

## **Master Thesis**

# **An investigation of reliability of Corporate Environmental Reporting and its impact on Environmental sustainability: An evidence from Sri Lanka**

**By**

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*This Master thesis is carried out as a part of the education at the University of Agder and is therefore approved as such. However, this does not imply that the University answers for the methods that are used or the conclusions that are drawn.*

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*13<sup>th</sup> December 2013*

Master Thesis in Development Management  
Centre for Development Studies  
Faculty of Economics and Social Sciences  
University of Agder

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## **Abstract**

Corporate Environmental Reporting (CER) has gained significant attention including government policy makers, researchers and business organizations. Several decision makers try to achieve sustainable development and place the environment at the top of their agendas. Many organizations are involved in reporting of their organization's environmental impacts as an important aspect to be disclosed to the stakeholders. The CER prompts organizations to rethink and conserve the environment, minimizing the harm and to reach international standards and attract stakeholders. Though many organizations disclose a CER within their annual reports, the reliability of the disclosures often remain to be determined. This study attempts to identify the reliability and honesty of CERs and their impact on Environmental Sustainability (ES) within the Sri Lankan context. Reliability and honesty are addressed by investigating extent, accuracy and quality of CERs, managers' perception of international standards in a CER, and their perception of the impacts of CERs on ES. The study reveals that Sri Lankan CERs are fairly accurate though it is a voluntary reporting. All most all the companies in the sample have described their environmental performances fairly accurately within their reports. More than 50% of the companies have already adopted international standards in their CER disclosures. It seems that reliable and honest CERs have positive effects on ensuring environmental sustainability. The environmental disclosure index served as an efficient tool to derive at this conclusion. Hopefully this study may contribute to the goal of sustainable development while giving insights in organizational CERs and environmental sustainability in Sri Lanka.

## **Acknowledgements**

I would like to extend my deepest appreciation to the following persons those who supported me in many ways to complete my thesis successfully. First of all I would like to pay my sincere gratitude to my supervisor Prof. Seven Ake Brojeke for his invaluable and constructive instructions and guidance throughout the thesis writing process. I am indebted to the all professors and teacher of the University of Agder, who helped me in teaching and assisting in different ways.

I extend my sincere appreciations to Prof. Danny Atapattu for his continuous support and encouragements given from the beginning of the Development Management Degree till the submitting the thesis.

I appreciate and thank to all the respondents including managers of the sample companies for giving me required information and allocating their precious time for my filed work in data collection.

I cannot forget the continuous encouragements and support made by my husband; Mr. W.A.K.Wickramarachchi, and I really pay gratitude for his assistance in many ways. In addition I would like to thank my brother Mr.H.A.N.Wimalasurendra and My Mother Mrs. M.Ranawansha for all the encouraging words and assistance given me to make my thesis a successful one.

Finally I like to pay my indebtedness and appreciations for all that I named and not named here but helped me to make my thesis dream into reality.

## **Declaration by candidate**

I hereby declare that the thesis:

**An investigation of reliability of Corporate Environmental Reporting and its impact on Environmental sustainability: An evidence from Sri Lanka**

has not been submitted to any other universities than University of Agder for any type of academic degree.

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13.12.2013

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## **Abbreviations and Acronyms**

<b>AR</b>	Annual Report
<b>CER</b>	Corporate Environmental Reporting
<b>CERs</b>	Corporate Environmental Reports
<b>CEI</b>	Corporate Environmental Information
<b>CERD</b>	Corporate Environmental Reporting Disclosures
<b>CSR</b>	Corporate Social Responsibility
<b>ES</b>	Environmental Sustainability
<b>ER</b>	Environmental Report
<b>GRI</b>	Global Reporting Initiative
<b>ISO</b>	International Standard Organization
<b>SD</b>	Sustainable Development
<b>SR</b>	Sustainability Report



# Chapter one

## Introduction

### 1.1 Background of the study

According to Sahay (2004) the last few decades of the 20<sup>th</sup> century have observed an increasing awareness of not only the severity but also the multiplicity of environmental problems (cited in Dutta and Bose, 2007), and man's ability to damage the environment was identified from the fifties of last century and hence UN Environment Programme (UNEP) was formed in 1972 at the world conference held in Stockholm with heads of states from all over the world to deal with environmental issues (Dutta and Bose, 2007; Pramanik et al, 2008 and Kolk, 2003). The international attention towards the environmental reporting increases drastically after a decade of publishing the first annual report (Kolk, 1998). Further it was found that most of the manufacturing and industrialization operations impact the environment and its sustainability through the use of natural capital, fossil fuel emissions to air, the greenhouse effect etc. (Kolk, 2003). Many corporations must take some responsibility for the environmental crises and should compensate for this (Kolk, 1998; Pramanik et al., 2008 and Belal, 2000 cited in Dutta and Bose, 2007). Currently the adverse environmental effects of economic development have become a matter of great public concern (Pramanik et al., 2008). The environmental impacts directly influence the Environmental Sustainability (ES) in reaching to the Sustainable Development (SD) and hence it is a key concern to the whole world (Kolk, 1998 and Belal, 2000 cited in Dutta and Bose, 2007). From the publication of the Brundtland Commission report entitled 'Our common future' in 1987 and the Earth summit in Rio de Janeiro in 1992, world leaders started to place the environment at the top of their agenda (Belal, 2000). After conducting the Earth summit, businesses were increasingly taking responsibility for the environmental impacts of their operations (Belal, 2000 cited in Dutta and Bose, 2007), and people started seeing the need for sound environmental information for better decision making (DEAT, 2005 cited in Dutta and Bose, 2007) and it demanded Corporate Environmental Reporting (CER) under the stakeholder and legitimacy theories. CER soon gained a prominent place among many companies all over the world. CER can be defined as 'a process through which companies disclose environmental information to their stakeholders to provide evidence that they are accountable for their activities and the resultant impact on the environment' (Lodhia, 2006 as cited in Dutta and Bose, 2007). Thus 'the environmental reporting should have both types of direction, as it is a question of life and sustainability' (Pramanik et al., 2008; 146).

Many companies now disclose CERs (Belal, 2000) and in many places CER is moving from voluntary to mandatory practice (Kolk, 1998). Most of the developed countries like Norway, Sweden, Netherlands and Australia have mandatory CER disclosures (Hossain, 1999) and developing countries like Sri Lanka, Bangladesh, and Malaysia have still a voluntary CER disclosure practice (Wilmshurst and Frost, 2000 and Pramanik et al., 2008). There are some generally accepted frameworks and guidelines such as Global Reporting Initiative (GRI), and ISO certification (ISO 14001 and ISO 26000) for common Corporate Social Reporting (CSR) and CER reporting but not a specific guideline exactly developed to Sri Lankan companies for CER disclosures (Kolk, 1998 and Rajapaksa 2003 cited in Pramanik et al., 2008). However, as per Jeewanthi (2011), a considerable number of listed companies disclose CER within Sri Lanka and among them a higher rate of CER disclosures is shown by non-manufacturing and non-environmental sensitive companies. It further shows that manufacturing and environmentally sensitive companies are reluctant to show their true involvement with the environment and their true operational impacts whereas the non-manufacturing firms might attempt to more CER (Jeewanthi, 2011). According to Kolk (1998) increasing the number of reports does not show that they are strategic and provide all information (Kolk, 1998) and might not affect environmental sustainability. Furthermore the absence of following generally accepted guidelines and standards (for example ISO 14001, ISO 26000 and GRI) for disclosing Corporate Environmental Reports (CERs) tends to result in no or minimal disclosure of CER and might not be totally accurate and in good quality (Staden and Hooks, 2007). However because of the CER demands much information it forced to ensure the validity of information that is the whole management system have to gear to supply accurate and relevant information pressing in an additional control on effectiveness and efficiency (Kolk, 1998).

With the increase of stakeholder demand for CER, they were further required to accomplish the given promises and guarantee the accuracy and reliability of data (Kolk, 1998). Therefore the purpose of this study is to identify the reliability and honesty of corporate environmental reporting among listed companies in Sri Lanka and to describe whether those environmental disclosures influence on the environmental sustainability in Sri Lanka. The analysis basically focuses on four main concerns: identify the extent, accuracy and quality of CER disclosures, investigate the extent of greenwashing of the reports, describing managers' perception on adopting international environmental standards (such as ISO 14001 and ISO 26000) in CER disclosures and describing managers' perception on the impact of CERs on environmental sustainability.

## **1.2 Research area**

This research will be conducted in Sri Lanka, a developing country located in South Asia. Sri Lanka had an agricultural based economy and is now moving towards an industrial economy. A large number of private, public and multinational companies are being established day by day. The increasing number of companies may give economic sustainability, but might also impact negatively on environmental sustainability (Rajapaksa. 2003 cited in Pramanik et al., 2008). This study will be conducted with reference to a sample of publicly listed companies in Sri Lanka because the company's information is publicly available only from the listed companies on Colombo Stock Exchange (CSE). The top 10 listed companies were selected as sample for the study based the rankings of the 'Business today top 25 companies'. These top 25 companies were selected based on the published information of companies in Colombo Stock Exchange. The criteria for considered for selecting the top 25 companies are Share turnover, Revenue, Profit after tax, Growth in sales turnover, Growth in Profits, Return On Equity, Earning Per Share, Market capitalization, values of share transaction and value addition. Researcher believes that this sample size is most suitable because literature evidenced that large companies tend to disclose CERs more than small firms (Hossain, 1999) and most of the researches have used small samples for their studies (Kolk, 2003). In addition the sample covers both manufacturing and non-manufacturing companies, national and multinational companies. These 10 companies and their subsidiaries are located in many places in Sri Lanka and the Head offices are located in Colombo.

## **1.3 Research objectives**

### **1.3.1 Main objective**

The main objective of this study is to identify the reliability and honesty (extent, accuracy quality and possible greenwashing) of corporate environmental reporting among listed companies and describe their impact on environmental sustainability.

### **1.3.2 Other objectives**

1. Evaluate the extent, accuracy and quality of the CER disclosures
2. Describe whether the reports give a true picture of organizational involvements and environmental impacts (possible green washing)
3. Describe Managers' perception on adopting international environmental standards (eg: ISO 14000 and ISO 26000) and guidelines (eg: GRI) in their CER disclosures

4. Describe the managers' perception to what extent CER disclosures actually contribute to Environmental sustainability

## **1.4 Research problem and justification**

### **1.4.1 Problem and justification**

Organizations disclose environmental information for many reasons (Staden and Hooks, 2007). Some are contributing to environmental sustainability, image building, satisfying stakeholder information needs, adhering to environmental guidelines and standards and as an ethical duty (Pramanik et al., 2008; Ramdhony et al., 2010 and Jeewanthi, 2011). However CER disclosures have widely been criticized by researchers due to its self-serving, incomplete and inaccurate accounts of environmental performances (Direken and Perston, 1977; Churchill, 1978 and Nader, 1978 cited in Kolk, 1998). According to Wiseman (1982), he found that CER disclosures are incomplete and are not related to the firms' actual environmental performance. Further the quality of both the mandatory and voluntary corporate environmental disclosures have not been established (Dierkes and Perston, 1977 cited in Wiseman 1982). Thus organizations are not really concerned about the true purpose of CER and the material impacts of the CER disclosures on the environment and its sustainability. According to findings of Jeewanthi (2011), more non-manufacturing firms disclose environmental information than manufacturing firms. However, the literature indicates that manufacturing firms have a direct and large impact on the environment and its sustainability (Sarkis, 2001). Therefore these companies are required to disclose more CER and now shareholders are also demanding more information on companies' environmental involvement.

Further it is accomplishing the legitimacy theory which organizations responsible to their stakeholders in communicating why and how do they do so (Staden and Hooks, 2007)? However to accomplish legitimacy, organizations must identify and take required precautions to protect the environment from the organizational impacts and disclose them to their stakeholders. CER disclosures could be used as a tool in identifying impacts, taking steps to protect the environment and ensure environmental sustainability. For that purpose, accurate and quality disclosures should be made according to accepted environmental standards and sustainability guidelines. Therefore this study is conducted to investigate the main research problem of '*Do the CER disclosures made by Sri Lankan companies reliable and influencing on environmental sustainably?*' Previous studies have assessed the extent and accuracy of CER disclosures in more descriptive ways.

However the current study attempts to examine and measure questions more quantitatively. The main research problem will be accompanied by focusing on extent, accuracy and quality of CER disclosures and managers' perception on adopting international environmental standards and the impact of CER on ES.

#### **1.4.2 Research questions**

1. How common is CER reporting among Sri Lankan companies?
2. Are the disclosures of CER in annual reports accurate and of high quality?
3. Are the CER disclosures reflecting reality or do they tend to rather reflect what could or should have been done? (Green Washing)
4. What perceptions are held by company management with reference to complying with international Environmental standards and guidelines?
5. What perceptions are held by management with reference to their environmental disclosures and its impact on environmental sustainability?

#### **1.5 Significance**

This study is significant in several ways. Firstly it contributes to the knowledge gap of the CER disclosures within Sri Lankan context, as there is very little literature currently available in this field. Just by disclosing CER, any company will have taken a step up towards international standards. The next step towards international quality is solid substance of content, reliability and validity. This study concentrates on the actual existence of a report, then on the quality, accuracy and validity of the CER disclosures. Thirdly this study could guide the governmental and non-governmental policy makers to reassess and reformulate environmental reporting disclosure policies and practices, and facilitate the development of a standard guideline for CER disclosures in Sri Lanka. Further it may facilitate companies to assess their attention given to the environmental impacts of their activities and motivate and guide for further improvements. The ultimate goal is sustainable development while giving insights of environmental sustainability within the listed companies in Sri Lanka.

#### **1.6 Methodology in brief**

This study will be conducted as a mixed research. Both primary and secondary data will be collected for the study. The primary data will be collected from self-administered questionnaires

and semi-structured interviews. The secondary data will be collected only from printed media. Therefore annual reports are treated as the main secondary data source. Some companies issue separate report for their environmental disclosures in addition to annual report but as a part of it naming sustainability report. In such cases, those sustainability report part have also been considered for collecting secondary data for the year of 2012/2013. Both quantitative and qualitative analysis techniques will be employed analyze data. To identify the extent of CER disclosure, content analysis will be employed and the extent of disclosure will be done by counting the number of sentences as it is most widely recognized measure of disclosures (Staden and Hooks, 2007). To investigate the accuracy and quality of CER disclosures within environmental reports, a CER index will be used developed based on the literature. The researcher has studied several indexes to test CER disclosures and selected the CER disclosure index developed by Staden and Hooks (2007) as the base index. That index has been amended and improved further basing the CER disclosure indexes developed by Wiseman (1982); UNEP/SustainAbility (1998); and (Kolk, 2003) so as evaluate CER disclosures within the environmental reports in the Sri Lankan context. The suggested environmental reporting index is shown in appendix 02. A scoring system has been developed by Staden and Hooks (2007) to identify the accuracy and quality of CER disclosures and the same scoring system will be used to this study since researcher thinks that it is more realistic and transparent to measure the accuracy and quality of CER disclosures. The scoring system is, 0 for non- disclosure, 1 for minimum coverage, 2 for descriptive, 3 for quantitative and 4 for truly extraordinary (Staden and Hooks, 2007). To present and analyze the results of the index, univariate statistics will be employed with bar charts and further rankings will be done based on the index scores to explain CER disclosure differences among the sample.

The extent of greenwashing, managers' perception on adopting international standards and the impact of CER disclosures on ES based on managers' perception will be analyzed quantitatively using univariate and multivariate statistical tools such as mean and correlation respectively based on the data collected from questionnaires. Moreover the data collected from semi-structured interviews were also used to elaborate the analysis with the data collected from questionnaires and environmental disclosures, and cross check the results. Therefore a case study analysis part will also be employed further to describe the role of CER within listed companies in Sri Lanka and its contribution on environmental sustainability.

## **1.7 Defining terms used in the thesis**

**CER (Corporate Environmental Reporting)** - a process through which companies often disclose environmental information for their activities and the results to provide that they are accountable for their activities and the resultant impact on the environment (Lodhia 2006 cited in Dutta and Bose, 2007). Thus Corporate Environmental Information (CEI) is an alternative word used by the researcher which explains the same meaning of CER.

**CED (Corporate Environmental Disclosure)** - Information made publicly available by a company, through any of the key channels or medium in relation to that company's interaction with its physical environment" (UN ISAR 1992, 1994 cited in Ahmad and Mousa, 2010).

**CERP / CERDP (Corporate Environmental Reporting Practices / CER Disclosure Practices)** - CER practices "as the use of environmental information to disclose the impact of corporate activities on the natural environment to stakeholders of the corporate entity or organization" and Corporate environmental reports (Edu et al cited in Ramdhony et al., 2010).

**CERs (Corporate Environmental Reports)** - Publicly available, stand-alone reports issued voluntarily by companies on their environmental activities (Brophy and Starkey, 1996).

**Mandatory disclosure of CEI-** Mandatory disclosure is disclosing of CEI required by law, legislation or other legal statute. Denmark, Netherlands, Norway and Sweden have to disclose CER as a mandatory requirement (Hossain et al., 2006).

**Voluntary disclosure of CEI -** Voluntary environmental reporting which is defined as reporting, not required by law, of the impact organization actions and activities have on the natural environment (Wilmshurst and Frost, 2000).

## **1.8 Thesis outline**

Chapter 1 offers a brief background for the study, shapes the research objectives, research questions, significance of the study, methodology in brief and thesis outline.

Chapter 2 presents an overview of the present knowledge available for this study area and the conceptual framework and list of hypotheses. It mainly focuses on sustainable development,

environmental sustainability, historical development of CER disclosures, theories of CER disclosures, greenwashing, international standards for CER disclosures, measurements of accuracy, quality and reliability CER disclosures and its impact on environmental sustainability. Finally it shows the conceptual framework developed by the researcher and the list of hypotheses.

Chapter 3 explains the methodology of the study. It mainly describes the sample, methods of data collection and analysis.

Chapter 4 provides the analysis of the collected data. The analysis is mainly done quantitatively using a CER index and both univariate and multivariate statistics using MS Excel and SPSS statistical tools. The information collected from self-administered questionnaires semi-structured interviews also analyzes both quantitatively and qualitatively.

Chapter 5 offers the findings, conclusion and the recommendations of the study.

## **Chapter two**

### **Literature review and conceptual framework**

#### **2.1 Introduction**

This chapter offers an overview of the current knowledge available for this study area and the conceptual framework with list of hypotheses. It mainly focuses on presenting literature about sustainable development, environmental sustainability, historical development of CER disclosures, theories of CER disclosures, greenwashing, international standards for CER disclosures, measurements of accuracy, quality and reliability CER disclosures and its impact on environmental sustainability. Finally it shows the conceptual framework developed by the researcher and the list of hypotheses.

#### **2.2 Sustainability, Sustainable development and Environmental sustainability.**

##### **2.2.1 Sustainability and Sustainable development**

Considering the past few decades, the environmental problems have changed and increased drastically. As per Holmberg and Karlsson, the nature of the environmental problems turned from local to global, from distinct to diffuse, from short time delay between cause and effect to long time delay, and relatively from low complexity to high complexity (Holmberg and Karlsson, 1992 cited in Robert et al., 1997). Hence ‘there is no question with regarding the need for the sustainability’ (Morelli, 2011). Sustainability concerns environmental protection, equity and economic development and Kolk stated that sustainability has been identified as a significant international issue at present ( Kolk, 2003 ) because with the huge developments, environmental, social and economic sustainability might be affected negatively. Although detailed definitions of sustainability vary, they consistently evoke to some extent a balance between ecological and social goals, such as improving quality of life, care for the environment, ecological carrying capacity, and participation in decision making (Jepson, 2004a; Porter, 2000; Wheeler, 2000 cited in Hawkins & Wang, 2011) Hence the sustainability concept is closely connected with the environmental systems and the use of natural resources for diminishing resources over time and across generations (Leuenberger and Bartle, 2009 and Jepson, 2004a cited in Hawkins and Wang, 2011). Sustainability could be defined in terms of economic, social and environmental sustainability. Though there are differences, there are some overlaps among them. For an instant,

economic and environmental sustainability have a strong relationship among each other (Goodland, 1995). Therefore to attain good economic, social and environmental sustainability, the development should be sustainable. Hence our focus should be the sustainable development. The concepts of sustainability and sustainable development are distinct in nature; there is a significant overlap in addressing these issues (Hawkins and Wang, 2011). Sustainable development was thus really important and agenda 21; the action plan for sustainable development was launched at Rio's Earth Summit in 1992. Further the UN Millennium Development goals invited all countries to integrate the sustainable development principles into national policies and programmes (Moran et al., 2007) due to its significance in present world. The World Commission on Environment and Development identified the emerging issue of stressing human economy to the global ecosystems. They emphasized that the development should satisfy the expectations of a better life and therefore development as identified within the ecological bounds. Hence the Brundtland Commission defines sustainable development as 'that meets the needs of the present without compromising the ability of future generations to meet their own needs' (WCSD, 1987). According to Leuneberger and Bartle (2009: 04), sustainable development is 'a plan of action that integrates environmental sustainability into decision making (cited in Hawkins and Wang, 2011: 09). As per Carte (2001) sustainable development can be defined as measurable bottom-line conditions for both human development and ecological sustainability (cited in Moran et al., 2007). Thus to identify the sustainable development, measurements are required. However they should be not only reflected changes in quality of life but also show if these changes are compatible with the planet's current ecological boundaries. In this study the attention is mainly focused to the environmental sustainability.

### **2.2.2 Environmental Sustainability**

One of the most important aspects of sustainable development is environmental sustainability. the Brundtland report of Environmental sustainability defines it as 'the ability to maintain valued environmental assets over the next several decades and to manage problems that emerge from changing environmental conditions' (Esty et al., 2005 cited in Siche et al., 2008). However environmental sustainability is a big issue at the present world (Kolk, 1999). The environmental sustainability has been identified as a concept apart from, but linked to both social and economic sustainability (Morelli, 2011). For a sustainable socio economic system, environmental sustainability is a necessary prerequisite. According to Morelli, ES can be defined as 'meeting the resources and services needs of current and future generations without compromising the health of eco system (Morelli, 2011). The environment becomes the major constraint for human progress

now (Goodland, 1995). The goals of environmental sustainability are unimpaired maintenance of human life-support system-environmental sink and source capacities (Goodland, 1995). Furthermore, Goodland (1995), presented the need of the environmental sustainability by evaluating its historical emergence. The history consists of the arguments of Mills, Malthus, Meadows and Brundtland et al., and he defined environmental sustainability as ‘the maintenance of natural capital’ (cited in Goodland, 1995). This meaning related to economic and social sustainability. But there are divergences. It is evident that it would be difficult to have a sustainable society without sustainable environment which facilitates the resource foundation. Further economic sustainability is dependent on sustainable materials, energy and environmental resources.

As per Goodland (1995), moving towards the ES is urgent because global life support systems arrange a time limit and therefore we do not have much time to attain our dream of creating more living space or more environment by doing colonizing the moon or building cities beneath the ocean. We have to save the remnants of the only environment we have and allow time for and invest in the regeneration of what we have already damaged (Goodland, 1995). Further a number of environmental professionals are now play a role so as to lead corporate efforts towards sustainability (N AEM, 2010 as in Lisa et al.2011). In addition sustainability is treated as a combination of social responsibility as in ISO 26000, Guidance for social responsibility due to its timely importance (ISO 2010) and adhering to 14001 will make the organizations responsible for reporting their environmental performances.

### **2.3 Corporate Social Responsibility and Corporate Environmental Reporting**

Society is increasingly demanding organizations to reveal corporate social responsibility (CSR) and organizations must be accountable, democratic and transparent to satisfy that demand. It can be done through the organizational legitimacy which communicates the organizational operations and why they do so? (Staden and Hooks, 2007). Organizational legitimacy can be gained through communicating about the social, economic and environmental aspects of CSR. Among the three aspects, environmental information is most important but the organizations have less attention on providing environmental information (Silva, 2008). Corporate Social Responsibility can be grouped into four main themes: social, environmental, ethics and stakeholders (Lockett et al., 200

cited in Visser et al., 2007) and there is an increasing level of CSR all over the world including both developed and developing countries.

However the CSR disclosures within developed countries are rising steadily and there are number guidelines and frameworks available with reference to different regions and countries. The developing countries are also gradually increasing the disclosures at present. In addition, there is organizations' increasing demand for CSR to be accountable and transparent; to be inclusive; to be ethical and stable; to be more equitable and to be sustainable (Birch, 2003 cited in Silva, 2008). However presently the society's demand for CSR has changed a bit and more focused to demand environmental accountability, which become a key focus of government and corporate policy (Chiang and Lightbody, 2004 cited in Silva, 2008) with a critical issue of 'how to avoid serious, and perhaps cataclysmic, damage to the natural environment' (Gunningham, Philipson and Grabosky, 1999 cited in Silva, 2008). CSR and CER papers are relatively scarce in African, Latin American and Asian regions. The three generic indicators of CSR is emerging market companies entitle a remarkable representation in the Dow Jones Sustainability index, and show increasing level of adhering to GRI and ISO 14001 (Baskin, 2006). Further two third of the sample emerging market companies produced sustainability report or allocate a separate section in their website or annual report for CSR (Baskin, 2006 as cited in Visser et al., 2007). The CSR activities in developing countries are not much different (Visser et al., 2007). The countries like Asia, China, India, Indonesia, Malaysia and Pakistan are mostly contribute CSR and Bangladesh (Nilsen, 2005), Vietnam (Prieto-Carron, 2006b) and Sri Lanka (Luken and Stares, 2005) have less attention on CSR (cited in Visser et al., 2007)

One of the aspect of CSR; the CER in a developing country is identified here because the researcher conducts the study in a developing country. Hence as in Visser et al., (2007) CER in developing countries can be explains as 'the formal and informal ways in which business makes a contribution to improving governance, social, ethical, labour and environmental conditions of the developing countries in which they operate, while remaining sensitive to prevailing religious, historical and cultural contexts' (Visser et al., 2007). Therefore current study attempts to analyze the disclosure of environmental reporting, one of the CER theme, within Sri Lankan listed companies.

## **2.4 Historical development and current knowledge of CER**

As per Hossain et al. (2006), corporate social and environmental reporting became an matter of interest of researchers during the last twenty years. However in the decade of 1980, the focus switched over from corporate social disclosures to corporate disclosures and reporting of environmental information and the trend continued and extravagant in the 1990s as well as beyond (Hossain et al., 2006). However, nowadays, issues relating to the corporate social and environmental disclosures have received a great deal of attention by the researchers (Gray et al., 1987; Gray et al., 1995; Deegan and Gordon, 1996; Choi, 1998; Eken, 1998; Guthrie and Parker, 1990 cited in Hossain et al., 2006) and (Choi, 1999). It has a substantial academic interest over past several decades.

The society's demand for the cleaner environment accompanied by extensive environmental legislation that have forced firms to undertake and actively involved in extensive pollution control programmes (Wiseman, 1982). Many studies promoted the need of the environmental reporting and suggest detailed environmental measurements and reporting systems (Beams and Fertig, 1971 and Estes, 1976 cited in Wiseman, 1982). Tsang (1998 cited in Dutta and Bose, 2007) identified that a steady increase in social and environmental disclosures during late 1980s and then a constant pattern since 1933. The disclosures of organizations dealings with natural environment appeared first in the 1940s with less intensity until recent times (Honger, 1982 as cited in Neu et al., 1998). The findings of the researchers who surveyed number of countries revealed that corporations are disclosing environmental information in annual reports has increase trend over years (Hossain et al. 2006). The development of non- financial reporting began in the US in the 1980s. Atkinson (1996 cited in Ahmad and Mousa 2010) stated that there are three reasons to the shift of CSR to CER; the continuing rise of environmental concern since 1970s and calls for the implementation of the concept of sustainable development through society, a growing recognition of public rights to information from government and industry and a shift away from a blind reliance upon regulation to a preference for alternative instruments of control which encourage rather than require organizations to improve their environmental performances.

Environmental reporting is a term used to describe various means by which companies disclose information on their environmental activities and as per Pramanik et al (2008), it can be defined as an umbrella term that describes various means by which companies disclose information on their environmental activities to the users. Corporate Environmental reporting represents only one form of environmental reporting (Emtairah, 2002). Corporate Environmental Reporting (CER),

Corporate Environmental Information (CEI), Corporate Environments Reporting Practices (CERP), Corporate Environmental and Reporting Disclosure (CERD) or Corporate Environmental Disclosures (CED) are terms used interchangeably in corporate environmental studies that has similar meanings (Pramanik et al., 2008). There are no unique definitions for above terms. However researcher has defined these terms with the support of literature as follows so as to get an approach for the study since the whole study deals with these terms.

CER can be defined as “a voluntary disclosing of the environmental impact of an organization’s operations, products and services producing process and the ways of committing to reduce such adverse impacts publically disclosing its polices, targets and other environmental information and such disclosures are effective tools to communicate shareholders about the environmental performance of the organizations” (Choi, 1999). According to Ramdhony et al. (2010) CER can be defined as ‘Environmental Reporting relates to the collection, measurement and publication of ‘green’ information to the community’. Lodhia (2006) cited in Dutta and Bose (2007) defines CER as “a process through which companies often disclose environmental information for their activities and the results to provide that they are accountable for their activities and the resultant impact on the environment”. As per Pramanik et al (2008) CER is the process by which a corporation communicates information regarding the range of its environmental activities to a variety of stakeholders including employees, local communities, shareholders, customers, government and environmental groups.

Though the number of companies making environment disclosures has increased steadily over the past two decades (Hossain, 1999 and Wiseman, 1982) and the quality, accuracy and reliability of the disclosures have not been established (Kolk, 2003) and only a handful of researches have done to measure the quality and accuracy of CER within annual reports (Staden and Hooks, 2007). Therefore the impact of CER may not a material impact or might not affect the environmental sustainability positively. However since the CER is voluntary disclosure practice, it is widely criticized due to its self-serving and inaccurate accounts of corporate environmental performances (Dierkes and Perston, 1977 and Nader, 1978 cited in Wiseman, 1982). Therefore this study is also attempts to analyze the reliability and honesty of CER within annual reports in Sri Lankan context.

## **2.5 Theories of Corporate Environmental Reporting**

Prior studies relied on many theories such as legitimacy theory (Patten, 1992; Wilmshurst and Frost, 2000), Institutional theory (Comier et al., 2005), Stakeholder theory (Roberts, 1992) cited in Aerts et al., 2006) in disclosing CER. Generally environmental reporting is self-laudatory and self-congratulatory-public relations exercise (Silva, 2008). It requires for the environmental information to have inclusiveness, completeness, relevance and auditability' (Laufer, 2003 cited in Silva, 2008) and these environmental information required to be publicly accessible, credible and verifiable or auditable. (Ballou et al, 2006). The main CER theory concerned in this study is legitimacy theory.

### **2.5.1 Legitimacy theory**

Legitimacy theory has been identified as a one of underlying theories in environmental disclosure research. It presents that organizations have different contracts with its society and accomplishing them legitimates the organization and its actions (Cormier and Gordon, 2000). Legitimacy is an important theory speaks about making the organizations responsible for providing true and all information about why and how they do so? (Chris et al., 2007) As per Neu et al., (1998) some issues of organizational legitimacy can be solved by Corporate Social Responsibility (CSR) disclosures which concern economic, social and environmental disclosures.

According to legitimacy theory, companies can follow proactive or reactive approach towards achieving legitimacy. As per Chris et al., (2007), large number of studies have been done focusing the reactive approach, which companies publish environmental information in relation to some event or crisis facing either the company (Deegan and Rankin, 1996 and Deegan et al., 2002 cited in Chris et al., 2007) or the industry (Patten, 1992 and Walden and Schwartz, 1997 cited in Chris et al, 2007). The proactive approach that has been designed to prevent legitimacy concerns from arising was given a little attention and Chris et al., made a contribution to this literature through their study (2007). Though the situation is like that, current study concerns only the environmental aspect of CSR disclosures and the reactive approach of the legitimacy which organizations responsible for communicating environmental information reacting to the increased environmental exposure (Chris et al., 2007). Thus current study attempts to contribute reactive legitimacy theory by examining the Reliability and honesty of environmental disclosure. According to reactive approach, a large number of evidenced found that companies' disclose more environmental information in reaction to increased environmental exposure or some environmental events.

Hence environmental disclosure and environmental performance or environmental sustainability often shows a reactive approach. However critics pointed out that it is not always possible to know for certain that which of the legitimacy strategy (Proactive or reactive) the companies are following (Chris et al., 2007).

Some studies in the literature suggest the legitimacy theory testing. As per Cormier and Gordon “Accounting and Financial reporting represent ways an organization communicates with society and its stakeholders, thereby legitimating its actions” (2000) As per Brown and Deegan legitimacy theory was used as the base for several social and environmental disclosures that have done in annual reports and financial statement data (1998 cited in Cormier and Gordon, 2000). Legitimacy theory was basis for many studies and for an instant Deegan and Gordon, 1996; Deegan and Rankin, 1996; Brown and Deegan, 1998 and Wilmshurst and Frost, 2000 have relied on legitimacy theory for their evaluations. (cited in Cormier and Gordon 2000 ). In testing legitimacy, the results of Deegan and Gordon shows that companies’ environmental reporting was positively related to the increase in environmental interests groups, the sample companies highlighted the positive actions taken and environmental sensitivity of the industries was positively correlated with the amount of disclosures (1996 cited in Cormier and Gordon, 2000)

Literature suggests many motives for the disclosure of voluntary environment (Jeewanthi, 2011 and Ramdhony et al., 2010). This includes the expectation of being legitimate with powerful stakeholders. Therefore “Legitimacy theory suggest that to achieve legitimacy an organization should be operating within the norms and expectations of the society within which it operates and implies that organizations make voluntary disclosures in order to gain legitimacy from, or maintain legitimacy with, relevant stakeholders or publics” (Doling and Pfeiffer, 1975; Deegan, 2002 and O’Donovan, 2002 cited in Chris et al., 2007)

Legitimacy requires a communication between organization and its various stakeholders and hence the disclosures are therefore required to show legitimacy and if not organizations may face a legitimacy threat if society is not aware that they are operating within its norms and expectations (Chris et al., 2007). The process of legitimation usually involves real, material changes in the operations of the organization and can be applied to all voluntary disclosures made by organizations (Chris et al., 2007). However this also study deals only with voluntary environmental disclosure within Sri Lankan context.

## **2.6 Green washing / True and honesty**

As per Marquis and Toffer (2011) “The transparency of corporate environmental impacts is a significant aspect of global social movement on the environment”. Stakeholders demand more information about organizational financial and non-financial data including environmental and social performances (Marquis and Toffer, 2011). Since the consumers and companies are paying more attention on environment, the number of companies issuing green claims also increased seriously over last few years (Gallicano, 2001). The corporations’ voluntary disclosure of information about their environmental impacts have become drastically widespread nowadays (Eccles and Keholders cited in Marquis and Toffer, 2011). Further stakeholders are increasingly aware of corporate social responsibility and are expecting more information and disclosure from companies. The control of information is with the companies (Li and ernoff, 2008 cited in Gallicano, 2011) and they provide what they want. Companies are strong enough to do beneficial but challenging businesses though influencing legislations and corporations are accused of Greenwashing on their reports, websites and other disclosing media. However there are some companies that maintain good relationships with its internal and external stakeholders. Stakeholders might think that some organizations tend to be deceitful while some are tended to build on meaningful relationships such as openness, honesty and transparency (Grunig, 1992; Toth, 2007 cited in Gallicano, 2011). Greenwashing was identified due to the inconsistencies between companies’ actual behavior and the claims about being green. The term Greenwashing was born from a critical view of companies environmental reporting. It was coined in 1980s by Jay Westerveld who identified the inconsistencies in hotels that did not have any recycling programmes but encourage the towel reuse (Romero, 2002 cited in Gallicano, 2011) .Green washing can be identified as the variations between companies’ actual behaviour and the claims about being green (Gallicano, 2011).Greenwashing is the “act of misleading consumes regarding the environmental practices of a company or the environmental benefits of a product or service” (Greenpeace,n.d cited in Gallicano, 2011).

According to Rawlins (2009 cited in Gallicano, 2011), companies should have three things to be transparent such as presenting accurate, substantial and useful information, listening to stakeholders to identify their information needs and providing objective, balanced information about their activities. Further it is important to provide ways to verify the accuracy of environmental information to the consumers. Hence experts are suggesting organizations to disclose quantitative measure of air emissions, water pollution, hazardous waste disposal, energy

consumption and green-house gas emissions etc. (Esty and Winston, 2006 cited in Gallicano, 2011).

There are many different guidelines to assess possible Greenwashing made by companies. According to Gallicano (2011), Greenpeace (n.d.), EnviroMedia Social Marketing and the University of Oregon (2009), TerraChoice Environmental Marketing (2009), and the committees of Advertising practices (2009) are the organizations that have developed Greenwashing criteria. If the companies are doing Greenwashing, the true purpose of CER cannot be achieved and it does not ensure the environmental sustainability. Further it affects the validity and reliability of the environmental disclosures that are used by stakeholders for their decision making. Therefore greenwashing should be identified and stopped. However due to the voluntary nature of CER disclosure, greenwashing can be done by the companies to its stakeholders by stating many green claims that actually not done. Further stakeholders are not very much familiar with internal business operations and their sustainable business practices (Lyon, 2006 cited in Gallicano, 2011). Therefore critics state that truth of actually done to protect environment is little than the huge environmental campaign. Therefore the level of Greenwashing should be identified to assess the level of reliability and honesty of CER disclosures. TerraChoice Environmental Marketing Inc. (2009) conducted a survey of identifying greenwashing. Though the survey, they identified 1018 consumer products bearing 1753 environmental claims. Based on the survey results, they identified six patterns in the green washing. Since the consumers and companies are paying more attention on environment, the number of companies issuing green claims also increased seriously over last few years (Gallicano, 2001). However corporations are alleged for greenwashing on their reports, websites and other disclosing media. The greenwashing came into the context due to identifying the inconsistencies between the companies' actual behaviour and claims and reports about being green.

According to Kim and Dutta, 2009; Munshi and Kurian, 200 and Rampton & Stauber, 2002 (cited in Gallicano, 2011), Companies have the full strength and ability to influence legislations and get away with questionable business practices that benefit them. Further these are some corporations that concerns good relationships with its stakeholders both internal and external (Toth, 2007 cited in Gallicano, 2011) and tend to develop meaningful relationships such as openness, honesty and transparency (Grunig, 1992 and Toth, 2007 in Gallicano, 2011).

Marquis and Toffer (2011) also developed greenwashing disclosure ratios to measure the level of greenwashing. Further Gallicano has developed a framework to assess the greenwashing by integrating frameworks of the four organizations that concern on greenwashing (2011). The researcher studied several guidelines and measures of greenwashing available in the literature. She identified some questions to be asked from the sample companies for assessing the Greenwashing among listed companies because the main purpose of this study is to analyze the reliability of CER disclosures within environmental reports among Sri Lankan companies.

## **2.7 International standard and guidelines**

### **2.7.1 ISO 14001**

It is clear that environmental disclosures gain many economic and social benefits to organizations. Some of them are the ability of creating stronger relationships with stakeholders; attract ethical investors and identifying new markets through better environmental performances (Sumiani et al., 2007). “Certification to international environmental standards creates significant trade and investment relationships and in the Asia Pacific region, ISO 14001 has been seen as an important indicator of voluntary business towards environmental improvements” (Sumiani et al., 2007). Therefore ISO 14001 is a widely recognized standard which place a significant impact on environmental management. It helps all the types of organizations to improve their performances and making positive impact on business results and help to minimize the harmful impacts of their activities on environment. ISO 14001 an international voluntary environmental management standard, originated in Japan in 1996, as a market requirement. Though this standard does not require a publication of report, it appears to have been a continued, relatively strong incentive for transparency on sustainability, with an associated significant increase (Kolk, 2003). This ISO 14001 further develops a framework to prevent and detecting on compliance with environmental laws and regulations without considering their country owned. The companies which are adopting this standard are responsible to develop their mission, targets, policies, and procedures that measure the impacts of their operations against the natural environment continuously. In addition, controlling measures need to be set up for any possible negative impact that might occur. “The ISO 14001 certification provides confidence to external parties, providing evidence that the companies have control over significant aspects of their operations and activities, they are committed to comply with all relevant legislations and regulations and those they are continuously improving their environmental performances.

In identifying the companies that disclosed CER, 15 countries out of 27 countries have more companies that are following ISO 14001. Among the ISO reporting companies of the countries, Japan has nearly 10% ISO certified companies comparing with the totals of ISO certified companies which provide environmental reports. Considering the countries like UK, USA, Norway and Canada, they have more companies that have ISO certification comparing other countries. For an instant UK has nearly 1:4 of ISO certified companies compared with the total companies that providing environmental reports. The reason may be these developed countries have mandatory form of environmental reporting practice. According to the survey result of Sumiani et al., (2007) they found that among the sample 36 companies do environmental disclosures and out of it only 13 (36%) companies were ISO certified. Further 23 companies out of 36 have disclosed CER, though they have no ISO 14001 certification. Thus according to the survey findings, it can be identified that ISO certification creates and extra value to the organization about their purpose of environmental reporting and it put some pressure on the companies to do some CER disclosures. Further it helps organization to strategically attract ethical and loyal stakeholders and specially international investors. By looking the organization's environmental performance, targets and disclosures stakeholders can be motivated and retained with the company. However though the ISO 14001, is significant there are some companies those who are disclosing CER are not following it may be due to high implementation cost and other controlling, auditing, training and many other costs involved (Sumiani et al., 2007). In Netherlands, Recommendations were published by governmental agencies and international governmental and non-governmental organizations like GRI to assist report on the topic on which generally accepted guidelines and standards are not yet adopted (Kolk, 2003)

### **2.7.2 ISO 26000**

The ISO 26000 is social responsibility standard questions about organizational governance, human rights, labour practices, environment, health and safety, fair operations practices, consumer issues, and community involvement and development (ISO 9000 as in Lisa et al., 2011). Therefore following ISO 26000 is also influence for proper disclosure of CER within CSR.

## **2.8 Reporting media**

Usually organizations disclose CER in the printed form such as annual reports, sustainability reports, stand-alone environmental reports, press releases, advertisement, news media, glossy booklets, newsletters, internal magazines and brochures (Zenhal and Ahamed, 1990; Tilt, 2001

and Lodhia, 2005 cited in Dutta and Bose, 2007). However after introduction of internet organizations started communicating environmental information through their corporate websites in addition to annual report and other print media (Dutta and Bose, 2007). There are many advantages of disseminating CER over the internet as low cost to deliver and access to information, offering instant access at any time, providing mass communication medium for companies, offering dynamic update facilities, offering the access to a large amount of data than printed media, facilitates flexibility in dissemination and interlinking facilities through world wide web Finally offers users the ability of exporting data for manipulation (Duta and Bose, 2007). However the current study attempts to analyze the CER only within the annual report due to several reasons such as annual reports are producing on regular basis (Gray et la., 1995b cited in Tilt, 1998).

This study attempts to fill the literature gap of CERD (CER Disclosure) by analyzing annual report since it is the main medium of promoting the company by providing all required financial and non-financial data. Further in most of the studies conducted in CERD attempt to study the level or the extent of CER disclosures among the companies. There is no any study that attempt to address the quality, reliability and validity of CER disclosures within Sri Lanka. Therefore this study again focuses to fill the literature gap of analyzing the validity, reliability and quality in addition to the accuracy and extent of CER disclosures. Moreover, previous studies attempted mostly to analyze CERD using content analysis and this study attempts to do it using environmental disclosure index selected and improved based on literature available. Then using such index can bridge the literature gap of analyzing CER more quantitative way using the index rather analyze it employing content analysis.

## **2.9 Measuring quality, accuracy, validity and reliability of CER**

There is an increasing trend of disclosing environmental information within annul reports, other print and non-print media (Dutta and Bose, 2007). Though the number of companies that are disclosing environmental information has increased, their reliability, quality and validity have not been established yet. Further the information demand of the stakeholders has increased rapidly and they demand new data with required reliability and accuracy (Kolk, 1998). Therefore just disclosing much of data is not required to day and it needs to ensure the accuracy, quality and validity of the data (Kolk, 1998). Finally information needs to be verified by external parties to maintain the validity and reliability (Kolk, 1998). However the CER is still a voluntary reporting

requirement especially in developing countries like Sri Lanka, Bangladesh, Malaysia and Pakistan (Hossain, 1999) and developed countries moving from voluntary to mandatory practice due to its timely importance (Kolk, 1998). As a result Norway, Sweden, Netherlands, and Australia has mandatory requirement of disclosing environmental information within their annual reports (Pramanik et al, 2008).

However the introduction of disclosure of CER was done to make the corporations responsible for what they are doing to the environment and then ask them to take preventive actions. However it is difficult to state that just disclosing environmental information affect and contribute environmental sustainability. Therefore we need to evaluate the environmental disclosures and determine the accuracy, quality and reliability. KPMG (1997a cited in Kolk, 1998) presents six principles to evaluate environmental reports such as understandability, relevance, completeness, materiality, conciseness and reliability.

Nevertheless, there are arguments and debates on the content of environmental reports and uniform criteria and standards are still in the process of development (Kolk, 1998). However though the environmental disclosures are increasing, their reliability and quality were big issues. Therefore different organizations introduced some criteria for evaluating environmental reports (Kolk, 1998). According to Kolk, UNEP/SustainAbility, Tomorrow Magazine and Deloitte Touche Tohmatsu. UNEP/Sustainability and Tomorrow magazine are leading institutions which concern about the environmental reporting. UNEP/SustainAbility is the leading partner. It has introduced 50 reporting items in 1994 in their benchmarking survey called 'Engaging Stakeholders'. They score environmental reports using six classes: management and policies and systems, inputs and outputs, finance, stakeholders' relations and partnerships, sustainable development and report design and accessibility. The quality and extent of CER disclosures positively related to the responsiveness

In assessing the disclosure quality and accuracy, researcher mainly get base from the Staden and Hooks (2007). According to that, therefore in assessing the quality of environmental disclosures, it attempts to analyze a comprehensive story of the companies' environmental impacts and performances by considering companies information with regarding its strategies, progress and contribution. To measure the quality and accuracy, reliability and extent researcher adopted the environmental index adopted by Staden and Hooks (2007). That index was developed based on the United Nations Environment Programme /SustainAbility Index (SustainAbility/UNEP, 1997)

to evaluate environmental disclosures by the companies. In addition researcher studied other indexes mentioned above available in the literature and modify the index so as to match with the Sri Lankan context.

With the increasing growth of CER, there is an increasing demand for quality, credibility and reliability of information presented in corporate environmental report and whether this information is valid in presenting companies environmental and social impact. However literature evidenced that the organizations CER disclosures are not always in good quality, accurate and reliable. Therefore researchers suggested many ways to improve the quality and reliability of CER disclosures. For an instant to improve the credibility environmental reports can be audited externally (Emtairah, 2002). In addition literature evidenced many ways to measure the quality, accuracy and reliability of CER disclosures. Most of the researchers used content analysis and some have used an indexing procedure with a rating score. However the use of an index to measure the quality, accuracy and validity is appropriate for main three reasons as per Aerts et al., (2005). First it facilitates to integrate different CER information into a single form that can be compared across the firms in terms of relevance. Second, a qualitative scale is used to rate the CER to measure the quality, accuracy and validity based on researcher's judgment rather relying on word count as in (Neu et al, 1998; Williams and Ho Wern Pei, 1999) and thirdly since the process is more subjective, it verify that the irrelevant generalities are omitted (cited in Aerts et al., 2005). Aerts et al., measured environmental disclosure using a coding system which is similar to Wiseman, (1982), Cormier and Magnan (2003) and Al-Tuwaijri et al., (2004) (cited in Aerts et al., 2005). This grid comprises 39 items where the items are categorized into six as expenditures and risk, laws and regulations, pollution abatement, sustainable development, land remediation and environmental management to measure environmental disclosure quality (Aerts et al., 2005). The scoring system was one to three, and three points are given for the items described in monetary or quantitative form, two are given for describing the item specifically and one point is given for discussing the item in general (Aerts et al. 2005). Further Dutta and Bose (2007) have developed an environmental reporting index based on Hossain et al., 2006; Belal (2000) and CPAA, 2007). Their index includes 28 attributes and firms could maximum score 28 and minimum of 0. Hence the researcher identified an environmental disclosure index mainly from Staden and Hooks (2007) with undergoing some improvements based on the literature. It mainly includes six categories such as the entity, management policy and systems, environmental impacts, environmental conservation and sustainable development, financial and general (which include stakeholders, environmental standards and guidelines, awarded received etc). The index

includes all 35 items. The same rating system was used as suggested by Staden and Hooks (2007) and the environmental disclosure index is shown in the appendix 02.

## **2.10 Relationship between CER and environmental sustainability**

Wiseman (1982) studied the contents of the CER disclosures and the relationship between the disclosure contents and the firms' environmental performances and found that CER disclosures are incomplete and are not related to the firm's actual environmental performances. Patten (2002b) stated a lower association between environmental performance and environmental disclosures for more environmentally sensitive industries and high level of disclosures are done by less sensitive industries (cited in Aerts et al, 2005). However the firms with higher levels of toxic releases are associated with higher levels of CER and they suggest that organizations are disclosing in order to alleviate concerns regarding the high levels of negative environmental activity (Hughes et al., 2001, Patten 2002 and Cho and Pattern 2007 cited in Chris et al., 2007)

United Nations conducted a study of environmental disclosures within annual reports of a sample of 203 companies of Fortune magazine's 'Global 500' representing several industries from 1992-1993. They found that 97% companies out of the sample have disclosed CER and big differences could be identified among the sectors and content of the disclosures (Tilt, 1998).

Further, Wiseman (1982) found that most of the numerical and monetary information are not provided in the voluntary CER disclosures. Such as expenses on pollution control equipment and pollution abatement. In identifying the contention, Wiseman (1982) found that voluntary environmental reports are inconsistent across firms, incomplete, and often provide only general accounts of environmental performance. Further due to not reporting adequate environmental information, the usefulness of environmental reports for inter-company performance comparison is questionable.

The literature suggests that there is a negative relationship between environmental disclosure and environmental performance. Patten (2002b) stated a lower association between environmental performance and environmental disclosures for more environmentally sensitive industries and high level of disclosures are done by less sensitive industries (Aerts et al, 2005, and Jeewanthi, 2011). However the firms with higher levels of toxic releases are associated with higher levels of environmental Disclosure and they suggest that organizations are disclosing in order to alleviate

concerns regarding the high levels of negative environmental activity (Hughes et al., 2001; Patten 2002 and Cho and Pattern 2007 cited in Chris et al., 2007). Criticisms for negative environmental and social impacts of national and multinational enterprises have increased since the 1990s (Kolk, 2003).

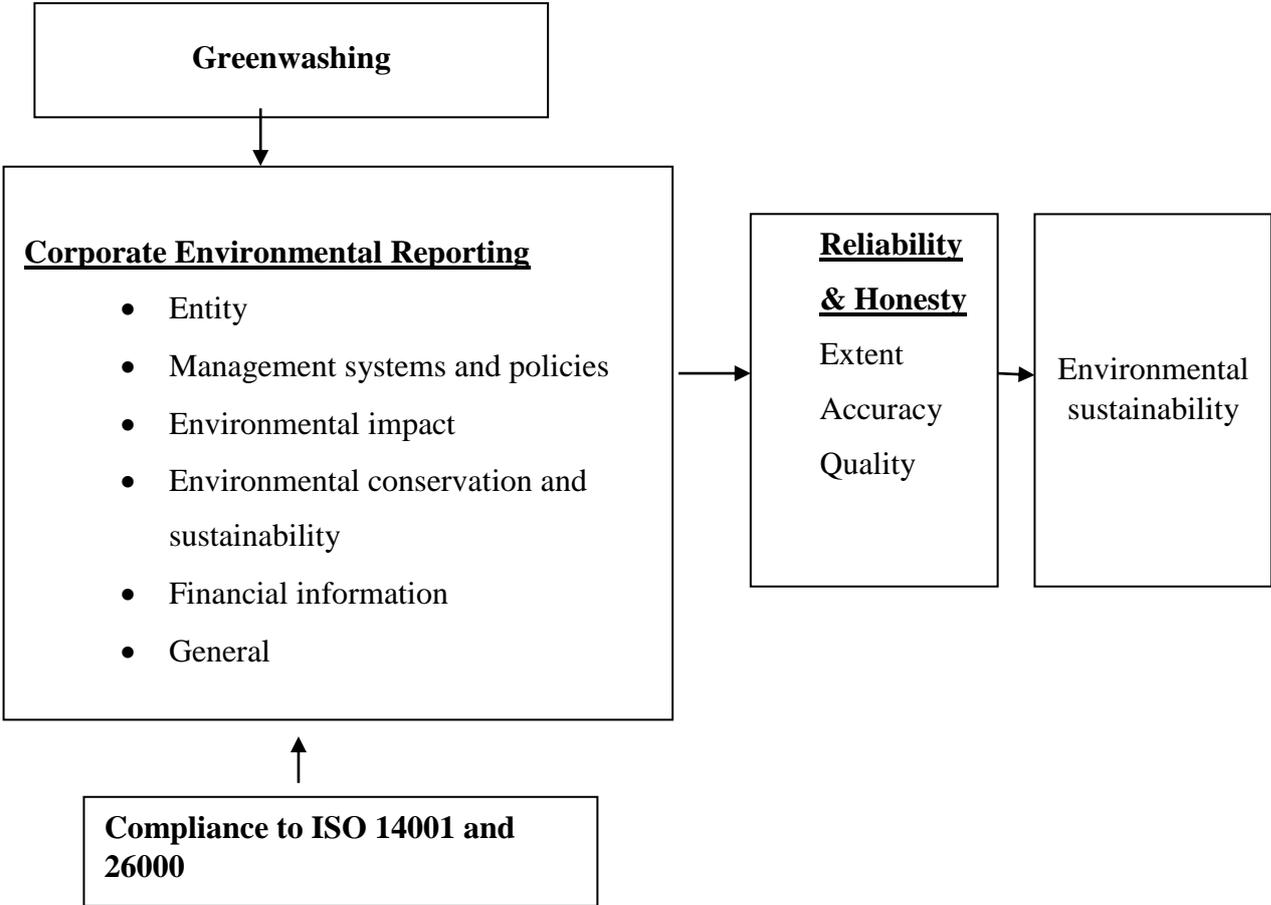
**2.11 Conceptual Frame work and list of hypotheses**

**2.11.1 Conceptual Framework**

A conceptual framework was developed by the researcher focusing on the previous studies and results and it is depicted in Figure 2.1.

According to the Conceptual Framework shown in Figure 2.1, researcher attempts to evaluate the Corporate Environmental Reporting among the sample companies.

**Figure 2.1: Conceptual Framework**



Source: Author

The CER has been categorized in to main six parts as suggested by the literature (Staden and Hooks, 2007 and Dutta and Bose, 2007). The reliability and honesty of reporting is checked by analyzing the extent, accuracy and quality of CER disclosures using an indexing procedure adopted from literature. Further researcher analyses the managers' perception of the impact of their CER on Environmental Sustainability. In addition the level of green washing affected to CER and the managers' perception on adopting ISO 14001 and 26000 will be studied for identifying the real CER disclosures within the annual reports.

### **2.11.2 List of Hypotheses**

Based on the above conceptual framework and the study objectives, the following hypotheses have been formulated.

**H1:** There is a relationship between corporate environmental disclosures with the extent, accuracy and quality of the disclosures.

**H2:** Companies are not doing "greenwashing" within their environmental reports.

**H3:** There is a relationship between corporate environmental disclosure and adoption of international environmental standards and guidelines

**H4:** There is a relationship between corporate environmental disclosure and Managers' perception on environmental sustainability

## **Chapter Three**

### **Methodology**

#### **3.1 Introduction**

Research methodology is an important part of any study. It explains the methodology employed to conduct the study and focuses on a number of key factors extending from selection of research strategy and research methods, up to the methods of data presentation and analysis. This chapter gives information about the methodology employed for the study.

The first section briefly outlines the contents of the third chapter. The second section explains the theoretical background of different types of research strategies available for this study:

Quantitative, Qualitative and Mixed / Multi research methods, and the choice of strategy for the current study. The third section describes the design of the research study. Sampling is presented in the fourth section. The last three sections discuss data collection, data presentation & analysis and challenges & limitations.

#### **3.2 Research Strategy / Approach**

Research strategy or approach is the whole direction to the conduct of social research (Bryman, 2008). Constructivism, positivism, objectivism and interpretivism are main factors that affecting research strategy (Bryman, 2008). The two distinctive clusters of research strategies are:

Qualitative and quantitative strategies. In addition, by mixing the features of qualitative and quantitative approaches, multi method strategy can be formed (Bryman, 2008).

##### **3.2.1 Quantitative approach**

A quantitative approach in general involves measurements, explanations and testing of theories from an objective point of view (Bryman, 2008). It may also employ mathematical and statistical techniques for identifying facts and causal relationships (Fitzgerald and Howcroft, 1998 cited in Nilsen, 2007). Thus, it can be seen that “Quantitative research produces data in the form of numbers” (Holland and Campbell, 2005:2 cited in Nilsen, 2007). This approach is generally used for testing of hypotheses which can be verified (Fitzgerald and Howcroft, 1998 cited in Nilsen, 2007). Hence the study results can be generalized to larger populations. Usually, the quantitative approach has been associated with positivism and objectivism and an epistemological view concerned with objectivity, measurement and reliability. The researcher should be neutral and observe the research situation from outside (Nilsen, 2007).

### **3.2.2 Qualitative approach**

The Qualitative approach is concerned with emphasizing words rather than quantification in the data collection and analysis (Bryman, 2008). As per Fitzgerald and Howcroft, qualitative studies aims to determine what things exist, instead of how many there are (1997 cited in Nilsen, 2007). Hence it “tends to produce data in prose or text form” (Holland and Campbell, 2005:2 cited in Nilsen, 2007). Qualitative researches are less structured and more alert to the requirements and nature of the research situation. In qualitative research, the results usually cannot be generalized because samples are smaller and not necessarily representative and it allows researcher to go in depth of information and has great exploratory power (Holland and Campbell, 2005 cited in Nilsen, 2007). The qualitative methods are observations, interviews, text analysis, naturally occurring talk and visual images (Silverman, 2001 cited in Nilsen, 2007).

### **3.2.3 Mixed / Multi research approach**

This research approach includes both qualitative and quantitative strategies in single research project (Bryman, 2004). In the mixed approach, one research strategy might be dominant and the other complimentary or be of equal weight (Creswell, 1995 cited in Rogan, 2009). This approach permits the researcher to use quantitative methods followed by qualitative data collection and analysis, and then again complemented by qualitative methods to clarify new findings or vice versa. This allows for cross checking the results gathered from the qualitative methods with results obtained from the quantitative method, a process often called triangulation (Greene et al., 1989 cited in Rogan, 2009). Qualitative methods can provide in-depth knowledge about the social setting which later can be used to appropriately design survey to obtain information from larger samples, or to develop hypotheses that can be tested. It can also be of help in terms of interpreting relationships between variables and establish causal explanations for the qualitative findings (Bryman, 2004). Similarly data gathered thoroughly through quantitative survey can shed light on concepts that requires to be explored more thoroughly through qualitative methods (Bryman, 2008).

## **3.3 Choice of method**

The researcher has used quantitative approach to address the purpose study which is to be identifying the reliability and honesty of corporate environmental reporting among listed companies and its impact on environmental sustainability. For that purpose, the researcher identified the extent, accuracy and quality of corporate environmental reports using an index

developed based on the available literature. Further the managers' perception on adopting international standards to disclose CER, the extent of "Greenwashing" and the managers' perception of the impact of CER on Environmental sustainability was tested quantitatively using a questionnaire.

The researcher also employed qualitative approach to analyze the accuracy and quality of CER disclosures, managers' perceptions of the impact of CER disclosures on ES and adopting international standards. Thus qualitative approach here allowed the researcher to cross check the data collected from questionnaires and the index, and provide a constructive debate. Therefore researcher used semi-structured interviews and document analysis as qualitative data collection strategies for further verification and clarification of the collected data from the quantitative survey.

Hence, the researcher has used the mixed method strategy for conducting the study due to the benefits of each study and some limitations of using one strategy alone. Mixed methods from two strategies supplement each other, increasing validity and reliability of the results.

### **3.4 Research design: Survey**

As per Rogan, research design is "the way of structuring a research project so as to answer the identified research problem and research questions" (Trochim and Land, 1982 cited in Rogan, 2009:33). This directs the selection of a framework for the collection and analysis of data (Bryman, 2004). Bryman (2008) pointed out five types of research designs such as experimental design, case study design, cross sectional or survey design, longitudinal design and comparative design. The application of any research design depends on the priority of the researcher for a range of dimensions of the research process (Bryman, 2004 cited in Gunasinghe, 2006). This specifies that the researcher finds all possible ways to study his or her research phenomenon and selects the best means according to its relevance and usefulness for the study (Gunasinghe, 2006).

Accordingly, a survey design was employed mainly for this study since it explores the patterns of association (Bryman, 2008) such as managers' perception on adopting international environmental standards to their environmental reporting disclosures and their perception of CER disclosures on environmental sustainability of the sample of Colombo Stock Exchange, Sri Lanka. The advantage of conducting a survey for this study was that it helped to test hypotheses developed by

the researcher. Further in a survey study, the extent of researcher interferences is minimal since this was a field study and the type of investigation was correlational which carried out to recognize main characteristics of the relationship between the independent and dependent variables.

In addition to use a questionnaire and an environmental disclosure index will be used to test the accuracy, quality and validity of CER disclosures within environmental reports.

Moreover, qualitative interviews were conducted for this study since it undertook investigating the actual CER disclosures, managers' perception on what and how to disclose, whether they employ international standards in disclosing CER and what they perceive about the impact of their CER on environmental sustainability.

### **3.5 Sampling**

There are many techniques to select a sample. Selecting a sample to investigate the corporate environmental disclosures among Sri Lankan companies is a critical issue. Because CER is a voluntary practice and most of the companies are not disclosing CER within their reports. Further the annual reports are not publishing by all the companies and they are prepared mainly by the public listed companies. Then it is very difficult to find annual reports from other companies except the public listed companies on Colombo Stock Exchange (CSE). In addition CER is very limited among listed companies due to the voluntary nature (Pramanik et al., 2008). As well as there are around 245 companies of twenty industry sectors and therefore selecting a representative sample out of them is a big task. However CER literature stated that larger organizations do more environmental disclosures and company size and industry type influence to the CER (Siddique, 2009). Further multi-national companies disclose CER more than national companies do (Kolk, 2003). Therefore the current study attempts to evaluate a sample of listed companies on Colombo Stock Exchange (CSE) in Sri Lanka. Basically all the listed companies have been categorized into twenty industry sectors such as Manufacturing, Beverages, Diversified holdings, Finance, Footwear and textiles, Investment Trusts, Information Technology, Land and property, Motors, Oil palms, Plantations, Power, Services, Store supplies, Construction, Health care, Chemicals, Hotels, Trading and Telecommunications (CSE, 2013). Literature suggests that many researchers have employed small samples for their studies of CER disclosure practices among companies (Hossain, 1999). Moreover due to the resource constraints and the nature of research design, only 10 companies were determined as the sample size for the current study. However selecting 10

companies out of nearly 250 companies (CSE, December 2013) of twenty industry sectors was a great deal of work because there should be a reasonable justification and a base for the selection of the sample. If the researcher selects only environmentally sensitive industries, the researcher cannot see the disclosures of non-environmentally sensitive companies; such as banking and finance, telecommunication etc. those which are doing CER more than environmental sensitive companies (Jeewanthi, 2011). On the other hand if the researcher chooses those two main categories, there are different number of companies in each sector and hence difficult to select a representative sample. Therefore the researcher selected the top 10 companies from the top 25 companies based on 'Business Today e-magazine' (Business today, 2013). These top 25 companies were selected based on the published information of companies in Colombo Stock Exchange. The criteria considered for selecting the top 25 companies are Share turnover, Revenue, Profit after tax, Growth in sales turnover, Growth in Profits, ROE, EPS, Market capitalization, values of share transaction and value addition (Business today, 2013).

However the sample of a total 10 companies represent 4 sectors and it consists only the CER disclosing company's which are very large in scale and have a good reputation within relevant sectors in Sri Lanka. The list of the sample companies are depicted in Table 3.1. Hence senior management such as Chief Financial Officers (CFOs), Financial Managers, Finance directors, Chief Accountants, managing directors or general managers who are responsible for preparing environmental reports within the annual reports of the sample companies are treated as the responding sample and administered questionnaire to them.

**Table 3.1: Sample companies**

Sample size (Top 10 companies based on Business Today, 2013)			
Ref.	Company Name	Industry sector	National or Multinational
1	John Keells Holdings	Diversified Holdings sector	M
2	Bukit Darah	Diversified Holdings sector	M
3	Commercial Bank of Ceylon	Bank Finance and Insurance sector	M
4	Distilleries company of Sri Lanka	Food beverages and Tobacco sector	M
5	Lanka Orix Leasing company	Bank Finance and Insurance sector	N
6	Hatton National Bank	Bank Finance and Insurance sector	N
7	Ceylon Tobacco Company	Food beverages and Tobacco sector	N
8	Dialog Axiata	Telecommunications sector	M
9	Hayleys	Diversified Holdings sector	N
10	Sri Lanka Telecom	Telecommunications sector	M

*Source:* Business today (15.04. 2013)

### **3.6 Data collection**

The current study attempts to investigate the extent, accuracy, and quality of CER disclosures within environmental reports in the year 2012/2013 among the sample companies. In addition it aims to identify managers' perception on adopting international environmental standards in CER disclosure and the impact of CER on ES. The researcher collected both primary and secondary data for conducting the study fruitfully.

#### **3.6.1 Primary Data**

As this study is basically a survey, primary data was collected by the self-completion questionnaires. In addition to that, semi-structured interviews were also used to cross check the

information gathered from the questionnaires and to identify companies' overall view on their environmental reporting.

### ***Self-administered questionnaires***

Self-administered questionnaires are very important research instruments in survey studies. The questionnaire was developed based on literature to get all required information from the senior management about their environmental reporting disclosures. The questionnaire has five main parts and it includes both closed and open ended questions. The first part of the questionnaire includes few general questions about the organizations and the respondents. Part two questions about the disclosure of CER. Part three focuses on questioning manager's perception on adopting international standards and guidelines in CER disclosures. Part four aims to get information about managers' perception on how their CER disclosures may influence environmental sustainability. The last part is allocated for the open ended questions to get an overall understanding of the CER in each organization. The medium of the questionnaire was English because it was distributed to the senior managers of the listed companies on CSE. A copy of the questionnaire is attached in appendix 02. After developing the questionnaire, a pilot test was undertaken using two sample companies and two students to see the reliability and validity of the questionnaire so as to get the accurate information from the respondents. The pilot test gave insights of changing the way of asking questions directly about the honesty and greenwashing because sometimes respondent are reluctant to provide all such sensitive information. Therefore the questionnaire was revised appropriately based on the responses received. Finally the questionnaire was mailed to the respective respondent of each sample company selected based on the preliminary discussions and got all the questionnaires completed.

### ***Open ended interviews***

In addition to the self-administered questionnaires, open ended interviews were conducted with the respondents of the sample companies. The purpose of these interviews was to collect additional more information to get explanations about companies' CER disclosure, verify and cross check the results obtained by questionnaires and environmental reports. Here the researcher highly focused on questioning the future expectation of improving CER, adopting ISO or other Guidelines, willingness to audit environmental reports etc. The interviews were conducted based on a semi-structured interview guide prepared based on the literature. A copy of the interview guide is attached as appendix 03 along with the letter which obtained the permission to the interviews. The permission letter is attached as appendix 05. The researcher recorded the senior

managers' replies for each question and had some discussions where companies were having specialties in their CER disclosures.

### ***Reliability and validity of the primary data collection instruments***

It is very important to ensure the reliability and validity of the research instruments. Considering the self-administered questionnaire developed by the researcher to conduct this study, the reliability of a questionnaire means that whether the question items measure the reliability of the variables being studied. The reliability of the measures for this study was evaluated by using one of the widely used internal consistency method; Cronbach's Alpha in SPSS 17.0. An alpha of 7.0 is normally considered to indicate a reliable set of items in a questionnaire.

When it comes to interview guide, it was developed based on theories and literature available so that it covers the research questions and variables. Therefore the validity and reliability of interview guide can be established in that way.

### **3.6.2 Secondary data**

The secondary data also has a greater importance as primary data for this study and secondary data was collected specifically from printed media. Hence the secondary data was collected from annual reports including sustainability reports which environmental information given as a part of annual report. The base year for the environmental reports is 2012/2013. The purpose of collecting these data was to identify the extent, accuracy and quality of CER disclosures within the environmental reports through an environmental disclosure index acknowledged and adapted from the literature.

### **3.6.3 Data presentation and Analysis**

Since this was a mixed research, both primary and secondary data were collected by self-administered questionnaire & open ended interviews, and annual reports respectively. The collected data was presented in graphical formats such as tables, graphs and figures in addition to the frequency charts and percentages.

In analyzing the primary data of the questionnaires, univariate statistical tools were employed to measure the accuracy, quality and extent of disclosing CER. In analyzing the data taken from open ended interviews, mean was uses with descriptive explanations.

When it comes to the analysis of secondary data of the disclosure of CER in Annual reports including sustainability reports in the year 2012/2013, an environmental disclosure index were used adapted from the literature (Staden and Hooks, 20007) with small improvement based mainly on Wiseman (1982) and other available indexes (such as Dutta and Bose, 2007; Pramanik et al., 2008). In the document analysis, researcher firstly collected hard copies of annual reports and sustainability reports if those are treated as a part of annual report for the year of 2012/2013 of the sample companies. Then the extent of disclosure was evaluated using ‘sentences count’ as the unit of measure. The sentences count is identified as the most suitable measure for analyzing the documents and texts. Therefore researcher also used the sentences count to identify the extent of CER disclosure. The accuracy and quality of CER disclosures was measured using a CER index is shown in the appendix 01. Here the quality was measured using a rating score adapted from the literature and determined the level of disclosure quality based on that. In addition, check whether the sample companies have any internal or external auditing or verification of the environmental reports so as to ensure the reliability of the reports.

### **3.7 Limitations and challenges**

Bryman (2008) expresses that limitations restrict validity, reliability and generalizability of the study results and findings and hence limitations have been identified early as possible before starting the study (2008). Accordingly they can be mitigated at best while conducting the research. Considering this study, there were few limitations. The problems of time constraints and limited resources were the main restrictions and hence considered only a sample of listed companies from whole population of listed companies in Colombo stock exchange. However the taking only a sample of companies to conduct the study affect generalizing the findings for the whole population and country negatively. Further researcher had to face problems in contacting and collecting accurate information from top management since they were busy and issues of technical support of the assistants. Finally there were some financial restrictions since the researcher funding personally and all these limitations affect to scope and conducting of the study. However researcher takes steps to mitigate the limitations of the study which are under her control as much as possible.

## **Chapter four**

### **Results and Discussion**

#### **4.1 Introduction**

This chapter focuses to the analysis and discussion of data collected from questionnaires, interview guide and annual reports using several analysis techniques. It contains main six parts. The first part provides a brief overview of the chapter four. The second part is allocated to analyze the general information about the sample companies and respondents. The data about general background was presented in graphical and tabulation formats and analyzed using frequencies and percentages. From the third part, the chapter is focused to testing the hypothesis based on the objectives of the study.

The third part addresses the first sub objective of identifying the extent, accuracy and quality of CER within annual reports. However this is done based on the secondary data and analyzed using the index adopted from the literature. For the analysis of extent, sentences count was adopted. To analyze the accuracy and quality, scoring system was employed as per Staden and Hooks (2007) employed to their study. The validity and reliability of the index can be ensured since it was adopted from the literature available. Univariate analysis tools such as mean along with bar charts used in addition to the rankings to analyze the extent, quality and accuracy of CER. The fourth part is focused to analyze the second sub objective of the identifying the possible greenwashing. This was analyzed using bar charts and frequency tables, mean and correlation analysis. The fifth part is allocated to address the third sub objective; the managers' perception on adopting international standards and guidelines for CER and this was also analyzed using bar charts and frequency tables with and mean and correlation analysis. The last part of this chapter is concerned with investigating respondents' perception of to what extent the CER influence on ES. To analyze the last sub objective, charts, mean and correlation was used.

#### **4.2 Analysis of General information about sample and respondents**

Before going to analyze the collected data to address the research questions, it is important to get an overall understanding about the general information of the study. Hence the number of respondents, responding companies based on the industries and gender of the respondents were presented where required in graphical form and analyzed in detail with frequency tables.

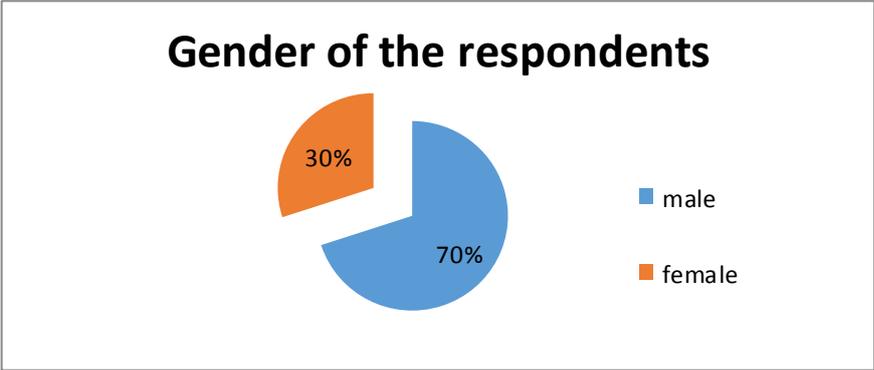
**4.2.1 Analysis of Number of respondents**

The researcher selected 10 listed companies as her sample from the top twenty five companies from the ‘Business Today’ Business magazine in 2013. The sample covers main few industry sectors such as 30% of the sample is from diversified holdings, next 30% of the sample is from Bank, Finance and Insurance, 20% companies from Food, beverages and tobacco and last 20% is from telecommunication sector. Among the sample 40% companies are national companies and rest 60% are multinational companies. Since the sample covers 4 main industry sectors and both national and multinational companies, it is considered as a reasonable sample for the study.

**4.2.2 Gender of the respondents**

In addressing the questionnaires to the respondents, both male and female respondents were participated. However 70% respondents were male and 30% were female. Hence it can be seen that there was a high possibility to the male persons to become senior managers and to intermediate the disclosure of CER in annual reports than female persons. Figure 4.1 depicts the gender distribution of the responding sample in graphical format and it clearly shows the male and female respondents’ participation in making interferences in CEI disclosure decisions.

**Figure 4.1: Gender distribution among the responding sample**



Source: Questionnaire Survey, 2013

**4.2.3 Companies disclosed CER within annual reports**

All the companies of the sample are publicly listed companies and hence they produce annual report to the public to communicate organizational performances to their stakeholders. Therefore annual report is very important organizational communicational instrument. Currently organizations are increasingly involving in disclosing CER within annual reports and other

reports. In current study researcher concerns only the annual report to identify the CER disclosure and hence it focuses to identify the companies disclosed environmental information within annual reports. Among the sample 80% companies disclosed CER within their annual reports, 20% disclosed sustainability report as a part of annual report. Here the researcher considered only the CER disclosures within the annual report and in the sustainability report prepared as a part of the annual report. Hence all the companies in the sample was treated as units of the sample and taken in to the consideration for the analysis.

#### **4.2.4 Usage of other reports to disclose CER including both printed and non-print media**

Considering the sample, 100% sample companies disclose their environmental involvements within other reports such as press releases, environmental reports in addition to the annual report. Specially companies communicate CER through internet since it is a low cost and easy access media. Further organizations can have a big space to communicate their environmental involvement to the public by using other media.

### **4.3 Analyzing the research objectives of the study and testing hypotheses**

From this session, the chapter four is focused to analyze the sub objectives and test hypotheses developed by the researcher based on the previous study findings. There are four sub objectives and four hypotheses and they were analyzed as follows.

#### **4.4 Identify the extent, accuracy and quality of CER within annual reports**

The first sub objective is to identify the extent, accuracy and quality of CER among the sample companies. Researcher has used an index adopted from literature to analyze the extent, quality and accuracy of CER. The index covers CER classifying into main six categories. The six categories includes sub parts. The first category is entity and it includes corporate profile and governance structure. The score allocated to that part is 6. The second category is management and policy systems. It includes environmental policy, environmental objectives, performance measure against previous year's targets, environmental management system, environmental audit, employee environmental programmes, environmental conservation and bio diversity and sustainable business practices. The score allocated to this part is 24. The third category is environmental impact and it includes material, water and energy consumption, water, air, waste, noise emissions and transport, environmental impacts, supplier programmes and clean technology, life cycle and packaging / recycling. The maximum score is 48. The next category is stakeholders

and it includes identification of stakeholders and communication with them. The score allocated to this part is 4. The financial category includes environmental liabilities, current expenses, past expenses and future expenses. The score allocated to this category is 8. The final category is general and it includes global operating standards, GRI, ISO compliance, report accessibility, ecological foot print, awards, and support for environment organizations. The score allocated to this part is 10. Therefore the total score is 100.

The extent was evaluated using sentence count in the content analysis. The quality and accuracy will be tested by the index using the scoring system. The results of the content analysis and the index analysis can be illustrated as follows. In addressing this objective, researcher attempts test the following hypotheses.

***H1: There is a relationship between CER disclosure and its extent, quality and accuracy***

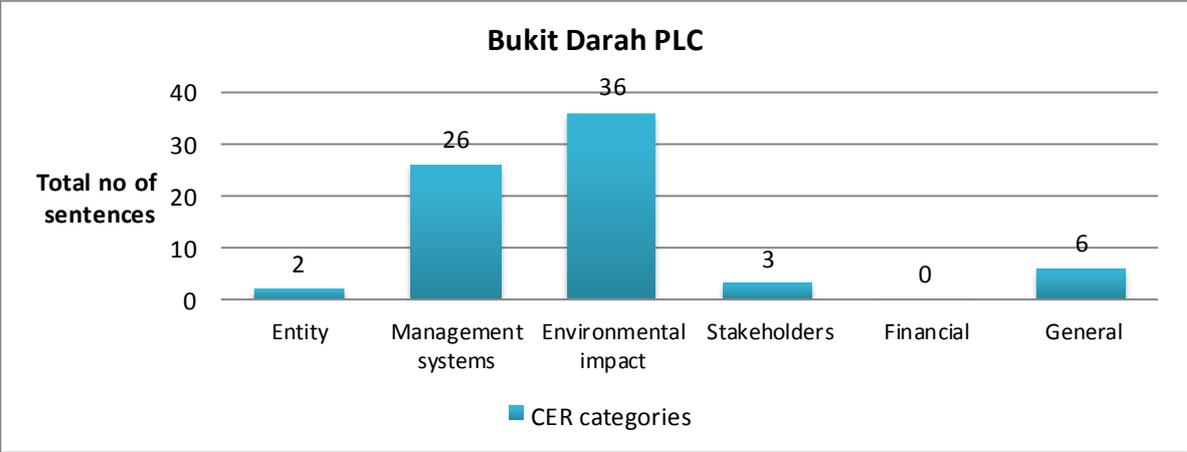
#### **4.4.1 The extent, quality and accuracy of CER within annual reports**

In identify the extent of CER, the content analysis was done based on the environmental index adopted from the literature (Staden and Hooks, 2007 and Dutta and Bose, 2007) using number of sentences. According to the index, environmental reporting has basically broken down into six main areas such as Entity, Management systems and policies, Environmental impact, Environmental conservation and sustainability, financial information and General with sub parts as mentioned in 5.4. The scoring systems has also developed to each category by Staden and Hooks (2007) with little modification so as to match with Sri Lankan context as mentioned above and it was adopted here. Therefore the researcher tries to analyze the total number of sentences, given score and company score to identify the extent, accuracy and quality of CER among the sample companies.

#### ***The extent of CER in Bukit Darah PLC***

This company is represent diversified holding sector and a multinational company. It has disclosed its environmental information within their annual report in addition to the other reporting media. The total the number of sentences allocated to each category of the CER is 72 and the total of 3 pages have been allocated to disclose CER within the annual report. The sentences distribution among the CER categories is depicted in Figure 4.2.

**Figure 4.2: The number of sentences of the CER categories of Bukit Darah PLC**



Source: Secondary data analysis, 2013

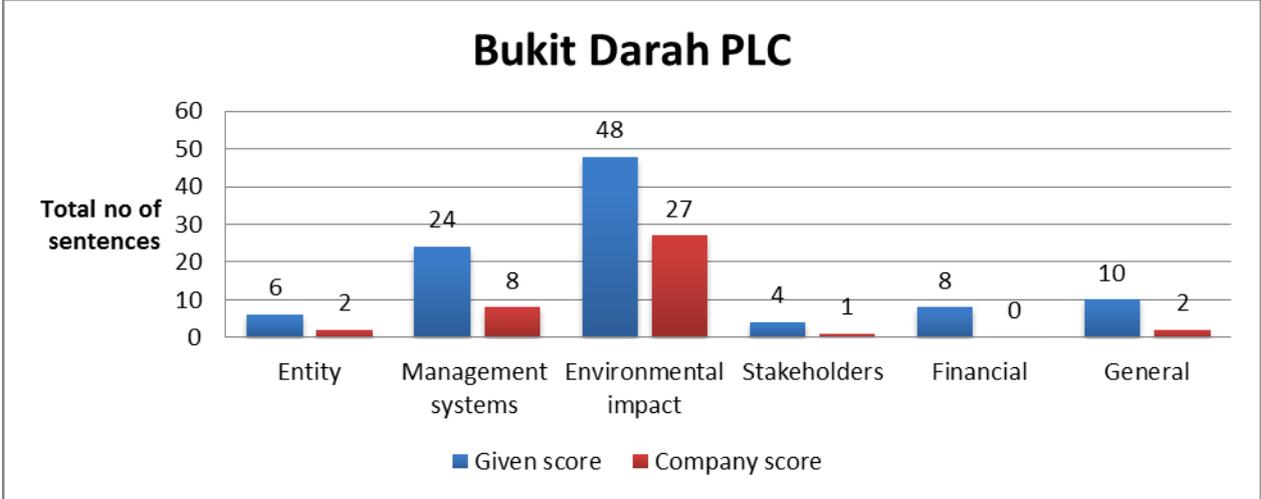
According to the above figure 4.2, the company has allocated total of 72 sentences for all the categories of CER. The sentences have been allocated among entity, management policy, environmental impact, stakeholders and general categories are 2, 26, 36, 3 and 6 sentences respectively. Bukit Dhara has highly paid attention on disclosing environmental impact and sustainability category and it was 50% and 34% respectively out of total number of sentences. It has not disclosed any financial information with regarding the CER. Management policy has given some more attention but entity, stakeholder and general category has given very lower attention by the company.

However the company has allocated 3 pages to the CER disclosures within the annual report and it is a considerable amount. Further in addition to the sentences, company disclosed some photos of their environmental involvements. Though the company is a multinational company it has still not addressed to cover all the areas of CER. However considering the extent of disclosure, company has attempted to disclose their environmental involvement and impacts by allocating 3 pages and 72 sentences. Company has given the priority to disclose environmental impact and sustainability and management policy aspects. Hence Bukit dhara has attempted to disclose CER though it is a voluntary reporting practice.

***The accuracy and quality of CER in Bukit Darah PLC***

Considering the accuracy and quality of CER, it can be judged by studying the company score and given scores by the literature. The scores of CER in Bukit Darah can be seen in Figure 4.3.

**Figure 4.3: The given score and the company score of CER categories of Bukit Darah PLC**



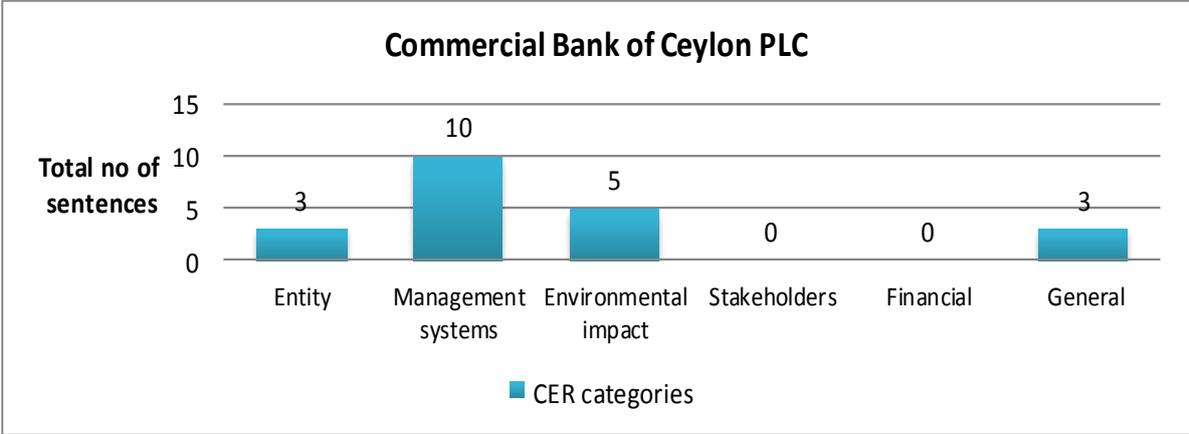
Source: Secondary data analysis, 2013

According to the Figure 4.3, the company has obtained 40 scores to all the categories. The given score was 100 for all CER disclosures and this can be classified among the main CER categories as entity, management policy and systems, environmental impact, stakeholders, financial and general were given 6, 24, 48, 4, 8 and 10 respectively as shown in Figure 4.3. The company has reached only up to 40% of the total score and the highest scores are recorded in the environmental impact and management system aspects. The scores are 54% and 30% from the given scores respectively. The given score to the environmental impact is 48. But the company achieved only 27 score and it is 53% and other areas have lower score except financial information of CER. Entity, stakeholders and general has 2, 1 and 2 scores and they are not attained the given scores of 6, 4 and 10 respectively. Though the given score for Management policy is 24, the company score is 8. Though the company has allocated 3 pages and disclosed CER to some extent using 72 sentences, the quality of reporting is not in a higher level since only one category has scored 50% from its total score. But CER as a voluntary reporting practice, the 40% score is a considerably significant amount and the quality and accuracy of CER can be determined based on that.

***The extent of CER in Commercial Bank PLC***

This company is a financial institution and considering its CER disclosures, it has disclosed its environmental information within their annual report. The total of 21 sentences has been reported under the CER and 1.5 pages have been allocated for CER disclosures within the annual report. The total number of sentences allocated to each category of the CER is shown in the Figure 4.4.

**Figure 4.4. The number of sentences of the CER categories of Commercial Bank PLC**



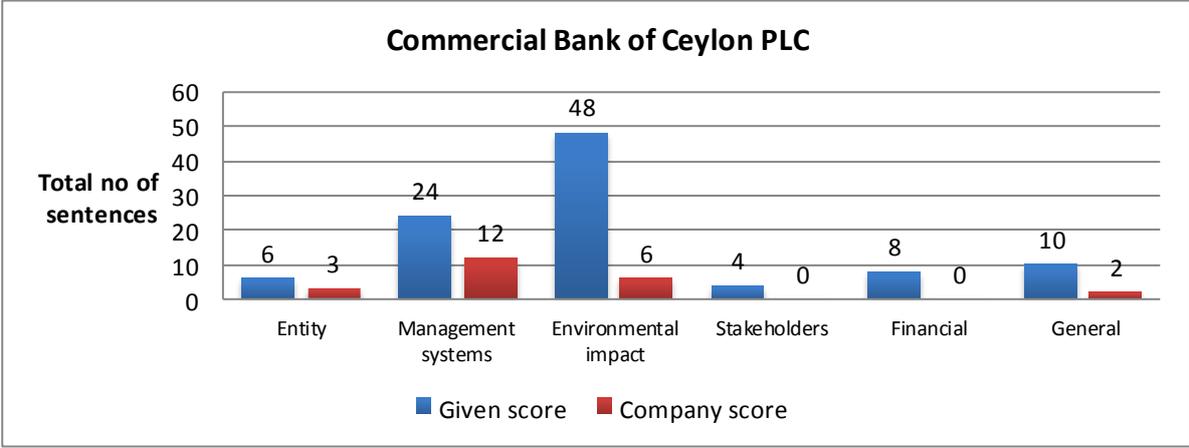
Source: Secondary data analysis, 2013

According to the above Figure 4.4, company has distributed the total of 21 sentences for all the categories of CER. The entity, management policy, environmental impact and general categories have allocated 3, 12, 6 and 3 respectively. The stakeholders and financial categories have not addressed by the bank. Among the all categories, management policy is the prioritize category and 50% sentences has been allocated to it. Environmental impact is the second important category here and 25% sentences has been allocated to that category. But the entity and general categories have given very lower attention since the percentages of the sentences are nearly 12% and 12% respectively. However the company has allocated 02 pages to the CER disclosures within the annual report. Still the Bank has not paid its attention to addressing to cover all the areas of CER. However the picture of company’s environmental involvements have been presented. Therefore considering the extent of disclosure, company has attempted to disclose their environmental involvement and impacts by allocating 1.5 pages and 21 sentences focusing management policy and environmental impacts aspects. Therefore commercial bank has attempted to disclose CER at a reasonable level.

***The accuracy and quality of CER in Commercial Bank PLC***

Considering the accuracy and quality of CER, it can be judged by studying the company score and given scores by the literature. The scores of CER in Commercial Bank can be seen in Figure 4.5.

**Figure 4.5: The given score and the company score of CER categories of Commercial Bank PLC**



Source: Secondary data analysis, 2013

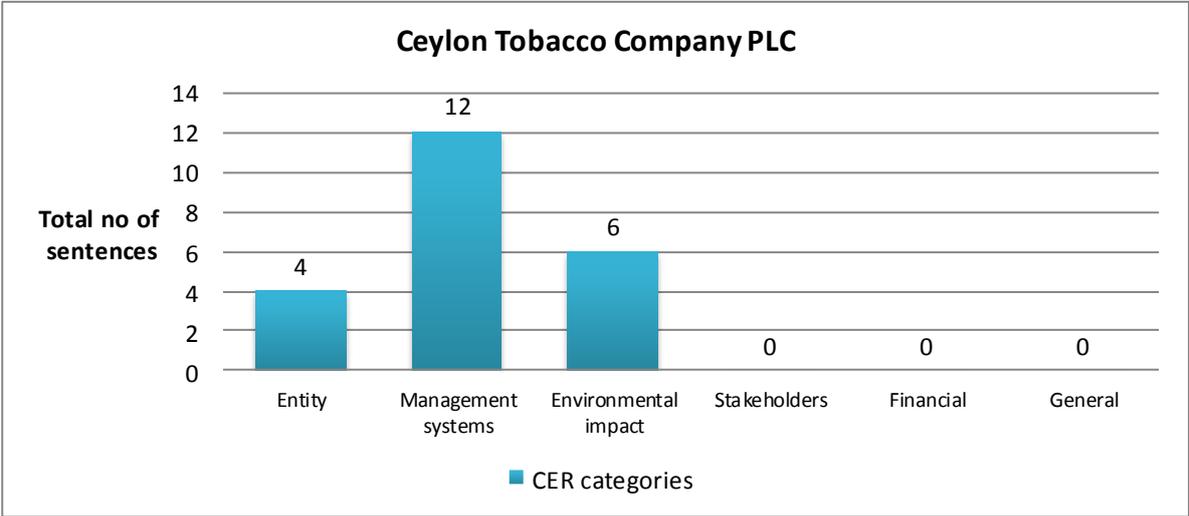
According to the Figure 4.5, the company has obtained 23 scores to all the categories. The given score was 100 for all the categories of CER disclosures and the scores for individual items are shown in Figure 4.5. The management system has scored 12 points and environmental impact has scored 6 points. They are only 50% and 12.5% respectively from the category scores. Entity and general also has 50% and 20% scores. The given score to the environmental impact is 48. But the company achieved only 06 and it is very low score. Further management system has allocated 24 scores. But company has achieved only 12 points. The stakeholders and financial aspects has not gained a single score because of not reporting in those areas. Though the company has allocated 1 and half pages and disclosed CER to some extent using 23 sentences, the quality of reporting is not in a satisfactory level comparing with total score. But considering the number of sentences, the scores achieved are good and the present CER disclosures made by the company can be treated as quality and accurate disclosures. Further commercial bank is a finance institution and their direct involvement with environment is quite lower comparing to a manufacturing company. Hence this 23% score with 21 sentences and 1 and half pages are substantial for evaluating its extent, accuracy and quality of CER.

***The extent of CER in Ceylon Tobacco Company PLC***

This company belongs to the food and beverages sector and considering its CER disclosures, it has disclosed its environmental information within their annual report. The total of 22 sentences have been reported under the CER and 1page has been allocated for CER disclosures within the

annual report. The total number of sentences allocated to each category of the CER is shown in the Figure 4.6.

**Figure 4.6: .The number of sentences Tobacco Company PLC**



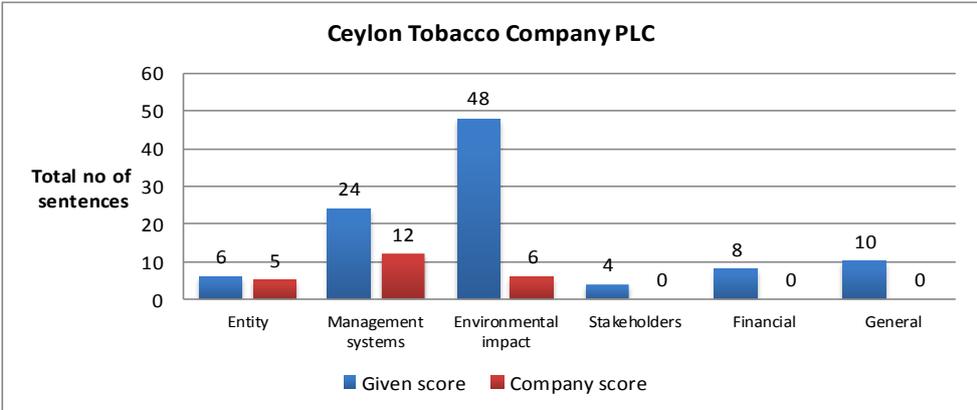
According to the above Figure 4.6, company has allocated total of 22 sentences for all the categories of CER. Tobacco PLC has highly paid attention on disclosing management policy category and it was 51% out of total number of sentences. It has not disclosed any financial information, stakeholder information or general information with regarding the CER.

Environmental impact and entity have given some more attention and the number of sentences are 6 and 4 respectively. However the company has allocated 1 pages to the CER disclosures within the annual report and it is also a considerable amount from an annual report. This company also not paid in addressing to cover all the areas of CER within their CER disclosures. Therefore considering the extent of disclosure, company has attempted to disclose their environmental involvement and impacts by allocating 01 pages and 23 sentences. Therefore it can be stated that CER is common to tobacco and they have attempted to disclose CER to some extent.

***The accuracy and quality of CER in Ceylon Tobacco PLC***

Considering the accuracy and quality of CER, it can be judged by studying the company score and given scores by the literature. The scores of CER in Commercial Bank can be seen in Figure 4.5.

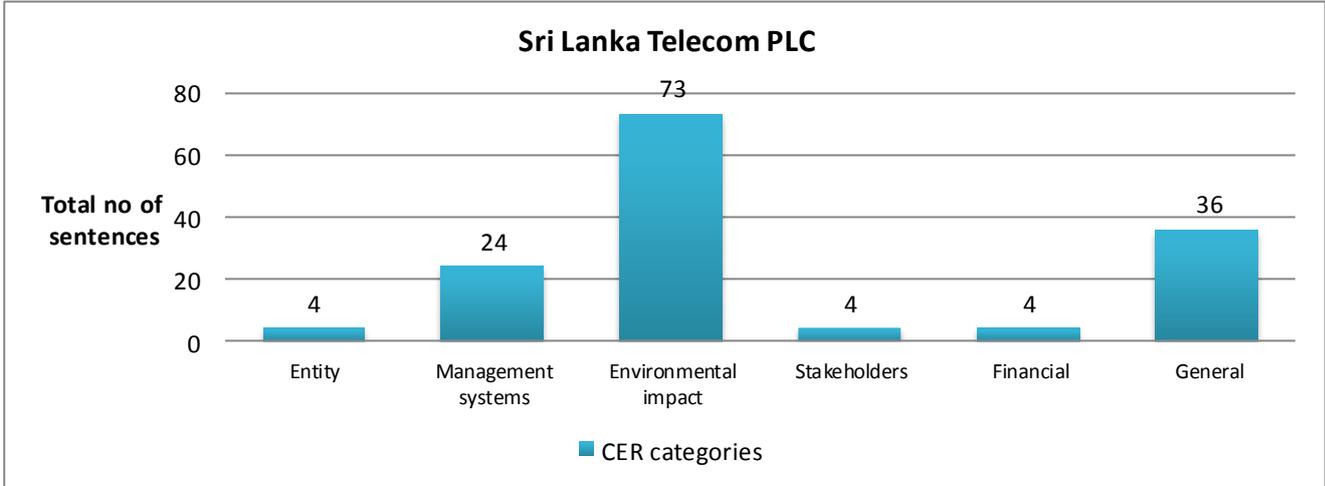
**Figure 4.7: The given score and the company score of CER categories of Ceylon Tobacco PLC**



Considering the accuracy and quality of CER, it can be judged by studying the company score and given scores. According to the Figure 4.7, company has obtains 23 scores to all the categories. The given score was 100 and this company has reached to 23% of the scores and the highest scores are recorded in the impact and management policy areas. Other areas have lower score except financial information of CER.

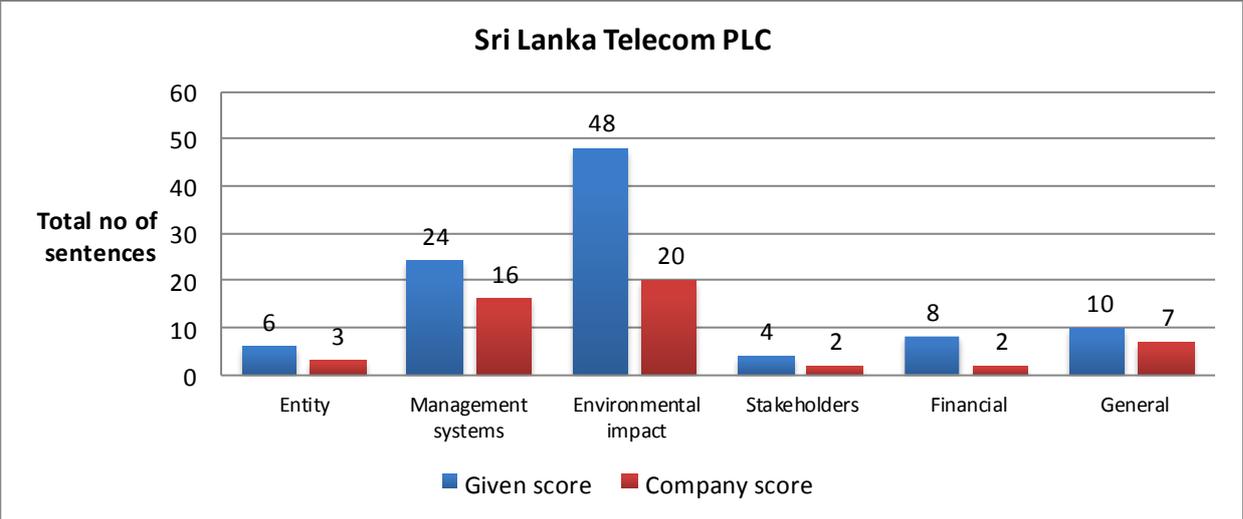
*The extent of CER in Sri Lanka Telecom PLC*

**Figure 4.8: The number of sentences of CER**



According to the above figure, company has allocated total of 145 sentences for all the categories of CER. Company has highly paid attention on disclosing environmental impact and sustainability category and it was 50% out of total number of sentences. It has disclosed information with regarding the CER covering all the categories of the index. Management policy has given some more attention but entity, stakeholder and general category has given very lower attention. However the company has allocated 7 pages to the CER disclosures within the annual report and it is a considerable amount. However it addresses all the areas of CER and therefore considering the extent of disclosure, company has attempted to disclose their environmental involvement and impacts by allocating 7 pages and 145 sentences. Therefore CER is common to telecom and they have attempted to disclose CER.

**Figure 4.9: The given score and the company score of CER categories of Sri Lanka Telecom**

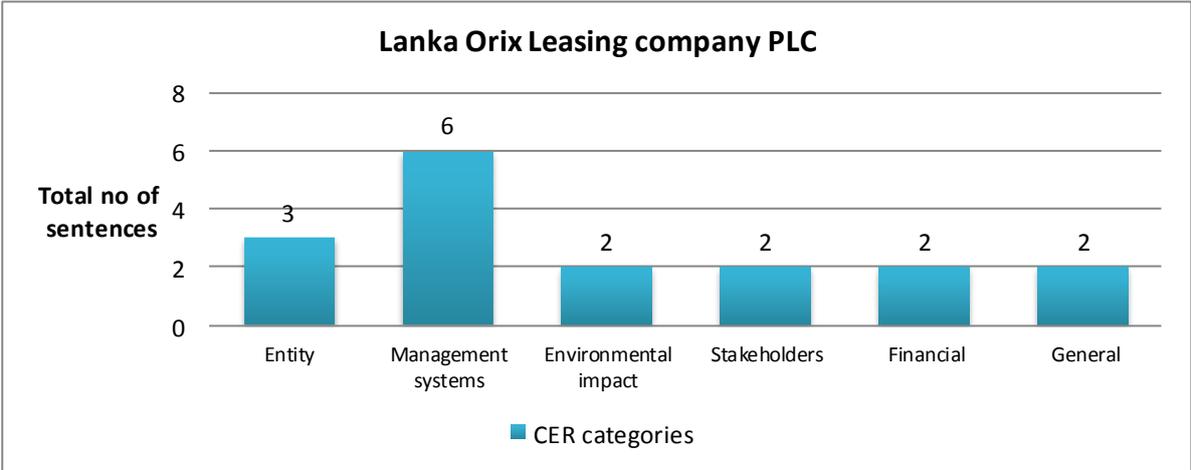


Considering the accuracy and quality of CER, it can be judged by studying the company score and given scores. According to the Figure, company has obtains 50 scores to all the categories. The given score was 100 and this company has reached to 50% of the scores and the highest scores are recorded in the impact and management policy areas. Other areas have lower score except financial information of CER. Thus the accuracy and quality can be determined as high.

***The extent of CER in Lanka Orix Leasing PLC***

This company has disclosed its environmental information within their annual report and the number of sentences allocated to each category of the CER, given score and the company score is shown in the Figure 4.10.

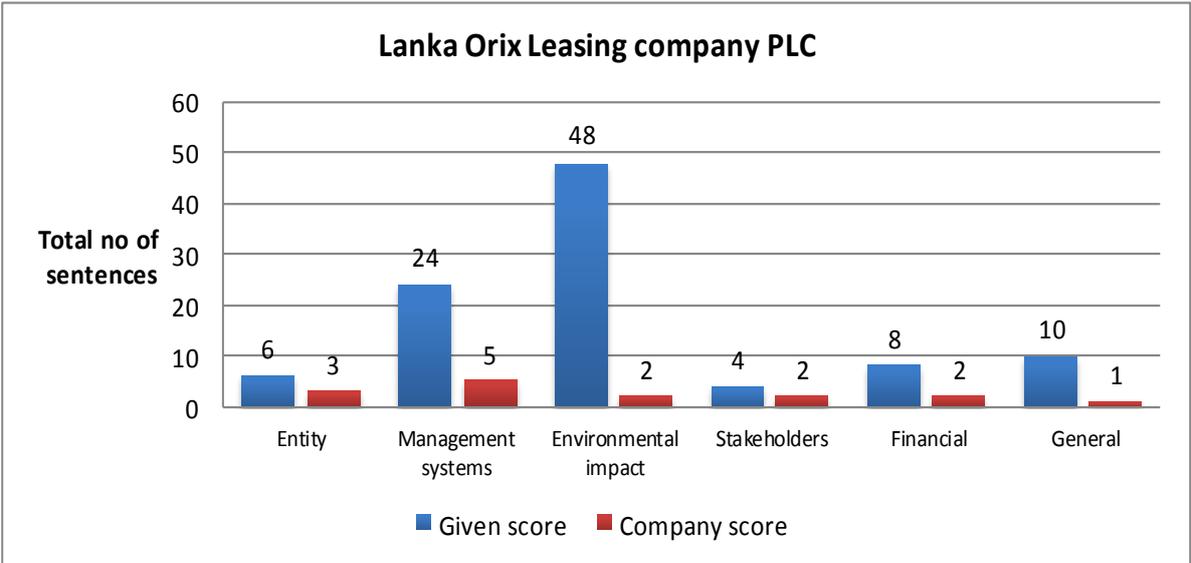
**Figure 4.10: The number of sentences score of CER**



According to the above figure, company has allocated total of 17 sentences for all the categories of CER with half page. It has highly paid attention on disclosing management systems and next important aspect is environmental impact and sustainability category. However it has disclosed all the formation with regarding the covering. Therefore considering the extent of disclosure, company has attempted to disclose their environmental involvement and impacts by allocating half page and 17 sentences. But it has attempted to disclose CER.

*The quality and accuracy of CER in Lanka Orix Leasing PLC*

**Figure 4.11: The given score and the company score of CER**

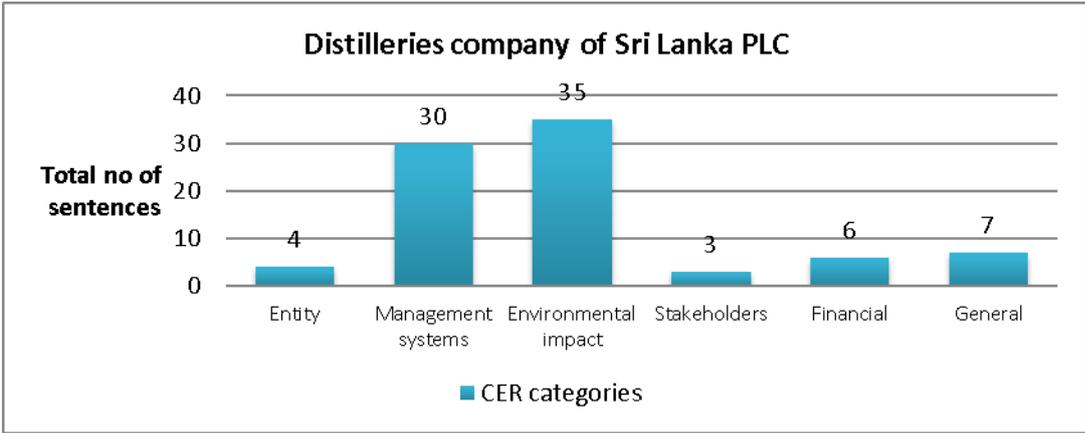


Considering the accuracy and quality of CER, it can be judged by studying the company score and given scores. According to the Figure 4.11, company has obtains 15 scores to all the categories. The given score was 100 and this company has reached to 15% of the scores and the highest scores are recorded in the impact and management policy areas. Other areas have lower scores. But all areas obtained a score and comparing to the sentences, the score is reasonable and it has quality and accurate CER.

***The extent of CER in Distilleries PLC***

This company has disclosed its environmental information within their annual report and the number of sentences allocated to each category of the CER, given score and the company score is shown in the Figure 4.12

**Figure 4.12: The number of sentences of CER**



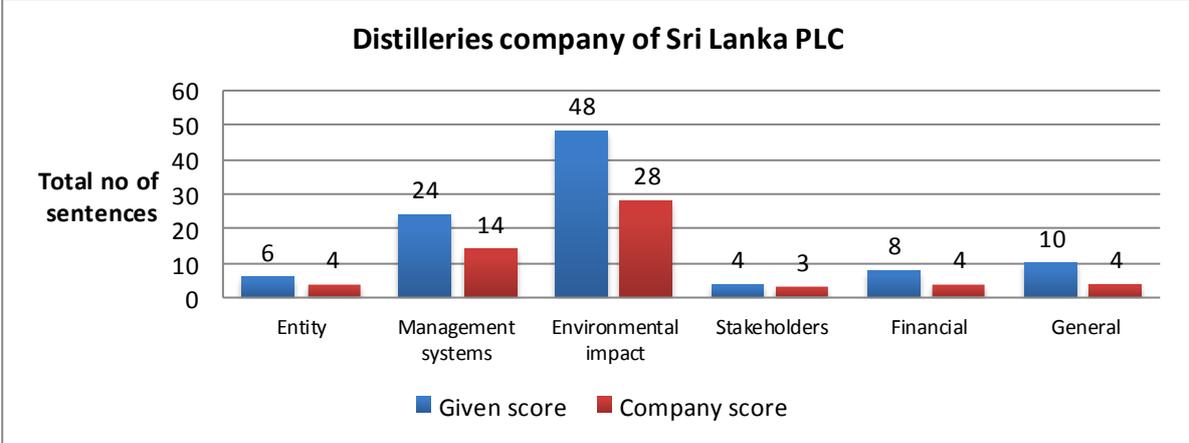
According to the above figure, company has allocated total of 85 sentences for all the categories of CER with 2 and half pages. It has highly paid attention on disclosing environmental impact and sustainability and management policy categories. It has disclosed information for all the categories and therefore considering the extent of disclosure, company has attempted to disclose their environmental involvement and impacts by allocating 2.5 pages and 80 sentences. Therefore CER is common to Distilleries company and they have attempted to disclose CER.

***The quality and accuracy of CER***

Considering the accuracy and quality of CER, it can be judged by studying the company score and given scores. According to the Figure 4.13, the company has obtains 57 scores to all the categories. The given score was 100 and this company has reached to 57% of the scores and the

highest scores are recorded in the impact and management policy areas. Other areas have lower score except financial information of CER.

**Figure 4.13: The given score and the company score of CER**

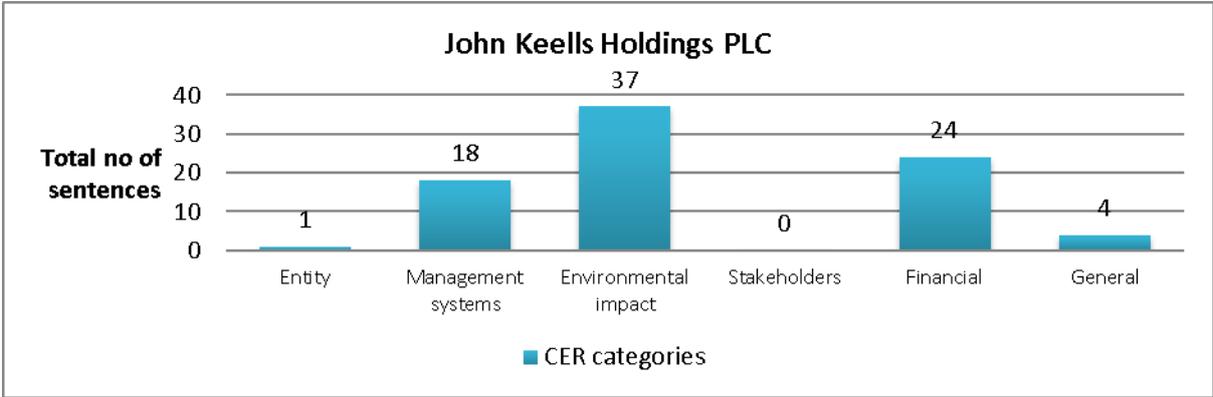


But still the company has maintained the quality and accuracy at a higher level.

***The extent, quality and accuracy of CER in Jhon Keels PLC***

This company has disclosed its environmental information within their annual report and the number of sentences allocated to each category of the CER, given score and the company score is shown in the Figure 4.14.

**Figure 4.14: The number of sentences, given score and company score of CER**



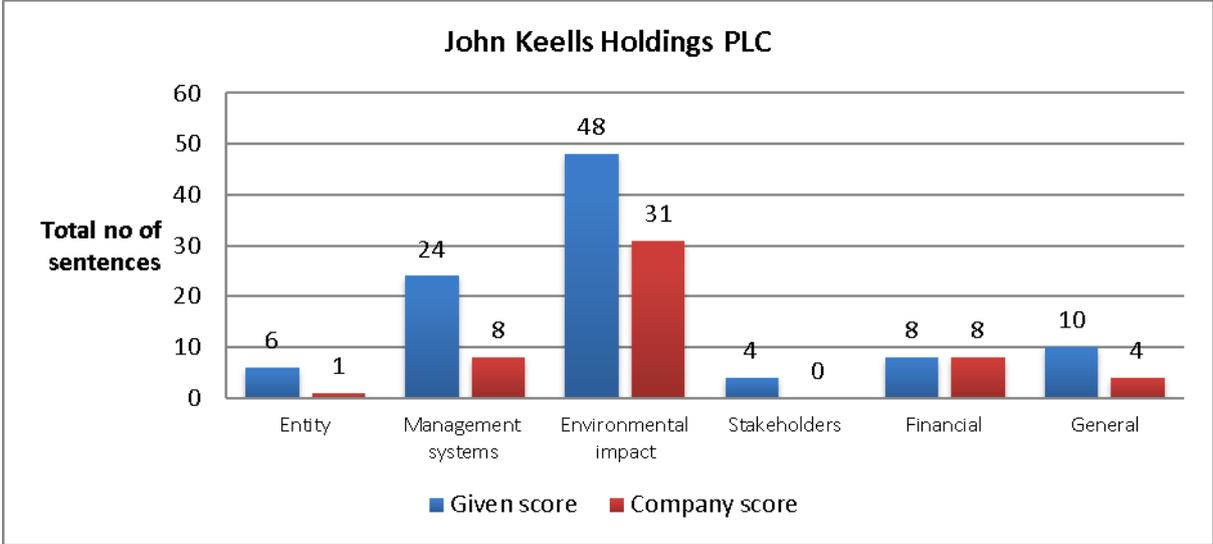
According to Figure 4.13, it has allocated 84 sentences with 7 pages. it has highly paid attention on disclosing environmental impact and sustainability category and it was 50% out of total

number of sentences. It has not disclosed any stakeholder information with regarding the CER. Management policy has given some more attention but entity and general category has given very lower attention. However the company has allocated 7 pages to the CER disclosures within the annual report and it is a considerable amount. Therefore considering the extent of disclosure, company has attempted to disclose their environmental involvement.

***The quality and accuracy of CER***

Considering the accuracy and quality of CER, it can be judged by studying the company score and given scores. According to the Figure 4.15, the company has obtains 52 scores to all the categories. The given score was 100 and this company has reached to 52% of the scores and the highest scores are recorded in the impact and management policy areas. Other areas have lower score except financial information of CER.

**Figure 4.15: The given score and the company score of CER**



Thus all the companies shave disclosed CER and with accuracy and quality and hence CER is common in Sri Lanka

#### **5.4 Describe whether the reports give a true picture of organizational involvements and environmental impacts (possible green washing)**

Literature evidenced that the corporations' voluntary disclosure of information about their environmental impacts have become drastically widespread nowadays (Eccles and Keholders cited in Marquis and Toffer, 2011). But the control of the formation is with the Companies and sometimes they can disclose what they want. Corporations are accused of Greenwashing on their reports, websites and other disclosing y media (Galicano, 2011). Greenwashing was identified due to the inconsistencies between companies' actual behaviour and the claims about being green. Therefore researcher also tries to describe the possibility of green washing among the sample. According to the data collected from the questionnaire and interview guide, the level of greenwashing can be illustrated as follows.

The questionnaire and the interview guide used to collect data for the greenwashing is developed based on literature and pretested before administering the full survey. Hence the validity and reliability can be established. Ensuring the reliability of questionnaire is very significant because the main part of the analysis is based on the data collected from the questionnaires. The reliability of a questionnaire is that the question items of a particular questionnaire measures reliability of the variables being studied. Here the researcher used a popular reliability test calling Cronbach's Alpha Value method using SPSS 17.0 to test the reliability of questionnaire developed by the researcher based on the literature for this study. The result of the reliability test is .756 and it can be treated as a reliable questionnaire. In analyzing the possible greenwashing researcher tests the following hypotheses.

***H2: Companies are not doing "greenwashing" within their environmental reports.***

The mean of the responses for the greenwashing is identified from the questionnaires and it is basically ranges from neutral level to agree level and the mean of the answers are 3.4638. It means that most of the respondents were answered that they are disclosing their true environmental involvements within their reports and the pictures and appendixes also provided to prove the CER. Further at the semi-structured interview, most of the respondents mentioned that they have disclosed only the things that have been done and some future events expected to be done. Only two company shave recorded that things should have been done instead actual information for some categories. Further companies' attempted to disclose monetary and in disclosing CER

information. Two companies have audited their environmental disclosures and mentioned those information within the annual report with an unqualified opinion. Further some companies have given more detailed information with relevant illustrations and pictures. Hence based on the responses given to the questionnaire and the interview guide, 80% companies have disclosed true and real information about their CER and only 20% companies have done some greenwashing. But not for whole CER, but in some categories of CER.

#### **4.5 Describe Managers' perception on adopting international environmental standards (eg: ISO /GRI) in their CER disclosures**

In reaching to the global market, and to become respective national and multinational companies, organizations must comply with international requirements. One of such requirement is adopting or complying with ISO 26000, the reporting requirement of social responsibility and ISO 14001, the reporting organizational environmental impacts. Adhering to these standards means that organizations require to disclose CER within their reports in a proper manner. In addition adhering to GRI is also very important. The relationship between the managers' perception on adopting international environmental reporting standards and the CER disclosure was identifies using the questionnaire and interview guide.

The questionnaire and the interview guide used to collect data for the identifying the managers' perception on adopting international environmental reporting standards is developed based on literature and pretested before administering the full survey. Hence the validity and reliability can be established. Ensuring the reliability of questionnaire is very significant because the main part of the analysis is based on the data collected from the questionnaires. The reliability of a questionnaire is that the question items of a particular questionnaire measures reliability of the variables being studied. Here the researcher used a popular reliability test calling Cronbach's Alpha Value method using SPSS 17.0 to test the reliability of questionnaire developed by the researcher based on the literature for this study. The result of the reliability test is .884 and it can be treated as a reliable questionnaire. In analyzing the managers' perception on adopting international environmental reporting standards following hypotheses will be tested.

***H3: There is a relationship between corporate environmental disclosure and adoption of international environmental standards and guidelines***

The mean of the responses for the managers' perception on adopting international environmental standards is identified from the questionnaires. Hence the responses basically ranges from agree level to strongly agree level and the mean of the answers is 4.5784. It means that most of the respondents were answered that they are willing to adopt ISO 26000 and ISO 14001. Among the sample 100% companies willing to adopt to these standards and they really wish to do it. But all the companies follow GRI guidelines for their CER disclosures.

Further at the semi-structured interview, most of the respondents mentioned that they are willing to adopt these international standards in to their CER disclosures since 60% of the companies are multinational companies and they are willing to expand their global market Further at the data collection from the interview guide, researcher found that only two companies are already following ISO 14001 and one company follows ISO 26000. All the companies disclose their Corporate Social Responsibility and CER according to the GRI guidelines. It means that organizations are now moving towards complying and adhering international standards in their environmental reporting. Further at the interview, all of the managers' told that they wish and will to adopt the international standards in their CER reporting in near future since they have identified its importance by now. Therefore results of the questionnaire and interview guide confirm the hypotheses 03 of the study.

#### **4.6 Describe the managers' perception to what extent CER disclosures actually contribute to Environmental sustainability**

Literature evidenced that the organization are responsible for the harm that they are doing to the environment. Therefore they have to take steps to protect the environment. CER is one of such strategy to protect the environment and ensnare the environmental sustainability. Further the CER is a voluntary disclosure practice and managers of the companies willing to disclose CER. Therefore the researcher investigated the managers' perception about their CER on environmental sustainability. According to the data collected from the questionnaire and interview guide, the managers' perception about their CER on environmental sustainability can be illustrated as follows.

The questionnaire and the interview guide used to collect data for the greenwashing is developed based on literature and pretested before administering the full survey. Hence the validity and reliability can be established. Ensuring the reliability of questionnaire is very significant because the main part of the analysis is based on the data collected from the questionnaires. The reliability of a questionnaire is that the question items of a particular questionnaire measures reliability of the variables being studied. Here the researcher used a popular reliability test calling Cronbach's Alpha Value method using SPSS 17.0 to test the reliability of questionnaire developed by the researcher based on the literature for this study. The result of the reliability test is .822 and it can be treated as a reliable questionnaire. In analyzing the possible greenwashing researcher tests the following hypotheses.

***H4: There is a relationship between corporate environmental disclosure and Managers' perception on environmental sustainability***

The mean of the responses for the managers' perception about their CER on environmental sustainability is identified from the questionnaires and it is basically ranges from agree level to strongly agree level and the mean of the answers are 4.621. It means that most of the respondents were answered that they believe that their true environmental involvements within their reports and particulars of CER influence on ES. Further at the semi-structured interview, most of the respondents mentioned that they have disclosed most of the programmes and activities that they have done to protect the environment and they believe that definitely their CER disclosures show the real and true environmental involvements and they affect to ensure the ES. The things that companies have to be done have also been reported and then managers replied that they continually reporting ER and it directly impacts the ES in all the ways because the companies are having programmes to continue CER works within their agendas. Further some companies have mentioned that the activities to protect the environment and conserving for future has done and pictures have presented in their annual report and those thing prove how they help to conserve environment and ensure ES. Thus in here also the hypotheses 04 is confirmed and managers' believe that their CER disclosures influence to the ES and it can be proved by the CER disclosures and pictures given by the companies.

## **Chapter Five**

### **Findings, Conclusions and Recommendations**

#### **5.1 Introduction**

Researcher has conducted this study basically to identify the reliability and honesty of voluntary disclosure of Corporate Environmental Reporting within annual reports among listed companies in Sri Lanka. Though the literature evidenced that many developing and developed countries have conducted studied in the field of CER, it is very new to conduct this type of a study in Sri Lankan context (Rajapaksha, 2003 cited in Pramanik et al., 2008). Further there is no specific guideline for ensuring the reliability and honesty of CER and only a handful of studied of CER disclosures have done with reference to the world and researcher could not find any evidence regarding this type of a study done in Sri Lanka. Hence this research study was conducted with the aim of analyzing the reliability and honesty of CER disclosures within annual reports among listed companies in Sri Lanka focusing the identification of extent, accuracy and quality of CER disclosures, possible greenwashing, managers' perception on adopting international standards in reporting environmental information and managers' perception on the impact of CER on environmental sustainability.

This chapter includes main five parts. The first part presents the introduction to the chapter. The second part is allocated to analyze the findings of general information about the sample and the respondents. From the third section, this chapter concludes the findings of the objectives of the study and testing hypotheses. The fourth section concludes the results of the first sub objective which is the identification of the extent, accuracy and quality of CER disclosures within the annual reports of the sample companies in 2012/2013. The fifth section is allocated in describing the possibility of greenwashing. The sixth section is allocated for investigating the managers' perception on adopting international standards and guidelines and the seventh section is devoted to identifying the managers' perception of the impact of companies' CER on environmental sustainability. The next section presents an overall conclusion of the study. The Last two sections provide recommendations and suggestion for future research.

## **5.2 Analyzing the general Information**

### **5.2.1 Analysis of Number of respondents**

There are twenty industry sectors in Sri Lanka and it was really difficult to select a representative sample from 245 listed companies in Colombo Stock Exchange (CSE, 2013). Therefore researcher selected top 10 companies from the 'Business Today' business magazine, 2013. That sample can be treated as a valid and reasonable sample since it covers main few industry sectors. Among the sample 30% is from diversified holdings, another 30% is from Bank, Finance and Insurance, 20% companies from Food, beverages and tobacco and last 20% is from telecommunication sector. Among the sample 60% companies are multinational companies and rest 40% are national companies. The final sample is treated as a reasonable and valid sample because it covers at least 4 main industry sectors and both national and multinational companies.

### **5.2.2 Gender of the respondents**

In addressing the questionnaires to the respondents, it was done to the senior managers those who are responsible for the CER disclosures. Hence the respondents include both male and female managers. However 70% respondents were male and 30% were female. Hence it can be concluded that there was a high possibility to the male persons to become senior managers and to intermediate the disclosure of CER in annual reports than female persons.

### **5.2.3 Companies disclosed CER within annual reports**

All the companies of the sample are publicly listed companies and hence they produce annual report to the public to communicate organizational performances to their stakeholders. Therefore annual report is very important organizational communicational instrument. In this study researcher concerns only the annual report to identify the CER disclosures. Among the sample 80% companies disclosed CER within their annual reports and 20% disclosed sustainability report as a part of annual report. Those companies are Hatton National Bank and John Keels PLC. Hence all the companies in the sample was treated as units of the sample and taken in to the consideration for the analysis.

### **5.2.4 Usage of other reports to disclose CER including both printed and non-print media**

Considering the sample, all the sample companies disclose their environmental involvements within other reports such as press releases, environmental reports, stand-alone environmental reports and web sites in addition to the annual report. It means that companies are now moving to

the disclosure of CER in many different places in addition to the annual report and CER has gained an increased attention by the companies.

### **5.3 Findings for the sub objectives of the study and texting hypotheses.**

From this part, the Chapter five is allocated to present the findings and conclusions for all the research objectives while testing the hypotheses of the study.

### **5.4 The extent, accuracy and quality of CER among the sample companies**

This was the first sub objective that the researcher expected to achieve. Literature evidenced that only a handful of studies have done to identify the extent, accuracy and quality of CER and no study results have found which was done in this aspect within Sri Lankan context. Therefore researcher has investigated the extent, quality and accuracy of CER and the study results can be presented as follows. Further the hypothesis of;

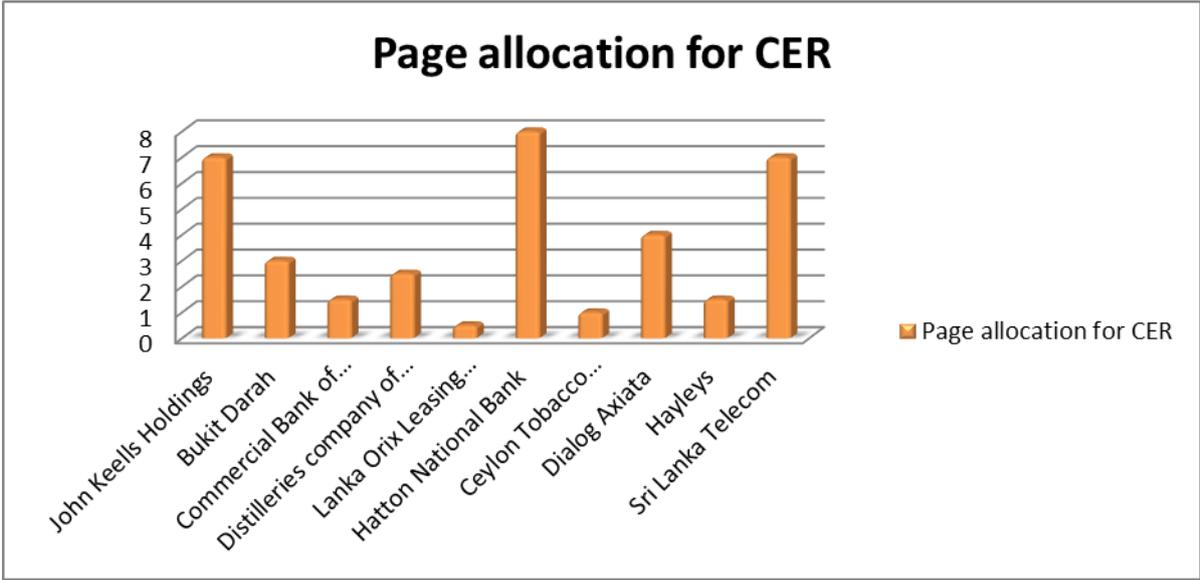
H1: There is a relationship between the CER and its extent, accuracy and quality

is also tested as follows.

#### **5.4.1 The total pages allocated to report environmental information of the sample**

In the analysis and discussion, the researcher identified that all the companies of the sample has disclosed CER within their annual reports and have allocated considerable space from their annual report. There were some variations in disclosing CER among the companies. The CER has been basically identified as one of the main item in the annual reports recently. However the recognition given to CER has increased drastically and hence the companies allocates some space within their annual report to CER. Following Figure 5.1 shows the total pages allocated to disclose CER within annual reports from the sample companies.

**Figure 5.1: Page allocation to CER**

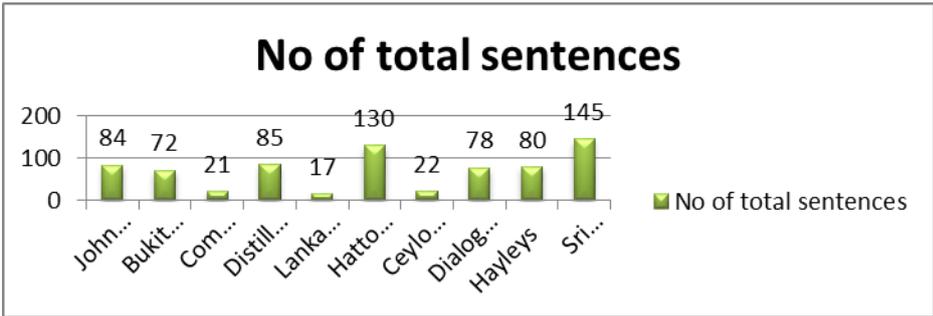


According to the Figure 5.1, 3 companies have allocated a around 7 pages and it is a remarkable amount of pages since annual report is a limited. But 5 of the sample has allocated pages less than 3. Thus by looking and studying above figure concluded that companies allocate considerable space for their CER and none of the companies not reporting CER. It means that companies are attempting to disclose CER and they have given a prominent place to CER due to its timely importance and hence a big space of the annual report has been allocated To CER as shown in above figure. This can be highlighted as really important because annual report is not a very big report and each page or line of the report is very significant for reporting because organizations have many things to disclose.

**5.4.2 The total number of sentences of CER made by each company**

In the analysis and discussion, the researcher identified that all the companies of the sample has disclosed CER within their annual reports and have allocated considerable space from their annual report. There were some variations in disclosing CER among the companies. The total number of sentences allocated by each company for CER disclosures is shown by the following Figure 5.2.

**Figure 5.2: The total number of sentences of CER made by companies**



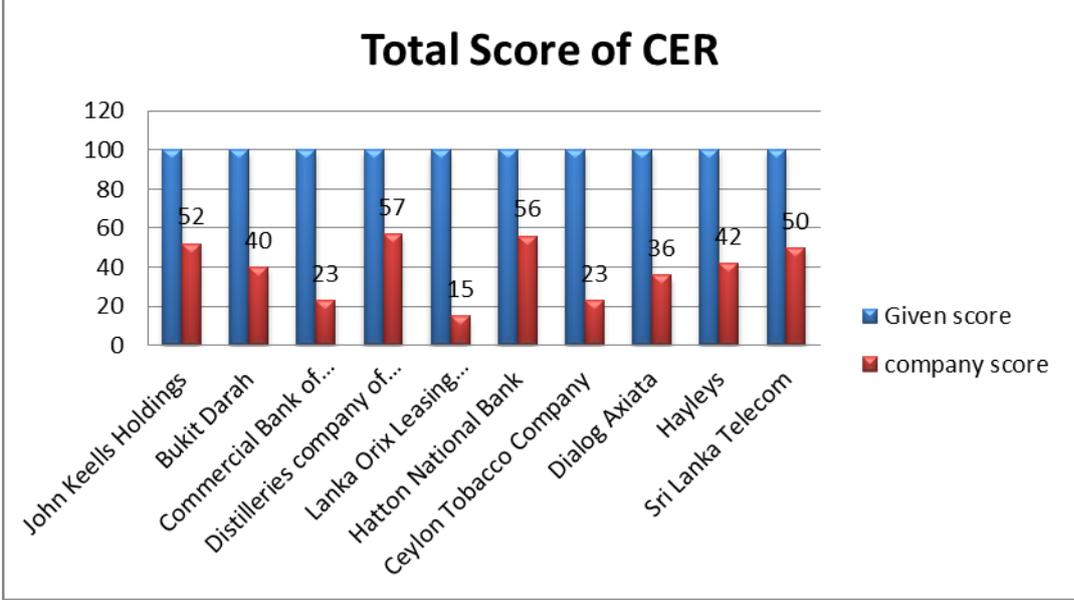
According to the above figure 5.2, the number of sentences allocated to CER by the companies ranges from 17 to 145. The highest disclosures were made by Sri Lanka telecom (145) and Hnatton National Bank (130). Distilleries, John Keells, Heylys , Dialog and Bukit Darah companies have disclosed total of 85, 84, 80, 78and 72 sentences respectively. The least CER reporting companies are LOLC (17), Commercial bank (21) and Tobacco (23). Thus 70% of the sample companies have disclosed a considerable amount of CER within their annual reports and , though the CER is still a voluntary practice it is not new to Sri Lanka and commonly disclosed by companies.

Considering the categories of CER, all the companies have paid much attention on disclosing information about environmental impacts including resource consumption, outputs, products and services and procurement. In addition, the next most important category is management policy and systems and it includes environmental policies, objectives, environmental management systems, environmental conservation, bio diversity and sustainable business practices. The less attention has been give to the stakeholders, financial information about CER and general categories. However, considering the disclosures of the whole sample all the categories have been addressed. Therefore it can be concluded that CER disclosures are common to Sri Lanka and all the companies have disclosed CER within their annual reports. Further a considerable amount of page is and space have been allocated to CER disclosures and Sri Lankan companies disclose CER to a greater extent though it is still a voluntary reporting practice.

**5.4.3 The average Score of main categories of CER of the companies**

To ensure the accuracy and quality of CER disclosures, the scores of the companies should be investigated. The total scores obtained by the companies based on the CER disclosure index can be shown in below Figure5.3.

**Figure 5.3: The total Score of main categories of CER of the companies**



According to the above figure 5.4, all the companies have reached a considerable amount of scores comparing with the sentences disclosed and hence the quality and accuracy can be established. Therefore the hypotheses one is accepted and there is a relationship between the CER and extent, accuracy and quality.

**5.5 Identifying the possibility of Green washing**

Though the companies have disclosed CER in high quality and accurately, those things might not be totally reliable and companies might do some green claims instead actual environmental reporting. Therefore researcher investigated possibility of making green claims and things that have not done, but the things that should be done.

The questionnaire was treated as a valid one due to its alpha value is  $>.700$ . The interview guide was also treated as a valid and reliable one since it was developed based on the literature. According to the data collected from the questionnaire and interview guide data collected from both questionnaires and interview guide concluded that almost all the companies are not doing

greenwashing and they are trying to disclose what they have really done with suitable pictures and evidences. Hence the hypotheses 2; companies are not doing greenwashing is accepted.

## **5.6 Describing the managers' perception on adopting international standards on CER**

The companies are now moving towards the adoption of international standards in reporting CER and 20% companies already done it. Further managers of the all companies willing to adopt ISO and other guidelines of CER for a better CER disclosure. Therefore this conclusion accept the hypotheses 03; there is a relationship between managers perception on adopting international standards in CER

## **5.7 Describing the managers' perception of the CER and its impact on environmental sustainability.**

The researcher administered a questionnaire and an interview guide to collect data from the respondents to see the managers' perception of CER on ES and the results concluded that all the managers believe that their CER influence to the ES since they are reporting what they really do.

## **5.8 Conclusion of the study**

The main purpose of the study was to identify the reliability and honesty of the CER disclosure sin Sri Lankan context. Thus the study findings concluded that CER of Sri Lankan companies are common and CER has disclosed to a considerable amount with accuracy and quality. Further the possibility of greenwashing is very low and some of the companies already adopted international standards for their reporting. Hence the CER of Sri Lanka can be identified as reliable and honest. Therefore it can be concluded that reliable and honest CER definitely affect to the Environmental Sustainability of the Country.

## **5.9 Recommendation**

The researcher found that CER is not common to Sri Lanka and companies do it with accuracy and high quality. But still we do not have any framework specifically designed to report CER and still it is a voluntary practice. Therefore it is recommend to make strong policies and guidelines to report CER as a mandatory practice since its timely importance.

## **5.10 Suggestions for future research**

The researcher has attempted to analyze basically the documents and the managers' perceptions regarding the CER disclosures. However researcher can suggest to examine the actual CER activities and their impact on ES without checking the documents. Then the real impact of CER on ES can be established.

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# Appendices

## Appendix 01: Environmental Disclosure Index

<b>The Entity</b>	Max score
Corporate profile: Corporate context to understand environmental performance	4
Governance structure of the organization: Direct responsibility for environmental performance (1, mention; 2, elaborate)	2

### Management policy and systems

Corporate environmental policy: What are the main issues for the organization related to environmental performance: “how the company understands and intends to meet its environmental responsibilities” (Massey University, 2002, p. 15)	4
Environmental objectives/targets: “The organization’s specific aims to address the impacts of its processes, products or services” (Massey University, 2002, p. 16)	4
Performance measured against previous year’s targets (authors)	4
Environmental management system: Organizational structure, responsibilities, practices, and procedures processes and resources for determining and implementing the environmental policy	4
Environmental audit: “The audit provides feedback about strengths and areas of weakness, identifies areas of risk and makes available to the company the information needed to improve Performance” (Massey University, 2002, p. 21) (1, that one was done; 2, if report included)	2
Employee environmental programme: “providing prog rammes of awareness-raising, education and training which enable the employee to understand the importance of environmental responsibility” (Massey University, 2002, p. 19) (1, that programme exists; 2, if details are provided)	2
Environmental impacts and negative sides of company operations (1, that one was done; 2, if report included)	2
Environmental conservation and conservation programmes (1, that one was done; 2, if report included)	2
Ensuring bio diversity and environmental sustainability (1, that one was done; 2, if report included)	2

### Environmental impacts

<b>Inputs:</b>		<b>Outputs:</b>	
Materials used	4	Emissions—water	4
Water consumption	4	Emissions—air	4
Energy consumption	4	Waste (reduction and Disposal—including recycling)	4
		Noise and odours	4

**Process management:**

Environmental impacts (stewardship of processes and services; land contamination)	4	Transportation (impacts, minimization)	4
Supplier programme	4	<b>Products/services:</b>	
Clean technology	4	Life-cycle—design and assessment (including recycled materials)	2
		Packaging (reduction/recyclable)	2

**Stakeholders**

Identification of relevant stakeholders: “Anyone who has been impacted upon by the company’s activities or who has a potential impact on the company” (Massey University, 2002, p. 18)	2
Communication with stakeholders:	1

**Financial**

Environmental liabilities: (Kolk, 1999)	2
Current expenditures: Environmental equipment, facilities, operations and remediation	2
Past expenditures: Environmental equipment, facilities, operations and remediation (Hughes et al., 2001)	2
Future expenditures: Environment equipment, facilities, operations and remediation	2

**General**

Global operating standards: (1, reference to global standards, i.e. ISO; 2, detail on compliance)	2
Compliance to GRI or any other guideline (1: Just mention, 2, detail on compliance)	2
Report design and accessibility: (UNEP) layout and readability (1, fair; 2, exceptional)	2
Covers full ecological footprint: Eco efficiency and measures	2
Awards received: (reporting and environmental) rewards noted in the reports	1
Support for environmental organizations:	1
<b>Total score</b>	<b>100</b>

# Appendix 02: Survey Questionnaire

## An investigation of reliability of Corporate Environmental Reporting and its impact on Environmental sustainability: An evidence from Sri Lanka

**Instructions:** I am interested in studying the accuracy, quality and reliability of corporate environmental reporting disclosures and its impact on environmental sustainability among listed companies in Sri Lanka as a partial requirement of the M.Sc. Degree in Development Management, University of Agder, Norway. This questionnaire was developed to collect primary data. All the information that you produce will be used only for the study purposes and I certify to assure the confidentiality of the information given by the respondents. If you could allocate a few minutes of your time to answer this questionnaire, it will be highly appreciated.

### Part I- General information

1. Gender (Female..... Male..... ) Please Use “√” mark to tick.
2. Age range (26-30, 31-35, 36-40, 41-45, 46-50, 51-55, Above 55) Please tick or highlight.
3. Working organization:-..... (Please write)
4. Status (MD, CFO, Finance manager, Finance director, Chief Accountant, other: .....)

### Part II- Media of disclosure

5. Where does your organization disclose CER at present? .....
6. What is the most suitable media to disclose Corporate Environmental information (CEIs) from the followings (Annual report, stand-alone environmental report, web sites, sustainability report, media releases, Corporate responsibility report or any other medias etc.) as per your view.....(Please write)

Use this scale to answer followings questions.

1. **SDA** = Strongly Disagree
2. **D** = Disagree
3. **N** = Neutral
4. **A** = Agree
5. **SA** = Strongly Agree

### Part III –Greenwashing of CER disclosures

8. To what extent do you agree with the following in reference to the accuracy of your environmental reporting disclosures?

No	Possible greenwashing	SDA	D	N	A	SA
1.	We provide all relevant environmental information through our environmental reports					
2.	Environmental reports consists of both positive and negative environmental impact information					
3.	Environmental reports give an accurate and true picture of the firm’s dealings with the environment					
4.	Environmental reports are regularly updated					
5.	Both quantitative and monetary information have been provided where required					
6.	Special team and resources have been allocated for reporting the organizations environmental performance					
7.	The information is checked by other authorized officers and records are regularly maintained					
8	The organization provides a good information base with relevant evidence about its interactions with and impacts on the environment					
9	We do not give false information within the report					
10	We have disclosed all relevant environmental dealings that may have significant importance for the stakeholders.					

### Part IV – Managers’ perception on adopting international standards

9. Indicate the following items (Put “Tick“√” mark), the degree to which you agree or disagree with each statement regarding your perception of disclosure of Corporate Environmental Information (CEIs) and the applicability of ISO standards and guidelines.

No	Managers’ perception on adopting international standards	SDA	D	N	A	SA
1	We follow international standards in CER (Eg: ISO 14001 and 26000)					
2	Our team of environmental reporting knows applicable ISO standards or similar well					
3	We like to follow ISO standards or similar in our environmental reporting					
4	Adoption of international standards in environmental reporting enhance validity and quality of the reports					
5	Though we do not have followed ISO standards we would like to follow them in near future					
6	We understand the worth of ISO standards in reporting environmental information					

7	We follow other guidelines like GRI for our reporting					
8	Our organization is willing to accept a good standard or guideline helpful in quality reporting					
9	Standards and guidelines should be available for ideal environmental reporting and we follow them.					
10	I am happy to say that our organization is one which is willing to follow ISO standards and other important guidelines					

**Part V – Managers’ perception on corporate environmental reporting and its impact on environmental sustainability**

10. Indicate the following items (Put “Tick“√” mark), the degree to which you agree or disagree with each statement regarding your firm’s disclosure of Corporate Environmental Reporting and its impact on environmental sustainability using following scale.

No	Managers’ perception on Corporate environmental reporting and its impact on environmental sustainability	SDA	D	N	A	SA
1	We report all dealings and impacts of our works that may affect the environment.					
2	We always take steps to protect the environment from harmful organizational activities.					
3	We disclose all negative and positive environmental impacts and emphasize ways to conserve the environment.					
4	Our environmental reporting aims to conserve the environment for the future.					
5						
6						
7	We have disclosed the investments, information and actions that have been taken to protect the environment for future use.					
8	Our organization is willing to accept a good standard or guideline if they are helpful in quality reporting					
9	One of our main goals of environmental reporting is ensuring environmental sustainability					
10						

**Part VI**

11. What is your general perception of the firm’s present Corporate Environmental Reporting (CER) Disclosures in annual reports?

12. What kind of corporate environmental reporting do you plan for within the next ten year?

## **Appendix 03: Interview Guide**

### **An investigation of reliability of Corporate Environmental Reporting and its impact on Environmental sustainability: An evidence from Sri Lanka**

#### **General information**

1. Name of the organization?
2. Industry sector?
3. Position of the interviewee?
4. Nature of the business?

#### **Possible greenwashing of the environmental disclosures**

1. Do you disclose CER within the annual report or other environmental report available to the public?
2. If yes, does your organization present **all** the environmental information within the reports? If so which aspects?
3. What are the reasons for not reporting all the environmental dealings within the reports?
4. Do you disclose negative impacts of the organizational dealings with its environment?
5. Do you disclose only the positive aspects of the organizational dealings with its environment?
6. Does your organization presents environmental information with relevant financial and quantitative data where required?
7. Does your organization disclose information about the steps taken to avoid negative environmental impacts?
8. Does your organization provide a true and clear picture of the all environmental dealings with your organization including positive and negative sides?
9. Does your organization expect to produce a full report of organizations' environmental dealings in ten years' time?

## **Managers' perception on adopting international standards and guidelines for disclosing CER**

1. Does your organization adopt ISO 14001 standard in environmental reporting?
2. Do you have any understanding with ISO 14001?
3. Does your organization expect to follow ISO 14001 in ten years' time?
4. Does your organization adopt ISO 26000 standard in environmental reporting?
5. Do you have any understanding with ISO 26000?
6. Does your organization expect to follow ISO 26000 in ten years' time?
7. Does your organization follow any other guideline in environmental reporting like GRI or Jow Dones Sustainability index in disclosing environmental information?
8. If not, does your organization hope to adopt such standard in ten years' time?
9. If yes, what is the chosen guideline?
10. In which ways does your organization adopt the standards to your environmental reporting?
11. What is your overall idea about the organizations present environmental reporting and the applicability of standards and guidelines to the reporting?
12. What is your idea about the adoption of standards and guidelines in environmental disclosures in future may be in ten years' time?

## **Managers' perception on CER disclosures and its impact on environmental sustainability**

1. Does your organization do substantial activities for protecting environment or to minimize negative environmental impacts?
2. Such actual CER activities and CER disclosures are almost same.
3. Are you satisfied with the amount of environmental disclosures made by your organization comparing the actual performances?
4. Did you disclose the CER activities that are planning to do in future?
5. Did you disclose something other than that you did under environmental reporting?
6. Is Environmental sustainability one of key goal of the organization for CER disclosures?
7. Does your organization care about the environment in working with it?

8. Do you have any idea for a sustainable environment when you disclose environmental information?
9. Do you believe that the information given in the reports influence to the environmental sustainability? If so how?
10. Do you expect to initiate steps to a sustainable environment through environmental conservation programmes in ten years' time?
11. What is your suggestion to improve the CER disclosures to increase environmental sustainability?

### **Other**

1. What is your overall view of present CER disclosures?
2. What is your expectation to improve it in ten years' time?