

**CORPORATE CARBON EMISSION REDUCTION STRATEGIES AND
COMPETITIVENESS OF SMALL AND MEDIUM ENTERPRISES IN UGANDA**

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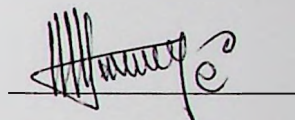
**RESEARCH DISSERTATION SUBMITTED TO THE FACULTY OF BUSINESS AND
MANAGEMENT STUDIES IN PARTIAL FULFILLMENT OF REQUIREMENTS FOR THE
AWARD OF MASTER OF BUSINESS ADMINISTRATION DEGREE OF UGANDA
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ORIGINAL CREATION STATEMENT

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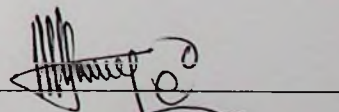


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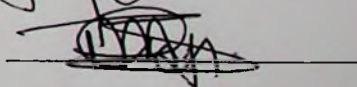
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DEDICATION

I dedicate this thesis to my Family and Friends.

ACKNOWLEDGMENT

The completion of this thesis would not have been possible without the support of my Supervisor Dr. Maurice Olobo, and Stephen Kyakulumbye for their much commitment on refining data analysis tools, Dr. James S Epilla-Otara for proof reading and providing guidance on the introduction part of this thesis.

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TABLE OF CONTENTS

ORIGINAL CREATION STATEMENT	i
DEDICATION	ii
ACKNOWLEDGMENT	iii
COPY RIGHT	iv
TABLE OF CONTENTS	v
ABSTRACT	viii
LIST OF ABBREVIATIONS	ix
List of tables	x
List of figures	xi
APPENDICIES	xii
CHAPTER ONE	1
1.1 Background of the study	1
1.2 Statement of the Research Problem.....	2
1.3 Justification of the Study.....	3
1.4.0 Purpose of the Study	5
1.4.1 Research Objectives of the study.....	5
1.4.2 Research Questions.....	6
1.5 Conceptual Frame Work	6
1.6 Theoretical Frame Work	8
1.7 scope of the study.....	10
CHAPTER TWO: LITERATURE REVIEW.....	11
2.0 Introduction	11
2.1 Company carbon emission reduction strategies and competitiveness of SMEs	11
2.3 Customer emission reduction strategies and competitiveness of SMEs	19
CHAPTER THREE.....	23
METHODOLOGY	23

3.1	Introduction	23
3.2	Research design.....	23
3.3	Research Procedure.....	23
3.4	Description of the sample size	24
3.5	Research Tools	24
3.5.1	Interviews	24
3.5.2	Questionnaires	25
3.5.3	Historical Reviews.....	25
3.6.0	Data Analysis.....	25
3. 7.	The validity and reliability	25
3.8	Limitation of the study	25
CHAPTER FOUR		27
DATA ANALYSIS AND PRESENTATION.....		27
4.1	Introduction	27
4.1	Response Rate	27
4.2	Background Information	27
4.2.1	Age of the Respondents	27
4.2.2	Sex of the respondents	28
4.2.3	Company Category by size	29
4.2.4	Respondents per Companies and Customer.....	29
4.2.5	Response on duration of working with/knowning the companies	30
4.3.2	Climate change and Carbon Trade Awareness Levels	33
4.3.3	Carbon Trading Systems	34
4.3.4	Companies Major Investment Areas	34
4.3.5	Companies Energy Sources.....	35
4.4.1	How Company emission reduction Strategies that affect the Competitiveness of Small and Medium Enterprises.....	38
4.4.1.1	Correlation (Relationship) between company emission reduction strategies and competitiveness of SMEs..	41

4.4.2 How employee emission reduction strategies affect the competitiveness of small and medium enterprises.....	42
4.4.2.1 Correlation between employee emission reduction strategies and competitiveness of the SMEs.....	44
4.4.3 How customer emission reduction strategies affect the Competitiveness of small and medium enterprises	44
4.3.3.1 Correlation (Relationship) between customer emission reduction strategies and competitiveness in SMEs	47
4.3.3.2 Multiple regressions results of all strategies on competitiveness of SMEs	48
4.5 Competitiveness of Small and Medium Enterprises.....	49
CHAPTER FIVE: DISCUSSIONS AND INTERPRETATION OF RESULTS	53
5.1 Introduction.....	53
5.2 How company emission reduction strategies affect the competitiveness of small and medium enterprises	53
5.3 How employee emission reduction strategies affect the competitiveness of small and medium enterprises.....	56
5.4 How customer emission reduction strategies affect the competitiveness of small and medium enterprises.....	59
CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS	62
6.1 Conclusion.....	62
6.2 Recommendations	63
6.3 Suggestions for further research.....	65
6.3 Conclusions.....	66

ABSTRACT

Availability of strategies and opportunities can drive SMEs competitiveness potential. In Uganda, more SMEs are emerging and many of these SMEs activities have contributed to global warming in form of carbon-dioxide release with less effort to reduce these negative effects. For example, water risks are urgent today, given the population and climate change trends, the demand for primary energy is projected to increase globally. The study assessed corporate carbon emission reduction strategies to enhance competitiveness of small and medium enterprises under different management practices in Uganda. The objectives of the study were to determine how company, employee and customer emission reduction strategies enhance the competitiveness of small and medium enterprises. Strategies were categorized as independent variables and competitiveness as dependent variable. However, multiple regression analysis was conducted to find out the effect of these strategies on the competitiveness. The study revealed that employee strategies are the number one predictor of competitiveness. The study suggested an integrated carbon financing model which intends to contribute to carbon trade, climate change mitigation policy in Uganda. Critical success factors for Competitiveness of carbon financing strategies are determined by employee factors. Therefore, it's those companies that will consider human resources capacity building for competence and change of attitude in these companies that will benefit from carbon emission strategies and such strategies will target carbon markets and systems competitively.

Key words: Corporate, Carbon Strategy and Financing SMEs

LIST OF ABBREVIATIONS

CDM	Clean Development Mechanism
MFPED	Ministry of Finance Planning and Economic Development
GHG	Green House Gasses
WB	World Banks
UNEP	United Nations Environment Programme
SMEs	Small Medium Enterprises
IMCF	Integrated Model of Carbon Financing
DNA	Designated National Authority
OECD	Organisation of Economic Development
UNRA	Uganda national Road Authority
ILO	International Labour Organisation
VCM	Voluntary Carbon Markets
IPCC	International Panel on Climate Change
ITCZ	Inter-tropical Convergence Zone
WBCSD	World Business Council on Sustainable Development
DENR	Department of Energy and Natural Resources
SPGs	Saw log Production Schemes
REDD+	Reduction of Emission from Deforestation and Degradation plus Agriculture
CSRA	Corporate Social Responsibility Activities
NGOs	Non Governmental Organisations

List of tables

Table 2-1: Trends in Uganda's Performance in the Global Competitiveness Surveys 2003-2006	14
Table 4-1. Showing Age of respondents	27
Table 4-2 Showing sex of the respondents.....	28
Table 4-3 Shows respondents by company Category by size	29
Table 4-4. Showing respondents Per Company and selected customers.....	29
Table 4-5. Showing employee working durations among companies.....	30
Table 4-6. Showing the position of respondents	31
Table 4-7. Company emission reduction by number of Employee emission reduction response.....	32
Table 4-8. Shows climate change and Carbon Trade awareness levels	33
Table 4-9 below shows carbon trading systems	34
Table 4-10. Below showing Companies Major Investment Areas.....	34
Table 4-11. Below showing Companies Energy Sources	35
Table 4-12. Showing how company emission reduction strategies affect Competitiveness of SMEs.....	38
Table 4-13 below showing correlation results between company emission reduction strategies and competitiveness in SMEs	41
Table 4-14. Showing how employee emission reduction strategies affect competitiveness of SMES	42
Table 4-15. Showing correlation results between employee emission reduction strategies and competitiveness in SMEs	44
Table 4-16 below shows how customer emission reduction strategies affect competitiveness of SMEs ...	45
Table 4- 17. Showing correlation results of customer emission reduction strategies and competitiveness in SMEs	47
Table 4-18a. Showing Model Summary.....	48
Table 4-18b. Multiple regressions results of all strategies and competitiveness of SMEs.....	49
Table 4-19. Competitiveness of SMEs.....	50
Fig 6-1: Hypothetical Integrated Carbon Financing Model (ICFM)	64

List of figures

Fig 1-1. Showing the research conceptual frame work	7
Fig2-1 Ansoff's Growth Vector Matrix	8
Fig3-1: Role is played by a highly diverse set of actors across sectors as seen below.	15
Fig. 4-1. The graph showing company by number of Employee response	32
The figure 4-2. Above shows company fund sources among the companies.....	36
Fig 4-3. Climate change practices supported by the companies	37

APPENDICIES

Appendix I: Factor analysis results.....	72
Appendix II: Study Questionnaire	73
Appendix III: Masters Research Projects and Publications	74

CHAPTER ONE

1.1 Background of the study

In normal circumstances a company has only one business strategy. However, in the current market trends and demands, corporate companies in Uganda, are incorporating into their concept several business strategies due to emerging concepts in the market. It's becoming a requirement adapting company emission reduction strategies due to the effects and opportunities resulting from climate change impacts.

Companies are developing corporate strategies in the market and these are corporate tactics or approaches to defining products, markets and determines the company's emission strategies such as focused planning, having budgets and investment plans in different areas like water, tree planting and energy leading to the principles of carbon reductions and trading systems. For example regulated Clean Development Mechanisms, voluntary carbon trading and Reduction of emission through Deforestation and Degradation (REDD) systems. Therefore, corporate companies in Uganda through their employee emission reduction strategies such as attitude to take on and facilitates opportunities, believes in climate change, understanding production life cycle, employing and Understanding emission reduction cost methods and efficiency in Planning climate change related activities will need to leverage organisational resources beyond normal businesses. This will be enhanced by targeting Small and Medium enterprises in the market that have multiple goals throughout the value chain. It will be important in deriving financing strategies of Small and medium enterprises. Whose capital base and raw material sources have been constrained in adapting to the harsh conditions provided by the market due to climate change effects making it had for these small business to make profit and become competitive. This will provide Market systems and improved market growth rate leading company markets shares and capital through Carbon finance opportunities for SMEs with effective Training on carbon issues to gain skills for improved and unique products which are climate change friendly and Carbon free to suit customer emission reduction needs. Interestingly this will be double edged approach for corporate companies to gain competitive advantage in their strategies for the dynamic changing markets in Uganda and globally.

In Uganda small and medium enterprises have increased across sectors ranging from production to marketing enterprises. This justifies the number of activities which make up these SMEs. The activities of SMEs along the value chain represent a great deal of carbon footprint. I.e. Activities involving Carbon emissions contribute to carbon footprint and it is a measure of the impact a product or particular activity has on climate change. Direct footprints (stemming from production) can be distinguished from indirect footprints (carbon from supply chain and product use). Carbon emission sources include use of fuel wood, oil products, all industrial, deforestation and agricultural activities especially slashing and burning of agricultural and forest remains.

It's known that companies use Combined Heat and Power (CHP), the type of power generator that delivers both electricity and useful heat e.g. for heating or processing as a normal part of its operation. Involving climate change and carbon reduction emission strategies can save on the amount of energy use. Given the fact that carbon credit transactions in form of GHG emission reduction projects is becoming key in providing streams of finance to institutions, individuals and companies in developing nations.

Therefore, in Uganda corporate companies have the potential to involve SMEs in mitigation of carbon dioxide effects by developing business strategies towards emission reduction strategies influenced by number of factors. This is companies do not exist in a vacuum. Many strategies enter into forming company emission reduction's strategy. Each exists within a complex network of environmental forces, conditions, situations, events, and relationships over which the companies have little control.

In conclusion, this research focused on how corporate carbon emission reduction strategies can target SMEs for carbon market, through company emission reduction, employee emission reduction and customer emission reduction strategies to enhance the competitiveness environment in the market by investing in innovative approaches to existing opportunities in energy, forestry, water and agriculture enterprises in Uganda for economic and conservation gains.

1.2 Statement of the Research Problem

The problem is limited ability of corporate companies in incorporating carbon emission reduction strategies in their mainstream operations yet there are benefits resulting from such

available strategies in markets globally (Risk Metrics, 2007). Basically many companies are coming up, small and medium enterprises are generating a lot of carbon emissions. This has been linked to limited extent to which investors include company, employee and customer emission reduction strategies in their mainstream investment decisions (Headland, 2007). Carbon accumulation has increased water risks (www.ceres.org/). Also, the demand for primary energy is projected to increase globally by a factor between 1.6 to 3.5 by the year 2050, and in developing countries by a factor between 2.3 and 5.2 (World Bank , 2007).

This study investigated how corporate carbon emission reduction strategies impact on the competitiveness of small and medium enterprises in Uganda using company , employee and customer emission reduction strategies as independent variables and competitiveness as dependent variables. The objectives were: To determine how company emission reduction strategies affect the competitiveness of Small and Medium Enterprises, to find out how employee emission reduction strategies affect the competitiveness of Small and Medium Enterprises and to establish how customer emission reduction strategies affect the competitiveness of Small and Medium Enterprises in Uganda.

1.3 Justification of the Study

Small and Medium Enterprises comprise over 90% of Uganda's private sector. They contribute to employment, provision of basic goods and services, and generation of export and tax revenues for national socio-economic development. However, Uganda has one of the highest private business failure rates in the world (UNDP, 2010).

UNRA (2010) Nile breweries promoted environmental protection through reducing the carbon and energy footprint by planting trees. SME will be aware about their role towards environmental protection and safety guarding their customers from any climate change effects and loss.

Boosting SMEs effort by companies to mitigate carbon effects can lead to increased business investments in water, energy, natural resource management, hence impacting on company profit margins, economic and social indicators within the context of the Poverty Eradication (MFPED

2008). Also, reduction on the gap in the current carbon market trading systems which has affected participation of many developing countries. Climate change is already affecting the investment and financial services industry (ACCA 2009).

However, ESA BMO (2010) provides that still private sector's ability to contribute to combating climate change is challenged by lack of awareness. Inefficient governance structures, lack of specialised staff and limited access to energy efficient technology and finance. There is concern among policy makers in Uganda and various developing African countries that these measures fall short of needs and have so far not succeeded in increasing Africa's share of CDM projects (<http://www.oecd.org/>).

Industrial timber and cellulose plantations, for instance, sequester carbon but also produce a stream of revenue or inputs for their owners. Co-generation and methane recovery projects produce saleable or usable energy streams; improved boilers save fuel costs and reduce the cost of complying with air pollution regulations; installation of high-efficiency electric motors reduces expenditure on electricity; reductions of the clinker proportion in cement yields substantial energy savings. The research will contribute to Carbon emission reduction debate which is important for Sustainable Development in many different ways: through the diversification of energy supply, reduced dependence on fossil fuels, increased reliability of energy supply and increased access for rural populations to modern energy sources and job creation, and improving the social livelihoods in the regions. Given this wide range of options, it is clear that African countries could re-examine CDM's role in achieving sustainability, and that collaboration between countries could further enhance this process.

The understanding of the sustainability criteria for carbon emission reduction on a regional or sub-regional level could provide greater clarity for developers seeking to meet these criteria, without undermining the role of national authorities. It would also allow international project developers to enter the African market more easily as well as enable African project developers to replicate CDM projects from other African countries. This would reduce the level of divergence from certain Voluntary Carbon based Markets/projects(VCM) that can address the issue of engaging under represented developing countries into the global carbon market,

providing stream of finance, and contributing to overall sustainable development objective in the region.

Indeed, there is a need to assist in adaptation of development pathways that would confront major causes of GHG emissions and would utilize the opportunities African continent offers in consistency with regional and global sustainability goals (Karavai, 2009). Thus, more robust understanding of the complex context of carbon development in the African regions is required if positive sustainable development benefits are expected to result from carbon finance. Moreover, much more has to be understood about the role of carbon markets in addressing the needs of developing countries, and in particular how the principle of corporate carbon emission reduction strategies can contribute to channeling carbon investment to Sub-Saharan Africa and the sustainable development potential they may hold given the fact that Uganda has a developing cooperative movement.

The research therefore, identified the market gap in carbon trading systems by suggesting alternative carbon market opportunities in Saharan Africa. Also, offering a platform for GHG emission reductions through private sector actors aiming to invest in SMEs. Sub-Saharan Africa has a lot of opportunities to benefit from integrated approach to carbon market systems. Because SMEs provide diversified opportunities ranging from commercial, agro based industries and social goods. This will make increased carbon market possible in Sub Saharan Africa.

1.4.0 Purpose of the Study

The purpose of the study is to assess effects of the corporate carbon emission reduction strategies to the competitiveness of Small and Medium Enterprises in Uganda

1.4.1 Research Objectives of the study

- i) To determine how company emission reduction strategies affect the competitiveness of Small and Medium Enterprises
- ii) To find out how employee emission reduction strategies affect the competitiveness of Small and Medium Enterprises

- iii) To establish how customer emission reduction strategies affect the competitiveness of Small and Medium Enterprises

1.4.2 Research Questions

- i) How do company emission reduction strategies affect the competitiveness of Small and Medium Enterprises?
- ii) How do employee emission reduction strategies affect the competitiveness of Small and Medium Enterprises?
- iii) How do customer emission reduction strategies affect the competitiveness of Small and Medium Enterprises?

1.5 Conceptual Frame Work

Many elements or strategies enter into the forming of a company's strategy. Each exists within a complex network of forces. These forces, conditions, situations, events, and relationships over which the company has little control are referred to collectively as the company's environment. In general terms, environment can be broken down into three areas: The macro environment or general environment i.e. company , technical, economic, social, political and legal systems and operating environment i.e. competitors, markets, customers, regulatory agencies, and stakeholders; and the internal environment - that is, employees, managers, unions, and board directors.

In formulating a strategy, the strategic decision makers must analyze conditions internal to the companies as well as conditions in the external environment, which are described in the following sections.

An organization ignores the macro environment at its own great risk. Many studies support the concept that there are needs to be a link between the organization's strategic decisions and its environment.

The motivation is derived from the above background that the companies and community should take up emerging concept resulting from climate change impacts such as carbon reduction to adapt and finance such opportunities. I.e. effectively engage company emission reduction and

SME activities in climate change mitigation and the risk analysis arising from climate change impacts on company business for Competitiveness. The research further, introduces integrated business environment to companies to increase profitability by introducing new socially responsible products or services, reducing waste and costs, and adding new “social” value to existing products and services O'Brien (2001). This research investigated the influence of factors/elements have on strategies of corporate have on structure and social values that can transform carbon trading markets and create competitiveness through carbon trade there by reducing emissions from companies and SMEs. However, the identified strategies have been indicted in the conceptual framework on which this research was based.

Independent Variables

Dependent Variables

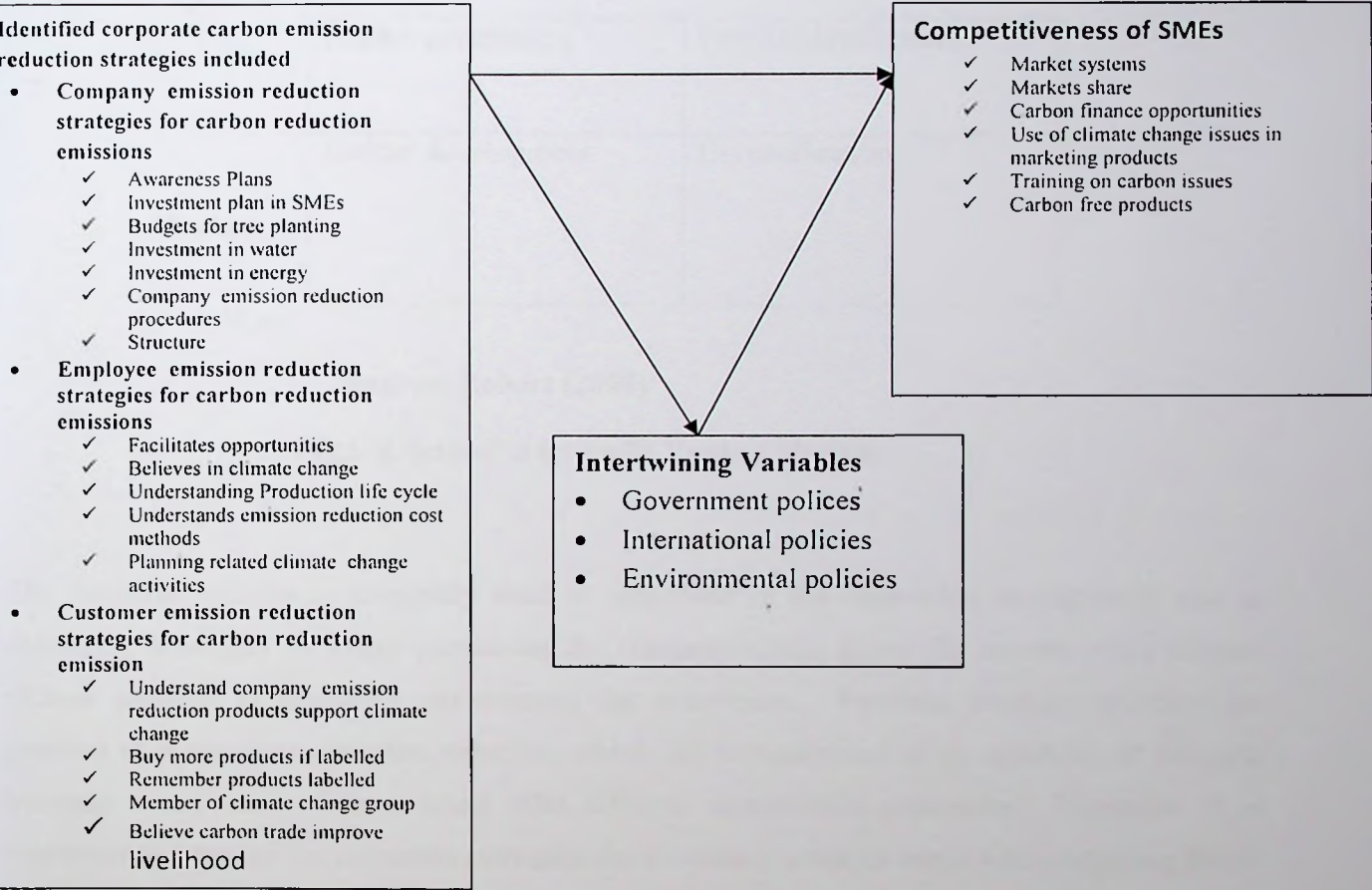


Fig 1-1. Showing the research conceptual frame work

1.6 Theoretical Frame Work

Robert et al, (.2009) and Hung-hsin (2003) indicated that Ansoff focused on strategic decisions defined as “decisions on what kind of business the firm should seek to be in. Views strategy as the “common thread” among a firm’s activities and product-markets and is comprised of four components: product-market scope, growth vector (or the changes that a firm makes in its product-market scope), competitive advantage, and synergy.

		Products	
		Present	New
Markets	Present	Market penetration	Product development
	New	Market development	Diversification

Source: Robert (2009)

Fig1-2 Ansoff’s Growth Vector Matrix

The portfolio strategy is frequently used to contribute to the innovation management and to marketing strategies in many companies for competitiveness given the current risks climate change presents to operating environment for companies. Portfolio strategy specifies the position of a company emission reduction which can be conceived as an assembly of strategic business areas, each of these areas offer different competitive approaches. Therefore, it is important to consider for corporate strategies the 4 business strategic areas when targeting SMEs business in Uganda and these include:

Market Penetration denotes growth direction of increasing market share for the present product market through competitive pricing advertising and sales promotion. Secure dominance of growth markets; restructure a mature market by driving out competitors, increasing usage of existing customers for example through carbon labelling and green products insight.

Market Development new mission are sought for geographical areas, products and export markets reaching new audience. Encouraging different package sizes for food and other processed products. This has influence the product life cycles saving on the level of company operational cost, energy, water hence reducing carbon emissions and providing innovation and new distribution channels to attract new customers for different segments.

Product Development Companies can launch new products to exhibiting markets. It is important to frequently use portfolio strategy to contribute innovation management and to marketing strategies in many companies for competitiveness given the current risks climate change presents. The most important strategy for companies would be to focus on Small and Medium Enterprises because SMEs they present already diversified organised environment ranging from agro-based, social goods and commercial enterprises.

Diversification Companies can have related and unrelated diversification. It will encourage providing significant carbon emission reduction strategies and markets targeting institutions product lines and groups.

The SAC model O'Brien (2001) represents a complex process of taking core business competencies, marrying them with stakeholder analysis, and getting a set of competencies that are socially anchored. Companies that can convert their core competencies into SACs and integrate them throughout the organization will achieve a competitive advantage by employing competencies to proactively address their stakeholder interests. Companies will benefit from an enhanced reputation that comes from placing the highest value on people and carrying out actions that are consistent with these values. These companies will not have separate strategies for business, stakeholders, and corporate social responsibility. Instead, the truly outstanding

companies will find ways to fold notions of stakeholder management, corporate citizenship, corporate philanthropy, and the business model into an integrated strategy that gives them unprecedented competitive advantage in global markets.

1.7 scope of the study

The research considered relevant literature in range of 10 years

Chapter Two: Literature Review

2.0 Introduction

This chapter will consider different background information as secondary data which has been researched on the aspect of carbon emission reduction to mitigate the dangers of climate change and the competitive of the SMEs in Uganda.

2.1 Company carbon emission reduction strategies and competitiveness of SMEs

Companies contribute to global warming in form of carbon-dioxide release with less effort to reduce these negative effects (Headland 2007). The largest percentages (64%) of SMEs borrow money from MFIs. Some SSEs comprising 16.6 % are able to get loans from companies like banks to build capital for market Penetration, because 93% of the SMEs are producing for a localized market due to lack of capital (<http://sme.gatsbyuganda.com>). This has affected the SMEs competitiveness in Uganda.

Government efforts need to be in support of the company emission reduction strategies for wider impacts. For example, globally the United Nations Climate Change Conference 2009 at Copenhagen, Prime Minister of Malaysia, Datuk Seri Najib Tun Razak announced that Malaysia has agreed to reduce its carbon dioxide emissions to 40 Percentage by 2020 compared with 2005 levels, subject to assistance from developed countries in the form of technology transfer and adequate financing. According to UN data, Malaysia's carbon emissions in 2006 stood at 187 million tones or 7.2 tones per capita, one of the worlds highest per capita (Jennifer, 2010).

Company carbon emission strategies can provide policy approach and positive incentive on issues relating to reducing emissions from deforestation and forest degradation in developing countries. Including REDD+, which involve deforestation, forest conservation, sustainable forest management and enhancement of forest carbon stocks (MW&E 2009).

Company emission reduction Investors are becoming more concerned about climate change and corporate responses to it. The 2007 Post season report of proxy-voting in the United States .The

support for such resolutions increased to nearly 20% average voting score, up from 17 Percentage in the previous year. During the 2008 proxy season, a record 57 climate-related shareholder resolutions were filed with US companies, of which nearly half were withdrawn after the companies agreed to positive climate-related commitments (Ceres, 2008).

The Spores (2011), the World Bank (WB) paid US\$34,000(€25,000) for the purchase of carbon credits from the Humbo Community Based Forest Management Project in Ethiopia and pledged to buy credit for half of the 330,000 t of carbon the forest can absorb, worth a total of US\$726,000(€538,000) over 10 years. The payments will be divided among 800 people into seven cooperatives to work on forest development with the aim of helping members to make a living from carbon trading instead of fire wood.

Turyakira (2010) considered that the long-term goal of SMEs is to stay in business, grow and make profit. To effectively compete in local and global markets, companies should employ emission reduction strategies and must be quick and flexible in their response to stakeholders' needs. (UNEP, 2007). The World Bank's Investment Framework for Clean Energy and Development Mechanism, World Bank Report (2007), puts it around three linked pillars that represent key policy issues:

1. Meeting the energy needs of developing countries and widening access to energy services for their citizens in an environmentally responsible way.
2. Reducing greenhouse gas emissions and speeding the transition to a low-carbon economy
3. Help developing countries adapt to climate risks goal. However the overall goal of the Investment Framework is to catalyze investments from public and private sources to increase access to energy in developing countries. In project-based trading approach that the buyer purchases emission credits from a project that can credibly and verifiably demonstrate that it reduces greenhouse gas emissions compared to what would have happened otherwise. Most project-based transactions are currently executed through the Clean Development Mechanism (CDM) under the Kyoto Protocol, generating Certified Emission Reductions.

Corporate companies of non profit nature (Hegerl &, Zwiers (2007), observe that the global mean temperature averaged over land and ocean surfaces warmed by $0.76^{\circ}\text{C} \pm 0.19^{\circ}\text{C}$ between the first 50 years of the instrumental record (1850–1899) and the last 5 years (2001–2005) with a linear warming trend of $0.74^{\circ}\text{C} \pm 0.18^{\circ}\text{C}$ over the last 100 years (1906–2005). The rate of warming over the last 50 years is almost double that over the last 100 years ($0.13^{\circ}\text{C} \pm 0.03^{\circ}\text{C}$ vs $0.07^{\circ}\text{C} \pm 0.02^{\circ}\text{C}$ per decade. This is a mega trend which affects negatively the competitive potential of the markets including SMEs. Therefore, corporate emission reduction strategies for competitive should target Clean Development Mechanism (CDM) as one of the project based mechanisms of the Kyoto Protocol on climate change where buyers from developed countries can acquire Certified Emission Reductions (CERs) for each tonne of greenhouse gas that is prevented from entering the atmosphere. This enables companies and government institutions which have legally binding GHG targets access a stream of externally sourced and independently verified CERs to partially offset these targets (www.oecd.org/).

Currently, in Uganda many companies are coming up with company emission reduction strategies. For example (Risk Metrics, 2007) revealed that of the 656 proposals filed by shareholders, 80 were related to the environment. The majority of the Environmental filings were focused on climate change and urges companies to reduce their carbon footprint.

Corporate companies adapting company emission reduction strategies could cause industrial revolution supported by the joint-stock company emission reduction reform and the strong support from venture capital for the industrial revolution enhancing competitiveness of small and medium enterprise emission reduction strategies causing a healthy development of financial systems in carbon trade (Yuechun, 2010).

Companies targeting indirect investment and financing “Equator Principles” it has gradually become an international industry standards and practice in project financing. Foreign commercial banks actively participate in environmental financial innovation, the carbon trading and providing intermediary services for families and SMEs. For example Dutch bank providing rate discount of 1% for housing mortgage loan which comply with government environmental

standards, U.S. banks providing unsecured loans to small transport companies when they buy fuel-efficient equipment; Barclays Bank launching green credit card and promising that the holders can have a more favorable purchase of friendly environmental products; Deutsche Bank introduced energy-saving mortgage loans to customers for the upgrading works of home energy conservation and renewable energy installations(UNEP, 2007).

Corporate mission reduction strategies are important in strengthening institutions .According to the Global Competitive Surveys of the World Economic Forum, MFPED (2008), which rank participating countries in relation to the performance of the macroeconomic environment, public institutions and technology, Uganda was ranked 113 out of 125 countries in 2006/07. As Table 2-1, below shows, among the three core indicators, Uganda’s performance was consistently worst in the area of the effectiveness of public institutions and demonstrates weak institutional capacity. The country’s ranking in the area of technology readiness also shows, a declining trend over the three-year period suggesting that enterprises in other Countries are investing more in technology than in Uganda see table 2-1 below.

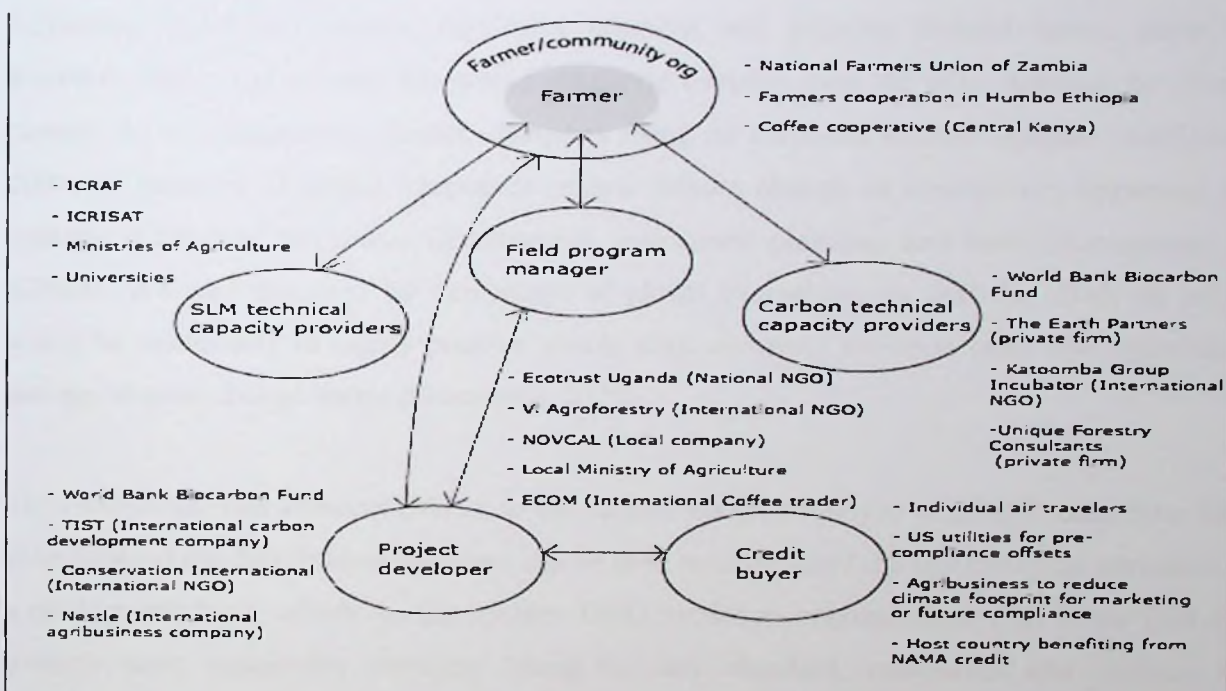
Table 2-1: Trends in Uganda’s Performance in the Global Competitiveness Surveys 2003-2006

Competitive ranking index	2003/04	2004/05	2005/06	2006/07
Uganda overall ranking	80/102	79/103	103/117	113/125
Macro economic Environment	71	75	88	66
Public institution	84	86	95	100
Technology	77	77	82	94

Source: Ministry of finance Planning and Economic Developent2008

Company emission reduction strategies should target the current investment model in the developing countries. For example, the Carbon Finance Technical Assistance Model, World Bank (2009), for the Philippines was conceived based on discussions with the Department of Environment and Natural Resources (DENR) which is the Designated National Authority (DNA) for the Clean Development Mechanism (CDM). They expressed interest in the World Bank assistance in the carbon market in the country through project identification and development. It is intended to support the country's CDM market through two complementary strategies: (i) By

exploring the potential in under-represented and emerging CDM sectors and (ii) By exploring multiple project/ sector-wide approaches in partnership with traditional intermediaries. It is strategically designed to push the market in the country more broadly and also provides an assessment of opportunities to respond to the evolving agenda to deliver programmatic/sector-wide low carbon investment and carbon finance. Shames and Scherr (2010) both stated that the developer/investor is the party that initiates the project and provides the upfront capital to get it off the ground. For agricultural projects in Africa, this role is played by a highly diverse set of actors across sectors as seen in fig 2-3 below.



Source: Shames et al 2010

Fig2-3: Role is played by a highly diverse set of actors across sectors as seen below.

Companies investing in carbon emission reduction strategies should aim at multiple strategies in carbon trading systems. For example, the voluntary Carbon market has grown in response to the increased demand for carbon credits outside the Kyoto Protocol compliance market and is more informal than the compliance one. The volume and value of credits traded on the voluntary

market is far smaller than in the compliance market of the Kyoto Protocol. Even though VCMs represent a small proportion of the carbon market as a whole it is a rapidly growing market. Similarly to the compliance schemes, there are two types of transactions in the voluntary market: allowance-based and project-based transactions. The over-the-counter (OTC) market constitutes the largest portion of the voluntary market (Karavai, 2009).

2.2 Employee emission reduction strategies and competitiveness of SMEs

MSMEs (2007), An enterprise employing more than 50 people, with annual sales turnover of more than Ush 360 million and total assets of more than Ush 360 Million.

Increasing scientific evidence, regulatory pressure, and growing societal unease about the potential impact has already stimulated corporate concern over the risks imposed by climate change. As a consequence, climate change is rising on corporate boards' agendas (McKinsey, 2007). A majority of global executives regard climate change as strategically important and consider it essential to product development, investment planning, and brand management. In addition, it's said that over 60 Percentage of global executives say that the effect on profits would be moderately to highly positive should their company emission reduction successfully manage climate change issues (Economist, 2009).

The Greenhouse Gas Protocol (2011), in the current market employee emission reductions have to understand the that Product Standard can be used to understand the full life cycle emissions of a product and focus efforts on the greatest GHG reduction opportunities. This is the first step towards more sustainable products. Using the new standard, companies can measure the greenhouse gases associated with the full life cycle of products including raw materials, manufacturing, transportation, storage, use and disposal. The results can create competitive advantage by enabling better product design, increasing efficiencies, reducing costs, and removing risks. The standard will also help companies respond to customer emission reduction demand for environmental information and make it easier to communicate the environmental aspects of products like Product Life Cycle and Corporate Value Chain standards.

Corporate carbon emission strategies should consider new opportunities are the global trends in demand and action to tackle climate change, which the World Business Council on Sustainable Development refers to as megatrends. These trends encompass five broad sectors: power generation, industry and manufacturing, mobility, buildings and consumer choices. Each of these sectors offers opportunities for SMEs between the present date and 2050. For example, in power generation, the WBCSD anticipates a 160-fold increase in renewable electricity generation, with the fitting of carbon capture and storage technology to half of all coal-fired power generation, an expansion of the nuclear fleet, and the increasing consumption of energy in the form of electricity rather than other fuels (Shell Spring Board, 2006).

The primary aim of corporate carbon emission strategy should be situation of the economic development in and the current low level of economic development in Uganda is partly attributable to an inadequate power supply, which cannot support large-scale manufacturing industries and agro-processing factories. Industry employs only 5 Percentage of the total labour force, whereas agriculture employs 82 Percentage and the service sector about 13 Percentage. The Ugandan Government is working to steer the country away from an over dependence on agriculture by increasing the importance of the industrial and service sectors (UNWD, 2005).

Emission reduction strategies are the major source for of green jobs globally. ILO (2011), states that the ILO's Green Jobs Programme promotes a practical and coherent strategy that recognizes the strong interdependence between the need for social development and the urgency to act on climate change. The analysis and policy guidance provided by the Programme contribute to the promotion of a fair globalization and the development of sustainable enterprises and economies which are efficient, socially just and environmentally sound. Bigsten and Kayizzi-Mugerwa (1999), has it that to improve the competitiveness of the firms, cost-saving, quality-improving and energy-saving investments need to be undertaken. These have to be financed, which is another important factor to address. Measures that improve credit availability have a direct and positive impact on the success of the firm. Doyle and Erdmann (2010) explains that industrialised countries are responsible for most of the greenhouse gases in the atmosphere and

more than 40 percent of current emissions, the Kyoto Protocol placed a heavier burden on developed nations to reduce emissions.

Involving SMES sector in creation of green jobs, Small and Medium Enterprises (SMEs) play an important role in income generation as well as employment creation around the globe. Small and medium-sized enterprises (SMEs) are considered to be one of the principal driving forces in economic development. They stimulate private ownership and entrepreneurial skills, they are flexible and can adapt quickly to changing market demand and supply situations. They also generate employment, help in diversifying economic activities and make a significant contribution to exports and trade (Mariam, 2008). As drivers of economic growth in emerging economies and developing countries, SMEs have far-reaching potential to pave the way for sustainable patterns of consumption and production (www.scp-centre.org/project).

OECD (2000), SMEs are thus a large and very heterogeneous group of firms whose investments in and use of Innovations cannot be uniformly characterized. SMEs fall roughly into four subgroups. Less than 20 Percentage of all SMEs – the technology developer and leading technology user groups – are active innovators. Over 80 Percentage of SMEs are technology followers, but close to half of these have the potential to be more innovative. However, each of these sub-groups of firms have very different innovation needs. SMEs must be able to respond quickly and efficiently to international market signals to take advantage of trade and investment opportunities and reap the benefits of the international trading system. This means they need to be competitive and productive.

Company emission reduction strategies should target effective business support systems and are needed to enhance competitiveness and productivity of SMEs. Development of an effective business support system is also a key condition for the success of both trade and investment capacity building. It requires business support agencies (including financial institutions), which are customer-oriented and which have a demonstrated capability of penetrating the SME sector OECD (2004). The status of the human resources in a country is also instrumental in attracting direct investment from overseas. There are certain countries like China that have taken an active interest in increasing the quality of their workers. They have made it compulsory for every

Chinese citizen to receive at least nine years of education. This has helped in enhancing the standards of the labourers in China (<http://www.economywatch.com/foreign-direct-investment/determinants.html>).

2.3 Customer emission reduction strategies and competitiveness of SMEs

These impacts of emissions from company's activities reduce customer grain yields, cause changes in runoff and water availability also, increase stress resulting from increasing drought and floods and significant plant and animal species extinction and associated livelihood impacts on company customers (Heinrich-Böll-Stiftung, 2010).

Customer emission reduction strategies among companies and Small and Medium Enterprises have become the focus of attention for development stakeholders interested in market-oriented solutions to poverty and economic development (World Bank 2007). Customer emission reduction strategies will compel carbon sequestration and storage as public goods provided by forests and forest owners. There are currently limited markets or market-like mechanisms to incentivize forest owners and users to factor the value of these services into their management decisions. Through a PES system, landowners will conserve the forest because they can make more money by doing so. This aspect made REDD+ significantly different from previous forest conservation efforts (CIFOR, 2012).

Market initiatives support customer livelihood. Therefore, customer carbon emission strategies are being affected by limited awareness on investment opportunities in carbon trade in Uganda. Secondly under the current CDM projects are limited to narrowly defined resources and a few initiatives involving GHG reductions (Karavai, 2009). This Make the market segments for companies with limited options weakening the competitiveness in the market given the limited resource and bargaining powers due to ignorance on some issues of climate change.

Table 2-2 showing Change in 2020 of energy-related CO2 emissions and associated financial flows under different allocation rules to achieve a 10 per cent reduction in emissions relative to the reference scenario

Based on current emissions				Based on equal <i>per capita</i> emissions				Relative to current GDP	
Region/country	Emissions (Gt)	Change <i>vis-à-vis</i> reference scenario (Gt)	Potential financial flows (US\$ billion)	Emissions (Gt)	Change <i>vis-à-vis</i> reference scenario (Gt)	Potential financial flows (US\$ billion)	Emissions (Gt)	Change <i>vis-à-vis</i> reference scenario (Gt)	Potential financial flows (US\$ billion)
USA	6.64	+0.87	+34.8	1.44	-4.33	-173.2	6.87	+1.10	+44.0
EU	4.62	+0.67	+26.8	2.09	-1.86	-74.4	6.99	+3.04	+121.6
Japan	1.41	+0.26	+10.6	0.52	-0.63	-25.2	2.13	+0.98	+39.2
Other OECD	2.32	-0.12	-4.9	1.24	-1.19	-22.8	3.00	+0.56	+22.4
China	6.6	-3.40	-13.6	5.90	-4.10	-164.0	3.30	-6.7	-268.0
India	1.47	-0.72	-28.8	5.54	+3.35	+134.0	1.40	-0.79	-31.6
Africa	0.99	-0.09	-3.5	5.16	+4.08	+163.2	1.18	+0.10	+4.0
Russia	1.84	-0.08	-3.2	0.56	-1.36	-54.4	0.98	-0.94	-37.6
Middle East	1.53	-0.56	-22.6	1.02	-1.07	-42.8	1.05	-1.04	-41.6
Latin America	1.24	-0.14	-5.6	2.42	+3.80	+152.0	1.38	—	—
Total change from 2020 reference scenario (in Gt)			-3.31						
(Change in per cent)			(-10 Percentage)	(10 Percentage)			(10 Percentage)		

end of September in 2010, which are expected to reduce nearly 500 million tons of carbon dioxide equivalent emission, of which 953 projects successfully registered in the UFCCC. The estimated annual emission reduction of greenhouse gases achieve to about 2.3 tons of carbon dioxide equivalent. (<http://www.SciRP.org/journal/lce>).

However Karavai (2009), states that voluntary segment of the market is currently operated by a number of business companies and non-profit organizations in North America and Europe. Those companies invest in carbon-reduction projects both in industrialized and developing countries and sell the emissions credits to buyers and final consumers in the industrialized ones. Nature of the demand on VCM differs from compliance market, as purchasers are interested in projects that respond to the goals of their CSR programs or individual values. Consequently, the offsets provided through the voluntary schemes are rather driven by CSR concerns or individual intentions to reduce personal footprint, rather than necessity driven and highly dependent on consumer.

The emission reduction models need to help companies target existing customers. However, the Ecosystem Marketplace (2006) in 1997 had it that the Kyoto Protocol laid out target emission reductions and the different mechanisms by which countries could achieve those targets. In order to achieve target emissions levels, countries had two options: either take actions to reduce their own domestic emissions, or pay someone else to reduce their emissions and thus offset the country's domestic emissions with reductions some where else. The Kyoto Protocol establishes the rules and financing structures surrounding different types of offset mechanisms. The Parties to the Protocol excluded REDD from the offset mechanism because of uncertainties about the magnitude of deforestation emissions and the ability to monitor deforestation.

The Kyoto Protocol does recognize credits from reforestation and a forestation – the first being when you replant forests that have recently been chopped down or otherwise destroyed, and the second being when you plant forests that have either been gone for quite some time or never existed. Both can be used to generate offsets under the Kyoto Protocol's Clean Development Mechanism (CDM), but only if they meet a narrow definition of success. Because of their exclusion from regulatory markets, REDD credits have been limited to the

voluntary market, where a handful of projects are generating credits. These credits are sold at a fraction of the regulatory market price to buyers concerned about reducing their carbon footprint for reasons other than compliance with the law (Marketplace and New Carbon Finance 2008)

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This section of the chapter includes the research methodology in relation to the research design, area of study and the characteristic of the population or the research. It also outlined the methods that were used in collecting and analyzing the data as well as the research procedure.

3.2 Research design

The researcher considered Quantitative research. The researcher conducted research where the respondents had opinion on research questions. The opinions were ranked from 1 to 5 on likert scale.

3.3 Research Procedure

When conducting the interviews for the questionnaires the choices did not depend on specifics. The procedure of selecting people to take part in the research was based on random and purposeful sampling among Executives/Managers, customers and employee, who answered different sets of questions. The researcher Took into consideration that these selected respondents were willing to share their knowledge on this specific topic.

The researcher first pre-tested the questionnaire on a test group which gave some valuable insights. Then questions were amended, introduction brief updated. This made the answers more focused, since a crosscheck and confirmation was done by the information obtained.

This contributed to interviewing specific target group selected target groups. The administration of questionnaires and interviews to the selected participants was done in mix of local language and English.

However, Participants were informed in writing that their responses would be held in confidentiality. The responses were then scored and analyzed in consistence with the research

objectives. The primary data for this research was collected from the selected customers and employee of companies and SMEs in Uganda.

3.4 Description of the sample size

Specific Group	Sample frame	No. of interviewees	Sampling method
Company customers	500	70	Random sampling
Company employees	350	30	Purposeful Random sampling
Total		100	

Source: Researcher

The companies included Coca Cola, Nile Breweries; Saw Log Production Scheme (SPGs) others included SMEs. The research considered purely customers of the three corporate companies Nile Breweries, Coca Cola, SPGs and the respondents were selected at random. However, purposeful random sampling was used because, employee interviews were conducted at the position of a manager or another position working with that particular company.

3.5 Research Tools

Research methods are no more than the tools of trade, therefore in order to carry out a complete and successful research a selection of the best methods relevant to the problem under investigation was used. Although the research widely relied on a process of reviewing literature relevant to the topic, multiple methods of research were employed which included the following:

3.5.1 Interviews

Researcher conducted interviews, conversations between a researcher and the respondents. This was in order to keep the research focused. Researcher had a guideline of questions which assisted to extract the needed information from the respondents. The questions that were used in the research it was both open ended giving the respondent the liberty to answer from a non direct opinion and closed ended questions that needed either a yes or no answer.

3.5.2 Questionnaires

In addition questionnaires were used as a checklist designed to assist in guiding the researcher. It had a set of questions that researcher took time to first prepare the list of topics or questions to ask.

3.5.3 Historical Reviews

The researcher used this method to obtain information from records and other accounts what happened in the past as secondary data.

3.6.0 Data Analysis

Statistical Package for Social Scientists (SPSS) version 16.0 was used. a principal axis factor analysis was performed. Correlation analysis was performed to find out whether there was significant relationship between competitiveness variables and the independent variables which were indentified as strategies affecting carbon emission reduction strategies. Relationships that were significant at the 95 Percentage confidence level ($p < 0.05$) were then subjected to a multi regression analysis for further analysis of the effect.

3. 7. The validity and reliability

The choice of interviews, documentation and Questionnaires was to increase/ strengthen the validity of the thesis. Besides, other tools the respondents for the interviews were reminded by telephone and E-mail. This increased the response rate which was 100% in that no questionnaire was left an answered or missing. In the absence of an authentic Executive/Manager available in a department, a substitute or a departmental or branch survey was carried out to make it clear and minimize the misunderstandings. The reliability was taken care of by conducting cross checks with people that were indirectly involved in the strategy planning in companies. Since, some of them are likely to become or will take a managerial position, in the future.

3.8 Limitation of the study

Carbon trade it's generally still a new concept in Uganda where few people have abilities in interpreting the activities of carbon process and carbon market function which made data collection hard.

The research process it take a lot time and money if you are to produce a sound report. Therefore, one to carry out research he must be well prepared because it is very expensive.

4.2. Interview

The interview is a verbal interaction between two or more people, which is structured, semi-structured, or unstructured. The interview is a verbal interaction between two or more people, which is structured, semi-structured, or unstructured. The interview is a verbal interaction between two or more people, which is structured, semi-structured, or unstructured.

4.3. Focus Group

A focus group is a small group of people who are brought together to discuss a specific topic. The focus group is a small group of people who are brought together to discuss a specific topic. The focus group is a small group of people who are brought together to discuss a specific topic.

4.4. Management Interview

A management interview is a structured interview that is designed to gather information about a specific topic. The management interview is a structured interview that is designed to gather information about a specific topic. The management interview is a structured interview that is designed to gather information about a specific topic.

4.5. Design the Management

Table 1. Management Interview

Interview	Design	Management	Interview	Design	Management
Interview	Design	Management	Interview	Design	Management
Interview	Design	Management	Interview	Design	Management
Interview	Design	Management	Interview	Design	Management
Interview	Design	Management	Interview	Design	Management
Interview	Design	Management	Interview	Design	Management
Interview	Design	Management	Interview	Design	Management
Interview	Design	Management	Interview	Design	Management

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1 Introduction

The First section of this chapter represents the response rate, followed by respondent's background information, analysis and interpretation, both qualitative and quantitative data generated in form of descriptive statistics. The chapter presents detailed empirical findings (correlation and regression) that are presented, analysed and interpreted.

4.1 Response Rate

The study clearly shows a sample size of 100 respondents, comprised of respondents from companies which included 70 customers and 30 employees of different levels and sectors as follows, manufacturing companies 17 respondents, Government sectors 4 respondents, Bank 2 respondents, Insurance Company 2 respondents, Small and Medium Enterprises 5 respondents, all respondents returned the questionnaires fully completed.

4.2 Background Information

This included company response, age of the respondents, sex, duration worked or been customer, position of the respondents, carbon funding systems, Companies Major Investment Areas Energy sources, Climate change and Carbon Trade Awareness Levels, Climate Change Practices Supported by the Companies.

4.2.1 Age of the Respondents

Table 4-1. Showing Age of respondents

Age	Companies responses		Customers	
	Frequency	Percentage	Frequency	Percentage
18- 30 years	13	43.3	26	37.1
31-40 years	13	43.3	27	38.6
41- 50 years	3	10	12	17.1
51 years & above	1	3.3	5	7.1
Total	30	100	70	100

Source: Field Data

The majority of the respondents 43 percent were between 18-30 years, 43percent 31-40 percent, and the least being 3 percent for above 51 years of age. Among the customers indicate that the majority of the respondents 38.6percent were between 31-40 years of age followed by 37.1 percent between 18-30 years of age, and 7.1 percent above 51 years of age. The findings from the above **table 4-1** showed that the research involved more mature respondents who were above 18years of age and therefore the respondents had rich information regarding the research. It also indicates that the market has very young group of population (43 percent of employee and 37 percent customers below 30 years of age). This indicated that it can accommodate new company innovations. The customer's age and income could determine the buying pattern of the product including overall market behaviours which is important for competitiveness of any enterprise.

4.2.2 Sex of the respondents

Table 4-2. Showing sex of the respondents

Sex	Company	emission		Customers	
	reduction Frequency	Percentage	Frequency	Percentage	
Male	21	70	33	47.1	
Female	9	30	37	52.9	
Total	30	100	70	100	

Source: Field Data

The **table 4-2** above, the results show that companies' responses were in favour of male70 percent followed by female 30 percent. Customer's Reponses, female 52.9 percent were the majority followed by male 47.1 percent. These findings indicate that more male participated in the study among company responses compared to the female. Given the recruitment patterns among companies its more of the men compared to female. Among the customers, more of the female participated in the study. It also indicates how available and willing men and women are on responding to different issues in the society.

4.2.3 Company Category by size

Table 4-3. Shows respondents by company Category by size

Company emission reduction category	Companies responses		Customers	
	Frequency	Percentage	Frequency	Percentage
Small	6	20	9	12.9
Medium	9	30	16	22.9
Large	15	50	45	64.3
Total	30	100	70	100

Source: Field Data

The results in the **table 4-3** above shows that majority company responses 50 percent were from corporate companies given the fact that the research looked at these corporate carbon emission reduction strategies compared to the Medium enterprises, 30 percent and 20 percent was for Small enterprises. Similarly for customers, the majority of the views came from customers for corporate companies 64.3 percent, followed by Medium enterprises with 22.9 percent and then 12.9 percent for small companies or enterprises. This showed the level to which corporate companies can incorporate climate change practices in their company training for employee and developing climate based marketing strategies as a result customers becoming aware of these companies' products. However, such strategies could make small and medium companies more competitive when practised and it will boost these corporate competitive strategies in the market place.

4.2.4 Respondents per Companies and Customer

Table 4-4. Showing respondents Per Company and selected customers

Company emission reduction	Company Responses		Customers responses	
	Frequency	Percentage	Frequency	Percentage
SPGS	5	16.7	13	18.6
SaB millers	4	13.3	21	30
Coca Cola	8	26.7	36	51.4
SMEs	13	43.3	0	0
Total	30	100	70	100

Source: Field Data

Results from the **table 4-4** above, indicate that majority of the respondents 43.3 percent were from other companies, this was followed by 26.7 percent were from Coca Cola, 16.7 percent were from SPGS, and the least 14 percent Nile Breweries SAB Millers. Based on the **table 4-4** above, the customer statistics show that Coca cola was the highest 51.4 percent, SaB Millers had 30 percent with the least being SPGS 18.6 percent. Companies should take up the opportunities which exist with others 43.3 percent were SMEs is part as indicted to engage in carbon trade with the market. This shows that coca cola had the highest Percentage among companies and therefore, key in creating awareness on climate change issues among the customers and this has made company emission reduction product(s) known among the customers and associating themselves with the company products.

4.2.5 Response on duration of working with/knowning the companies

Table 4-5. Showing employee working durations among companies

Period	Employee Responses		Customers	
	Frequency	Percentage	Frequency	Percentage
<1 year	3	10	2	2.9
1-4 years	15	50	10	14.3
5-7 years	4	13.3	19	27.1
8-10 years	8	26.7	39	55.7
Total	30	100	70	100

Source: Field Data

In the **table 4-5** above, the highest response was below 7 years compared to those above 7 years which contributed to 73 percent and 26.7 percent as duration of serving by employee respectively. The response for customers, indicate that most of the customers had known company for over 7 years and it contribute 55.7 percent followed by 44 percent below 7 years. It implies that these companies are able to retain staff more than 4 years (50percent) and such companies can implement carbon trade capacity building for their staff to meet the demand and behaviours of the royal customers attaching their interest on climate change and link these activities to SMES for competitiveness.

4.2.6 Position of the respondents

Table 4-6. Showing the position of respondents

Position	Company Responses		Customer Responses	
	Frequency	Percentage	Frequency	Percentage
Administrator	11	36.7	-	
Technician	10	33.3	-	
Director	4	13.3	-	
Planner	5	16.7	-	
Customers			70	100
Total	30	100	70	100

Source: Field Data

Administrators were 36.7 percent, then Technicians 33.3 percent, planners 16.7 percent and Directors 13.3percent. The customers 100 percent participated in the research based on the research design. The company based responses indicated that administrators took the central role because carbon emission reduction and climate change is still a new concept where most of the time the researcher was referred to administration and this led to less understanding in carbon trade concept. Because the planners are not taking the central role in providing carbon trade and climate change information when planning or setting company emission reduction strategies and building their capacities for carbon trade. Customer participation in climate change or carbon emission reduction could drive the competitive investment strategies of most corporate companies and this would lead to SMEs benefiting from such strategies for competitiveness given the fact that customers represent the size of a given market.

4.3.0 Companies and number of employee response

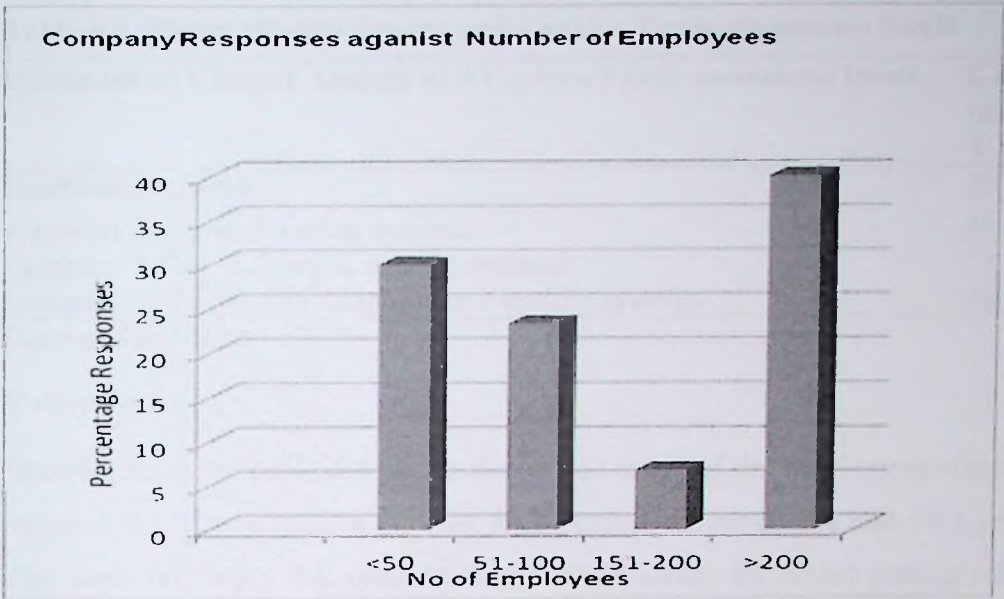


Fig. 4-1. The graph showing company by number of Employee response

Table 4-7. Company by number of Employee response

Number of employee	Company Frequency	Response Percentage
<50	9	30
51-100	7	23.3
151-200	2	6.7
>200	12	40
Total	30	100

Source: Field Data

The response from **table 4-7** shows that 23.3 percent of the companies had employee below 100 and 40 percent of the companies had 200 and above of the employee. Therefore, there are more of the SMEs compared to large companies. Due to ease of data collection, the most commonly used variable is the number of employee. It showed the level of involvement and response of these SMEs on emerging concepts and their involvement will promote the competitive environment for SMEs and corporate companies.

4.3.2 Climate change and Carbon Trade Awareness Levels

Table 4-8. Shows climate change and Carbon Trade awareness levels

Statement on Climate change and Carbon Trade awareness levels	Company (percentage)		Total
	Y	N	
Established structure	30	70	100
Aware of the carbon trading systems	43.3	56.7	100
Company apply the carbon trading systems	13.3	86.7	100
Company have plans to adopt above trading systems	36.7	63.3	100

Source: Field Data

Y=Yes, N=No

Statistics from the **table 4-8** above shows that some of the respondent when asked if they were aware of the carbon trading systems 43.3 percent answered yes and 56.7 percent indicated No. This could not imply that companies and communities are nether getting information about the carbon trading systems nor consolidated it for the benefit 13.3 percent said Yes and 86.7 percent answered No. This is because climate change is a new phenomenon and just coming up after companies realising the effect of climate change on the company's activities. When the respondents were asked whether there was established structure on climate change 30 percent replied Yes while 70 percent No. This is because some companies are have limited abilities and technicalities on climate change or carbon trading and every activity being done about carbon trading or climate change is just a promotional activity for their products as part of company marketing strategy or CSR.. The company apply the carbon trading systems 13 percent said yes and 69 percent No. Because, very few companies have began quantifying their carbon contribution, although it's on small scale, company capacities to participate in carbon trading is lacking and just developing. Picking up carbon trade concept by SMEs can provide investment areas for the corporate or direct investment by donors and private businesses.

4.3.3 Carbon Trading Systems

The table 4-9 below shows carbon trading systems

Carbon Trading system	Company Responses	
	Frequencies	Percentage
CDM	9	30
VCM	2	6.7
REDD	5	16.7
Others	14	46.7
Total	30	100

Source: Field Data

The response was as follows CDM 30 percent, VCM 7 percent, REDD 18 percent and others 47 percent being the majority. This implied that there are many carbon trading systems on the market and their application depends on the convenience of the system and the investor's willingness to invest in the company and the kind of carbon trade system.

4.3.4 Companies Major Investment Areas

The Table 4-10. Below showing Companies Major Investment Areas

Investment areas	Companies responses	
	Frequency	Percentage
Production	11	36.7
Marketing	8	26.7
Transport	1	3.3
Farming	3	10
Research	7	23.3
Total	30	100

Source: Field Data

The response from Table 4-10 above showed that production 36.7 percent were the majority followed by marketing 26.7 percent, the least being transport 3.3 percent. The study showed that most activities are dependent on one another and corporate companies are engaged in carbon producing ventures. This could attract major partners in carbon reduction and direct investment in these companies and SMEs. Carbon trade engagement could contribute to their competitiveness in terms of production cost reduction and diversified products to capture

different markets. The carbon footprint generated by these investments areas has to be taken serious such that it can contribute to capital inflow.

4.3.5 Companies Energy Sources

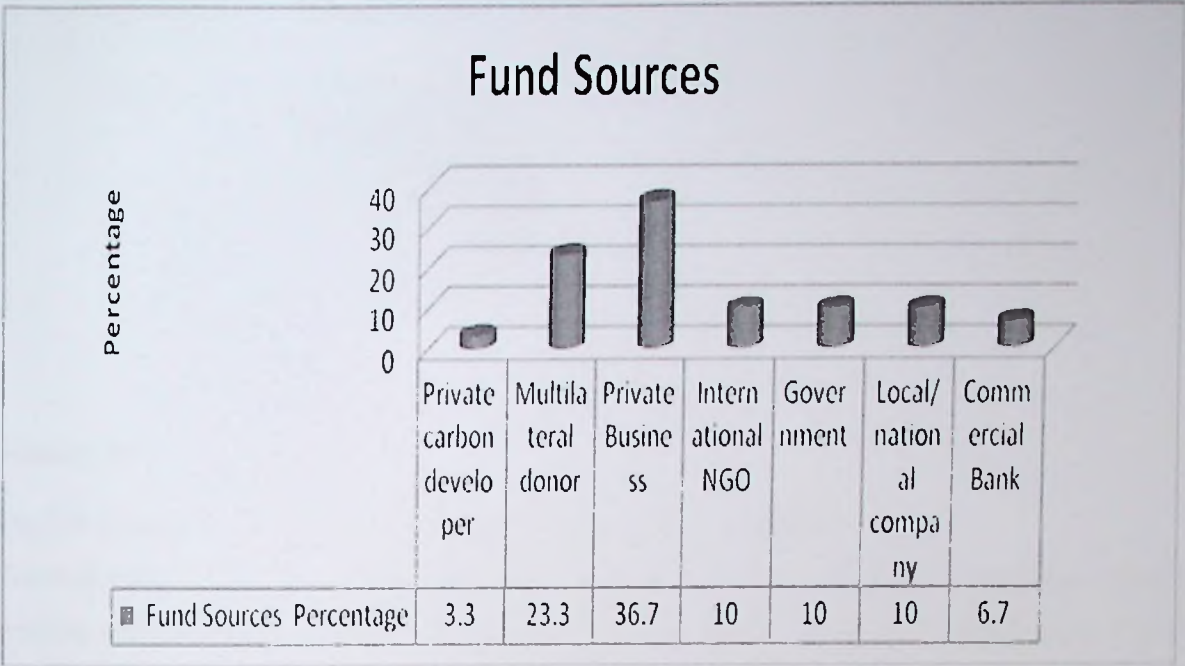
Table 4-11. Below showing Companies Energy Sources

Energy sources	Company Responses	
	Frequencies	Percentage
Fire wood	2	6.7
Electricity	20	66.7
Petrol	1	3.3
Diesel	7	23.3
Total	30	100

Source: Field Data

The study revealed that companies major energy sources was electricity with 66.7 percent, diesel 23.3 percent, and petrol 3 percent. This showed that electricity is the major source of energy, by increasing amount of electricity produced. Industries could benefit from small projects developed and designed for electricity production in the area of water and other energy sources such as biogas. To make these small companies competitiveness, there is need to reduce the cost of energy supply. This will lead to the reduced pressure on environment through reduced degradation where by energy use from firewood and any other carbon producing substances like coal will be minimised. The SMEs should target such small energy producing projects for individuals and institutions to conserve energy.

4.3.6 Company Fund Sources

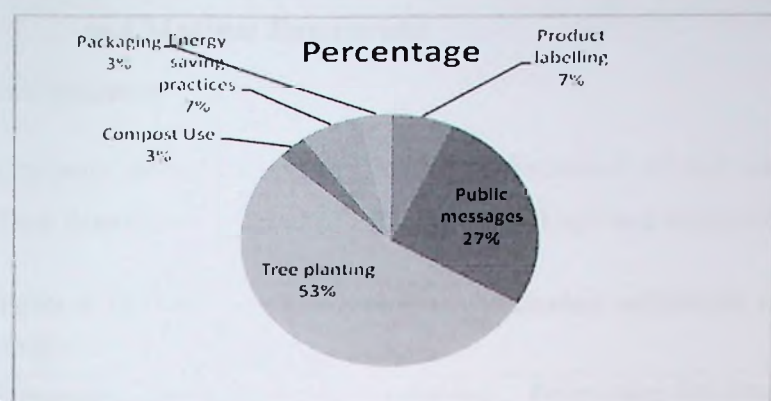


Source: Field Data

The figure 4-2. Above shows company fund sources among the companies

The responses indicate that Private Business were the majority with 36.7 percent, and 3.3 percent Private carbon developer. Corporate companies use climate change in the CSR activities and this is why the majority are private businesses 38 percent and multilateral donors 23 percent especially with medium companies who have such budgets. International NGOs are playing the role of awareness creation on the prospects of carbon trade and the trading systems. Corporate companies could gain competitive environment by engaging in carbon trade while investing in SMEs, especially with the private carbon developer on the production rights. This is where competitive advantage will stem from on the market. Because, SMEs are heterogamous firms which have arrange of products and production ones and this will provide wide range of investment areas to invest and generate profit while conserving the environment.

4.3.7 Climate Change Practices Supported by the Companies



Source: Field Data

Fig 4-3. Climate change practices supported by the companies

The responses in the figure 4-3 above, the study revealed that the highest was Tree planting 53 percent, and Packaging 3percent. However, despite the small Percentage 3 percent use compost it is taking ground in Uganda under World Bank supported project on climate change were CDM carbon trading system is being implemented by municipal councils. Secondly tree planting is the leading activity among the corporate and SMEs and this is due to CRS activities. It means Initiating carbon calculation could boost the effort towards trading based on already implemented tree planting or climate mitigation practices by companies as seen in **table 4-3** above it can provide an easy route to carbon trading when big companies link up with SMEs and communities to identifying particular trading systems on the market.

Energy saving practices was 7 percent, its being implemented by some companies/ government sectors such as SPGs, where by they are able to calculate and report their carbon footprint from vehicles and other activities. It could bring in a stream of income and indicate the compliance level of these companies.

4.4.1 How Company emission reduction Strategies affect the Competitiveness of Small and Medium Enterprises

Introduction

Company strategies are key to the performance of any company emission reduction strategy. They determine the level of innovation, linkage and competitiveness in the market.

Table 4-12. Showing how company emission reduction strategies affect Competitiveness of SMEs

Statements on Company emission reduction Factors	Percentage Responses					Mean	StD
	SA	A	UD	D	SD		
aware of Strategies/Plans	33.3	46.7	10	3.3	6.7	3.97	1.098
Plans for investment in SMEs	10	33.3	26.7	3.3	26.7	2.97	1.377
Budget for tree planting	36.7	33.3	16.7	0	13.3	3.8	1.324
Company emission reduction plans for investment in energy	10	36.7	13.3	13.3	26.7	2.9	1.423
Investment in water	10	23.3	26.7	20	20	2.8	1.289
Company emission reduction structure and marketing strategies	23.3	26.7	13.3	10	26.7	3.1	1.561
systematic procedures for monitoring and controlling energy	20	36.7	13.3	3.3	26.7	3.2	1.518
Mean 3.3, StD 1.37							

Source: Field Data

SA= Strongly Agree A=Agree UD= Un Decided D=Disagree SD=Strongly Disagree

Findings from **table 4-12** above showed the average mean is 3.3 with average standard deviation (SD) of +_1.37. The study showed that the majority of the respondents 46.7 percent agreed that they were aware of the strategies/plans of companies on climate change and 6.7 percent strongly disagreed. This is because many corporate companies are becoming aware of the climate change risks and opportunities associated with their company emission reduction's activities and they are putting plans in advance for example Uganda municipal councils are implementing CDM world bank project. The 20 percent are the companies missing out on the awareness avenues that corporate strategies should take interest in climate change issues depending on their potentials. The respondents on the question whether Plans are there for Investment in SMEs 33.3 percent agreed and surprisingly 26 percent disagreed. It was established that corporate companies have the willing to invest in SMEs 43 percent agreed including those who strongly agreed with the

statement. The culture of SMEs should be built on specialised products and investment targets to be offered to the market and carbon trade such that it's easy for these corporate companies to determine areas of support to make the SMEs more competitive. From above **table 4-10** there are opportunities in research, farming, production were REDD, CDM and others trading systems is key.

However, the response on whether the budgets are there for tree planting, the majority of the respondents 36.7 percent strongly agreed, with 0.0 percent undecided. Tree planting is major activity which provides companies with firewood as alternative sources of energy, income and many corporate companies have budgets for tree planting for the purpose of environmental awareness through corporate social responsibility as their corporate marketing strategies. SMEs and corporate companies investments in tree planting could play a key role in the carbon trading systems in the near future especially when CDM, REDD and VCM are fully embraced by these corporate companies and this will depend on the innovative level of these corporate companies in targeting SMEs mainstream activities. It's provided in the climate change practices in fig. 4-3 the out standing activity being tree planting suitable for any carbon trading system.

The response on aspect of company emission reduction plans are there for investment in energy, the majority 36.7 percent agreed with the statement, however, the undecided were 13 percent, 10 percent strongly agreed. Energy sources, supply and their effectiveness is important for the investment atmosphere and the performance of any economy because most industry operation need efficient and adequate energy. SMEs need to take up such opportunities in the energy sector to broaden the energy industry through investing in the different energy sources because the companies are willing to support the energy initiatives. **Table 4-1**, reflects on the most energy sources for some of these companies and SMEs. Electricity and diesel are the most energy sources for the most activities. The demand for these energy sources has increased, adopting measures to reduce on their use provides along term solution to SMEs and their competitiveness.

Alternative investment in biogas and other energy sources could reduce on the impact of these SMEs on the environment. Fire wood 6. Percent as source of energy it's causing and imposing a lot of the threat to environment through deforestation.

The statement that company emission reduction plans are there for investment in water, the highest 26.7 percent undecided and 23.3percent agreed. Water resources in Uganda it's enough to provide competitive environment for SMEs and this is justified by the mean 2.8 below average tending towards complete disagreement among the respondent. But SMEs may be at risk when efforts to increase and protect water sources by corporate companies are not in place. It may undermine water availability and water quality in future given the level of company waste and disposal.

Company emission reduction structure and marketing strategies consider carbon emission reduction and planning, the highest 26.7percent were in agreement and 10percent disagreed with the statement. It's because, carbon emission reduction is a new concept that corporate companies are getting involved in and first understanding the implication of involvement. Carbon emission reduction and planning in SMEs could provide an opportunity for capital sources as a result of more corporate companies picking interest in paying investments in SMEs.

The response about company have systematic procedures for monitoring and controlling energy and fuel consumption the highest respondent 36.7percent were in agreement, 26.7 strongly disagreed and only 3.3percent disagreed with the statement. Most responses were in agreement based on the aspect that they have routine practices during the company operations by determining the peak hours and non peak hours given the Umeme schedule. What is important is that these practices should be converted into money through carbon trade depending on the amount of carbon credit saved. This will provide companies with alternative income sources and opportunities of targeting the SMEs depending on the carbon foot print and the market needs given the particular emission reduction strategy.

4.4.1.1 Correlation (Relationship) between company emission reduction strategies and competitiveness of SMEs

Table 4-13 below showing correlation results between company emission reduction strategies and competitiveness in SMEs

Correlations		company emission reduction strategies	Competitiveness
company emission reduction strategies	Pearson Correlation	1	.435**
	Sig. (2-tailed)		.016
	N	30	30
Competitiveness	Pearson Correlation	.435**	1
	Sig. (2-tailed)	.016	
	N	30	30

*. Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.05 level (2-tailed).

Table 4-13 above revealed the correlation between company emission reduction strategies and competitiveness of SMEs. The findings indicated the Pearson correlation $r = 0.435$. The result of 0.435^{**} , is above 0.361 from Pearson product –moment correlation coefficient critical values , however, the significant value above revealed that there was a positive and statistically significant at $p = 0.016$ relationship between Company emission reduction strategies for corporate carbon emission reduction strategy and competitiveness of SMEs. This implies that there is association or relationship between the two variables. The linear pattern emerged between both variables. This indicates that when company emission reduction strategies change, the competitiveness of SMEs will also alter by the same proportion. It's therefore imperative that company emission reduction strategies are seriously taken into consideration to improve the competitiveness of SMEs in Uganda

4.4.2 How employee emission reduction strategies affect the competitiveness of small and medium enterprises

Introduction

The employee emission reduction strategies for corporate carbon emission reduction are key to pushing forward the innovative process engineered by company chief Executives. The employee emission reduction skills and attitude can motivate them in support of innovative approaches to SMEs competitiveness and increase the company emission reduction horizons and market performance.

Table 4-14. Showing how employee emission reduction strategies affect competitiveness of SMES

Statements on Employee emission reduction Factors	Percentage Responses					Mean	StD
	SA	A	UD	D	SD		
Strategies facilitate opportunities	6.7	40	23.3	6.7	23.3	3.0	1.313
Believe climate change is an issue	30	40	20	6.7	3.3	3.87	1.042
Short production life cycles key to save carbon emission and reduce cost	13.3	43.3	13.3	3.3	26.7	3.13	1.456
Planning climate change related activity	6.7	33.3	33.3	3.3	23.3	2.97	1.275
Mean.3.3, StD 1.272							

Source: Field Data

SA= Strongly Agree A=Agree UD= Un decided D=Disagree SD=Strongly Disagree

The findings showed the average mean 3.3 and average standard deviation (SD) 1.272. This implies that all the responses were distributed around the mean by+₋1.272.

However, the results in the **table 4-14 above**, revealed that majority of the respondents 40 percent agreed they were aware of the company emission reduction strategies that facilitate carbon emission reduction opportunities, 6.7 percent disagreed while 23.3 percent undecided with the statement. The findings showed that many companies are coming up with proposals and strategies including training on the how to harness the carbon trade opportunities but this should be targeting SMEs for their competitiveness.

The majority of the respondents 40 percent believed that climate change is an issue among company customers, only 3.3 percent strongly disagreed. This is because, employee are always in contact with the customers that they evaluate customer emission reduction needs and willingness to buy particular company green products based on their desires. Therefore, employee get the feedback about the market needs and then plan and develop processing and marketing strategies that suit the market.

Therefore, 43.3 percent of the respondents were aware that the short production life cycles of a product are key to carbon emission reduction and saves company operational cost, 3.3 percent disagreed and 26.7 percent strongly disagreed. It's because energy affects and always is an issue in company and SMEs operations affect output for the companies. Therefore, for these companies to remain competitive there is need to save on the amount of energy consumed by having short production cycle. However, big companies need to begin investing in SMEs to have practices which can save on energy or encourage energy reduction to enable SME boost the production to meet their market demands.

Planning a climate change related activity or campaign in the next 4 month, 33.3percent of the respondents agreed, and 3.3 disagreed. Given the facts that companies, SMEs and companies are getting the impact of climate change, employee emission reductions are taking initiatives to mainstream climate change related activities through corporate social responsibility. But this should go beyond the corporate social responsibility and embrace carbon trade such that they are able to benefit from climate change activities by considering amount of carbon saved through tree planting activities among the communities.

4.4.2.1 Correlation between employee emission reduction strategies and competitiveness of the SMEs

Table 4-15. Showing correlation results between employee emission reduction strategies and competitiveness in SMEs

Correlations		Employee emission reduction strategies	Competitiveness
Employee emission reduction factors	Pearson Correlation	1	.602**
	Sig. (2-tailed)		.000
	N	30	30
Competitiveness	Pearson Correlation	.602**	1
	Sig. (2-tailed)	.000	
	N	30	30

** . Correlation is significant at the 0.01 level (2-tailed).

The table 4-15 above revealed the correlation between employee emission reduction strategies and competitiveness of SMEs. The findings indicated the Pearson correlation ($r = 0.602^{**}$), the significance value at $p < 0.0001$. The result of 0.602^{**} , above revealed that there was a positive and statistically significant association/relationship between the two variables.

4.4.3 How customer emission reduction strategies affect the Competitiveness of small and medium enterprises

Introduction

Customers determine the market share of every company emission reduction in the market. It's shown by the level of demand of Company products on the market. The higher the demand of particular products represents the market share for the particular company. This will encourage companies and SMEs develop competitive strategies, leading to ultimate consumption at a profit.

The Table 4-16 below shows how customer emission reduction strategies affect competitiveness of SMEs

Customer emission reduction strategies	Percentage Responses						
	SA	A	N	D	SD	Mean	StD
Company emission reduction products support climate change	18.6	31.4	18.6	4.3	27.1	3.10	1.486
Buy more products if labeled	40	31.4	17.1	7.1	4.3	3.96	1.122
Remember company emission reduction products labeled	10	10	38.6	8.6	32.9	2.56	1.347
Member of climate change group	8.6	4.3	47.1	11.4	28.6	2.53	1.201
Carbon trade improve our livelihood	37.1	32.9	12.9	4.3	12.9	3.77	1.342
mean 3.184, SD 1.2996							

Source: Field Data

SA= Strongly Agree A=Agree UD= Un decided D=Disagree SD=Strongly Disagree

The study revealed from the table 4-16 above showed that the average mean of 3.18, standard deviation 1.2996 and distribution around the mean by + _ 1.2996. The majority of the respondents 31.4 percent agreed to the statement that they liked some company products because they support climate change, 27.1 percent strongly disagreed, 4.3 percent disagreed. It's due to the fact that climate change is affecting societies. Therefore, the customers are becoming more interested in companies addressing climate change issues and this could drive corporate companies to take part in investing in SMEs and address specific needs, activities which could be channeled to capture such market.

The majority of the respondents 40 percent strongly agreed that could buy more of the company products if labeled with climate change information, and only 4.3 percent strongly disagreed with the mean of 3.96 and standard 1.122. It's assumed that a satisfied customers willing and will be willing to spend money on goods and services which meets his or her desire. There are concerns with the way the products are packaged and if they are packed well reflecting climate change. By this companies & SMEs offering products with such information on climate change will gain profit and this will contribute to Companies and SMEs competitiveness.

Surprisingly, a good margin of respondents 38.6 percent were undecided about the statement that they remembered the company products because they were labeled with carbon emission reduction symbol, 8.6 percent disagreed and 32.9 strongly disagreed only 10 strongly agreed to the statement, .the study revealed that customers differ in their character and remembrance may not have any connection with product purchase.

The study revealed that 47.1 percent were undecided whether they were members of a group on climate change issues, 28.6 percent strongly disagreed to the statement. It showed that “Green Movement” is developing slowly. It’s about people’s consciousness on how the products are environmentally friendly in support of climate change. Therefore, Companies and SMEs capturing such market indicators integrating them into the production and marketing strategies they are to remain competitive compared to non-environmentally friendly enterprises.

However, those SME activities which are not built based on the principle of Green Movement may miss out on the list of competitiveness. Because, customers have similar lifestyle which influence buying pattern and look for their group interests, decide as a group in the market.

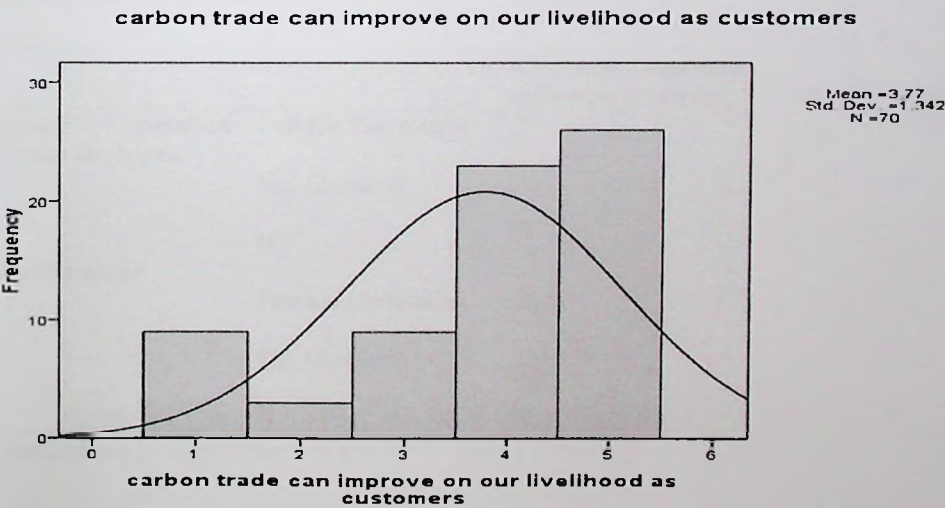


Fig 4-4 shows histogram for response on carbon trade can improve livelihoods

From the **figure 4-4** above, 37.1 percent believed that Carbon trade can improve livelihood of customers, only 4.3 percent disagreed and it emerged with a mean of 3.7 and standard deviation of 1.342. Implying that the distribution around the mean ± 1.342 . It's because people have stress, safety needs and status associated with their security in the surrounding environment. Carbon emission reduction is believed among the respondents to have a lot of opportunities. Activities of climate change and carbon trade involve building assets and making profit due to income resulting from the sale of the carbon credit based on the use and carbon footprint generated to save energy, water, environment and economic development targeted by governments through the carbon trading systems such as REDD, CDM and VCM. This is because the carbon trade is attracting a lot of money through direct investment in the country. The impact of this is improvement in the standard of living because the proceeds from carbon are based on methods of payment and project design targeting the existing regulations, market segments and the local communities.

4.3.3.1 Correlation (Relationship) between customer emission reduction strategies and competitiveness in SMEs

Table 4- 17. Showing correlation results of customer emission reduction strategies and competitiveness in SMEs

		Customer emission reduction strategies	Competitiveness
Customer emission reduction strategies	Pearson Correlation	1	.262**
	Sig. (2-tailed)		.029
	N	70	70
Competitiveness	Pearson Correlation	.262**	1
	Sig. (2-tailed)	.029	
	N	70	70

** Correlation is significant at the 0.05 level (2-tailed).

The study results showed in the table **4-17** above revealed that there is correlation between Customer emission reduction strategies that affect corporate carbon emission reduction strategies and competitiveness of SMEs. The findings indicated the Pearson correlation $r = 0.262^{**}$, the

significance value $p < 0.029$, result of 0.262^{**} , above revealed that there was a positive and statistical relationship or association between customer emission reduction strategies and competitiveness of SMEs.

4.3.3.2 Multiple regressions results of all strategies on competitiveness of SMEs

A regression technique was used in order to determine the percentage effect of company emission reduction strategies on competitiveness and results are shown in the table below.

Table 4-18a. Showing Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.626 ^a	.392	.319	.51952
2	.805 ^b	.648	.552	.42167

a. Predictors: (Constant), customer emission reduction strategies , company emission reduction factors, Employee emission reduction factors

b. Predictors: (Constant), customer emission reduction strategies , company emission reduction factors, Employee emission reduction factors, Personal Background information, company emission reduction Data

The model summary **table 4-18a** above, revealed that correlation coefficient (r), using the predictors of b; all the three factors, the results revealed $r = 0.552$. This implied that $r = 55.2\%$ of variability or effect on competitiveness, while the remaining percentage of the effect was attributed to other factors.

Table 4-18b. Multiple regressions results of all strategies and competitiveness of SMEs

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.350	.650		2.078	.048
	company emission reduction strategies	.179	.165	.192	1.086	.288
	Employee emission reduction strategies	.423	.146	.519	2.896	.008
	customer emission reduction strategies	-.049	.133	-.059	-.370	.715
2	(Constant)	3.264	1.131		2.886	.009
	company emission reduction strategies	.193	.134	.208	1.439	.164
	Employee emission reduction strategies	.369	.119	.453	3.091	.005
	customer emission reduction strategies	-.100	.112	-.119	-.896	.380
	company emission reduction Data	-.780	.243	-.438	-3.210	.004
	Personal Background information	-.087	.263	-.045	-.332	.743

a. Dependent Variable: Competitiveness

From the **table 4-18** above the multiple regression study revealed that employee emission reduction strategies were positive and significant at $p < 0.005$. The study showed that employee emission reduction strategies are number one predictor of corporate carbon strategy for the competitiveness of Small and Medium Enterprises.

4.5 Competitiveness of Small and Medium Enterprises

Introduction

Small and medium enterprises (SMEs) have become the focus of attention by development stakeholders interested in market-oriented solutions to poverty and economic development. Measuring competitiveness is a very challenging task and competitiveness has been measured by use of financial indicators such as profit, market share, sales, and growth rate.

Table 4-19. Competitiveness of SMEs

Competitiveness	Percentage Responses					Mean	Std
	SA	A	UD	D	SD		
Insurance opportunities for carbon trade	33.3	36.7	10	3.3	16.7	3.7	1.422
Carbon market systems hard for the stakeholders	20	26.7	23.3	13.3	16.7	3.2	1.375
Support to climate change boost market share	26.7	23.3	13.3	13.3	23.3	3.17	1.555
Carbon finance opportunities & markets	13.3	26.7	26.7	13.3	20	3.0	1.339
Utilize effectively the climate change issues in marketing company emission reduction products	6.7	43.3	20	13.3	16.7	3.1	1.242
Receive training on carbon issues	6.7	26.7	30	20	16.7	2.9	1.196
Company emission reduction produces carbon free products	13.3	23.3	30.0	6.7	26.7	2.9	1.398

Mean 3.138, StD 1.361

Source: Field Data

SA= Strongly Agree A=Agree UD= Un decided D=Disagree SD=Strongly Disagree

The responses had an Average mean of 3.138 and standard deviation of 1.361 and the distribution around the mean value ± 1.361 . Table 4-19 above the study revealed the customers views by companies, the majority of the respondents 36.7 agreed, 3.3 percent disagreed that insurance opportunities for carbon trade can be supported. Risk management plays a central role in the performance of any business among corporate companies and it provides the confidence in the business environment as it safe guard businesses from the rooming risks. Therefore, the study revealed that there is a motivation on insurance companies that they can play a big role in carbon trade and willing to be part of the carbon trade and this strengthens the competitiveness of that particular industry especially for SMEs. 26.6 percent agreed positively that with current carbon market systems it's hard for the stakeholder's engagement in carbon trade, surprisingly 23.3 percent were undecided. The problem is that carbon trade is still a new concept in African countries including Uganda. The existing structures and processes have not been explained and utilized by a big number of companies except the few who have known the existence of carbon credit trading systems 26.7 percent strongly agreed that Company emission reduction support to climate change has boosted our market share 23.3 percent were in disagreement. This is because many companies are using the approach of tree planting activity as Corporate Social

Responsibility activities in Uganda. It's a result of realizing the impact of climate change on company operating environment such as unbecoming cost of material due to scarcity. Therefore, through their effort of CSR especially with tree planting messages combined with other marketing strategies many companies are achieving their market share hence competitiveness and this should be an opportunity for promoting SMEs which share similar interest with such big companies.

Among the respondents 26.7 percent agreed, 26.7 percent were undecided, 13.3 percent in strong agreement that they were aware of the carbon finance opportunities & markets. Some corporate in Uganda are trying to find out how based can enter into the carbon markets considering the energy crisis, climate change challenges and some of these companies see the burden of alternative energy source which is not providing any alternative profit. However, the alternative profit will come from supporting these SMEs to adopt better and environmentally friendly energy use and their support to SMEs could be translated into carbon units saved and this will mean providing capital for the SMEs as corporate given the market share.

The majority of the respondents 43.3percent agreed with the statement that they utilize effectively the climate change issues when marketing company products and Only16.7 percent strongly disagreed. Similarly, companies are using climate change messages as a tool in raising awareness among customers to drive new consumption patterns, while at the same time developing new products and services that appeal to new priorities. This competence factor could drive the competitive level among SMEs and companies by adopting sustainable production life cycles.

26.7 percent agreed with statement they received training on carbon issues, 6.7 percent strongly agreed and 30percent undecided with the statement and this has been reflected by the lowest mean of 2.9 and Std of 1.196. This is attributed by the fact that there is fewer capacity building opportunities on climate change and carbon trade on. The aspect of lack of training among corporate companies it has narrowed down the opportunities for direct investment in the country

and competitiveness of the less competitive and privileged sectors like SMEs sector were capital is required for investment in the area of Energy, water and environment issues to provide for jobs and economic development. Providing training to corporate companies on carbon trade and investment opportunities will enhance corporate companies have potential to harness the carbon investment opportunities and in term these companies will target the SME activities.

The result in the **table 4-19** above show views on attitude among companies where 23.3percent of the respondents positively agreed with the statement that I am aware that the company produces carbon free products. 30.0percent remained undecided and 26.7 strongly disagreed. It's an assumption by customers that some companies are selling carbon free products but their quantification is not known including the carbon emission and these could provide capital for SMEs if they streamlined such activities in the production process and it is all about attitude change.

CHAPTER FIVE:

DISCUSSIONS AND INTERPRETATION OF RESULTS

5.1 Introduction

This chapter presents the summery, discussion, conclusions and recommendations of the study. This chapter is divided into three parts. The first part presents the summery. The second part presents discussion and the conclusions. The third part presents the recommendations about the corporate carbon emission reduction strategies for the competitiveness of Small and Medium Enterprises (SMEs).

5.2 How company emission reduction strategies affect the competitiveness of small and medium enterprises

In March, 2009, the EU announced that the 105 billion euros will have been invested by 2013 to support the "green economy (Yuechun, 2010). The study revealed that there are different Segments of the markets currently operated by a number of business companies, SMEs and non-profit organizations ranging from production to the Aids to trade. It's possible that through these segments, companies can invest in carbon-reduction projects both at community and enterprise level and sell the emission credits to buyers and final consumers (Karavai, 2009). However, to enhance opportunities for SMEs and companies in carbon trade they have to create an innovative structures which can accommodate business environment risks especially those associated with climate change and it has been said that, the new opportunities are the global trends in demand and action to tackle climate change by the World Business Council on Sustainable (shell spring Board 2006).

Corporate companies and organisations are becoming aware (46.77 Percentage) of the climate change risks and opportunities associated with carbon trade and they are putting plans in advance for example the world Bank (WB) paid US\$34,000(€25,000) for the purchase of carbon credits from the Humbo Community Based Forest Management Project in Ethiopia and pledged to buy credit for half of the 330,000 t of carbon the forest can absorb, worth a total of US726,000(€538,000) over 10 years (The Spores, 2011). This could provide and alternative income, capital and return for small and Medium enterprise in result improvement in the living and

investment competitive conditions especially for companies supporting rural based enterprises on forest, agriculture and packaging are the investment areas that could attract the attention with the aim of helping communities to make a living from carbon trading instead of fire wood (Jennifer 2010). However, these plans will not be effective without companies and government sectors in countries building strategies to harness these opportunities.

The will from climate change stakeholders ranging from employee emission reductions and the customers, board of director or executives, banks and insurance companies in Uganda and globally, a record of 57 climate-related shareholder resolutions were filed with US companies, of which nearly half were withdrawn after the companies agreed to positive climate-related commitments (Ceres, 2008). It shows the level of engagement and the future. There is possibility for increased engagement which will lead to stable social structures responding to carbon trade and climate change issues amongst the communities.

It's possible for Companies to initiate carbon trade as many of these companies have plans and budgets on tree planting and mitigating measures to climate change. This would be an opportunity for CDM, REDD+, voluntary carbon trading systems. Many of these companies are using Corporate Social Responsibilities Activities (CSCA) in developing their strategise to capture more of these customers for tree and fruit planting for the purpose of environmental awareness finally promoting company emission reduction products. Coca cola as accompany emission reduction in Uganda, taking the lead as revealed by study based on the employee emission reduction and the customer emission reduction response respectively 26.7 Percentage and 50 Percentage respectively (Shames and . Scherr, 2010). The challenge is how these companies and SMEs to have effective technical capability to planning and implementing carbon trade and providing full information to the investors and the executives to create competitive environment.

The companies are considering tree planting as major activity providing firewood as source of as alternative energy, income and many corporate companies have budgets for tree planting for the purpose of environmental awareness through seasonal campaigns as their corporate

marketing strategies. Also, it's said that of the 656 proposals filed by shareholders, 80 were related to the environment. The majority of the Environmental filings were focused on climate change and urged companies to reduce their carbon foot print. The support for such resolutions increased to nearly 20 Percentage average voting score, up from 17 Percentage in the previous year (Risk Metrics Group 2007). Nile breweries promote tree planting through environmental protection as corporate social responsibility reducing the carbon footprint (UNRA, 2010).

Besides tree planting companies should put in effort to modify their product production systems which should consider reducing the value chain carbon footprint and this be part of their corporate social responsibility to effectively managed their carbon emission and responding to regulations governing such emissions. However, carbon regulations in sub Saharan Africa should consider such regulations with much caution as they intend to boost their economies which are still growing.

The energy sectors, sources, supply and their effectiveness remain demanding in Sub Saharan Africa and important for the investment atmosphere, the performance of any economy including most industry level operational needs to remain competitive. SMEs need to take up opportunities in the energy sector to broaden the energy industry through initiating activities appropriate for investors because at certain extent companies are willing to support the energy initiatives, Deutsche Bank introduced energy-saving mortgage loans to customers for the upgrading works of home energy conservation and renewable energy installations(UNEP, 2007). Consider that the long-term goal of SMEs should be to stay in business, grow and make profit and to effectively compete in local and global markets SMEs must be quick and flexible in their response to stakeholders' needs (Turyakira, 2010).

Carbon emission reduction it's a new concept that corporate companies are getting involved and first understanding the implication of involvement. Carbon emission reduction and planning in SMEs could provide an opportunity for capital sources as a result of more corporate companies picking up more paying investments with these SMEs. The sustainability criteria for carbon emission reduction on a regional or sub-regional and country level could provide greater clarity

for developers seeking to meet these criteria, without undermining the role of national authorities. that can address the issue of engaging under represented developing countries into the global carbon market, providing stream of finance, and contributing to overall sustainable development country objectives. Thus, more robust understanding of the complex context of carbon development in the African regions is required if positive sustainable development benefits (Karavai, 2009).

The employee emission reduction strategies are the drivers for companies to develop strategies that could manage the challenges arising as a result of an over-exposure to either low or high carbon activities, including, the systemic risk in the financial systems and the macro instruments that might be designed and deployed to help restrain the build-up of risk. However, the failure risk resulting from calculation and estimation of capital requirements for the SMEs might undermine the competitiveness of the business environment for SEMEs in Uganda.

In conclusion, policy initiatives by governments involving companies at awareness and policy design level can provide negotiation platform and provide the confidence for the investors were direct investment and bilateral relationships are due, Prime Minister of Malaysia , Datuk Seri Najib Tun Razak announced that Malaysia has agreed to reduce its carbon dioxide emissions to 40 Percentage by 2020 (Jennifer, 2010).

5.3 How employee emission reduction strategies affect the competitiveness of small and medium enterprises

Effective business support systems are needed to enhance competitiveness and productivity of SMEs. Development of an effective business support system is also a key condition for the success of both trade and investment capacity building (OECD, 2004). The status of the human resources in a country is also instrumental in attracting direct investment from overseas. There are certain countries like China that have taken an active interest in increasing the quality of their workers. They have made it compulsory for every Chinese citizen to receive at least nine years of education. This has helped in enhancing the standards of the labourers in China (<http://www.economywatch.com/foreign-direct-investment/determinants.html>). Given that the

success of IBM's competitive strategy depended heavily on the knowledge and expertise of its personnel and their ability to forge beneficial relationships with customers, the firm's sales force is even more crucial than ever. But many sales people who used to sell the company's hardware have been retrained and transferred to the software division or turned into business consultants. The company also acquired PricewaterhouseCoopers consulting, a move that helped IBM focus more on executive level business consulting in addition to traditional technology consulting. The superior expertise and experience of IBM's people – and the firm's ability to satisfy the e-commerce needs of customers in a variety of industries – was also effectively communicated via an advertising campaign featuring a series of ads (Mullins et al, 2011).

Companies which can convert their core competencies and integrate them throughout the organization will achieve a competitive advantage by employing competencies to proactively address their stakeholder interests (O'Brien, 2001). For companies to benefit from the carbon streams from the company emission reduction activities need the human resources which can convert opportunities into money ventures such that there is capital generated from the sale of carbon and developing more innovative strategies to harness opportunities existing with SMEs given their heterogeneous nature of the activities.

Companies practicing and aware about climate change and carbon trade in the private sector it's ability to contribute to combating climate change is challenged by lack of awareness, inefficient governance structures, lack of specialised staff and limited skills to utilise efficient technologies and finance (ESA BMO, 2010). It's clear for companies to develop strategies which need to respond with capacities and attribute to compete and remain relevant for company emission reduction carbon emission reduction strategies to target SMES.

The awareness level of employee emission reductions strategies on opportunities that exists on the markets determines the extent to which such companies integrate company emission reduction strategies. A majority of global executives regard climate change as strategically important and consider it essential to product development, investment planning, and brand management. In addition, it's said that over 60 Percentage of global executives say that the effect

profits would be moderately too high and positive should their company successfully manage climate change issues (Economist intelligence 2009).

It's noticeable among companies and employee that climate change is an issue among company emission reduction customers and short production life cycles are key to carbon emission reduction and save company operational cost and varying market demands. However, increasing scientific evidence, regulatory pressure, and growing societal unease about the potential impacts have already stimulated corporate concern over the risks imposed by climate change. As a consequence, climate change is rising on corporate boards' agendas (McKinsey, 2007). Many companies are coming up with proposals and strategies including training on the how to harness the carbon trade opportunities but this need to target SMES for their competitiveness.

Employees are always in contact with the customers in that they even evaluate customer emission needs and willingness to buy particular company emission reduction products based on their desires. Therefore, employees get the feedback about the market needs and then plan and develop processing and marketing strategies that fits the market. The employees potentials and commitment to understand carbon trade ensure corporate strategies work to ensure competitiveness and targeting of these customers.

Corporate companies considering carbon trade in their operations can turn climate change risks into opportunities and this should be done through capacity building, Deutsche Bank introduced energy-saving mortgage loans to customers for the upgrading works of home energy conservation and renewable energy installations and this can define competitiveness. The international communities have set up some self-regulatory organization, which is to promote green finance and supervise the financial institutions engaging in sustainable finance, whose members are from the bank, insurance and securities companies and other financial institutions in the world (UNEP, 2007)

It's because energy affects and an issue in companies and SMES operations and affects output for the companies. Therefore, for these company categories to remain competitive they need to

on amount of energy consumed by having short production cycles (O'Brien, 2001). However, big companies have potential to invest in SMEs and employee competencies, attitude have practices which can save on energy or encourage energy production to enable SME boost production to meet their market demands. Boosting SMEs effort by companies to mitigate carbon effects can lead to increased business investments in water, energy, natural resource management, hence impacting on company profit margins, economic and social indicators within the context of the Poverty Eradication (MFPED, 2008).

Given the facts that companies, SMEs and employee emission reductions are getting impact of climate change, employee emission reductions are taking initiatives to mainstream climate change related activities through corporate social responsibilities. But this approach can embrace carbon trade such that they are able to benefit from climate change activities by considering amount carbon saved through tree planting activities among the communities. Direct investment and financing "Equator Principles" has gradually become an international industry standards and practice in project financing. Foreign commercial banks actively participate in environmental financial innovation, the carbon trading and providing intermediary services for families and SMEs (Yuechun, 2010).

4 How customer emission reduction strategies affect the competitiveness of small and medium enterprises.

In any economy all corporations operate within a macro economic, social, political and cultural systems. These differ from country to country regarding the role of markets even in the era of globalization. That is the role of market and government interventions in the market differs from country to country. However, in the era of globalization and trade liberalization most countries allow market forces to determine economic affairs to a greater extent.

This is due to the fact that climate change is affecting societies. The customers are becoming more interested in companies addressing climate change issues and this could drive corporate companies to take part in investing in SMEs which address specific needs and activities and it could channel effort to capture such market. UNRA (2010) Nile breweries promotes

environmental protection through reducing the carbon and energy footprint by planting trees. These are perfect activities which can be initiated by companies, SMEs and developing their role towards environmental protection and safe guard the customers from any climate change effect and loss.

The packaging process and type of materials need improvement reflecting climate change mitigation. The companies which offer such needed products with more of such information on climate change and carbon emission will in the end gain profit and save on the advertising cost. The focus should be on strategic decisions, defined as "decisions on what kind of business the firm should seek to be in, product-markets and this is comprised of four components: product-market scope, growth vector or the changes that a firm makes in its product-market scope, competitive advantage, and synergy (Robert and Michael, 2009)

Customers differ in their character and desire including opinion. The difference companies must take advantage of especially focusing on the most pressing needs of the customers as materials required for building livelihoods get scarce and this is important for any marketing strategy. However, a well thought strategy toward customer's test and preference may initiate connection with product purchase and this should be the primary focus of companies to support those activities resulting from climate change risks.

"Green Movement" developing slowly. It's about people who are conscious about how the products are environmentally friendly in support of climate change. Therefore, Companies and SMEs capturing such market indicators and integrating them in production and marketing strategies they will remain competitive compared to non-environmentally friendly enterprises. The products or services offered must be what customers want. The days when businesses could decide what they wanted to sell or supply, and customers would buy it, are long past. The customers' needs and wants are now paramount. If you don't meet them, someone else will. In addition, it can encourage entrepreneurship in the private sector so that the economy as whole encourages new branch of industries to emerge and provide a dynamic business environment. For example, for years, the world's leading coffee marketers, including Kraft and Nestlé, resisted

calls to pay premium prices for coffee grown in a sustainable manner, on farms that pay their workers a living wage and respect the environment. In 2003, Kraft, running neck and neck with Nestlé for the number one spot in market share globally, reached agreement with the Rainforest Alliance, a nonprofit organisation that seeks to improve the working, social, and environmental conditions in agriculture in the developing world. The agreement called for Kraft to buy £5 million of Rainforest Alliance-certified coffee from Brazil, Colombia, Mexico, and Central America in 2004, paying a 20 per cent premium to the farmers. Why did Kraft take this step? This is not about philanthropy,' says Kraft's Annemieke Wijn. 'This is about incorporating sustainable coffee into our mainstream brands as a way to have a more efficient and competitive way of doing business.' In short, Kraft made the jump because consumers demanded it (Mullins, 2011).

Companies can improve its competitive potential by investing in physical infrastructure developments which improve customer mobility and communication and working environment. Expanding innovation horizons and adoption by companies, SMEs will provide the more understanding among the customers. This will be based on change information and bringing carbon trade systems to the market and such companies involving such strategies will benefit and create impact on the competitiveness of such industry and SMEs will benefit.

The Carbon trade activities, customers believe that it can improve livelihood. Because, the stress, safety needs and status associated with their security take greater influence in market and this affects the bargaining powers in the market. Carbon trading generates income especially for communities that will be under REDD given the payment methods which will be adopted by the particular project. Therefore, strong position of particular company or SME in the market which involve climate change risks and carbon trade will give that firm greater strength in dealing with the buyers and any other opportunities in the market. Carbon emission reduction involves gaining money which can provide customers with purchasing power in market. Therefore particular SMEs which have focused activities in energy, agriculture, trade and finance will have benefit from the climate change mitigation and adoption measures.

CHAPTER SIX:

CONCLUSIONS AND RECOMMENDATIONS

1 Conclusion

The employee emission reduction strategies could bring a solution to some of the unknown context of carbon financing. Because compliance markets for CDM require high level of skills for application including the voluntary and REDD market of which companies need to check their competencies for implementation of the carbon strategies. Especially the potentials and competence of the employee emission reductions to be aware of the company emission reduction strategies which facilitate carbon emission reduction opportunities and take advantage of advancing innovation in the production process such as short production life cycles which reduces carbon emission and save company emission reduction operational cost. Therefore, the study revealed that when employee emission reduction strategies are improved there is a likelihood that the company emission reduction becomes competitive and if not improved, companies will be less competitive and innovative. It will be hard for such companies to adopt emerging concept. Given the fact from the study that employee emission reduction strategies is the number one predictor of corporate carbon emission reduction strategy for the competitiveness of Small and Medium Enterprises in Africa in particular Uganda.

Carbon emission reduction is believed among the respondents who are the customers to have a lot of opportunities. Because, activities of climate change and carbon reduction involves support in building assets and making profit of which the impact can be in energy, water, environment, agriculture including economic development targets by governments through the carbon trading systems such as REDD, CDM and VCM. The problem is that carbon trade is still a new concept in the African countries. Because, the existing structures and processes have not been fully explained and utilized except the few who have known the existence of carbon credit trading specially in the forestry and agricultural sector.

Recommendations

The presence of planning in companies and analysed enterprises should form sustainable business strategy and become very useful irrespective of company and SMEs segment. Focusing on competitive carbon trade activities in Sub Saharan Africa will be key to invite investors for direct investment which will be explained by direct use of market initiatives addressing the emerging concepts in the areas of energy, manufacturing and agriculture projects.

Creating new synergies through Mergers and Acquisitions i.e. creating linkages and collaborations should put in consideration for the capacity building for carbon trade practitioners. However, Mergers and acquisitions are areas that may provide opportunities for the companies and SMEs as an effective way for companies to cut costs and achieve synergy in financial and new concepts in the market including gaining growth in global market.

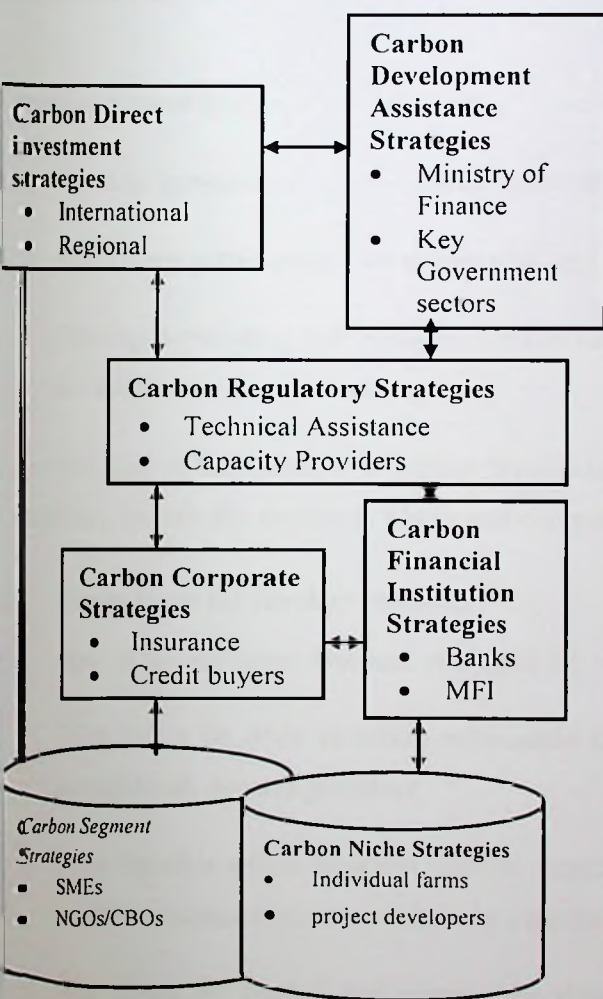
An integrated approach to carbon trade could play a critical role in integrating the carbon trading systems to take advantage of the unique environment in the market. This will close the existing carbon gap in trading systems initiating adaption of innovative competitive strategies to market niches and segments in society and globally. This will help targeting those customers who have and practice special interests and habits.

The proposed Integrated Carbon Financing Model (ICFM) in **figure 6-1** below could bring life to carbon market system and SMEs based on individuals expertise, public- private sector institutions for direct involvement in carbon policy and market adjustment.

The model is developed focusing on government, business community, market and niche segments and Social values i.e. providing a clear mode for carbon investments and revenue, increasing the investor confidence, flexibility and carbon emission response strategy in the country and sub Saharan countries.

From the fig 6-1 below the arrows indicate the lines of communication and investment pathways
 commitment in the carbon markets in terms of carbon revenue, information exchange on
 carbon investment opportunities and regulations.

Investors need information based on their potential to invest including particular characteristics
 the market segments and opportunities that exists with the market. For example resources
 related to investment may not need serious procedures resulting from the markets. It may require
 individual expertise which is to be targeted.



Source: Researcher

Fig 6-1 : Hypothetical Integrated Carbon Financing Model (ICFM)

However, carbon regulatory framework could be applied to investments which provide stream of revenue to the investors that individual governments can benefit from such investments through costs and revenue flow for economic development.

Therefore, all these will depend on the competitiveness strategies such as competence, attitude and market share commended by companies and SMEs. Governments need revenue and societies need income to improve on their standards of living. The business systems in finance and markets where major production systems to be supported with minimal marketing strategies in carbon markets are not different.

In conclusion the ICFM puts into 3 pillars:

- 1 Revenue generation for the country economy
- 2 Generating participation for niches and segments in society to benefit from carbon trade
- 3 Helping developing sub Saharan African countries initiatives adapt carbon trade actions for wider capital and market gains.

The overall goal of the mode is to initiate appropriate and integrated approach to carbon trade to increase benefit for societies, SMEs and companies for improved livelihoods.

Suggestions for further research

How to use different discount strategies for carbon investments?

What might be done to create sustainable carbon market alternatives for investors with the right risk-reward profiles?

What benefits exist between Control Approach and Equity Share Approach ownership of GHG emission in case of Uganda's markets.

How could we predict and manage the risks associated with sudden changes in carbon exposures.

6.3 Conclusions

In the view of the findings of this study made the following conclusion.

Critical success strategies for Competitiveness of corporate carbon reduction emissions strategies are determined by employee emission reduction strategies. Therefore, it's those companies that will consider human resources capacity building for competence and change of attitude in these companies will benefit from carbon emission reduction strategies and such strategies will target carbon markets and systems competitively.

Corporate strategies contribution to GHG emission reduction activities for sustainable development is at the centre of debate. Inadequate employee emission reduction strategies will undermine principles of carbon finance mechanism and leading to the failure of describing critical features of emission reduction strategies for SMEs in Uganda.

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Appendix 11: Study Questionnaire

Appendix B

QUESTIONNAIRE

Please this questionnaire is **ONLY** for research. The Researcher is a MBA student of Uganda Christian University. Answer by **Ticking ONLY One** company or mention any other where appropriate.

- . SPGS Company
- . Uganda Nile Breweries- SaB Miller
- . Coca cola Uganda
- . Any other company please specify e.g. Stanbic.....
- . Personal Data
- . Sex a) Male b) Female
- . Age
- a) 18-30 b) 31-40 c) 41-50 d) above 51
- . a) Choose the category of the company
- a) Small b) Medium c) large
- . How long have you worked with/known this company
- a) less than 1 year b) 1-4 years c) 5- 7years d) 8-10 year
- . What is your current position in this company?
- a) Administrator b) Technician c) Director d) Planner e) Constomer
- . Company Data
- . How long has the company been in existence?
- a) Less than a year b) below 5 years c) 15-20 years d) 11-15 years e) 5-20 years f) above 20 years
- . What is the total number of employees in the Company?
- a) Below 50 b) 51-100 c) 100-150 d) 151-200 e) above 200
- . Are you aware of any of these words **yes/NO** if **yes** Tick?

a) Carbon credit b) Carbon financing c) Climate change

9. How is the company or group you know of engaged in climate change with stakeholders.

10. Are you aware of the carbon trading system? **Yes /No,**

If Yes, a) CDM b) VCM c) REDD d) others.....

11. Does your company apply the carbon trading systems? **Yes/No** if **yes** mention

12. What are the major investment areas of this company?

a) Production b) Marketing c) Transport d) Farming e) Research

13. What are the company energy sources?

a) Fire wood b) Electricity c) Petrol d) Diesel

14. What could be the source of funding?

a) Private carbon developer b) Multilateral/bilateral donor c) Private business, d) International NGO e) Faith based organization f) Government g) Local/national company h) Commercial bank i) Insurance company

15. Tick some of climate change practices you know which is supported by the company. a) Product labeling b) Public messages c) Tree planting d) Composite use e) Energy saving practices, f) Packaging j) any other

Please use the scale below to respond to the issues in the tables in the sections B, C, D, E that follow, CIRCLE the appropriately.

Strongly agree	Agree	Disagree	Strongly disagree	Not agree
	4	3	2	1

Section .B Company factors

1	The company has Plans are there for investment for SMEs	5	4	3	2	1
2	The company budgets are there for investment in agriculture	5	4	3	2	1
3	The company budgets are there for investment in tree planting	5	4	3	2	1

	Company budgets are there for investment in climate change related research	5	4	3	2	1
	Company Plans are there for investment in energy	5	4	3	2	1
	Company Plans are there for investment in water					
	Company puts emphasis over climate change management practices?	5	4	3	2	1
	Company structure and marketing strategies consider carbon financing in planning	5	4	3	2	1
	Company has systematic procedures for monitoring and controlling energy and fuel consumption?	5	4	3	2	1
0	Top management is directly involved in implementation of innovations related to carbon emission reduction	5	4	3	2	1
11	The company has a carbon/energy reduction target(s)?	5	4	3	2	1

Section C Employee factors

1	Am aware the company strategy facilitate carbon financing opportunities	5	4	3	2	1
2	I believe climate change is an issue among our customers	5	4	3	2	1
3	Am aware of that shorter production life cycles key to carbon reduction and save company operations cost	5	4	3	2	1
4	I am planning climate change related activity or campaign in the next 4 month	5	4	3	2	1

Section D Customer factors

1	I like some company products because they support climate change	5	4	3	2	1
2	I will buy more of these products if labeled with climate change					
3	I remember this company products because they are labeled with carbon emission reduction symbol	5	4	3	2	1

I can order more stock with this company label with climate change information.	5	4	3	2	1
Am a member of a group on climate change issues	5	4	3	2	1
Carbon trade can improve our livelihood as customers	5	4	3	2	1

Section E. Policy factors

Am aware of the climate policies	5	4	3	2	1
Company has a climate change policy?	5	4	3	2	1
Am aware of the international carbon financing policies	5	4	3	2	1
Participated in country climate change financing strategy setting	5	4	3	2	1
Country carbon regulatory framework will reduce on costs involved in carbon trading systems					
Financial institutions not skilled in carbon trade	5	4	3	2	1
There is no carbon regulatory framework for financing firms can be recognized for carbon finance.	5	4	3	2	1
Am aware the carbon financing activities	5	4	3	2	1

Market share factor

Insurance opportunities for carbon trade can be supported	5	4	3	2	1
The current carbon market systems its hard for the stakeholders engagement in carbon trade	5	4	3	2	1
Country carbon regulatory framework will reduce on risk/costs involved in carbon trading systems	5	4	3	2	1
Variation in carbon regulatory regimes from one country to another increases the problems in carbon market	5	4	3	2	1
Company support to climate change has boosted our market share	5	4	3	2	1

mpetency factors

Always emissions and reduction performance communicated to relevant stakeholders?	5	4	3	2	1
We are competent in handling issues involving carbon trading	5	4	3	2	1
I utilize effectively the climate change issues when marketing company products	5	4	3	2	1
I receive training on carbon issues	5	4	3	2	1
Am aware of the strategies/plans on climate change	5	4	3	2	1

Attitude factors

Am aware the company produces carbon free products	5	4	3	2	1
I attach my desires on climate change issues	5	4	3	2	1
We have interest in the company products for its climate change related policy	5	4	3	2	1
I know the products of this company well because it engages in climate change activities.	5	4	3	2	1

Appendix III: Masters Research Projects and Publications

1. Carbon Trade Financing: Strategies and Opportunities for Competitiveness of Private Sector SMEs In Uganda, American Scientific Research, *Journal of Technology And Investment, Journal of Investment and Technology, American Scientific Research* November 2012.
2. Employee Factors rather than Customer Factors Drive Corporate Carbon Financing Strategies in Uganda, paper presented at Hotel Imperial Royale Kampala. Makerere University Business School (MUBS) in Partnership with the Human Resources Managers' Association of Uganda (HRMAU) 17th Annual International Management Conference Theme: "Transiting to a Medium Income Economy for African Countries September 10-12, 2012.