.27	6.93	4
Reduce noise pollution	3.76	1.22	6.84	5
Reducing energy & material usage	3.77	1.27	6.73	6
Reducing CO ₂ emission	3.81	1.32	6.70	7

Source survey data 2014

Results showed that the top three areas of the most active role business play are “Waste reduction & recycling”, “Reduction of hazardous material and reduce water consumption”. The least weightages according to the Index Values are taken by “Reduce CO₂ Emission” and “Reduce Energy Consumption and Material usage” respectively. In the literature discussion it is pointed out that construction industry is responsible for GHG emission as well as natural resource depletion.

Question 13: What would in your opinion be the biggest obstacles to integrate CSR in your business operations?

This question was left with a Likert Scale choice selection with 5 points to strongly agree Affect to 1 point to strongly disagree, affect allowing for a full understanding of the subsequent problems associated with implementation and the external environment difficulties. Table 4.8 shows the analysis of the results.

Table 4. 8: Ranking of s on obstacles to integrate CSR by respondents

Obstacles to integrate CSR	Avg.	Std. Div.	IV	Total
Lack of knowledge	4.08	1.14	7.64	1
Lack of specific legislation CSR	3.88	1.15	7.24	2
Lack of institution assistance	3.76	1.19	6.92	3
Lack of human resources	3.72	1.18	6.89	4
Business benefits not immediate	3.78	1.22	6.88	5
No support from top-management	3.77	1.22	6.86	6
Lack of employee motivation	3.72	1.22	6.77	7
Lack of time	3.50	1.26	6.29	8
Lack of funds	3.46	1.29	6.13	9
Unavailability of technology	3.27	1.40	5.61	10

Source survey data 2014

Evaluating the comparable literature in respect to Didier and Huet (2008), he cited that the financial benefits being 'Separated in time' be the crucial factor for CSR integration. However, according to the IV values most significant hindrance is lack of knowledge. CSR benefits are not immediate, but fundamentally the main complication of implementation is the "Lack of knowledge" on the subject considering it as the main complication. Didier and Huet (2008), highlights that focus should be on continuous education of staff, which will facilitate the long term effects and successful implementation of CSR.

Tables from 4.9 to 4.12 show the variation with respect to each of the listed obstacles for different ICTAD grade (C1 to C4) construction companies.

The table 4.9 shows the ranking for the obstacle items analyze for ICTAD Grade C1 contractors.

Table 4. 9: Ranking of responses from C1 Grade on obstacles to integrate CSR

Obstacles to integrate CSR	Avg.	Std. Div.	IV	Rank C1
Business benefits not immediate	3.97	1.07	7.66	1
Lack of institution assistance	3.91	1.13	7.37	2
Lack of knowledge	4.00	1.20	7.34	3
Lack of specific legislation csr	3.84	1.25	6.91	4
Lack of human resources	3.69	1.16	6.87	5
Lack of employee motivation	3.72	1.21	6.80	6
No support from top-management	3.59	1.27	6.42	7
Lack of time	3.44	1.30	6.09	8
Lack of funds	3.41	1.30	6.04	9
Unavailability of technology	3.38	1.29	5.99	10

Source survey data 2014

Similar ranking pattern is noted for this grade except for the obstacle "Business benefits not immediate" has taken the first place against the fifth in the group.

The Table 4.10 shows the ranking for the obstacle items analyze for ICTAD Grade C2 contractors.

Table 4. 10: Ranking of responses from C2 Grade on obstacles to integrate CSR

Obstacles to integrate CSR	Avg.	Std. Div.	IV	Rank C2
Lack of specific legislation CSR	4.05	0.98	8.19	1
Lack of knowledge	3.91	1.00	7.83	2
Lack of institution assistance	4.00	1.09	7.68	3
Business benefits not immediate	3.91	1.20	7.16	4
Lack of human resources	3.77	1.20	6.91	5
No support from top-management	3.77	1.24	6.81	6
Lack of funds	3.86	1.32	6.78	7
Unavailability of technology	3.55	1.23	6.42	8
Lack of employee motivation	3.32	1.36	5.76	9
Lack of time	3.36	1.43	5.71	10

Source survey data 2014

No any drastic variation is noted in the ranking pattern compared with the group.

The table 4.11 shows the ranking for the obstacle items analyze for ICTAD Grade C3 contractors.



Table 4. 11: Ranking of responses from C3 Grade on obstacles to integrate CSR

Obstacles to integrate CSR	Avg.	Std. Div.	IV	Rank C3
Lack of knowledge	4.11	1.05	8.03	1
Lack of human resources	4.00	1.00	8.00	2
Lack of specific legislation CSR	4.07	1.07	7.89	3
Lack of institution assistance	4.04	1.05	7.87	4
Lack of funds	3.71	1.25	6.69	5
Business benefits not immediate	3.64	1.20	6.67	6
Lack of employee motivation	3.68	1.26	6.61	7
Lack of time	3.43	1.18	6.34	8
No support from top-management	3.32	1.28	5.91	9
Unavailability of technology	3.14	1.48	5.26	10

Source survey data 2014

The table 4.12 shows the ranking for the obstacle items analyze for ICTAD Grade C4 contractors.

Table 4. 12: Ranking of responses from C4 Grade on obstacles to integrate CSR

Obstacles to integrate CSR	Avg.	Std. Div.	IV	Rank C4
Lack of institution assistance	4.17	0.92	8.73	1
Lack of specific legislation CSR	4.09	1.02	8.10	2
Lack of funds	4.00	1.06	7.76	3
Lack of knowledge	3.57	1.14	6.71	4
Lack of human resources	3.65	1.24	6.60	5
Lack of employee motivation	3.65	1.37	6.32	6
Business benefits not immediate	3.65	1.37	6.32	7
Lack of time	3.48	1.28	6.19	8
Unavailability of technology	3.13	1.30	5.55	9
No support from top-management	3.00	1.50	5.00	10

Source survey data 2014

The variation in response pattern is shown in the Figure 4.6 and it is evident that most of the factors have relatively taken the same ranking irrespective to the size of the companies i.e. ICTAD Grades.

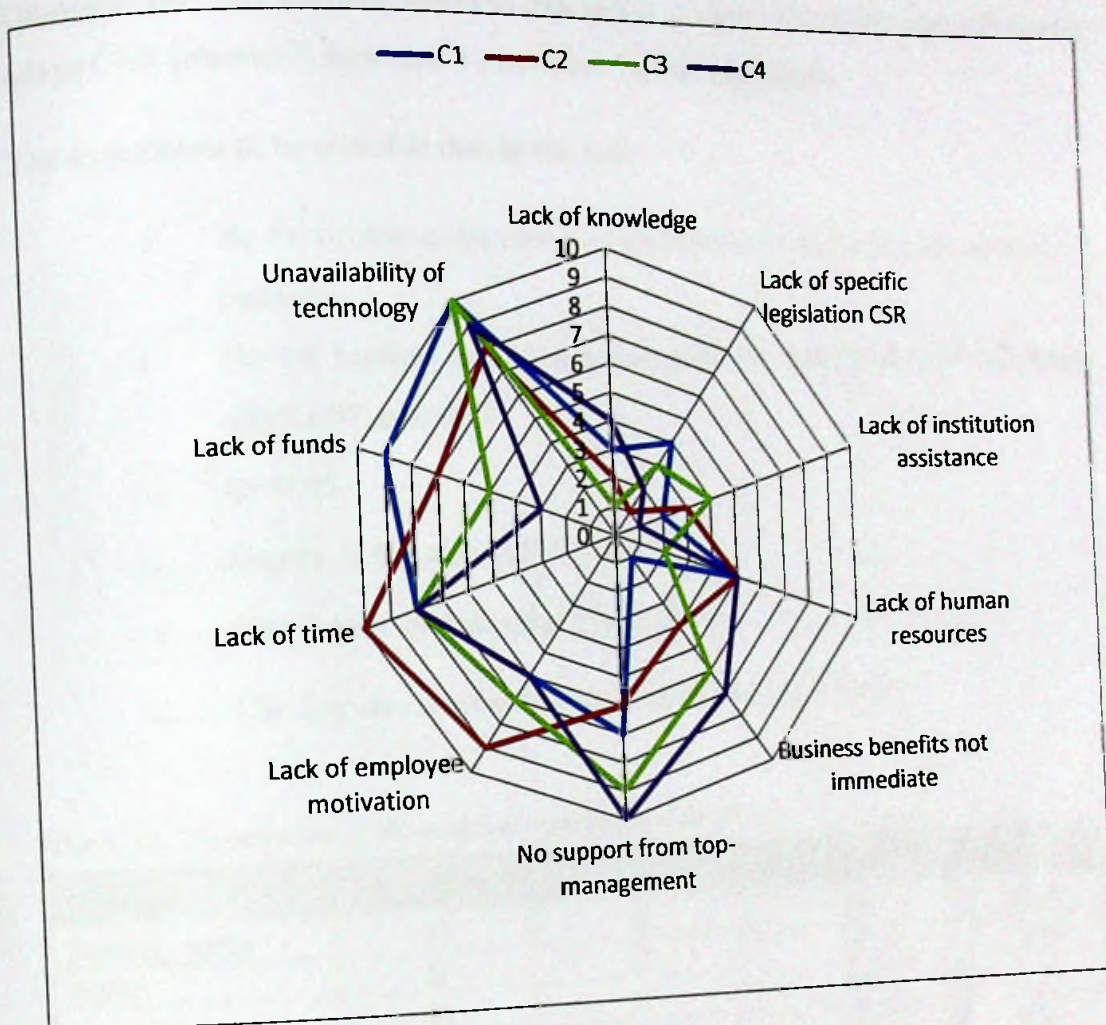


Figure 4. 1: Response pattern for obstacles to integrate CSR
 Source: Survey data 2014

The findings of this study established that obstacles such as; “Lack of knowledge”, “Lack of human resources”, “Lack of specific legislation for CSR” and “Lack of institution assistance” are the key obstacles to integrate CSR in to the construction business. Further it can be observed that “Lack of funds” is becoming as obstacle for small contractors to implement CSR in to their business. In the research carried out by Munasinghe & Malkumari (2012) also confirmed that lack of money is the main barrier for SME in Sri Lanka.

Question 14: "Sri Lankan construction sector do not effectively and efficiently adopt CSR practice", how much you agree on this statement.

The hypothesis to be tested is that in the null

- i. H_0 : Sri Lankan construction sector effectively and efficiently adopt CSR practices.
- ii. H_1 : Sri Lankan construction sector do not effectively and efficiently adopt CSR practices.
- iii. $\alpha = 0.05$
- iv. Degree of Freedom (df) = C-1 = 4
- v. Chi- Square critical value $\chi^2_{0.05} = 9.49$
- vi. Chi- Square computed value from table 4.9 $\chi^2_t = 84.67$

Table 4. 13: The responses of the examinee regarding hypothesis

Opinion	Observed N	Expected N	Residual (O - E)	(O - E) ² /E
Strongly agree	53	21	32	48.76
Agree	30	21	9	3.86
Undecided	15	21	-6	1.71
Dis agree	7	21	-14	9.33
Strongly disagree	0	21	-21	21.00
Total	105			84.67

Source survey data 2014

- i. Decision rule
 Reject H_0 : if $\chi^2_c > \chi^2_t$
 Accept H_0 : if $\chi^2_c < \chi^2_t$

Since $\chi^2_c > \chi^2_t$ i.e. $84.67 > 9.49$, we reject the null hypothesis and accept the alternative hypothesis that Sri Lankan construction sector do not effectively and efficiently adopt CSR practices.

Question 15: Do you think CSR will become more prominent over the coming years within all companies in the industry in Sri Lanka?

All the respondents confirmed the statement in affirmative. Unreservedly the opinions of all the established organizations reveal the indisputable prominence of CSR in the Industry. In Skanska CSR Reports 2012 (Skanska, 2012) summarizes the extent of this intricate question in a simple and formidable statement,

“If a company does not adapt they will not survive in the industry”

This statement copiously corresponds with the interviewees of Sri Lankan construction context in different forms but the general consensus is that all companies will have to adopt some aspect of CSR over the next few years if they want to compete in the growing markets where increasing competition is undeniable resulting new market strategies and innovative policies.

4.3 Chapter Summary

This chapter outlines the survey findings of questionnaires administered for the field survey and their responses. A healthy sample was selected covering the Major Contractors in Sri Lanka which comprises of ICTAD Grades C1 to C4. Demographic variable is limited to the size of company i.e. ICTAD classification. The survey focused on sustainability and Corporate Social Responsibility in construction sector in Sri Lanka. The study was aimed to find out the common key obstacles that prevailed to all contractors in incorporating CSR to their business strategies. Finally, a Chi-Square test was carried out to test the hypothesis “Sri Lankan construction sector do not effectively and efficiently adopt CSR practice” in to the day to day business operataion.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Chapter Overview

In this chapter author wishes to merge the information obtained in the research completed over the previous chapters, to present the informative conclusions regarding the objectives stated in the first chapter along with recommendations to improve CSR activities in the construction industry in Sri Lanka.

5.2 Conclusion

The main objectives of this study are to find out the obstacles faced by Sri Lankan construction industry when incorporating CSR in to their business strategies and find out the level of implementation of CSR in the industry. In this research a total of 162 questionnaires were administered among the construction companies based on the sample size determined through formula for sampling techniques (Boone, Jr. and Boone, 2012). The study was limited to ICTAD Grade C1 C2 C3 and C4 construction companies who represent the Major Contractors under National Contractors of Sri Lanka. Out of 162 questionnaires only 105 numbers were returned and analyzed for the discussion.

The first section of the questionnaires (question no 1 to 6) was designed to obtain an insight how the construction industry address the sustainable construction. All the respondents were aware of the concept. However, they were more concerned about the environment than the economic and social aspect of the sustainability. In the literature study, the construction sector was identified to be the major contributor for the GHG emission and maximum energy user. The study reveals that more than half i.e. 67% of the sample is fully aware of this phenomenon and 39% of the sample are against the statement. Since this being a substantial percentage, more awareness programs are required to be conducted through government organizations such as ICTAD and Sustainable Energy Authority. This is further justified from the responses to the question on government contribution towards the promotion of sustainable construction by raising awareness and developing new regulations. From the results, it can be

concluded that many organizations require government to play an active role in the direction of sustainable construction.

From the survey data it reveals that the industry is not fully aware that the barrier to GBC exists at the design stage of a project. It can be concluded that many of the organization are of the view that significant barrier exists at the construction stage which is completely a misunderstanding. However, the industry is keen to take up green projects and the author can conclude that there are few organizations that have already excelled their direction in GBC and won the National Construction and Green Construction Awards from ICTAD.

The latter parts of the questionnaires were directed in the area of CSR in order to fulfill the research objectives. From the findings, this study concludes that the construction sector is aware of the CSR concept but they are concerned towards the environmental stewardship thus deviating from the economic and social benefits which can be yielded through CSR. Under literature review commonly adopted CSR activities were filtered from the construction organization across the world and the study reveals the ranking as shown in the Table 5.1

Table 5. 1: Ranking of CSR activities

CSR activities	Rank
Charitable & fundraising work	1
Training and awareness programs for employees	2
Health care of employees	3
Reduction, reuse and recycle waste materials	4
Reduce water consumption	5
Effective use of materials and energy	6

According to ranking, we can conclude that “Charitable and fundraising and Training programs and health care for employees”, take the upper ranks while the most prominent facts such as “Reuse and Recycle Waste Materials”, “Reduce water consumption”, “Effective use of materials and energy” are ranked at lower levels though they should be the at the top.

Survey data reveals that the main catalyst in driving the CSR is the “Management” of the company. However, the literature accounts for the “Stakeholder” engagement. “Compliance with relevant Environmental Legislation” and “Prevention of pollution”

are in the top rankings of the strategies adopted by a business to protect the environment however, more important aspects are not taken in to consideration. It reveals that companies are following the basic guidelines set forth in environmental regulations.

With respect to the economic aspect to CSR, construction sector is only keen in direct out comes. The author can conclude that CSR is being looked after by the construction sector to enhance their reputation and branding and further on reducing operating cost and increasing profitability.

The analysis for the Environmental Stewardship through CSR reveals that waste, hazardous and toxic substances and water consumption reduction being the top three ranks while the critical aspects discussed in the literature such as; GHG emission, energy consumption and material usage have not being considered.

It can be concluded that "Lack of knowledge", "Lack of human resources", "Lack of specific legislation for csr" and "Lack of institution assistance" are the four key common obstacles for c1, c2, c3 and c4 contractors to integrate csr in to the business. Moreover, "Lack of funds" becomes another barrier to implement CSR in the organization become small in its capacity. The Chi- Square Test results at 0.05 significance level shows that Sri Lankan construction sector do not effectively and efficiently adopt CSR practices.

Finally, the author wishes to conclude that Sri Lankan construction companies are in the initial stage of understanding the CSR agenda related to environmental, social and economic benefits that can be harvested in the long term business.

5.3 Recommendation

Fundamentally, to begin with, the ultimate objectives of the CSR should be drafted into law of the country establishing new rules and regulations which public and private sector are bound to be compatible with. To adding sustainability there rules and regulations should clearly define the parameters and the minimum requirements to be accomplished, where the government has to take initiative as it is ranked 4th in the survey with high index value. These rules and regulations should also include time targets to be achieved in the course of implementation. Awareness campaign through training programs, exhibitions, competitions can improve the knowledge and need of implementation of the concept and the commitment of professionals in achieving the

objectives. As mentioned in survey, these initiatives shall be done by the management, employees and stakeholders, ranked as first, second and third with high index value.

CSR should be implemented into the culture of an organization. And every employee should behave in a socially responsible manner at all times. It should not be confined to a few individuals or a separate division within the company. The top management should ensure that they lead by example so that the rest will ultimately follow with the help of a strong Human Resource team. According to the literature review it is clear that better awareness of CSR will have many positive effects on a country as a whole as rejoice by the developed countries. Therefore, there is a need to establish standards for CSR which can be measured and monitored and to be incorporated to the project management portfolio. Measurement will enable the development of a rating system and further it requires CSR ratings to be considered in the evaluation of ICTAD gradings to the contractors. classification of contractors. This rating system will enable construction companies to develop and expand ethical business practices. This will enable customers, financiers and investors to choose to deal with businesses that are practicing CSR as an integral part of their business.

As a concluding and observable recommendation, the author proposes the prospect of an obligatory application of responsible practices particularly on public contracts where governments and local authorities have the influence and responsibility to showcase their own CSR ambitions before any contract is even awarded.

5.4 Future Research

There is need for a future dissertation focused on the broad sense of CSR through its developments, remunerations and implementations, with positive emphasis on accomplished construction companies with respect to CSR procedures and intelligences, to outline its fundamental presence in the industry. Therefore, as a first extension on the theoretical side, future researchers should enhance the investigation scope by focusing on a specific area of CSR to fully alleviate specific fundamentals. The subsequent concentrated research would offer a more complete picture of CSR specifics in construction industry in Sri Lanka, providing a more complex perspective on a definitive strategy. This study should focus on organizations engage in consultancy and construction.

As mentioned previously, the selected subject was explored in an expansive approach and the aim of the author was to provide a wide scope of CSR in the industry with initial focus on the importance and prosperity in which it consumes. The identified obstacles in implementing CSR in construction sector in this study can be further studied in each of the area. The author hopes this initial study will act as a catalyst and inspire further investigation to sociological, environmental and sustainable aspects in the construction industry and provide a fundamental basis for future research or reference by undergraduates and construction organizations alike. This necessitates further empirical studies to identify the reasons for the lack of awareness and commitment to the CSR by construction sector in Sri Lanka and to derive mechanisms to get the benefits of CSR.

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