

**RELEASE FORM**

**Name** Sithole Guest Shingayi

(R111365E)

**Title of Project** An analysis on the trends in the adoption and implementation of environmental accounting practices and reporting manufacturing industry. A Case of Central African Cables (CAFCA) Ltd.

**Program** Bachelor of Commerce Accounting Honours Degree

**Project Supervisor** Mr J Satande

**Year** 2014

Permission is hereby granted to Midlands State University Library to produce copies of this project and to lend or sell for private, scholarly or scientific research purposes only. The author does not reserve the publication rights and the project nor may extensive extracts from it be printed or otherwise reproduced without the author's written permission.

SINGED BY: .....

DATE.....

## **APPROVAL FORM**

The undersigned certify that they have read and recommended to the Midlands State University acceptance of a project /dissertation entitled; **An analysis on the trends in the adoption and implementation of environmental accounting practices and reporting in manufacturing industry in Zimbabwe. A Case of Central African Cables (CAFCA) Ltd.** Submitted by Sithole Guest Shingayi student reg. number R111365E in partial fulfilment of the requirements for the Bachelor of Commerce (Hons) degree in Accounting.

SUPERVISOR:..... DATE...../...../2014

**(Signature)**

CHAIRPERSON:..... DATE...../...../2014

**(Signature)**

EXTERNAL EXAMMINER:..... DATE...../...../2014

**(Signature)**

## **DEDICATION**

To my beloved parents, Mr and Mrs Sithole, for their support, advice and love .May the almighty GOD abundantly bless you.

## **ACKNOWLEDGMENTS**

My gratitude goes to God ,for giving me life and the privilege to get this far ,May his name be exalted forever for he is awesome. My utmost and humble appreciation goes to my academic supervisor Mr J Satande for his patience , meaningful ideas and positive criticism from the beginning to the end of the project. I am thankful to the Finance Executive Mrs C Kangara, Finance Manager Mr T Nyahuye the Chief SHE dept Engineer and Practitioner Mr G Mavhera among other senior executives for granting me the permission to carry out the study and for access to confidential documents which played a pivotal role throughout the study.

I fully appreciate the assistance and unwavering support from my friends ,Henry Ndlovu ,Phillipa Juawo ,Rufaro Gwanzura ,Flora Muuzhe and Christopher Chinofunga.Profound gratitude goes to my family members special thanks to Faith ,Felix ,Cathrine ,Tonderai and Lavender for their inspiration, advise and financial support .

Acknowledgements are also extended to CAFCA Ltd staff members for their cooperation and willingness to directly participate in the project as respondents .Their knowledge ,opinions and ideas made the project a success .May the Good Lord bless them all.

## ABSTRACT

The study analysed the trends in the adoption and implementation of environmental accounting and reporting at CAFA Ltd in Zimbabwe. Emphasis was placed on environmental accounting practises which include elaboration of environmental budgets and calculation of environmental costs. Reporting on environmental costs, liabilities revenues and contingencies was also analysed. Major factors influencing the adoption and implementation of environmental accounting and reporting pertaining to the organisation was to be determined from a pool of factors established by prior studies which include size, industry type ,board composition ,internal organisational interests and pressure from stakeholders. The research aimed at providing a contribution to existing literature in addressing the debate on how organisations are incorporating environmental accounting and reporting given the current situation. The current situation is that environmental law has gained prominence yet there is no mandatory GAAP standard pertaining the accounting and reporting of environmental financial information. Companies engaging into environmental accounting and reporting are doing so voluntarily. In past researches ,environmental costs and liabilities ,revenue and assets have been referred to as environmental related issues without specific terms .Literature have criticised the accounting profession for being reluctant ,uncommitted and slow in adopting and implementing environmental accounting and reporting despite efforts by the big four accounting firms (Pwc,Ernest and Young ,Delloite and KPMG) of carrying out surveys on the environmental accounting and reporting as an emerging issue in the accounting system. The researcher used both primary and secondary sources to collect data so as to establish trends in the adoption and implementation of environmental accounting and reporting. The study employed techniques such as interviews and questionnaires to accounts department, SHE dept, senior executives and other employees so as to achieve the objectives and coming up with informed conclusions. Statistical methods were used to for diagnostic tests for significance of data so as to ensure validity and regression models were employed to analyse the relationship between level of adoption and factors influencing adoption and implementation. Findings indicated that the level of adoption and implementation is still an ongoing process in its early stages as only four of the eight accounting practises which the researcher had posed as standard accounting practises were adopted by CAFCA Ltd. Reporting on financial environmental information is low and shows evidence of inconsistency and in sufficiency. Absence of a costing system to complement the traditional despite that these costs are recognised calculated and budgeted for independently of other costs for instance administrative, general and distribution costs. The accounting staff is involved in eco –budgets and the calculation of costs and investment appraisals associated with the environment however from the impression obtained from findings classification of these costs as environmental borne lies with the SHE department. Having identified the research findings for the area under investigation the researcher came up with a number of recommendations which include adopting and implementing more environmental accounting practises and adopt reporting strategies such as the popular Global Reporting Initiative .Research and development committee to enhance the existing practises .The researcher also suggested area for further research as ,identification of factors hindering the adoption and implementation of environmental accounting and reporting and also measures that can be implemented to encourage high adoption and implementation grades.

## LIST OF TABLES

<b>Table</b>	<b>Title</b>	<b>Page</b>
2.1	Popular Articles Published on environmental accounting.....	25
3.1	Target population and sample size.....	31
3.4	Measurement of independent and dependent variables.....	37
4.1	Questionnaire response rate.....	40
4.2	Interviews response rate.....	41
4.3	EAP index.....	42
4.4	Grades awarded to cafca.....	43
4.5	Descriptive statistics.....	45
4.6	Frequency analysis.....	45
4.7	Regression results.....	45

## LIST OF FIGURES

<b>Figure</b>	<b>title</b>	<b>page</b>
1.1	Stakeholder relationship diagram.....	6
1.2	Conceptual framework.....	8
4.1	Level of communication between SHE and accounting department.....	47
4.2	Level of integration with other management functions.....	48

## **LIST OF ACRONYMS**

<b>CAFCA</b>	Central African cables
<b>EIA</b>	Environmental Impact Assessment
<b>EMA</b>	Environmental Management Agency
<b>GAAP</b>	Generally Accepted Accounting Practice
<b>GRI</b>	Global Reporting Initiative
<b>ISO</b>	International Organization for Standardization
<b>NSSA</b>	National Social Security Authority
<b>REA</b>	Rural Electrification Agency
<b>SABS</b>	South African Berua of Standards
<b>SAZ</b>	Standard Association Of Zimbabwe
<b>SHE Dept.</b>	Security Health and Environmental Department
<b>ZELA</b>	Zimbabwe Environmental Law Association



## Table of Contents

RELEASE FORM.....	1
APPROVAL FORM.....	2
DEDICATION .....	3
ACKNOWLEDGMENTS .....	4
ABSTRACT.....	5
LIST OF TABLES .....	6
LIST OF FIGURES.....	7
LIST OF ACRONYMS .....	8
CHAPTER ONE .....	12
1. 1 INTRODUCTION .....	12
1.2-BACKGROUND OF STUDY .....	12
1.3 PROBLEM STATEMENT .....	14
1.4 THE REASEARCH OBJECTIVES .....	15
1.5 RESEARCH QUESTIONS/HYPOTHESIS .....	15
1.6 SIGNIFICANCE OF THE STUDY.....	17
1.7 DELIMITATIONS OF THE STUDY .....	18
1.8 CONCEPTUAL FRAMEWORK .....	19
1.9 LIMITATIONS OF THE STUDY .....	19
1.10 DEFINITION OF TERMS.....	20
1.11 CHAPTER SUMMARY .....	20
CHAPTER TWO .....	21
2.0 INTRODUCTION .....	21
2.1 PURPOSE OF LITERATURE REVIEW .....	21
2.2 DEFINITION OF ENVIRONMENTAL ACCOUNTING .....	21
2.3 DEFINITION OF ENVIRONMENTAL ACCOUNTING PRACTISES .....	22
2.4 DEFINITION OF ENVIRONMENTAL REPORTING .....	23
2.5 THEORETICAL PERSPECTIVE ON ENVIRONMENTAL ACCOUNTING AND REPORTING .....	23
2.6 FACTORS INFLUENCING ADOPTION OF ENVIRONMENTAL ACCOUNTING PRACTISES AND REPORTING .....	26

2.7 ROLE OF THE ACCOUNTING PROFESSION IN ADOPTION AND IMPLEMENTATION OF ENVIRONMENTAL ACCOUNTING AND REPORTING .....	28
2.8 SIGNIFICANCE OF ENVIRONMENTAL ACCOUNTING-WHY CONSIDER ENVIRONMENTAL ACCOUNTING .....	29
2.9 SIGNIFICANCE OF ENVIRONMENTAL REPORTING AS COMPLEMENTARY TO CONVENTIONAL FINANCIAL REPORTING.....	33
2.10 ENVIRONMENTAL ACCOUNTING: CASE OF OTHER COUNTRIES .....	36
2.11 CHAPTER SUMMARY.....	38
CHAPTER THREE – METHODOLOGY .....	39
3.0 INTRODUCTION .....	39
3.1 PHILOSOPHY FRAMEWORK-POSITIVISM.....	39
3.2 RESEARCH DESIGN .....	40
3.3 TARGET POPULATION .....	42
3.4 DATA PRESENTATION AND ANALYSIS PROCEEDURES .....	48
3.5 CHAPTER SUMMARY.....	51
CHAPTER FOUR –DATA ANALYSIS AND PRESENTATION .....	52
4.1 INTRODUCTION .....	52
4.2RESPONSE RATE.....	52
4.3 DEMOGRAPHIC CHARACTERISTICS RESPONSES .....	53
4.4 FINDINGS AND DISCUSSION .....	54
4.5 CHAPTER SUMMARY.....	63
CHAPTER FIVE CONCLUSIONS AND RECOMMENDATIONS .....	64
5.1 INTRODUCTION .....	64
5.2 CONCLUSIONS .....	65
5.3 RECOMMENDATIONS .....	67
5.4Suggestions for further studies .....	68
REFERENCES.....	69
APPENDIX 1 .....	75
Regression.....	75
APPENDIX 2.....	78
QUESTIONNAIRE 1 SHE DPT .....	78
APPENDIX 3.....	81
QUESTIONNAIRE 2 FOR FINANCE DPT.....	81
APPENDIX 4.....	85

INTERVIEW GUIDE..... 85  
APPENDIX 5..... 87  
INTERVIEW GUIDE- ..... 87  
Finance Department ..... 87

## **CHAPTER ONE**

### **1. 1 INTRODUCTION**

This chapter put the research into context .It outlines the key areas of the research as well as limitations of the study.

The chapter constitutes the background of study, Statement of the problem, main research objectives, sub research objectives, justification of the study hypothesis, delimitations and limitations .It also constitutes the definition of abbreviations and key terms, conceptual framework, conclusion and summary of the chapter.

### **1.2-BACKGROUND OF STUDY**

In 1987, the United Nations Commission on environment and development (the Brunt land Commission) drew attention to the fact that economic development often leads to deterioration not improvement in the quality of people's lives. The Commissioner therefore called for a form of sustainable development which meets the needs of the present without compromising the ability of future generations to meet their own needs (United Nations World Commission on environment and development 1987).In line with these evolutions the International Organization for standards have accredited standards useful in environmental aspects.(Bengt and Steen) asserted that the forces driving the internalizing of environmental costs in companies are increasing. The identification of such costs is not a straight forward task as they are major differences between how different people understand the borders of the system environment. However they also purports that it maybe comparatively easy to identify them but to account for such costs is difficult and allocation maybe arbitrary. Prior studies have tested and considered environmental aspects with disclosure.Cooke and Hannifa (2005) emphasized that many researches carried out on environmental accounting were in developed countries. The first country to establish and report on environmental accounting was Norway in early 1970.In early 1990 the world bank reviewed countries ,the resulting report was listing countries which were ongoing developing environmental accounting and reporting and among those was New Zealand ,Hong Kong and Germany (Intonsai Working Group On Environmental Accounting 2010).In Africa , Nigeria researches on Environmental accounting established that environmental

accounting in companies is crucial and information to be disclosed include environmental costs, environmental liabilities ,assets and contingent liabilities (John Akahaiye, 2009). Other researches are in Botswana. Despite previous studies literature shows that there is lack of empirical research on environmental accounting and reporting (Bouma et al 2000).

The growth of environmental legislation has affected business operations as well as financial reporting. In Zimbabwe the issue of environmental law is topical, the emergence and improvement of Environmental Management Agency (EMA), Environmental Impact Assessment (EIA) and Zimbabwe Environmental Law Association (ZELA).

Environmental Laws have raised great concern in the cable manufacturing industry as manufacturing involves carbon emissions, noise and esthetic impacts, waste disposal and water, land and air pollution. In accounting, these have influenced the need to consider environmental costs. Environmental costs are important in that identifying such costs help in accurate product costing, pricing and profitability. Poor behavior and non-compliance result in increases in liabilities such as fines thus negatively affect profits and corporate image. In Zimbabwe there is screening and companies are classified into bands which categorize them on how much they should reemit to regulatory agencies based on the amount of environment pollutant its processes emit based on the polluter payer principle (EMA Act).

CAFCA Ltd is the sole manufacturer of electric and transmission of electric cables in Zimbabwe. It manufactures and supplies a wide range of electric cables and allied products primarily in Zimbabwe and exports to neighboring countries Zambia, Malawi and Botswana .As the sole manufacturer its customers rely on them for all their requirements. Business at the organization has increased due to a number of programs listed below.

- The governments' rural electrification program –This has given rise to another customer Rural Electrification Agency (REA).
- Growth of Telecommunication Industry –The organization supplies fiber optic cables, flexible cords for mobile electrical equipment to Telecel Zimbabwe ,Eskom Malawi
- Growth of Construction Industry –This influences the manufacture of domestic house wiring cables.

- Development of the mining Industry –In Zimbabwe a large portion of the state’s revenue is expected to be generated from the mining sector as illustrated by the Minister Of finance in his speech. CAFCA supply heavy underground armored cables to mining companies such as Zimplats and Marange resources. The mining Sector Constitute 25% of the total customers.

The programs have resulted in the organization to extensively manufacturer cables and operate on 2 shifts i.e. day and overnight shift to meet customer targets. The extensive operations calls for concern to the environment aspects as operations involved in cable manufacturing include melting casting wire, graphite flake recycling, maintaining melting and holding furnace, scrap copper recycling, use of charcoal for energy and waste water disposal. The processes gave rise to environmental costs that the company have since been investing in to protect the environment as well as the employees’ safety. The costs include inspection costs, environmental certification and labeling costs, environmental research and development and employee safety and health costs. It has invested in effluent water analysis for safe water of the employees, the service providers being Standard Association Of Zimbabwe (SAZ) and Scientific and Industrial Research and Development Centre (SIRDC). It established a clinic at the company premises, training of personnel by SAZ, SABS and NSSA Inspectors. The organization prides in excellence thus it has the following certification of environmental standards ISO 14001 which it was accredited in 1999, ISO 9001, ISO 9002, SABS ISO 14001. In 1999 CAFCA became the first cable company in sub –Saharan Africa to be awarded the environmental standard. The certification ,training and compliance fees involves heavy cash outflows. The absence of International accounting Standards on environmental accounting leaves a gap on how organizations are treating such costs as well as how the environmental issues are included in financial reporting and disclosure. Accordingly the research seeks to find out efforts done by the firm in adopting and implementing environmental accounting practices as well as the reporting and disclosure since 2011-2013.

### **1.3 PROBLEM STATEMENT**

Conventional cost accounting approaches have become inadequate since they tend to ignore essential environmental accounting practices such as inclusion of such costs in product costing,

pricing and profitability. It must be recognized that most management accounting techniques significantly underestimate the cost of poor environmental behavior while others overestimate the cost and underestimate the benefits of improving environmental practices.. CAFCA Ltd has implemented systems to try and comply with environmental laws but in order to come up with true cost accounting and useful financial statements to environmentalists, shareholders, environmental regulatory agencies, and potential investors to what extent are environmental accounting practices implemented and what factors influence the adoption and implementation of environmental accounting and reporting. Accordingly the argument is what efforts has the organization embarked on adopting and implementing environmental accounting practices and reporting of environmental financial issues.

#### **1.4 THE REASEARCH OBJECTIVES**

1. To evaluate whether CAFCA Ltd have adopted and implemented any environmental accounting practices adequately and the extent to which these are embraced.
2. To determine the extent to which adoption of environmental accounting and reporting is determined by board composition, internal organizational interest, pressure from stakeholders and company profile?
3. To evaluate the level of efficiency of communication between SHE department and Accounting department in budgeting and planning for environmental issues.
4. To determine the extent to which environmental costs are traced independently from administrative, operating and general expenses and incorporated in product pricing and costing.
5. To determine the extent to which environmental issues are applied in management functions such as decision making, strategic planning and performance management.

#### **1.5 RESEARCH QUESTIONS/HYPOTHESIS**

1. Which environmental accounting practices have been adopted by the organization to ensure that environmental accounting forms part of the accounting function?
2. What factors mainly influence the adoption and implementation of environmental accounting practice and reporting in your organisation?

3. Are environmental issues discussed between the accounting department and SHE department and to what extend?

4. Are environmental costs traced independently from administrative .operating and general expenditure?

5When conducting other management functions is environmental accounting and reporting taken into consideration?

### **Hypothesis**

### **Stakeholder Theory**

The theory outlines how management can satisfy the interests of stakeholders of a business. It addresses morals, ethics and values in business management. A stakeholder is ‘any group or individual who can affect or is affected by the achievement of an organization’s activities (Freeman, 2003). The theory argues that managers have a moral obligation to consider and appropriately and balance the interest of all stakeholders.



## Stakeholder Relationship Diagram

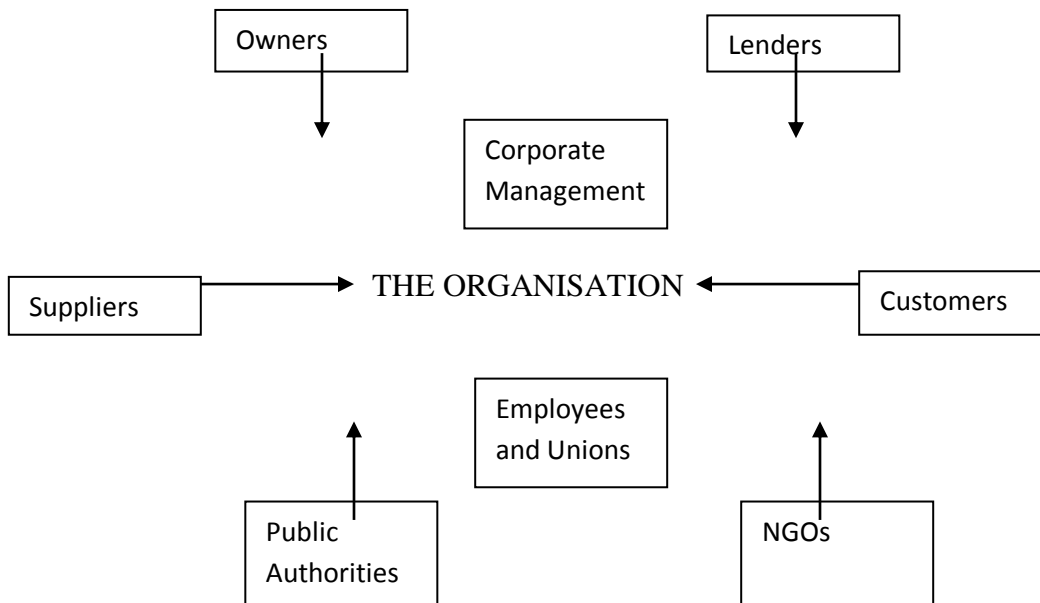


Figure 1.0 - (Based on Thomasson 2005)

CAFCA Ltd is an organization of high standards listed on the Zimbabwe, Johannesburg and London Stock Exchanges involved in importing and exporting as well. The firm has a number of influential stakeholders therefore it can be hypothesized that;

### **Hypothesis 1**

- i. H<sub>1</sub>: CAFCA Ltd is a company of high profile with a number of influential stakeholders it has adopted environmental accounting practices and provides relevant reporting and disclosure on its environmental accounting financial concepts.

## **1.6 SIGNIFICANCE OF THE STUDY**

### **1. to the student**

The research is worthwhile as it is done in partial fulfillment of the degree program and it equips the student with researching skills for further research.

## **2. to the institution Midlands State University**

The filing of the project adds value to researches by the institution. It provides reference to other scholars and influences the accounting department to conduct more lessons on the environmental costing subject area. Education on environmental accounting will help the institution in developing intellectual ability of accounting students.

## **3. to the organization CAFCA Ltd**

The research will influence the organizations to base their operations on gathered data which has evidence rather than working on assumptions or uninformed data. The research can be employed for benchmarking.

### **1.7 DELIMITATIONS OF THE STUDY**

The study is limited to CAFCA Ltd which is located in Harare. The target population from which data is expected to be derived from is CAFCA employees, accounting department, senior executives safety and health department. Responses from the targeted population have a bearing on the quality of information gathered.

## 1.8 CONCEPTUAL FRAMEWORK

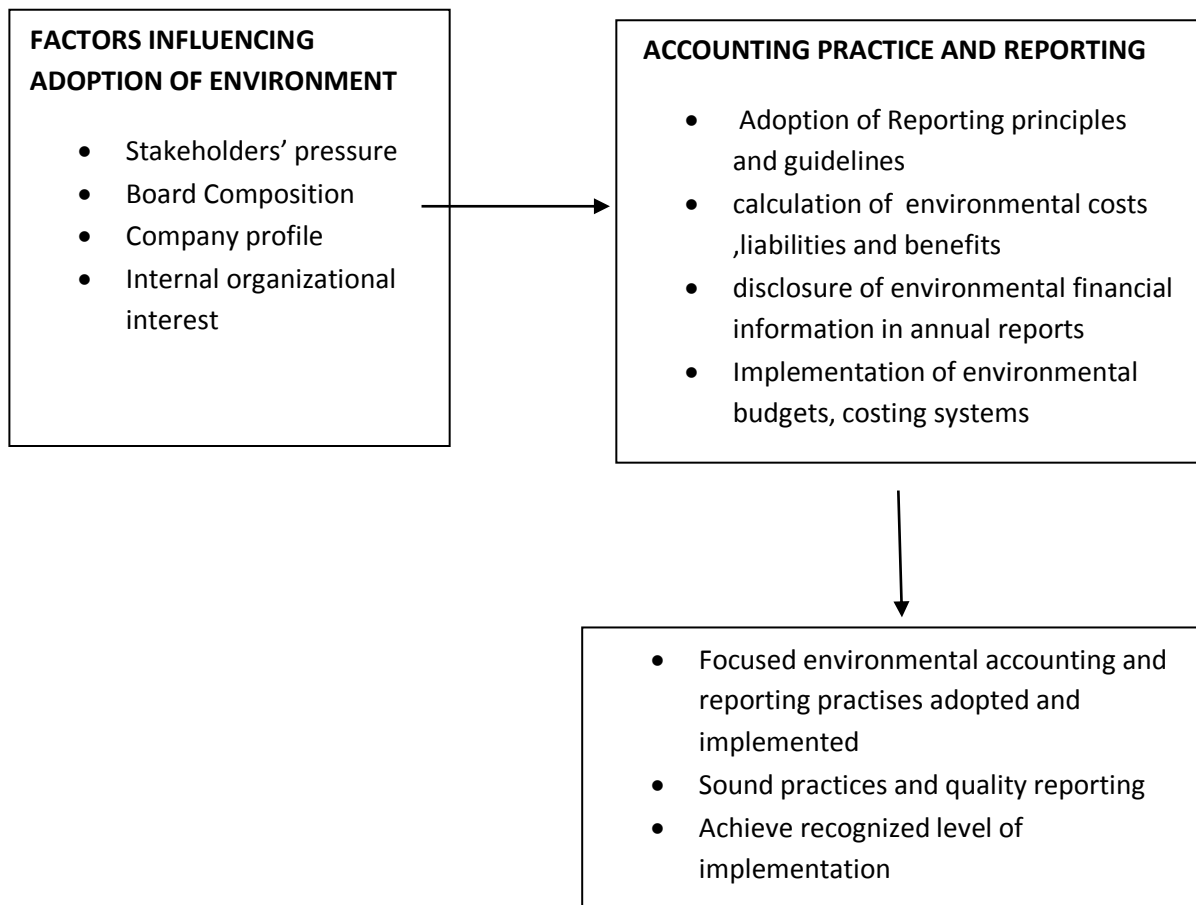


Fig 2 Adapted From Frost and Toh 1998

## 1.9 LIMITATIONS OF THE STUDY

The study could be limited by finances to travel to the firm .The student has to be very economical at all course and have to prioritize demands of the research.

The study could be limited to time and programs in the firm.

The study could be limited by the competence of employees in responding to various research questions. Employees on the production floor may not be willing to provide information therefore inclusion of supervisors and managers is essential as they may not be reluctant to respond to questions.

#### **1.10 DEFINITION OF TERMS**

**Environmental Accounting** –Is a method of accounting that traces direct and indirect costs about the possible environmental issues.

**Financial Reporting** –Inclusion of an item in the financial Statements

**Financial Disclosure**-The furnishing of descriptive information about an item in the financial statements.

#### **1.11 CHAPTER SUMMARY**

Chapter one gave an insight into the study by revealing a brief background of the problem under study. The study highlighted objectives and research questions that encompass the whole purpose of carrying out the study. Without limitations and delimitations, the study couldn't be a reality hence they are also part of the chapter. The key definitions in the study were defined, with the justification of the study being outlined as well. The next chapter explores the related literature that others writers have propounded concerning the subject under review.

## CHAPTER TWO

### 2.0 INTRODUCTION

This chapter reviews literature written by others on the key concepts of the study. It will focus on the environmental accounting aspects in manufacturing industries worldwide including Zimbabwe the main area of the study. Information from published books ,journals(local and international),reports from environmental agencies and accountants boards and any other authentic sources from the internet will be put into use to identify research gaps and overall implications of the existing information.

### 2.1 PURPOSE OF LITERATURE REVIEW

Literature review is a body text that aims the critical point of current knowledge including substantive findings as well as theoretical and methodological contributions to a particular topic (Hart C, 2008).The objective is to discuss the main aspects of the research problem as found in literature. The areas of agreement, disagreement, similarities and differences in prior studies give the researcher insight of addressing the problem under investigation.

### 2.2 DEFINITION OF ENVIRONMENTAL ACCOUNTING

Environmental Accounting is the art of accounting encompassing any of the three aspects (Bebbington 1997);

1. **Management Accounting (MA)** entails the identification, collection, estimation, analysis, and use of cost, or other information used for organizational decision-making.
2. **Financial Accounting (FA)** comprises the development and organizational reporting of financial information to external parties, such as stockholders and bankers. Environmental Financial Accounting (EFA) builds on Financial Accounting, focusing on the reporting of environmental liability costs with other significant environmental costs.
3. **National Accounting (NA)** is the development of economic and other information used to describe national income and economic health. Environmental National Accounting (ENA) is National Accounting focusing on the stocks of natural resources, their physical flows, environmental costs, and externality costs.

For the purposes of this study the MA and FA aspects are considers. In the same breath other prominent and well known researchers define environmental accounting as the entire domain of accounting for the environment including financial accounting, reporting and auditing and

environmental management accounting (Bartolommeo et al 2000). Environmental accounting is a course or subject that investigates how environmental issues affect traditional accounting disciplines. Environmental accounting is an inclusive field of accounting that provides the reports for both internal use (generating environmental information which can be used in management process of decision making) and for external use disclosing environmental information to the public.

### **2.3 DEFINITION OF ENVIRONMENTAL ACCOUNTING PRACTISES**

Environmental management accounting is the generation and analysis of both financial and non-financial information in order to support internal environmental management processes. It is complementary to the conventional financial management accounting approach, with the aim to develop appropriate mechanisms that assist in the identification and allocation of environment-related costs (Bennett and James (1998), Frost and Wilmhurst (2000). Consequently Frost and Toh (1998) in their paper came up with an index of environmental accounting practices listed below

- Elaboration of environmental Budgets
- Calculation of environmental costs
- Elaboration of environmental accounting indicators
- Allocation of budgeting funds to environmental projects and initiatives
- Accounting recognition of environmental issues
- Disclosure of environmental information in annual reports and independent sustainability reports.
- Direct participation of the Accounting Department in the elaboration and disclosure of the Environmental report
- Disclosure of environmental financial information in reports and publications other than Annual Report

Accordingly environmental management can be viewed as the management of environmental and economic performance through the development and implementation of appropriate environmental related accounting systems and practices. While this may include reporting and auditing in some organizations, environmental management accounting typically involves life cycle costing, full cost accounting benefits assessment and strategic planning for environmental

management. In this study the environmental accounting practice index developed by the researcher will be regarded as a benchmark for a standard adoption of environmental accounting practice adequately.

## **2.4 DEFINITION OF ENVIRONMENTAL REPORTING**

A broad view of environmental reporting includes the reporting on liabilities, contingences, capita market and reactions to accounting taxes (Lally 1998). Burritt et al (2001) stated that there is still no precision in the terminology associated with environmental reporting. They asserts that environmental reporting can be viewed as being an application of financial accounting that is concerned with generating and revealing information for internal and external use. In yet another definition it is defined as an accounting concept which deals with recognizing and disclosing of a company's environmental costs and liabilities in financial reports.

It can also be defined as an environmental management strategy to communicate with stakeholders(Deegan 2007).

## **2.5 THEORETICAL PERSPECTIVE ON ENVIRONMENTAL ACCOUNTING AND REPORTING**

### **Stakeholder Theory**

Stakeholder theory 'focuses on the various stakeholders groups within society (Ratanajongkoletal 2006). This theory is used 'as a basis to analyze those groups to whom a firm should be responsible' (Moir, 2005). A stakeholder is 'any group or individual who can affect or is affected by the achievement if the organisation objectives (Freeman, 2003). According to Freeman (2003) the theory argues that mangers have a moral obligation to consider and appropriately balance the interest of all stakeholders. The reporting entity should identify its stakeholders and explain in the report how it has responded to their expectations and interests.

According to (Wilmhurst 2007) any individual or group (e.g. employee, customer, community, government and regulators, shareholders, supplier) with an interest in the activities of the firm would be identified as stakeholders. To portray an image of conductive responsible operations and activities, companies can engage in environmental accounting and reporting (Ax Johansson and Kullven, 2005) .According to Deegan (2005) stakeholder theory has two branches, which are;

1. The managerial branch
2. The ethical branch

### **Ethical Branch**

This branch argues that all stakeholders have “a right to know about environmental implications of an organisations operations at all times” (Deegan et al 2005). Gray et al., (2010) argues in support of the idea and asserts that environmental information should be disclosed to all stakeholders. The information needs of stakeholders have to be provided so as to satisfy the purpose of annual reports as well as enhancing the financial statements.

### **Managerial Branch**

This branch suggest that entities will respond to those stakeholders who have necessary economic impact upon the organisation or those who are not directly engaged in the entities economic activities, but have an interest in the actions of the organisation and are able to influence it (O Dwyer, 2003 ) . Accordingly stakeholder theory would lead to an expectation that firms would be guided in their reporting of environmental costs and benefits either to reflect the development and implementation of their environmental accounting or to address the regulations of regulatory agencies. Thus the theory postulates that companies would be anticipated to consider stakeholders such as Environmental Management Agency (EMA), government regulators or .environmentalists investors and potential investors.

### **Legitimacy Theory**

The theory outlines that entities are anticipated to act in a socially acceptable manner so as to access resources, gain approval of their goals and places in the society and guarantee continued existence through good corporate image (Guthrie and Parker, 2008). This theory recognizes that entities persistently seek to ensure that they are perceived as operating within the bounds and norms of their respective societies, that is they attempt to ensure that their activities are perceived by the society as legitimate. Information disclosure is therefore vital to establishing corporate legitimacy (Deegan, 2006). From the theories point of view, it can be concluded that entities can develop environment accounting only to legitimize as environmental issues have gained prominence in the past two decades (ACCA).



As such organization's engage with external environmental agencies and regulators stakeholders to demonstrate that they operate within the bounds of society and behave within legitimacy to the extent that their activities are transparent and congruent with societal expectations and managers are fully accountable for their decisions (Mathews, 1993). In this context several empirical studies provide evidence of environmental accounting and practice adopted by companies to address legitimacy theory ( Cho & Patten, 2007; Cho, Freedman, & Patten, 2012). In parallel to this thought other academics agree that drivers for adoption of corporate environmental accounting and reporting depends on organizational interests and policies. According to this line of thought, companies incorporate environmental accounting aspects into their internal business strategies because of the potential financial benefits related to environmental performance. These business-case arguments contend that firms engaging in environmental activities are rewarded by the market in monetary terms (Carroll & Shabana, 2010; Schaltegger, Ludeke-Freund, & Hansen, 2012). These pose a gap in literature and areas of disagreements on the main factors influencing adoption and implementation of environmental accounting and reporting in firms.

### **Institutional Theory**

Institutional theory assumes that managers of an organisation will develop or adopt new practices (such as environmental accounting and environmental reporting) as a result of a variety of institutional pressures. The theory postulates that managers may be anxious that if they do not adapt to fast and rapid changes and developments, they will risk disapproval from some of their economically powerful stakeholders.

According to Scott (2004) institutions are social structures that have attained a high degree of resilience and also rules the predetermined pattern of conduct that are generally accepted by individuals in society. Environmental institutions include internal structures and rules such the organisations environmental policy and management and formal external rules such as environmental legislation and regulations for example EMA. Institutional theorists (such as Meyer and Rowan, 1997; DiMaggio and Powell, 1983, 1991; Scott, 2008) suggest that a range of legitimacy pressures lead to organisations adopting particular reporting structures (such as environmental reporting). Formal organizations would be required to adopt practices from the institutional theory point of view. This is correlated to the findings of (Guthrie and Farneti 2008

)who supports that environmental reporting was more driven by internal organisational interests rather than external legitimacy.

## **2.6 FACTORS INFLUENCING ADOPTION OF ENVIRONMENTAL ACCOUNTING PRACTISES AND REPORTING**

Legitimacy theory predicts that companies adopt environmental reporting to legitimize their operations when society's norms and expectations of the business entities change or the business entities perceive themselves in breach of existing norms and expectations of society (Deegan 2002; Deegan and Blomquist 2006). However prior researches postulates that regulations and societies expectations are not the only determinants of an organization's behavior on environmental accounting and reporting but also recognizes the factors discussed below ;

- **Corporate governance(board composition)** factors found to be associated with adoption of environmental accounting practices and reporting according to Cooke and Hanniffa (2000) and (2005) include; proportion of non-executive directors, ownership structure, proportion of chairman with multiple directorship, proportion of family members on board, existence of audit committee, foreign share ownership, existence of dominant personalities, and so on. Other studies agreed that as well, such as (Kelton & Yang 2008).

A non-executive director is one of the most important characters in corporate governance. In fact, corporate governance processes are a strategy which aims to closing a perceived legitimacy gap between shareholders and management via non-executive directors (Cooke & Hanniffa 2005). Thus, non-executive directors should not just encourage companies to act in the best practices of maximizing profits but rather be flexible and accept change and be directly.

- **Size of the entity** may influence the development of environmental management accounting practices and the disclosure of such information. The institutional theory emphasizes that large firms tend to report more on environmental aspects than small firms (Kostova, Roth and Dacin, 2008). Organizational fields may be different from those of small firms because their size dictates that they will face different suppliers,

clients and political pressures ultimately resulting in formation of their own organizational field (Kostova et al. 2008).

**Industry Sector-** Milne (1996) classifies industries into two categories namely high profile and low profile industries. Consistent with past studies, the agriculture, forest and paper, automobile, airlines, mining, metal, oil, utilities, chemicals, banking and finance industries are classified as high profile industries (Hackston & Milne 1996; Roberts 1992;).The consumer goods, construction and property, service, food, retail, and other industries are recognized as low profile industries (Hackston & Milne 1996). Hackston and Milne (1996) postulates that high profile industries report significantly more relevant environmental information and adopt sound environmental accounting practices than low profile industries.

- **Foreign Ownership-**Organisations that are foreign owned has got pressure from a number of stakeholders therefore they are morally bound to adopt sound environmental accounting practices. Foreign parent companies register with different boards as members and quality environmental disclosure is anticipated to protect the perceptions of the society towards the organisation.
- **Stock Exchange Listing-**The stock exchanges have stringent rules that organizations have to comply with. The Johannesburg stock exchange is an example which put emphasis on environmental accounting and disclosure.
- **Political Visibility-** According to (Guthrie and Parker 1990) the political perspectives also has a bearing on accounting reports political and economic documents. They serve as a tool for constructing, sustaining and legalizing economic and political arrangements, institutions and ideological themes which contribute to the corporations' private interests. Annual reports and any other reports by firms have the capacity to transmit social, political and economic meanings for pluralistic set of report recipients.
- **Internal Organizational interests and Policies-**Corporate culture on environmental accounting and reporting has an impact on the adoption of environmental accounting as an emerging issue in business today (Adams 2002).An organization with an environmental policy has high probability of adopting sound environmental accounting practices and generate detailed environmental financial reports.

The other sophisticated factors include age of the company, net sales growth, professional certificates, life cycle stages, and number of employees (Munther B 2010)

## **2.7 ROLE OF THE ACCOUNTING PROFESSION IN ADOPTION AND IMPLEMENTATION OF ENVIRONMENTAL ACCOUNTING AND REPORTING**

The accounting academia serves a reasonably defined profession hence the education and research programmes in the accounting field normally are responsive to changing demands placed on the accounting professionals (Frederick Pratt ,1995)This implies that the accountants realizes and understand the role of accounting profession on the demands of environmental regulations that have gained prominence globally.

Corporate environmental management is relevant to all professional accounting designations, encompassing a wide range of accounting expertise from audit to strategic planning to the design of corporate environmental information systems. In the words of Johan Piet (1995), Chairman of the Environmental Task Force in Europe: “ It is impossible for an accountant, regardless of his specialization, to think and state that environmental issues are not relevant.” Accountants can no longer deny the impact of the environment on their work. Every accountant will be confronted with environmental accounting.”

Accountants should have direct interest in controlling and reducing environmental costs while increasing benefits (Freedman, M and B Jaggi 2003) .They have the necessary skills to;

- Monitor , measure and control costs
- Manage information systems so that the outputs are accurate and reliable
- Identify and plan financial budgets for improved projects
- Help formulate and implement strategy
- Provide highly regarded advise to be used in strategic planning and decision making

Environmental accounting and reporting offers an opportunity for accountants to develop the services they offer beyond the traditional core activities in the profession.

The big four accounting firms have developed frameworks that encompasses community ,environmental ,market places issues for a company that desired to provide more comprehensive reports to stakeholders(Delloite ,Ernerst Young,KPMG,Pwc 2011). Surveys by Price Waterhouse Coopers recently revealed that, most respondents with known exposure to environmental costs

and liabilities were increasing but reluctant or slow to record them in the financial statements. ACCA has published researches outlining an agenda for action on full cost accounting (Bebbington, Gray, 2001), which contains a detailed review of the business case for adopting full environmental costing. A number of countries have adopted environmental accounting and reporting as a core function of the accounting profession. However, despite such initiatives, other authors disagree that the accounting profession is not concerned with environmental accounting and environmental reporting. In a study by (Kuasitikun and Lodhiagues 2003) in their paper argues that there is evidence that accountants in developing countries are uncommitted or unattached when dealing with corporate and social environment practices.

Current accounting education is said to be deficient in addressing pressing issues of ethics and professionalism and it has had its fair share of criticisms Blomquis (2006 ). Regarded by some as thoroughly deficient (Zeff 1989; Albrecht and Sack, 2000). In yet another assertion, Bebbington (1995) claims that the accounting education process has overly emphasized the technical aspects of accounting and forms the basis for reporting.

## **2.8 SIGNIFICANCE OF ENVIRONMENTAL ACCOUNTING-WHY CONSIDER ENVIRONMENTAL ACCOUNTING**

The World Business Council for Sustainable development (WBCSD) postulates that pursuing a mission of environmental accounting can make firms more competitive ,more resilient to shocks ,nimble in a fast changing world and more likely to attract and hold the best employees and investors. It also avows that they are investors willing to finance organizations in adopting sound practices. Management functions such as decision making, performance management, strategic planning is assumed to bear relationship with environmental accounting and reporting. Identification of environmental costs is one of the key concepts of environmental accounting (WBCSD 1999).

Canadian Institute of Chartered Accountants (CICA, 1998) present environmental costs as environmental costs which generate, directly or indirectly benefits of the current period, the period in which they occur, providing a series of details in this regard. Examples are as listed below;

- Costs generating direct benefits of the current period- expenditure on waste treatment and monitoring, recovery or cleanup costs associated with current operations of the entity
- Indirect costs which generates the current period's benefits- the costs of administrative activities, compliance, evaluation and environmental audit, courses and seminars related to staff training on environmental protection
- Costs regarded as losses for the period- costs that do not generate future economic benefits that cannot be capitalized. Costs related to research performed to design cleaner products and processes, costs of participation in recycling programs, costs related to activities undertaken.

These are summarized as;

- Remediation cost
- Compliance costs;
- environmental permit;
- environmental monitoring;
- certification cost;
- labeling costs;
- Environmental management.
- Environmental driven research and development
- Training personnel costs
- Product quality costs
- Employee health and safety costs
- Environmental internal and external failure costs

Dolan (1980) states that whoever is responsible for damage to the environment should bear the costs associated with it. Zimbabwean legislation has a provision for the polluter to pay for the damages and the Environmental Management Agency

Identification of such costs assist in achieving true cost accounting and complete, accurate and reliable it also results in a number of non-quantitative benefits. These may include

- For ethical reasons
- Enhanced corporate image
- Ability to measure and control cost
- Goodwill changes –(impact on sales, recruiting and mortgage rates)

Contrary to the benefits arising as a result of adoption of environmental accounting practices and reporting, poor behavior may lead to severe adverse effects in business management which include;

- Fines
- Increased liability to environmental taxes
- Loss in value of brands
- Consumer boycotts
- Inability to secure finance
- damage to corporate image if penalized
- Contingent liabilities

Miles, Hammond and Friedman (2002) argue that once the organization has started reporting on environmental costs and revenues in its annual reports and accounts, a number of perceived benefits arise. For example customers may decline to buy from firms with unfavorable ethical reputation and buy from those that have good corporate image which would have been enhanced by adopting environmental accounting and reporting guidelines. According to (Campbell, 2009), potential employees may as well use ethical performance as a criterion in their choice of potential employer. It is also possible that specialized entities may incur environmental obligations as a direct result of their core business (e.g. extractive industries, chemical manufacturers and waste management companies). As for such organisations, compliances with environmental regulations and laws become more central to their business activities (ACCA, 2009).

In the case of CAFCA Ltd, potential investors can be influenced through adequacy presentation of environmental issues. Campbell (2009) argues that, an increasing number of investors are using environmental performance as a criterion for their investment decisions thus support the argument that environmental issues should form part of business management in organizations.

However, in spite of benefits perceived to arise from environmental accounting and reporting they are challenges in adopting and implementing sound environmental accounting and reporting. The International Financial Accounting Committee, in a research of a British Telecom company in (1996), identified challenges involved in allocating and reporting on environmental costs and benefits to the firm.

### **2.8.1 Challenges prominent in environmental accounting and reporting**

Within any large organisation, certain functions or activities may be managed at Group level, such as procurement, insurance or property management. This may facilitate the collection of group-wide financial data relevant to the function. In the scenario with other activities, such as the recycling or disposal of waste, may be managed at an individual business unit or site level, requiring a revised or new system to collect the financial data relevant to environmental performance. (Hajnalca Van, 1997) in his paper titled ,environmental accounting a new challenge for the accounting system posits that .the accounting system is subject to multiple challenges generated by the environmental activities.

A study by the Financial Management Committee in (1996) supports that implementing environmental accounting systems and adoption of practices may be difficult. The committee concludes that evolving environmental regulations may demand new investments in technology or more rapid replacement of equipment thus having major impact on capital expenditure decisions. The main difficulty associated with environmental costs is their identification and allocation. According to ACCA (2003) conventional accounting systems tend to attribute many of the environmental costs to general overhead accounts with the result that they are 'hidden' from management. Thus, management is often unaware of the extent of environmental costs and cannot identify opportunities for cost savings.

According to (Bebbington ,J Higgings 2009) factors of low adoption can be subject to various notions including resistance to change ,fear of criticism ,lack of information ,management override and limited funds.

According to the view point of Spence and Gray, 2007 reporting of environmental issues is perceived as non-mandatory. It can therefore be argued that unavailability of imposed



regulations on the accounting and reporting of environmental issues influence the adoption and implementation of environmental reporting and disclosure.

Most prominent challenges include;

- Behavior of shareholders
- Uncertainty of managers
- Absence of information technology expertise to enhance existing systems
- Lack of mandatory international standards on classification of costs on environmental basis (lack of global and regional consensus)
- Environmental reporting still voluntary not yet legally enforced as a must to firms

## **2.9 SIGNIFICANCE OF ENVIRONMENTAL REPORTING AS COMPLEMENTARY TO CONVENTIONAL FINANCIAL REPORTING**

Financial Reporting comprises the development and organizational reporting of financial information to external parties such as stockholders and bankers. Environmental financial reporting builds on financial accounting focusing and emphasizing on the accounting and reporting of environmental liability, costs, assets, environmental projects.

Financial reporting complies with International Accounting Standards, The conceptual framework and International Financial Reporting standards. The concepts in financial reporting emphasis are on various principles such as fundamental and enhancing qualitative characteristics to financial statements.

In the same context According to (ACCA Global Convention, 2003) the most problem lies in the absence of mandatory standards however they have been voluntary frameworks developed to curb this challenge. The most popular in which environmental reporting is a subset is the Global Reporting Initiative Framework (G3.1) Sustainability Guidelines.

The framework has similar principles to that of financial reporting framework and these include the enhancing qualitative characteristics of annual reports.

### **2.9.1 Materiality**

The information on environmental financial reporting should cover topics and indicators that reflect the entity's significant economic, environmental impacts and substantively influence the assessment and decisions of stakeholders (G3.1, 2011) Coverage of the material topics and indicators and definition of the report boundary should be adequate to reflect significant economic and financial environmental impacts and enable stakeholders to assess the reporting organization's performance in the reporting period. In financial accounting material information is that information has influence due to its nature or amount to influence a decision made by the users of financial statements.

### **2.9.2 Comparability**

Issues and information should be selected, compiled and reported consistently. Reported information should be presented in a manner that enables stakeholders to analyze changes in the organization's performance over time, and could support analysis relative to other organisations. Stakeholders should be able to compare information reported on economic, environmental costs and performance against the organization's past performance against the performance of other organisations (G3.1, 2011).Accordingly the financial accounting conceptual framework(2010) and the (International Accounting Standard 1 Presentation of Financial Statements) emphasizes on consistency in reporting and disclosure as mandatory and should be retained. It illustrates that there should be consistency over time and over reporting of similar items within each reporting period.

### **2.9.3 Accuracy**

The reported information should be sufficiently accurate and detailed for stakeholders to assess the reporting organization's performance. Responses to economic and financial environmental aspects, ranging from qualitative responses to detailed quantitative measurements. The characteristics that determine accuracy vary according to the nature of the information and the user of the information (G3.1, 2011) .Consequently in financial accounting accurate information is defined as free from error and bias.

### **2.9.4 Timeliness**

Reporting occurs on a regular schedule and information is available in time for stakeholders to make informed decisions. The timing of release refers both to the regularity of reporting as well as its proximity to the actual events described in the report. Although a constant flow of information is desirable for meeting certain purposes, reporting organisations should commit to regularly providing consolidated reporting of their environmental financial performance at a single point in time (G3.1, 2011). For information to be useful to a wide range of users it should be available in time to decision makers (IFRS Framework 2010).

### **2.9.5 Clarity**

The information should be made available in a manner that is understandable and accessible to stakeholders using the report. A stakeholder should be able to find desired information without unreasonable effort. Information should be presented in a manner that is comprehensive to stakeholders who have a reasonable understanding of the organisation and its activities. Graphics and consolidated data tables can help make the information in the report accessible and understandable. The level of aggregation of information can also affect the clarity of a report if it is either significantly more or less detailed than stakeholders' expectations (G3.1, 2011). In financial accounting, it is recognized that information should be presented clearly and concisely to make it understandable. Quantitative information revealing the level of precision.

### **2.9.6 Reliability**

Information and processes used in the preparation of a report should be gathered, recorded, compiled, analyzed and disclosed in a way that could be subject to examination and that establishes the quality and materiality of the information. Stakeholders should have confidence that a report be checked to establish the veracity of its contents and the extent to which it has appropriately applied Reporting Principles. The information and data included in a report should be supported by internal controls or documentation that could be reviewed by individual other than those who prepared the report. Disclosures about performance that are not substantiated by evidence should not appear in an environment report unless they represent material information, and the report provides unambiguous explanations of any uncertainties associated with the information. In designing information systems in the context of environmental, reporting organisations should anticipate that the system could be examined as part of an external

assurance process (G3.1, 2011). According to the conceptual framework information should be able to assure stakeholders that it is faithfully represented and independent knowledgeable parties should be convinced that the information is necessarily complete and can be relied upon.

## **2.10 ENVIRONMENTAL ACCOUNTING: CASE OF OTHER COUNTRIES**

**TABLE 2.1 POPULAR ARTICLES PUBLISHED ON ENVIRONMENTAL ACCOUNTING**

<b>AUTHORS</b>	<b>YEAR</b>	<b>MAIN ANALYSED ISSUES</b>
Frost and Wilmhurst	2000	Adoption of environmental accounting practices
Bouma and Kamp-Roelands	2000	Environmental management information systems
Gago	2002	Environmental accounting related to make or buy decisions
Ball	2005	Environmental accounting
Perego and Hartmann	2009	Advances in environmental performance systems

Frost and Wilmhurst (2000) surveyed Australian companies in the context of level of adoption of environmental accounting practices. Their findings were that a small group of companies are sensitive to environmental accounting whilst most companies are not. They identified that industry type is an influential factor to the adoption, however it not the sole driver, hence both authors concluded that further research is needed to identify other determinants.

In the context of a single manufacturing site of a Dutch multi-national chemical company Bouma and Kamp-Roelands (2000) report that expectations of different stakeholders influence the extent of designing and implementation of environmental management information systems.

Gago Rodriguez (2002) examines the orientated short run decision (make or buy) and concluded that availability of finance and the use of cost benefit analysis is a major determinant. In the

same breath Gates and Germain (2000) carried out a case study in France and both authors revealed that industry type ,stock market listings influence the choice of integrating conventional accounting and environmental accounting practices.

The growing accounting research in the environmental accounting and environmental reporting area within a country has usually focused on the extent and determinants of voluntary adoption.

Some studies have also attempted to examine the adoption and implementation of environmental accounting and environmental reporting in different European countries. Bebbington (1999) made an evaluation of the environmental reporting compulsory in developed countries. Denmark; Llana et al. (2007) analyzed the environmental disclosures and compulsory accounting standards in Spain; Larrinaga et al. (2002) as well as accounting regulation in the Spanish context; Bebbington et al. (2003) try to build systems for effective regulation, based on the case of the electricity sector in Spain and in the United Kingdom. They analyzed the compliance with mandatory environmental reporting in financial statements in Spain and these studies concluded that there is a low degree of compliance with the standards published.

Africa is not an exception in the studies of environmental aspects .Researchers in Nigeria, Botswana and Namibia reveals that the adoption of environmental accounting and environmental reporting is still an ongoing process by individual countries and their different companies in different sectors (Intosai Working Group on Environmental Auditing 2010). In Botswana at national level in public and private sectors adoption and implementation is still current and as such reports are still incomplete. Nigeria researches on Environmental accounting established that environmental accounting in companies is crucial and information to be disclosed include environmental costs, environmental liabilities ,assets and contingent liabilities (John Akahaiye, 2009) who surveyed a number of oil industries in Nigeria. Environmental accounting is an emerging facet of accounting with benefits for industry, government, and society globally. As more companies come to see the environmental impacts in their decision making, the value of Environmental accounting will continue to grow (John Akahaiye, 2009)

## **2.11 CHAPTER SUMMARY**

This chapter discussed the concepts of environmental accounting and reporting as they are found in literature, text books and published journals. Theoretical perspectives were outlined, knowledge gaps were revealed and areas of debate among scholars in literature were also highlighted.

## **CHAPTER THREE – METHODOLOGY**

### **3.0 INTRODUCTION**

This chapter describes the investigation methods used as well as justification for using such methods. Emphasis is placed on how the research is planned and executed. This chapter outlines the philosophical framework selected, research design, target population, data collection instruments and procedures are also illustrated. The merits and demerits of methods selected are also discussed in this chapter and the suitability of the approaches selected to the research. The data analysis to be used in the next chapter as well as the chapter summary is part of this chapter.

### **3.1 PHILOSOPHY FRAMEWORK-POSITIVISM**

In approaching the research the positivism philosophy was adopted. In adopting the positivism philosophy the stance of a natural scientist is taken since it entails on basing on facts rather than impressions. It prefers working with an observable social reality and the end product of such research can be law like generalizations similar to those produced by the physical nature.

To generate a research strategy on collecting data basing on the positivism adoption an existing theory is used to develop the hypothesis. The main assumption of the philosophy is that the researcher is independent of and neither affects nor is affected by the subject of the research (Remenyi et al, 1998). It entails that the researcher cannot change facts giving an example that the researcher cannot change the fact that an organization has five trucks and ten computers.

The merits of adopting a positivism approach to a research are that it can provide credible data, facts that are free from bias. This philosophy encourages highly structured samples and promotes quantitative data collection techniques while giving room for qualitative techniques.

#### **3.1.1 justification for adopting the positivism**

A philosophical framework has a significant impact on what you will be doing and is useful to understand what is that you will be investigating. (Johnson and Clark 2006) therefore selecting a philosophy should be commensurate with the objectives to be achieved.

The hypothesis in the research was generated from existing theories i.e. the stakeholder and legitimacy theory which is encouraged by the philosophy.

The researcher is independent and is not affected by the subject of the research. The researcher cannot change the number of environmental accounting practices adopted and is not affected by the level of implementation.

The philosophy allows the use of quantitative and qualitative data collection techniques, this is suitable for the research questions and objectives posed.

### **3.2 RESEARCH DESIGN**

Ackroyd(1981) defines methodology as a system of models and procedures and techniques used to find the results of the research problem. This agrees with the definition by Bryman and Bell (2003) who state that a research design is a structure that guides the execution of the research method and the analysis of the subsequent data. Creswell (2014) highlighted that research design are types of enquiry within qualitative, quantitative and mixed research methods approaches that provide specific directions for procedures in a research design. In this research the mixed research method have been put in place.

#### **3.2.1 Case study**

Robert Yin (1984) defines the case study research methods as an empirical inquiry that investigates a contemporary phenomenon within its real life context. In the same breath Kendra Cherry (2000) defines a case study as an in depth study of a person. A case study involves paying attention to every aspect of the subject's life and seeking to identify causes for behavior .Many researchers view case study an explanatory or exploratory tool. For the purposes of this research the case study will be viewed as an exploratory tool to study the adoption and implementation of environmental accounting practices and causes for the phenomena.

#### **3.2.2 Explanatory research**

An exploratory study is a valuable means of finding out 'what is happening; to seek new insights; to ask questions and to assess phenomena in a new light (Robson 2002). According to Dr. Sue Greener (2008), this tool is designed to allow the researcher to gain an insight of some issues with the aim of developing suggestive ideas. Exploratory research design happens to be the most basic design meant to make available insight and thoughts about a problem. It explores trends in the industry with the idea of identifying specific situations and insights to generate



explanations as to certain behavior in the industry. The fundamental concept behind exploratory research is to explore and interpret relationships between different concepts and build theory in relation to the topic. Three principal ways of conducting exploratory research are there, which are a search of the literature; interviewing ‘experts’ in the subject; conducting focus group interviews. The greatest merit of this research design is that it is flexible and adaptable to change.

### **3.2.3. Mixed research method**

This method combined both qualitative approach and quantitative approach of collecting data. Mixed research can be defined as a methodology which focuses on employing rigorous quantitative research, assessing the magnitude and frequency of constructs and employing rigorous qualitative research exploring the meaning and understanding of constructs (Saunders et al, 2009).

#### **3.2.3.1 Advantages of using mixed research methods**

It is a rigorous form of enquiry that uses the methods of data collection such as in depth interviews, observation and review of documents. In the research interviews were scheduled as one of the data collection methods as well as reviewing of annual reports thus making mixed research method more useful.

- It involves the intentional collection of both quantitative and qualitative data. The weaknesses of both qualitative and quantitative methods are compensated by the counterbalancing strengths of each other in answering research questions.
- The merging of qualitative and quantitative data enhances the credibility of data obtained which influences results of the research.

It has the ability to match the purpose of the method and the objectives of the research.

#### **3.2.3.2 Disadvantages of using mixed research method**

- Combining the two types of data may result in manipulation in regard to the time and resources required.
- It results in difficulties in complying and analysis of data.

### **3.3 TARGET POPULATION**

According to Cohen (2006) population is defined as the entire set of people, object, items or units for which the researcher wants his study to be applicable.

In this research of the adoption and implementation of environmental accounting and reporting the target population were Senior Executives, Accounting department (Financial, Management and Cost Accountants), SHE department and employees as a group of stakeholders of the organisation. It is essential to include the three mentioned groups of the organisations as the researcher assumed that these possess reasonable knowledge of the research study and have information pertaining to the environmental accounting practices of the firm.

#### **3.3.1 Sampling**

A sample is a segment of the population that is selected for investigation purposes, it is a subset of the population, and the method of selection may be based on probability or a non-probability approach (Bryman 2012). Similarly, Frackel et al (2008) described a sample as an infinite part of statistical population, whose properties were studied to gain information about the entire population. According to McBurney and White (2010), a sample is defined as a subset of population. Dr Sue Greener (2008) therefore defined sampling as a practical way of studying people and their activities, thoughts, attitudes, abilities, relationships in relation to business. In a similar context sampling is an indispensable technique of behavioral research; the research work cannot be done without use of sampling. Due to the fact that studying the whole population is impracticable as a result of various reasons, sampling thereby became a necessity. A sample representing target population of CAFCA Ltd was taken.

Sampling presents various advantages, it ensures homogeneity and improvement of data quality and accuracy, data analysis becomes cheaper and easier, data collection program is made easier, follow up on respondents becomes easier and cheap. However sampling also has its own drawbacks which are but not limited to the following the sample chosen may not reflect the whole population and may be left out some characteristic that are material and materially affect the findings.

**Table3. 1 Target population and Sample size**

<b>Title</b>	<b>Target Population</b>	<b>Sample Size</b>
Accounting Department	30	20
SHE Department	15	12
Senior executive Members	10	8
Other Employees	130	20

### **3.3.2 methods of data collection and instruments used**

#### **Primary Sources**

(Thomas 2009) posits that primary data is information from the horse's mouth implying that no other person can edit summaries' or rephrase it. In this study primary data was obtained through questionnaires and interviews to the selected sample of CAFCA employees with relevant expertise of the research topic. Primary sources have advantages when carrying out a research however they also have their own drawbacks.

#### **Advantages of using Primary Sources**

- It is first hand information hence it is original and can be relied upon
- It is less bias since a respondent has the ability to express their mind through writing and through conversations on interviews

#### **Disadvantages of primary sources**

- It is time consuming
- It requires proper planning skills to be efficient

### **3.3.3 Secondary sources**

According to (Wallen and Fraenkel 2003) secondary data is the systematic collection and evaluation of data to describe, explain and understand actions and events that occurred in the past.

This also refers to data which was gathered for other purposes and is already stored. For the purposes of a significant research with sound results publications by the environmental working groups, environmental agencies, and accountants' boards were of paramount use.

The Zimbabwe, Johannesburg and London Stock exchanges brochures on the topic under study in which the company under investigation is listed were also used. The most important source which was very essential for the study were the organization's annual reports ,monthly and weekly accounts records and the company's website. Circulars ,newspapers, official and unofficial sources on the internet were the other sources of obtaining secondary data.

Secondary sources possess a number of merits and demerits as is the case with primary sources.

#### **Advantages of using Secondary sources**

- It was the only research method that could provide evidence from the past in relation to recent questions arising in the industry on the concept of environmental accounting..
- It helps to improve understanding of the problem and the research area.
- It provides a basis for comparison for data that is collected by the researcher.
- Relatively cheap since information is readily available.
- Access time is generally short.
- Researcher has the option of disregarding it at all.
- It provides a wide range of information as compared to primary sources which only stick to responses from parties involved

#### **Disadvantages of using secondary sources**

- Data available may not be accurate.
- Data is not problem specific and thus the researcher has to make an assessment of what to consider and what to disregard.
- Data may be outdated.
- It is difficult to check the reliability and validity of data available
- It is more susceptible to bias

#### **3.3.4 Research instruments**

These can be referred to as tools used in data collection to find solutions to the problems under investigation. Instrumentations therefore can be defined as the methods of data collection used in research .This study used interviews and questionnaires.

The research used interviews, questionnaires and historical text (document analysis) as instruments of collecting data from selected participants. The methods were chosen because of their superiority as compared to the other methods such as observation techniques and visual texts.

### **3.3.4.1 Questionnaires**

According to David and Sutton (2004) a questionnaire is a question based data collection instrument designed to be distributed and filled in by the person responding without the presence of the interviewer, there are structured but can have a degree of variation in the level to which expected answers are standardized. Questionnaires consist of a series of questions and other prompts for the purpose of gathering information form the respondent. This definition is similar to that provided by (Devans and Sandres 1998) which defines a questionnaire as a general form to encompass all data collection techniques in which each person is asked to respond to the same set of questions with those in his group.

#### **Justification for using questionnaires**

- Questionnaires provide and translate the research objectives into easily understandable language to respondents and pull the requisite information from them, which will satisfy the researcher's information. Also according Bryman (2012), absence of interviewer effect characteristics of interviewer and respondent such as ethnicity ,gender and the social background may combine into bias ,since there is no interviewer the effects are eliminated.
- Questionnaires were also chosen because they save on time since the time of carrying out the research project was very limited questionnaires would be given to participants at once.

#### **Advantages of Using Questionnaires**

- Large amounts of information can be gathered from a large number of respondents in a relatively cost effective way.
- Participants have ample time to consider questions and respond to questions
- Data can be easily coded in case of open ended questions, thus information can be quantified and statistical tests are possible.
- Data can be analysed scientifically, positivists believe that questionnaires yield quantitative data that can be used to make new theories as well as testing hypothesis.

### **Disadvantages of using questionnaires**

- There is possibility of low response rate if not administered well
- Questions cannot be explained to participants thus if misinterpreted then answers cannot produce relevant and reliable data
- The process of coding is subjective to the researcher

### **3.3.4.2 Interviews**

The research effort embodied the study to carry out personal interviews. Frey and Oishi(1995 ) define an interview as a purposeful conversation in which one person (interviewer) ask prepared questions and another (respondent) answers them. Interviews can have one of the two basic structures which are closed interview structures and open interview style (unstructured).Nichols (1991) defines an open interview style as an informal interview which is not structured by a list of questions. For the purposes of this study interviews conducted were formal, planned appointments with respondents and questions were structured on an interview guide list. However open ended questions emerged during conversations when respondents were seeking explanations to some of the issues and the researcher gave room for these so as to probe additional information from participants and enhance these to initial responses. Like any other technique interviews have their merits and demerits.

### **JUSTIFICATION FOR USING INTERVIEWS**

The researcher had to use interviews to cover limitations identified by the use of questionnaires. Interviews would enable the researcher to observe non verbal communication such as facial gestures which enhances the judgment of the quality of responses given by

participants.Appointments were scheduled in advance with the help of senior employees in the accounts department.

### **Advantages of using interviews**

- Respondents can seek clarity thereby outweighing the risk of misinterpretation
- Enable respondents to talk freely and express genuine answers.
- Information obtained from interviews can be easily quantified since people are given same set of questions.

### **Disadvantages of using interviews**

- The technique is costly
- It is time consuming
- Data depends on the willingness of respondents to give complete and accurate answers.
- Limits number of respondents

### **3.3.4.3 VALIDITY AND RELIABILITY OF RESEARCH INSTRUMENTS**

#### **VALIDITY**

Validity is based on determining whether the findings are accurate from the stand point of view of the researcher .Bryman (2012) asserts that validity is concerned with the integrity of the conclusions that are generated from data obtained from research. Validity can also be defined as the extent to which the instrument measures what it intended to measure. Validity ensures that the sample that has been adopted/chosen by the researcher adequately represent the target population study. It has two aspects which are; the instrument should measure the subject in question and measure it accurately. In order to incorporate validity the researcher ensured that the questions posed in questionnaires and interviews addressed research problem, objectives and research questions.

#### **RELIABILITY**

According to Saunders (2009), the extent to which data collection techniques or analysis procedure will yield consistent findings is referred to as reliability. Thus a reliable instrument

should give precise, stable and consistent results. The objective of reliability is to ensure that, the probability of errors and bias are reduced to low and acceptable levels. To ensure the reliability of the instruments used, questionnaires and interviews schedules were piloted and adjusted before they were administered to respondents. In conducting interviews the researcher had a list of key definitions to minimize giving biased information to respondents seeking clarity and questions in interview guide did not provide possible answers as in the case of questionnaires to reduce influence on respondents' answers.

### **3.4 DATA PRESENTATION AND ANALYSIS PROCEEDURES**

This entails the plan on which information will be processed, inspected and transformed into useful information in addressing the topic under investigation so as to establish suggestions, conclusions as well as recommendations.

Primary data collected from questionnaires and interviews will be conducted and graded according to the Environmental accounting practice Index for the adoption and implementation process and for the reporting aspect the G3.1 Reporting guidelines grades will be used in evaluating the annual reports of CAFCA Ltd.

**Table 3.2 Measurement of independent and dependent variables**

Environmental accounting

<b>Variables</b>	<b>Measurement</b>
Dependent variable	
Standard adoption grade	0 – no adoption of any environmental accounting practices 1 – at least two 2 – at least four 3 – at least six 4 – all of the eight practices
<b>Independent variables</b>	
Board composition	Number of respondents



Internal organization interests	Number of respondents
Company profile	Number of respondents
stakeholder influence	Number of respondents

**Environmental reporting**

<b>Variables</b>	<b>Measurement</b>
<b>Dependent</b> Standard reporting grade	0 – no mention of environmental costs and benefits in annual report 1 – single statement on environmental costs and benefits 2 – a paragraph 3 – several pages 4 – detailed stand-alone reports on costs and benefits

The questionnaire was designed to answer the research questions, selected employees’ responses on their perceptions of factors influencing environmental accounting and reporting adoption. The percentage of respondents in favor of a factor is regarded as the measure for independent variables.

**Analysis of data**

The percentage of respondents to questionnaires and participants of interviews conducted will be presented on tables and pictorial representation on pie charts.

The data gathered from questionnaires will be evaluated using simple linear regression model to assess the relationship between level of adoption of environmental management accounting practices and reporting and the factors influencing adoption. First we have to determine the correlation of coefficient between variables using the equation below:

$$r = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{[\sum (x - \bar{x})^2][\sum (y - \bar{y})^2]}}$$

where:

$r$  = Sample correlation coefficient

$n$  = Sample size

$x$  = Value of the independent variable

$y$  = Value of the dependent variable

If the correlation of coefficient is 0.8 or less the we use the liner regression formula

$$y = \beta_0 + \beta_1 x + \varepsilon$$

where:

$y$  = Value of the dependent variable

$x$  = Value of the independent variable

$\beta_0$  = Population's y-intercept

$\beta_1$  = Slope of the population regression line

$\varepsilon$  = Error term, or residual

The research questions on the extent of communication between SHE Department and Accounting Department as well as integration of environmental management accounting practices and other management functions such as decision making ,strategic planning and performance management will be qualitatively analyzed. Document analysis will be employed as a technique to come up with evaluations on qualitative conclusions.

### **3.5 CHAPTER SUMMARY**

This chapter discussed the various methodologies which were used by the researcher throughout the study. It highlighted the research design which was used, population, sampling techniques, data collection procedures and the data presentation and analysis techniques to be employed and used. The research was mainly conducted using a questionnaire, interviews and document analysis, the justification, merits and demerits were outlined in this chapter.

## CHAPTER FOUR –DATA ANALYSIS AND PRESENTATION

### 4.1 INTRODUCTION

In this chapter data is presented and analysed. Emphasis was placed on key research findings with the aim of coming up with informed conclusions that provide a platform for addressing the research questions and objectives. The chapter also constitutes the response rate of the selected sample, research findings and discussion based on data gathered throughout the research.

### 4.2 RESPONSE RATE

#### 4.2.1 Questionnaires

Questionnaires were issued to four groups of the targeted population and the response rate was recorded as illustrated in the table below. The researcher used the data obtained from the participants to formulate discussions and informed conclusions.

**Table4.1 Questionnaire response rate**

<b>Title</b>	<b>Target Population</b>	<b>Sample Size</b>	<b>Responded size</b>	<b>Non responded</b>
Accounting Department	30	20	18	2
SHE Department	15	12	8	4
Senior executive Members	10	8	5	3
Other Employees	130	20	15	5

The questionnaires dispatched to the accounting department, SHE Department and Senior executives and finally other employees from neutral departments for instance human resources, sales and marketing and production department. Total response rate was 77% of the sample size. The rate was reasonably valid to consider data gathered from questionnaires.

The non-responses were due to employees being reluctant to provide information whilst other senior executives had the perception that the information was confidential.

#### **4.2.2interviews**

Interviews were conducted as per appointments with the target population participants. More interviews were conducted to representatives from finance department and SHE department as more information was expected to be obtained from these respondents. Interviews from other respondents were fairly successful. The rate of planned, successful and unsuccessful interviews is presented below.

**Table4.2 Interview response rate**

<b>Title</b>	<b>Planned interviews</b>	<b>Successful interviews</b>	<b>Unsuccessful Interviews</b>
Accounting Department	6	6	0
SHE Department	5	4	1
Senior executive Members	4	2	2
Other Employees	5	4	1

The total of successful interviews was 80 % and unsuccessful interviews constituted 20%.Unsuccessful interviews were merely due to limited time and tight schedules such as perpetual inventory count, end of month key performance review and internal audit ,overtime schedules, outside company meetings to mention a few.

### **4.3 DEMOGRAPHIC CHARACTERISTICS RESPONSES**

#### **4.3.1 Age**

Most respondents highlighted their age and the age group with maximum number of respondents was 35 -45 followed by an age group constituting people aged from 30-40 the least group being 20-30.

Some of the participants were not keen to reveal their age since they considered it immaterial hence they could substitute that with their working experience.

#### **4.3.2 Highest Qualification**

A number of participants gave their highest qualifications obtained from the accounts department; SHE department and senior executives. The only target population who had the least number of participants who revealed their qualifications was from other employees especially the shop floor workers in the production department.

### **4.3.3 Gender**

The respondents represented the gender fairly well .Male participants comprised 55% whilst female participants constituted 45% of the total population.

### **4.3.4 Designation in the organization**

Senior executives, accounts department and SHE department representatives were not reluctant to provide their designation in the organization however a few were not willing to answer the aspect of their positions in the firm, others were honest enough to give the reasons for resilience and the most prominent being beauracracy in the organisations hence they were skeptical whether to reveal their positions or not. They were not sure whether the information would be kept confidential by the researcher.

## **4.4 FINDINGS AND DISCUSSION**

### **4.4.1. To evaluate whether CAFCA Ltd have adopted and implemented any environmental accounting practices adequately and the extent to which these are embraced.**

**Question -.** Which environmental accounting practices have been adopted by the organization to ensure that environmental accounting forms part of the accounting function?

**Table 4.3 EAP index**

<b>Environmental accounting practices index</b>	<b>Adopted (A)/not adopted(N/A)</b>
Elaboration of Environmental budgets	A
Calculation of Environmental costs	A
Elaboration of Environmental accounting indicators	N/A
Allocation of budgetary funds to environmental projects or initiatives	A
Accounting recognition of environmental issues	N/A

Disclosure of environmental information in Annual Report	A
Direct participation of the Accounting Department in the elaboration and disclosure of the Environmental report	N/A
Disclosure of environmental financial information in reports and publications other than Annual Report	N/A

Of all the environmental accounting practices the researcher posed as a standard adoption grade which was adopted from Frost and Wilmhurst only four of the environmental accounting practices were adopted by CAFCA Ltd as highlighted in the table above. This automatically grades the adoption of CAFCA Ltd as Grade 2.

According to responses from senior executives the other practices are yet to be adopted whilst the other practices they are not knowledgeable of such practices.

Secondary data was used to evaluate the extent to which the adopted practices are being embraced.

### **Internal documents Analyzed**

1. Minutes of management Meetings
2. Month end accounts and financial statements
3. Key Performance Review Reports
4. Stages and Finalization of Project Reports
5. Safety, Health and Environment Policy
6. Reports on compilation and evaluation of staff training
7. Budgets

Inclusion of environmental costs, capital expenditure ,quantifiable and non quantifiable benefits and provisions in the above mentioned internal documents which are compiled on a monthly basis attributed to the extent the researcher posed.

The researcher concluded that the 4 adopted environmental accounting practices were being implemented and embraced to a higher extent. The current practices are executed and implemented fairly, future potential is evidenced.

Extend to which financial environmental related cashflows are reported

Assessment of annual reports, Brochures, Newsletters and company website from 2011 -2013.

**Environmental Financial information expected to be in the above sources.** An index adopted from a number of prior studies.

1. Elaboration on environmentally related external costs for example –Certification costs
2. Reports on monetary values of environmentally related internal costs for example- Employee safety clothing, training
3. Capital Investment costs for example –effluent water analysis plant
4. Quantifiable environmental related benefits (revenues) for example awards
5. Elaboration of descriptive non monetary and monetary environmental related Provisions and contingences for example inspection fees
6. Environmental Liabilities

The list above was used as a guideline in evaluating the incorporation of environmental financial information in sources mentioned.

**Table 4.4 Grades awarded to CAFCA on Environmental Reporting**

Year	Grade awarded
2011	2
2012	2
2013	3



## **Key**

0 – no mention of environmental costs and benefits in annual report

1 – Single statement on environmental costs and benefits

2 – A number of paragraphs

3 – Several pages

4 – Detailed stand-alone reports on costs and benefits

From the annual reports selected by the researcher CAFCA Ltd is not fully reporting on the financial aspects of its environmental issues hence it was ranked Grade 2 in 2011 and 2012 and was awarded Grade 3 in 2013. In 2011 annual report years only a paragraph was discussed in the chairman's report under the heading Safety, health and environment and a subheading titled Environmental Financial Information. Several pages on Environmental reporting was observed in the annual report of 2012 under the heading operations and a subheading carbon footprint results. The information had several pages in which carbon emissions were recorded and costs associated with reducing environmental threat activities.

A noticeable improvement was on the notes to the financial statements included an explanation on the provision made to incorporate costs of \$4000 to be paid to SABS Commercial for a one month workshop on employee retraining on safety precautions in manufacturing industries where heavy machinery and hazardous chemicals are involved.

In the same breath a Grade 2 award was justified by omissions of some of the key issues noted in internal month end reports on key performance review which the researcher considered worth mentioning was not included in published annual reports. These include income from National Social Security Authority (NSSA) inspectors won by the organisation for best attendance of SHE workshops and an award from Confederation of Zimbabwean Industries (CZI) for the most eligible signs throughout the organization's premises on Safety and Environment precautions.

In the year 2013 the annual report constituted several pages on environmental financial related information. The information was monetary and descriptive in nature. Disclosure of estimates of a liability were recorded. Waste disposal of hazardous and less harmful waste from the company

clinic which is located at the company premises was not in compliance with regulatory agencies therefore the company was liable to an estimated fine. Capital investments expenditures in evolving technology to establish a graphite flaking plant on the company premises were recognized. The plant was initiated following the downsizing of Lynx Mine the major supplier of graphite to CAFCA .The plant was classified as part of environmental related as it is another source of pollution.

In a brochure entitled “ Management of natural resources in Workington” published by the organization in January 2013 monetary and non monetary descriptions were disclosed on several pages. The brochure was in consideration of the programme launched by manufacturing firms in the Workington/Southerton Industrial Area with the aim of pollution prevention and efficient use of natural resources bearing in mind the community in which the industries are situated in of Rugare, Kambuzuma and Mufakose Locations.

The company website is reflective of non monetary environmental issues only.

**4.4.2 To determine the extent to which adoption of environmental accounting and reporting is determined by board composition, internal organizational interest, stakeholders and company profile or any other?**

**Question -.** What factors influence the adoption of environmental management accounting practice and reporting?

**Table 4.5 Descriptive statistics**

variables	number	minimum	maximum	mean	Std deviation
independent	46	1	5	1.83	1.122
dependent	46	0	3	1.37	1.306

**Table 4.6 Frequency analysis**

variable	Factors influencing	frequency	Percentage
SAG	stakeholders	26	56
	Internal organizational interest	8	18
	Company profile	7	16
	Board composition	4	8
	Other	1	2

**Table 4.7 Regression results**

Variable	coefficient	t-value	p-value
Dependent	-0.168	4.668	0.0000
Independent	-0.168	-1.128	0.266

Number of observed = 46

$R^2 = 0.26$

F-value = 1.271

Prob (F) = 0.659

From the factors posed which were assumed to have an influence in the level of adoption the researcher used statistical methods to evaluate the significance of the factors as well as the extent to which these influence the adoption grade. The findings are as illustrated on the table of frequency and the diagnostic test is as illustrated on the statistical tables. All the variables were considered as they had a  $R^2$  value of below 0, 8 hence there was a significant difference in the variables obtained.

The research findings proved that the level of adoption is greatly influenced with the pressure from stakeholders of the company. The impression by most respondents is that the organization is more concerned about its foreign and local customers, foreign and local suppliers, investors and potential investors, public authorities and non-governmental organizations.

This was supported by opinions highlighted by interview respondents on the question which requested their opinions on the reasons for reporting on the financial information of environmental costs. Major reasons were attributed to the satisfaction of disclosure requirements to major stakeholders and others argued that it's a way to demonstrate to government and its agencies that the company complies with set rules.

Eight respondents were of the opinion that adoption and implementation is based on the organizational interests, senior executives highlighted that they have an Environmental Policy which is sound and enhanced by certification of Environmental ISO Certifications in which initiations are made by decisions internally influenced therefore organizational interest has a bearing on the level and extent to which practices and reporting are initiated. Internal factors have influenced capital budgeting on waste minimization strategies and pollution prevention.

Company profile was rated third important determinant of the level of adoption. Participants justified that the organization is a company of high profile, as the only manufacturer of electric and transmission cables in Zimbabwe that its level of operations is compared with companies outside the country hence it thrives to maintain the status by adopting environmental accounting practices and environmental financial reporting to legitimize and keep updated with changes and improvements in the business world.

Board composition was determined affecting to a lesser extent as it comprises more of non-executive as executive directors. The non-executive are concerned with activities which mostly have financial descriptions therefore the difficulties in classification and measurement of environmental issues maybe outweighed by the board members number of respondents did not agree that board composition is influential to the growing practices as there is absence of a subcommittee concerned with environmental issues as is the case with other corporate governance issues such as audit committee.

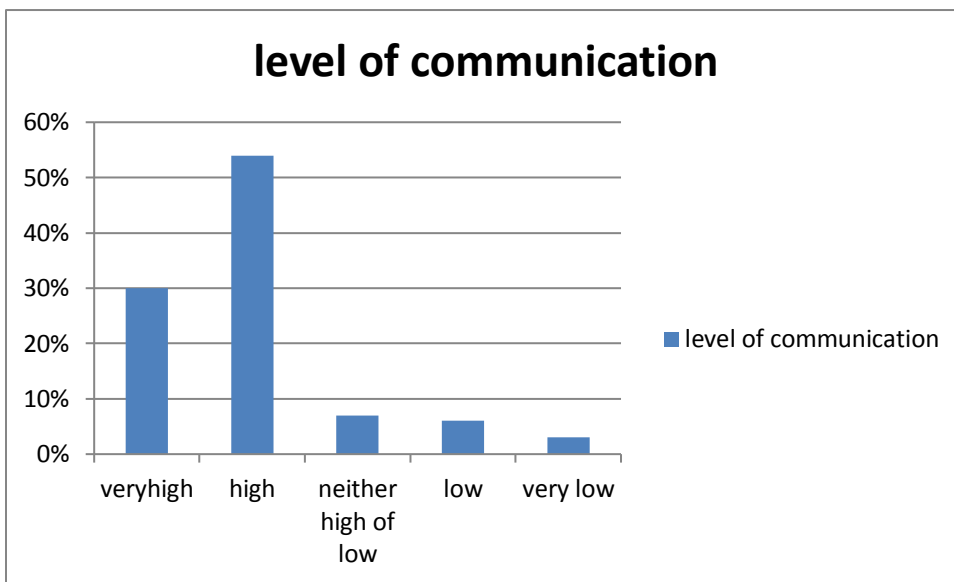
The other respondent suggested that the level of adoption and implementation is influenced by the size of the entity a large company will have to face different suppliers and customers. The respondent considers the organization as large in regard to its asset base, total number of employees and volumes of production activities.

The impression indicated by quantifiable and non-quantifiable findings acknowledge the hypothesis posed by the researcher in Chapter 1 of the study as true.

#### 4.4.3 To evaluate the level of efficiency of communication between SHE department and Accounting department in budgeting and planning for environmental issues.

##### Question-

4. Are environmental issues discussed between the accounting department and SHE department?

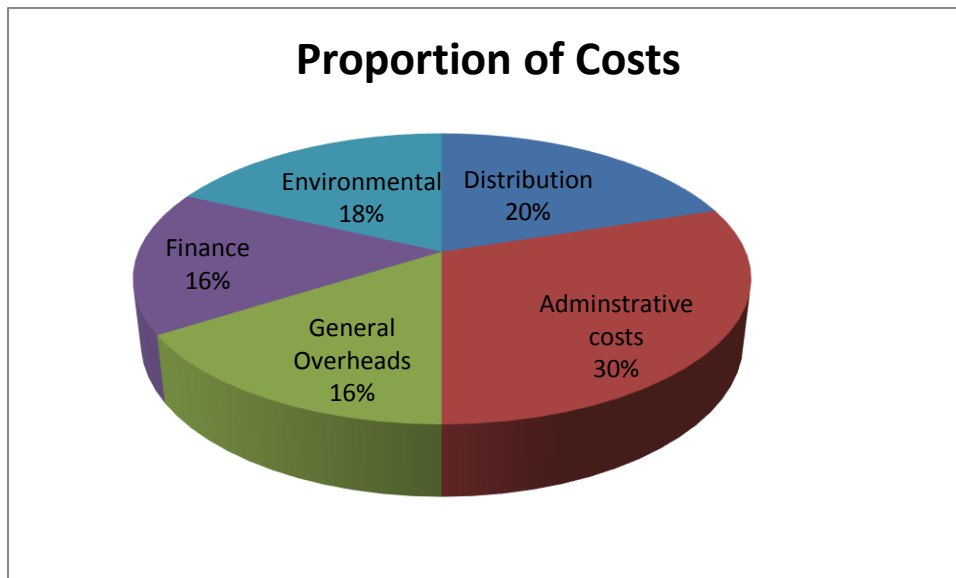


As illustrated by the bar graph above frequency of respondents on communication question environmental issues between accounting department and SHE department is to a greater extent. The two departments integrate very well in their operations which complement each other. Tactical and strategic plans were properly outlined in meetings and monthly reports and such observations from secondary data enabled the researcher to validate the findings in primary research. The judgment was also influenced by the question posed to respondents which aimed at investigating whether the communication on environmental financial information is different from other meetings on other functions. The findings were that

#### 4.4.4. To determine the extent to which environmental costs are traced independently from administrative, operating and general expenses.

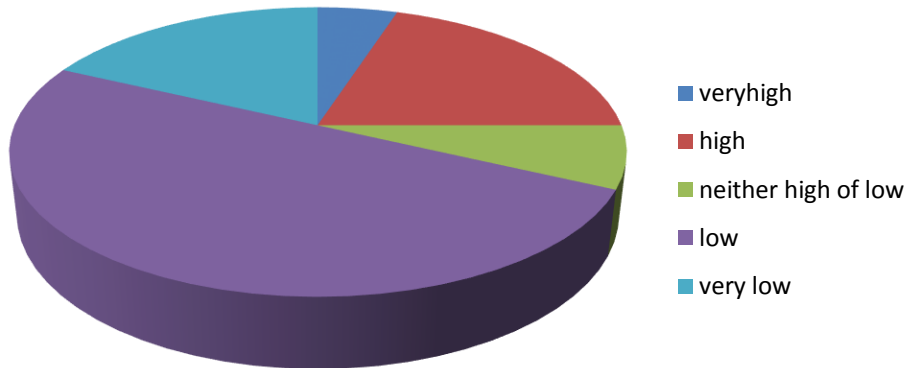
**Question-** Are environmental costs traced independently from administrative .operating and general expenditure?

From the data obtained from questionnaires and interviews revealed that environmental costs are tracked independently of other administrative, operating and general expenses however the costs are not traced to production units for product pricing and costing. The information is generated as part of the general ledger system but is not part of management accounting system. There is no existence of a stand-alone system designed for incorporating environmental costs. The figure below shows the proportion of costs with environmental costs included for the most recent reporting date 30 September 2013.



**4.4.5** To determine the extent to which environmental issues are applied in management functions such as decision making, strategic planning and performance management.

## intergration with other management functions



The findings obtained reveal that the extent to which environmental accounting and reporting is integrated with other management functions is still low. Lack of expertise and knowledge on the significance of environmental accounting as a tool in enhancing other management functions is believed to be the major drawback by the participants of interviews.

### 4.5 CHAPTER SUMMARY

The chapter gave an account on the response rate of the target population identified in the previous chapter .It also presented the key findings of the research and analyzed in relation to the research questions so as address the objectives of the study. Information from both primary and secondary data was incorporated in the data analysis and discussion.

## **CHAPTER FIVE CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 INTRODUCTION**

This is the last chapter of the study hence summaries of all the aspects of the research are outlined. It contains statement of the objectives in which purpose of carrying out the study and extent to which these objectives were achieved is also outlined. Since it is the last chapter it therefore constitute summary of findings, conclusions and recommendations which were drawn from research findings. In this chapter the researcher also outlined areas for further research which are considered to add value to the topic under research.

#### **5.1.1 Statement of the objectives.**

The research intended to analyze the trends in the adoption and implementation of environmental accounting practices as well as environmental reporting in manufacturing firms. The research was specifically for the manufacturing industry in Zimbabwe and it was a case of CAFCA Ltd.

Emphasis was placed on establishing factors influencing the adoption and implementation of the aspect under investigation. The data was obtained from primary and secondary sources .On environmental reporting attention was on the past three recent financial years ending 2011, 2012 and 2013.

Precisely the other supporting objectives to enhance the study were to assess how environmental costs, benefits liabilities and asserts are accounted for in the organization and also the extent to which the two main departments involved in the environmental accounting and reporting communicate and the level of integration with other management functions. As listed clearly in chapter one these were the research objectives and the statement of the problem.

The study highlighted the hypothesis, conceptual framework research objectives and literature review. Several theories on environmental and accounting and reporting played a vital role in elaborating some of the possible determinants of the level of adoption and implement environmental accounting and reporting.

#### **5.1.2 Achievement of objectives**



The researcher employed all the techniques illustrated in chapter three as the research methodology. The researcher was able to achieve all the set objectives of the study. Research methods were applied to investigate perceptions, opinions and motives behind adoption of environmental accounting and reporting, this was seen as crucial exercise in obtaining information. Based on research findings conclusions were reached.

Questionnaires and interviews were structured and comprised a number of questions and the research questions which were derived from research objectives were the key questions. Participants' response rate was fairly well and no questions were unanswered in regards to the area under study.

Secondary data proved to be a vital source throughout the study in order to achieve set goals. All the forms of secondary data in which the researcher had access to was thoroughly inspected and analysed the major ones being annual financial statements ,company website ,internal month end reports no stone was left unturned.

## **5.2 CONCLUSIONS**

The adoption of environmental accounting practices is still an ongoing process in the manufacturing industry. The findings indicated that CAFCA Ltd have adopted only four of the eight practices which the researcher had posed as standard adoption. This is in line with argument posed by ACCA report on environmental issues, as an accounting board which avows that environmental accounting is an emerging issue. Despite challenges firms face in implementing such practices efforts are underway as basing on findings some of the practices are yet to be employed. . As more companies come to see the environmental impacts in their decision making, the value of Environmental accounting will continue to grow (John Akahaiye, 2009).

This is contrary to other researchers such as Hajnalka Van (1997) who perceive environmental accounting as a new challenge for the accounting system and asserts that companies will not engage in any of the environmental practices.

Stakeholders are the major determinants of the level of adoption and implementation of environmental accounting and reporting of the company. It has great influence as compared to other factors which are considered to be more influential. Research findings from both primary sources and secondary sources revealed that pressure from stakeholders have more impact to the level of operations at CAFCA. The research findings are consistent to those in the context of a single manufacturing site of a Dutch multi-national chemical company by Bouma and Kap-Roelands (2000) report that expectations of different stakeholders influence the extent of designing and implementation of environmental management information systems. In the case of CAFCA Ltd most prominent stakeholders are foreign customers and suppliers. EMA as a regulatory board, NSSA as partner in inspections and PwC as an independent external auditors. The stringent listing requirements of the Zimbabwe, Johannesburg and London stock exchanges in which CAFCA Ltd is listed were considered to be one of the leading factors by respondents. This adds value to the debate that is current in literature as to what are the most determinant factors of adopting environmental accounting practices and engaging into environmental financial reporting. Institutional theorists argue that adoption and implementation of environmental accounting is more driven by institutional factors. (Guthrie and Farneti, 2008) supports that environmental reporting was more driven by internal organisational interests rather than external legitimacy.

Based on the findings of the study the researcher concluded that environmental costs are tracked independently of other general, administrative and distribution costs however classification of these costs when elaborating environmental budgets and calculating costs as environmental orientated is influenced more by the decision made by SHE department and some of the costs are classified under overheads when the accounting department is not convinced by the justification made by SHE department this result in over estimation of overheads. In the same context benefits arising from environmental issues are added to other income.

Environmental costs are neglected in product costing and pricing yet they constitute a significant proportion of costs. There is no system which integrates management accounting and environmental costs so as to achieve full cost accounting. From the overall impression by the management accountants interviewed, incorporating environmental costs would entail a complication with the traditional conventional costing techniques. Thus the value of

conventional costing techniques is questioned. This is in line with the belief in literature by past and recent studies. Bebbington (1995) claims that the accounting discipline has overly emphasized the technical aspects of accounting data that has financial descriptions and has presumptuously assumed that it acts in a neutral manner.

Reporting on financial performance in environmental costs and revenues, liabilities and assets is not yet fully employed in CAFCA. Findings made the researcher to conclude that the organization is slow in implementing reporting strategies on environmental elements. Insufficiency and inconsistency was noticed in the reports for the three financial periods under review.

In yet another research by Price Waterhouse in (2011) recently revealed that, most respondents with known exposure to environmental costs and liabilities were increasing but reluctant or slow to record them in the financial statements. This pose a question on the value, reliability, completeness and other enhancing qualitative characteristics of annual reports.

### **5.3 RECOMMENDATIONS**

In relation to findings the researcher recommends the organization to adopt more of the other environmental accounting practices it hasn't adopted especially disclosure on environmental financial information this will help achieve qualitative characteristics of useful financial statements. Although this is not in line with the thought of some other senior executives who justified that environmental information on brochures and internally for functions such as cost reduction hence may not need to be disclosed in published reports and rather disclose on information which shows that the company is being environmentally conscious in its operations e.g carbon emissions schedule. Disclosing of both would facilitate stakeholders to authenticate, accept and justify improvements in operations and costs involved either capital or revenue.

This is in line with the observation by Salomone and Gallucio (2001) that descriptive non-financial information cannot help the reader to comprehend the interactions between the company and the environmental issues quantitative and financial terms are essential to complement the information. They therefore gave the opinion that qualitative disclosure must be

accompanied by the same type of precise and clear financial information that is useful to reconstruct the economic consequences deriving from environmental expenditure.

The researcher also recommend the inclusion of IT department in facilitating the improvement of information system in tracing costs and adopt systems such as Environmental Activity based costing and come up with software's and databases to include environmental costs in product costing and pricing. This will assist in achieving true cost accounting.

Continuous improvement to practices already adopted and implemented is also recommended so as to achieve high standards in company operations. Policy legislators should do something by crafting or recommending a framework that the company could be encouraged to adhere to so as to avoid inconsistency and insufficiency noted in environmental reporting. The existence of a framework also aids in harmonizing reporting thereby providing important grounds for comparability which is very difficult to ascertain given the current position. A subcommittee either in the Accounts ,SHE or Internal department to address the adoption and implementation of environmental accounting practices and reporting would be essential taking into account that there is no specific Generally Accepted Accounting Practice (GAAP) set for Environmental accounting and reporting. The subcommittee would be responsible for research on frameworks being implemented by other industry sectors for instance the mining sector and consider those as benchmarks.

Certification of other ISO's which are concerned with financial aspects of environmental issues is also recommended such as ISO 14042 –Product Life Cycle Inventory Analysis.

Inclusion of the financial aspects in the environmental policy of the company is essential since the mandatory standards are not yet laid down by Zimbabwean legislators such as (ICAZ).This might require more programmes on research and development.

#### **5.4 Suggestions for further studies**

A study on the factors hindering (obstacles) in attaining high levels of adoption and implementation is suggested. The researcher also suggests a research on measures that can be used to influence standard adoption and implementation is essential to help close the gap on low adoption and inconsistent reporting.

## REFERENCES

- Adams, C.A. (2002) Internal Organisational factors influencing corporate social and ethical reporting: Beyond current theorizing Accounting, Auditing and Accountability. *Library Review*. Emerald Database 15. P 223-250. Available from: <http://www.emeraldinsight.com> (Assessed : 12<sup>th</sup> August 2014 )
- Akahiye, J. (2009) Environmental Disclosure in the oil and gas industry: Environmental Accounting Management. . *Library Review*. Emerald Database 3. P 49-75. Available from: <http://www.emeraldinsight.com> (Assessed : 5<sup>th</sup> September 2014)
- Association of Chartered Certified Accountants (ACCA) (2011) Accounting futures: Critical Issues for tomorrow's profession. *Library Review*. Emerald Database. P 45-47. Available from: <http://www.emeraldinsight.com> (Assessed : 15<sup>th</sup> August 2014 )
- Australian corporations (2002) Accounting and Business Research. *Library Review*. Emerald Database 26 (3). P 187-199. Available from: <http://www.emeraldinsight.com> (Assessed : 12<sup>th</sup> August 2014 )
- Ball, A.(2005) Environmental accounting and change in the UK local government: Accounting, Auditing and accountability journal. *Library Review*. Emerald Database 18 (3). P 346-373. Available from: <http://www.emeraldinsight.com> (Assessed : 18<sup>th</sup> August 2014 )
- Bartolomeo, M. (2000) Environmental Management Accounting in Europe: Current Practice and future potential *Library Review*. Emerald Database 9. P 31-52. Available from: <http://www.emeraldinsight.com> (Assessed : 18<sup>th</sup> August 2014 ).
- Bebbington, J. (1997) A review essay on environmental accounting: Accounting, Auditing and Accountability Journal *Library Review*. Emerald Database 10 (3). P 365-367. Available from: <http://www.emeraldinsight.com> (Assessed : 18<sup>th</sup> August 2014 ).
- Bebbington, J. and Thomson, I. (2007) Social and environmental accounting, auditing, and reporting: A potential source of organisational risk governance?" Environment and Planning C: Government and Policy. *Library Review*. Emerald Database 25 (1). P 38-55. Available from: <http://www.emeraldinsight.com> (Assessed : 18<sup>th</sup> August 2014 )

Bebbington, J., Higgins, C. and Frame, B. (2009) Initiating sustainable development reporting: evidence from New Zealand. *Accounting Auditing & Accountability Journal. Library Review. Emerald Database* 22 (4). P 588-625. Available from: <http://www.emeraldinsight.com> (Assessed : 18<sup>th</sup> August 2014 )

Bennett, M. and James, P.(1998) Making environmental management count: Baxter International's environmental financial statement Greener Management International. *Library Review. Emerald Database* 17. P 114-127. Available from: <http://www.emeraldinsight.com> (Assessed : 18<sup>th</sup> August 2014 )

Campbell, D. (2003) Intra- and Inter sectoral Effects in Environmental Disclosures: Evidence for Legitimacy Theory Business Strategy and the Environment. *Library Review. Emerald Database* 12 (6). P 357-371. Available from: <http://www.emeraldinsight.com> (Assessed : 12<sup>th</sup> August 2014)

Cherry, K.(2000) What is a case study: a case study of in-depth personal behavior. . *Library Review. Emerald Database* 4. P 170. Available from: <http://www.emeraldinsight.com> (Assessed : 5<sup>th</sup> September 2014)

Cohen, D. and Cabtre, B. (2006) Quantitative Research Guidelines Project (Online). Available on <http://www.quarelie.org> (assessed: 5<sup>th</sup> September 2014)

Cooper, D., R. and Schinder, P., S.(2003) *Business Research Methods 8<sup>th</sup>* . Edaron new pelhi. Tata McGraw-Hill Publishing company

Creswell, J., W.(2009) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE UK. University of Nebraska-Lincoln

Deegan, C. and Blomquist, C.(2006) Stakeholder influence on corporate reporting an exploration of the interaction between WWF-Australia and the Australian minerals industry: Accounting, Organisation & Society. *Library Review. Emerald Database* 3 (4). P 343-373. Available from: <http://www.emeraldinsight.com> (Assessed : 12<sup>th</sup> August 2014 )

Deegan, C.(1998) *Environmental Reporting in Australia: We're Moving Along the Road, but There's Still a Long Way to Go*. Paper presented at the University of Adelaide/University of South Australia Seminar series.

Deegan, C.(2006). *Financial Accounting Theory*. Sydney. McGraw-Hill Australia

Deegan, Craig, and Gordon, B. (2006) *A study of the environmental disclosures practices of Disclosure in the annual reports of large companies operating in Portugal*. Corporate Social

Deegan. C.(2002) The legitimating effect of social and environmental disclosures – a theoretical foundation: *Accounting, Auditing & Accountability Journal*. *Library Review*. Emerald Database 15 (3). P 281-311. Available from: <http://www.emeraldinsight.com> (Assessed : 5<sup>th</sup> September 2014)

Dolan, E., G(1980) *Basic Economics* 2<sup>nd</sup> Edition. Hinsdale. Dryden Press

Environmental Management Act of Zimbabwe( Chapter 20:27) Harare Gvt printers

Freedman, M. and Jaggi, B. (1986) An analysis of the impact of corporate pollution disclosures included in annual financial statements on investors' decisions: *Advances in Public Interest Accounting*. *Library Review*. Emerald Database 1. P 192-212. Available from: <http://www.emeraldinsight.com> (Assessed : 5<sup>th</sup> September 2014)

Freedman, M. and Jaggi, B. (2003) *Advances in Environmental Accounting and Management*. Bingley UK. Emerald

Frost, G. and Tod, D.(2008) *A study of environmental accounting within the New South*.

Frost, G., Geoffrey, R., Trevor, D. and Wilmhurst (1998) *Environmental Accounting a growing concern*. Australian CPA. May

Gago, and Rodriguez, S.(2002) Management Information for ecologically oriented decision making: A case study of the introduction of co-generation in eleven Spanish Companies *Accounting Forum*. *Library Review*. Emerald Database 26. P 191-218. Available from: <http://www.emeraldinsight.com> (Assessed : 5<sup>th</sup> September 2014). Vol26 pp191-218

Gray, R., H.(2010) Is accounting for sustainability actually accounting for sustainability and how would we know : An exploration of narratives of organizational and placement Accounting Organisations and Society *Library Review*. Emerald Database 35. P 47-62. Available from: <http://www.emeraldinsight.com> (Assessed : 5<sup>th</sup> September 2014).

Haniffa, R., M. and Cooke, T.,E. (2005) The impact of culture and governance on corporate social reporting: Journal of Accounting & Public Policy. *Library Review*. Emerald Database 24 (5). P 391-430. Available from: <http://www.emeraldinsight.com> (Assessed : 5<sup>th</sup> September 2014)

Hetled, J. and Yakovleva, N. (2000) Exploiting trends in social and environmental disclosure, Available at <http://www.sciencedirect.com>(Assessed: 5<sup>th</sup> September 2014)

Lally , A., P. (1998) ISO 14000 and environmental cost accounting :The gateway to the Global Markert Law and Policy in International Business. *Library Review*. Emerald Database 29. P 501-538. Available from: <http://www.emeraldinsight.com> (Assessed: 5<sup>th</sup> September 2014).

Larrinaga, G., C. (2008) Compliance with mandatory Environmental Reporting in Financial statements: The case of Spain (2001-2003). . *Library Review*. Emerald Database 79 (3). P 245-262. Available from: <http://www.emeraldinsight.com> (Assessed : 5<sup>th</sup> September 2014

Larrinaga-Gonzalez, C.(2007) Engaging with organisations in pursuit of improved sustainability, accounting and performance: Accounting, Auditing & Accountability Journal. . *Library Review*. Emerald Database 20 (3). P 333-355. Available from: <http://www.emeraldinsight.com> (Assessed : 5<sup>th</sup> September 2014)

Matthews, M.,R. (1993). *Socially Responsible Accounting*. London UK. Chapman and Hall.

Maunder, K., L. and Burritt, R., L.(1991) Accounting and ecological crisis Accounting: Auditing and Accountability Journal. . *Library Review*. Emerald Database 3. P 9-26. Available from: <http://www.emeraldinsight.com> (Assessed : 5<sup>th</sup> September 2014)

Milne, M., J.(1996) On Sustainability:The environment and management accounting, Management Accounting Research. . *Library Review*. Emerald Database 7. P 135-161. Available from: <http://www.emeraldinsight.com> (Assessed : 5<sup>th</sup> September 2014)

O'Donovan, G. (2002) Environmental disclosures in the annual report: Extending the applicability and predictive power of legitimacy theory: Accounting, Auditing & Accounting



Journal. *Library Review*. Emerald Database 15 (3). P 344-371. Available from: <http://www.emeraldinsight.com> (Assessed : 5<sup>th</sup> September 2014)

Phillips, R. (2003) *Stakeholder theory and organizational ethics*. San Francisco: Berrett-Koehler Publishers

Responsibility and Environmental Management . *Library Review*. Emerald Database 17. P 185-204. Available from: <http://www.emeraldinsight.com> (Assessed : 5<sup>th</sup> September 2014)

Roberts, R., W.(1992) Determinants of environmental disclosure: Accounting, Organizations and Society. *Library Review*. Emerald Database 17 (6). P 595-612. Available from: <http://www.emeraldinsight.com> (Assessed : 5<sup>th</sup> September 2014)

Saunders, M. Philip, L. and Adrian, T. (2009) *Research Methods for Business Students 5<sup>th</sup> ed.* Pitman. FP Prentice Hall.

Unerman, J., Bebbington, J. and O' Dower, B. (Eds), Sustainability Accounting and Wales's public sector. Accounting Research Journal . *Library Review*. Emerald Database 11 (2). P 400-410. Available from: <http://www.emeraldinsight.com> (Assessed : 10<sup>th</sup> September 2014)

Wilozek, Y. (2012) Accounting Practices: Accounting must Embody Environmental Social factors into reporting. . *Library Review*. Emerald Database 8 (4). P 157. Available from: <http://www.emeraldinsight.com> (Assessed : 5<sup>th</sup> September 2014)

Delloite (2011), "Towards greener pastures :How to leverage sustainability initiatives for finance transformation" Available on <http://www.delloite.com> accessed on 7/08/201

Global Reporting Initiative 2011, Sustainability Reporting Guidelines. Amsterdam:GRI. Accessed on 15/08/2014 <http://www.globalreporting.org>

Intosai Working Group on environmental auditing 2010, “Environmental Accounting: Current Status and options for supreme Audit institutions” Available at <http://www.environmentalauditing.org>, Accessed on 7/08/2014

[www.cafca.co.zw](http://www.cafca.co.zw)

[www.answers.com](http://www.answers.com)

[www.businessdirectory.org](http://www.businessdirectory.org)

[www.sciencedirect.org](http://www.sciencedirect.org)

# APPENDIX 1

## Regression

**Descriptive Statistics**

	Mean	Std. Deviation	N
dependent	1.37	1.306	46
independant	1.83	1.122	46

**Correlations**

		dependent	independant
Pearson Correlation	dependent	1.000	-.168
	independant	-.168	1.000
Sig. (1-tailed)	dependent	.	.133
	independant	.133	.
N	dependent	46	46
	independant	46	46

**Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	independant <sup>a</sup>		. Enter

a. All requested variables entered.

b. Dependent Variable: dependent

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change
1	.168 <sup>a</sup>	.028	.006	1.302	.028	1.271

a. Predictors: (Constant), independant

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.154	1	2.154	1.271	.266 <sup>a</sup>
	Residual	74.563	44	1.695		
	Total	76.717	45			

a. Predictors: (Constant), independant

b. Dependent Variable: dependent

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.726	.370		4.668	.000
	independant	-.195	.173	-.168	-1.128	.266

a. Dependent Variable: dependent

## Descriptives

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
independant	46	1	5	1.83	1.122
dependent	46	0	3	1.37	1.306
Valid N (listwise)	46				

## Descriptives

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
independant	5	1	5	3.00	1.581
dependent	5	0	4	2.00	1.581
Valid N (listwise)	5				

## APPENDIX 2

### QUESTIONNAIRE 1 SHE DPT MIDLANDS STATE UNIVERSITY FACULTY OF COMMERCE DEPARTMENT OF ACCOUNTING

My name is SITHOLE GUEST SHINGAYI a student at **Midlands State University** pursuing a Bachelor of Commerce Accounting Honours Degree. As a requirement for the completion of the degree program, students are required to carry out a research project on a problem of their choice subject to authorities' approval. As such the student is undertaking a research on “**An Analysis on the trends in the adoption and implementation of environmental accounting practices and reporting In manufacturing industry in Zimbabwe .Case of CAFCA Ltd.**” You are hereby kindly requested to assist in the research by responding to the following questions as truthfully as you can. All the information you will provide will be used solely for the purpose of this study and will be treated with utmost confidentiality. Your cooperation in this regard will be greatly appreciated.

#### INSTRUCTIONS:

- Please answer all questions fully and honestly.
- Where boxes are provided indicate your answers by ticking in the appropriate box.

### Questionnaire to the Safety, Health and Environment (SHE) Department, Senior Executives and other Employees.

#### I, Information of Respondent

1, Position held in Department: \_\_\_\_\_

2, Age: \_\_\_\_\_

3, Gender: Male  Female

**II, Questions to ask for the understanding about environmental accounting practices and reporting:**

1) I understand the meaning of “Environmental Accounting Practices and Reporting”.

Strongly agree     Agree     Neutral     Disagree     Strongly disagree

2) To what extent does your company adopt and implement such practices.

a.) Very high     b.) High     c.) Neither High nor Low     d.) Low     e.) Very low

3) What is the frequency of environmental feasibility projects, training and awareness?

a.) Very high     b.) High     c.) Neither High nor Low     d.) Low     e.) Very low

4) Which departments are concerned with the planning and budgeting of environmental costs.

a) Accounting dept

b) SHE dept

c) SHE and accounting dept

d) SHE, accounting and any other

e) None of the above

5) To what extent do you think adoption of environmental accounting and reporting is important.

a.) Very high     b.) High     c.) Neither High nor Low     d.) Low     e.) Very low

6) What factors do you think highly influence the level of adoption.

a) Board composition.

b) Internal organizational interests and policies

c) Company profile

d) Stakeholders of the company

e) Other, please specify.....



## APPENDIX 3

### QUESTIONNAIRE 2 FOR FINANCE DPT

**MIDLANDS STATE UNIVERSITY  
FACULTY OF COMMERCE  
DEPARTMENT OF ACCOUNTING**

My name is **SITHOLE GUEST SHINGAYI** a student at **Midlands State University** pursuing a Bachelor of Commerce Accounting Honours Degree. As a requirement for the completion of the degree program, students are required to carry out a research project on a problem of their choice subject to authorities' approval. As such the student is undertaking a research with the title **“An Analysis on the trends in the adoption and implementation of Environmental Accounting Practices and Reporting of Manufacturing industry in Zimbabwe: Case of CENTRAL AFRICAN CABLES (CAFCA LTD)”** You are hereby kindly requested to assist in the research by responding to the following questions as truthfully as you can. All the information you will provide will be used solely for the purpose of this study and will be treated with utmost confidentiality. Your cooperation in this regard will be greatly appreciated. Please note that you are requested not to write your name for the purposes of privacy and confidentiality.

#### INSTRUCTIONS:

- Please answer all questions fully and honestly.
- Where boxes are provided indicate your answers by ticking in the appropriate box.

#### QUESTIONNAIRE-FINANCE DEPARTMENT

##### PERSONAL INFORMATION

1. Gender: Male  Female
2. Highest Qualification : \_\_\_\_\_
3. Designation in the company: \_\_\_\_\_

## RESEARCH INFORMATION

### SECTION A: ENVIRONMENTAL ACCOUNTING PRACTISES

1. To what extent do you understand the concept of environmental practise?

a.) Very high  b.) High  c.) Neither High nor Low  d.) Low  e.) Very low

2) Does your company have adopted and implemented any environmental accounting practices?

a) Yes  b.)No  c) not sure

3) If yes which of the following:

Elaboration of Environmental budgets

a) Calculation of Environmental costs

b) Elaboration of Environmental accounting indicators

c) Allocation of budgetary funds to environmental projects or initiatives

d) Accounting recognition of environmental issues

e) Disclosure of environmental information in Annual Report

f) Direct participation of the Accounting Department in the elaboration and disclosure of the Environmental report

g) Disclosure of environmental financial information in reports and publications other than Annual Report

4) Which of the following statements (a-e) best describe how you generate the information:

a.) Generated as part of your general ledger system.

b.) Generated as part of your management accounting system, separate from your general ledger system.

c.) Generated by a free standing system, using data electronically transferred from your general ledger or management accounting system.

d.) Generated by a free standing system, which does not directly access data in other systems, including non-automated methods.

e.) Generated by some other type of system.

5) Which departments have access to the information generated on environmental costs and benefits?

a.) Financial accountants Dept. only       b.) Management accountant's dept.

c.) SHE dept. only

d.) Finance and SHE. Only  e.) All organizational Depts

6) Which of the following factors do you consider to significantly influence the adoption and implementation of environmental management practices?

a) Board composition

b) Internal organizational interests and policies

c) Company profile

d) Stakeholder of the company

e) Other, please specify .....

7) To what extent does environmental aspects such as capital budgeting, environmental expenditures and benefits discussed between SHE and accounts department.

a.) Very high    b.) High    c.) Neither High nor Low    d.) Low    e.) Very low

8) To what extent does the level of communication differ from other functions such as advertising of sales department.

a.)Very high    b.) High    c.) Neither High nor Low    d.) Low    e.) Very low

9) To what extent does environmental accounting practices are integrated with other management functions such as decision making performance management and strategic planning.

a.)Very high    b.) High    c.) Neither High nor Low    d.) Low    e.) Very low

10) how would you evaluate the level of implementation of the management accounting practices.

a.)Very high    b.) High    c.) Neither High nor Low    d.) Low    e.) Very low

## **SECTION B. ENVIRONMENTAL REPORTING**

1) To what extent do you understand the concept of environmental reporting.

a.)Very high  b.) High  c.) Neither High nor Low  d.) Low  e.) Very low

2) To what extent do you think the following factors influence environmental reporting.

a.)Very high  b.) High  c.) Neither High nor Low  d.) Low  e.) Very low

3) Which of the following theoretical perspective of environmental accounting and reporting do you think influence the level of adoption legitimacy?

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Legitimacy Theory					
Stakeholders Theory					
Shareholders Theory					

4) To what extent do you think environmental reporting is important to a firm of your profile?

a.)Very high  b.) High  c.) Neither High nor Low  d.) Low  e.) Very low

5) How do you rate the level of adoption of environmental accounting and reporting of your company.

a.)Very high  b.) High  c.) Neither High nor Low  d.) Low  e.) Very low

## **APPENDIX 4**

### **INTERVIEW GUIDE**

#### **The SHE Department, Senior Executives and Other Employees**

**Research topic: An Analysis on the trends in the adoption and implementation of environmental accounting and reporting**

**In manufacturing industry in Zimbabwe .Case of CAFCA Ltd.**

#### **Section A**

1. Gender: Male  Female
2. Age: \_\_\_\_\_ ,
3. Educational Qualifications: \_\_\_\_\_

#### **Section B**

4. Do you understand the term Environmental Accounting and Reporting and what it is all about?
5. In your own opinion what do you think environmental accounting entails?
6. Does CAFCA Ltd have a Safety and Health Environment Policy and to what extent does it influence the adoption of environmental accounting and reporting?
7. Does the company regulations require CAFCA Ltd to disclose in their reports the costs and benefits of Environmental Accounting.
8. Does the implementation of Environmental Accounting and Reporting leads to CAFCA Ltd deriving any benefits?
9. In your own opinion which departments do you think should be concerned with environmental costs and benefits ?
10. Do you think adopting and implementing environmental accounting and reporting is important?
11. What are the key costs of environmental issues incurred by the organisation?

12. In your own opinion what do you think are the challenges of successfully adopting and implementing environmental accounting and reporting?
13. Do you think environmental accounting should be mandatory or voluntary ?
14. What are the major reasons for reporting on environmental financial information and reasons for not reporting in your on opinion?

*Thank you for your time*

## **APPENDIX 5**

### **INTERVIEW GUIDE-**

#### **Finance Department**

**Research topic: An Analysis on the trends in the adoption and implementation of environmental accounting practises and reporting**

**In manufacturing industry in Zimbabwe .Case of CAFCA Ltd.**

#### **Section A**

1. Name: \_\_\_\_\_ ,
2. Age: \_\_\_\_\_ , Gender: Male  Female
3. Educational Qualifications: \_\_\_\_\_

#### **Section B**

4. Have you been oriented on the basic principles of environmental accounting and reporting?
5. How often are you trained on the aspect of environmental accounting and reporting?.
6. How often environmental expenditures and benefits do discuss, planned and reported?
7. Are environmental Costs tracked independently of other costs such as administration and general expenses or they are treated as overheads.
8. How do you report information on environmental costs and benefits (as standalone reports or as part of your financial statements or in internal reports only)
9. What is the significance of environmental accounting and reporting to CAFCA Ltd
10. Do you have any accounting standards you follow on environmental accounting issues for example IAS 37 on the treatment of environmental costs and benefits provisions and contingencies.

11. Are environmental accounting and reporting issues part of strategic planning, decision making and performance management functions of your organisation?
12. In your own opinion what factors do you think influence the adoption of environmental accounting practises and reporting by CAFCA Ltd

*Thank you for your time*

**Sithole Guest  
Shingayi**

**Bcomm (Hons) Degree in  
Accountanting**

**Midlands state University**

**Zimbabwe**

**Cell: 0779 743 606**



