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**Corporate Responsibility: Integrative Approaches for Coastal
and Environmental sustainability**

The Douala-Bonaberi Industrial Zone, Republic of Cameroon

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TABLE OF CONTENTS

Declaration	i
Copyright	ii
Table of content.....	iii
List of Figures.....	v
List of Tables.....	vi
Abbreviations.....	vii
Abstract.....	viii
Chapter 1 GENERAL INTRODUCTION	
1.1 Background to study Area.....	1
1.2 Problem Statement.....	5
1.3 Objectives of Study.....	7
1.4 Significance of Study.....	8
1.5 Research Questions.....	8
1.5.1 Institutional Framework.....	9
1.5.2 Environmental Commitment and Awareness.....	9
1.5.3 Beyond Compliance.....	9
1.5.4 Stakeholder Engagement.....	9
1.5.5 Measurement, Reporting and Auditing.....	9
1.5.6 Transparency.....	9
1.5.7 Commitment to Continuous Improvement.....	9
1.6 Hypothesis.....	9
1.7 Organization of the Paper.....	9
Chapter 2 LITERATURE REVIEW	
2.1 Understanding Corporate Environmental Responsibility (CER).....	11
2.1.1 Drivers and evolution of CER.....	12
2.1.2 Implementation of CER.....	14
2.2 Industrial Pollution In The Study Area.....	15
2.3 Coastal Pollution.....	18
2.4 Mitigation Industrial Pollution in The Douala- Bonaberi Industrial Strait.....	20

2.4.1 Institutional Framework for the control of industrial pollution in Cameroon.....	20
2.4.2 Cameroon’s Legal and Regulatory Framework (Environment and Nature protection)....	20
2.4.3 Cameroon’s Environmental Management Policy Framework.....	22
2.4.4 Cameroon Environmental Impact Assessment.....	23
2.4.5 Limitations Of Cameroon’s Environmental Impacts Assessment.....	25
2.5 Corporate Perspectives.....	26
2.5.1 Environmental Management System (EMS).....	26
2.5.2 Environmental Management System (EMS) in Cameroon.....	27
2.5.3 Approach for the effective and efficient Management of Industrial Pollution along the Atlantic Coast of Cameroon.....	27
Chapter 3 METHODOLOGY	
3.1 Data Collection.....	30
3.2 Environmental Responsibility Assessment Tools.....	32
3.2.1 Environmental Commitment and Awareness.....	33
3.2.2 Stakeholder Engagement.....	33
3.2.3 Measurement, Auditing and Reporting.....	34
3.2.4 Transparency.....	35
3.2.5 Commitment to Continuous Improvement.....	35
3.2.6 Beyond Compliance.....	36
3.2 Data Analysis	36
Chapter 4 RESULTS, ANALYSIS AND DISCUSSION	
4.1 CER assessment Results and Analysis.....	38
4.2 CER assessment for CDC.....	39
4.3 CER assessment for AUSTIN MARITIME.....	39
4.4 CER assessment for GUINNESS CAMEROON S.A.....	40
4.5 CER assessment for DOUALA AUTONOMOUS PORT (PAD).....	40
Chapter 5 RECOMMENDATIONS AND CONCLUSION	42
References	44

LIST OF FIGURES

Figure 1.1 Map of Cameroon.....	1
Figure 1.2 Representation of industries among major industrial Regions.....	2
Figure 1.3 Industrial concentration sites in Cameroon.	3
Figure 1.4 Spatial Planning of the Douala-Bonaberi Metropolitan Area.....	4
Figure 2.1 Decision making structure vis-à-vis the control of industrial pollution.....	20

厦门大学博硕士论文摘要库

LIST OF TABLES

Table 1.1: Major Industries, Products and Pollutants in the study area.....	6
Table 2.1: Elements of Corporate Responsibility.....	12
Table 2.2: Industrial pollutants and their potentials risks to human health.....	17
Table 3.1: Sampled corporations and basic features of respondents.....	30
Table 3.2: Environmental Commitment and Awareness Assessment Tool.....	33
Table 3.3: Stakeholder Engagement Assessment Tool.....	33
Table 3.4: Measurement, Auditing and Reporting Assessment Tool.....	34
Table 3.5: Transparency Assessment Tool.....	35
Table 3.6: Commitment to Continuous Improvement Assessment Tool.....	35
Table 3.7 Beyond Compliance Assessment Tool.....	36
Table 3.8: CER Data Analysis.....	37
Table 4.1: Case companies classification.....	38
Table 4.2: CER assessment for CDC.....	39
Table 4.3: CER assessment for AUSTIN MARITIME.....	39
Table 4.4: CER assessment for GUINNESS CAMEROON S.A.....	40
Table 4.5 CER assessment for PAD.....	40

ABBREVIATIONS

CDC	Cameroon Development Corporation
CER	Corporate Environmental Responsibility
CI	Continuous Improvement
EIA	Environmental Impact Assessment
EMS	Environmental Management System
PAD	Port Autonome de Douala (Douala Autonomous Port)
WBCSD	World Business Council for Sustainable Development
CSR	Corporate Social Responsibility
ENGO	Environmental Non-Governmental Organization
GNP	Gross National Product
BOD	Biological Oxygen Demand
TSS	Total Suspended Solids
DDT	Dichlorodiphenyltrichloroethane
TBT	Tributyltin
EMP	Environmental Management Plan
EPA	Environmental Protection Agency
FAO	Food and Agricultural Organization
ECA	Environmental commitment awareness
UNIDO	United Nation Industrial Development Organization
CEC	Certificate of Environmental Conformity
GRI	The Global Reporting Initiative
NGO	Non-Governmental Organization
ECA	Environmental Commitment and Awareness

摘要

近年来，为了减少和控制杜阿拉地区的工业污染，政府行动和企业自发行动开始关注这一问题。然而，现有的相关研究并没有很好地评估已有的行动和实践在解决杜阿拉地区工业污染问题的效果(Alemanji, 2006)。因此，为了解决这一问题，本论文通过研究这一地区的环境现状与现有的企业实践的关系，并提出一个关于企业在环境和海岸带管理方面的综合指南。本文还对企业环境责任、企业实施环境管理制定的动机以及利益这三个方面进行了研究。本论文的研究内容分为两个部分：第一部分是评估杜阿拉海岸带地区的环境退化现状和污染物的来源，并且调查和分析了企业和政府通过现有的法律制度框架来解决工业和居民的污染问题的措施。

第二部分是在上述研究的基础上提出一个关于企业环境责任的综合方法或是措施。企业应该要履行环保承诺，提高环境意识；此外应制定相关法律条款明确利益相关者的参与，并制定一个可行的相关机制来评估、报告和审计企业在应对环境问题上的表现，从而确保企业能够遵守相关的法律法规，改善企业在应对环境问题上的表现。本文采用文献搜集、现场调查和采访的方式来收集资料和数据，四个企业接受了采访。

本文的研究表明这些企业在遵守与环境和海岸带相关的法律法规方面取得了不错的效果，但是依然需要制定一个企业环境机制。本研究还发现非洲在充分理解和接受环境企业责任这一新的概念方面依然还很欠缺。本文的研究工作将为喀麦隆、非洲和世界其他地区在制定新的环境和海岸带适应性行动计划方面提供建议和借鉴。

关键词：企业责任；企业环境环保主义；海岸带适应性；适应性行动计划；杜阿拉工业区

Abstract

In recent years and even currently, the rule entails focus on both governmental initiatives and corporate voluntary practices with the view to curb industrial pollution in the Douala metropolitan city and its environs including Bonaberi. However, several studies have failed to ascertain the extent to which these initiatives and practices have been successful (Alemanji, 2006). This paper therefore bridges that gap by relating the state of the Environment in the area to corporate practices and proposes an integrative guideline on corporate perspectives on Environmental and Coastal management. A more persuasive case is made by analyzing the components of Corporate Environmental Responsibility, drivers, the benefits and limitations of Environmental Management Systems (EMS) implementation by the industries. The project involved two phases. The initial phase was an assessment of the state of environmental degradation in the coastal city of Douala and an acumen into the sources of pollution. This phase also involved a vivid investigation of how the corporations, the government or both are acting to curb the problems of industrial and residential pollution in Douala and Bonaberi through institutional, legal and regulatory frameworks. The last phase served to stage and develop an integrative approach for corporate responsibility. It is the wish of the author that industries in the study area should integrate these approaches into their decision making processes if they must come out clear on environmental and coastal sustainability. To integrate these approach, companies should embrace environmental commitment and awareness initiatives, make provisions for stakeholder engagement, develop reliable and relevant mechanisms to measure, report and audit corporate performance on environmental issues, strive to continuously improve its performance and demonstrate the zeal to go beyond simply adhering to rules and regulation.

This was a retrospective study through both primary and secondary methods. Firstly, from published materials, publicly available documentation, indigenous consultancy reports and published data. Secondly, primary sources such as observation and unstructured interviews. Unstructured interviews are individual discussions held with a respondent for the purpose of acquiring data (Halvorsen, 1992). The discussions were held with staff members of some Douala based companies -Austin Maritime Company, Guinness Cameroon S.A, Douala Autonomous Ports Authority and the Cameroon Development Corporation. During individual discussions, the major theme discussed was corporate response to environmental and coastal sustainability.

The case study revealed that though much has been done by these corporations in line with Cameroon's institutional and legal and regulatory policies on environment and the coast, much still need to be done to develop the area of corporate environmentalism. As a matter of fact, the author discovered that Africa still has a long way to fully understand and adapt to the relatively new concept of CER and

its components. It is my wish that this paper and the theories or approaches discussed herein become a working manual by industries in Cameroon, Africa and the world at large in establishing a new Environmental and Coastal Sustainability Action Plan that will redefine in-built administrative tools for corporate decision making on environmental issues.

Key words: Corporate Responsibility-Corporate Environmentalism-Coastal Sustainability-Sustainability Action Plan-Douala/Bonaberi industrial Zone.

厦门大学博硕士学位论文摘要库

Chapter 1

GENERAL INTRODUCTION

1.1 BACKGROUND TO STUDY AREA

The Douala-Bonaberi Industrial Zone is located on the Atlantic coastline of the Republic of Cameroon. As Asangwe (2005) submits, the 1976 official national population census figures put metropolitan Douala at 458,426 and with an annual growth rate in excess of 8% per annum, the estimated population of the area is at 2.5 million enjoying the fastest growing rate of urbanization in the Republic of Cameroon. Easily the most urbanized center in Cameroon, metropolitan Douala has witnessed extensive spatial expansion, which has provoked certain observable environmental problems on the lagoon complex and the wetlands. These are in forms of poor land reclamation for expansion of urban sprawls, sand dredging, expansion of highways, wetland conversion for industrial infrastructure and development with resultant increased discharge of effluents. In spite of the limitations and restrictions imposed by the lagoon water surface and the difficult terrain of its marginal lowlands describing wetlands, it appears that the rate of interference would continue unabated. The effects of these have seen impaired water quality in the contamination of surface and ground water sources, public health hazards, wetland loss, subsidence, flooding etc. (World Commission on Environment and Development, 1987; Population Reference Bureau, 2003; Centre de Recherche et d'Etudes en Economie et Sondage, 1994).



Figure 1.1: Map of Cameroon (Google)

The Douala-Bassa industrial zone is the primary site for industrial activity in Cameroon (a country with 25 million people) and has the highest level of industrial activity in the central African sub-region. Manufacturing industries in Cameroon account for 17% of the gross national product (GNP) (Alemagi 2006). Industrial activities along Cameroon's coastal zone cover about 60% of national production.

Industrial activities along Cameroon's coastal zone are concentrated in the Littoral province of Cameroon. As Angwe and Gabche (1997) assert, a total of about 236 major manufacturing industries are located along the coast of Cameroon. Over 90% of these industries are located in the Douala-Bonaberi industrial zone. These industries include: food processing, textiles and accessories, electricity, water and gas, mechanical and electrical appliances, chemical and mining, building and transport material, paper and pulp, wood processing, agro-industrial and diverse manufacturing plants.

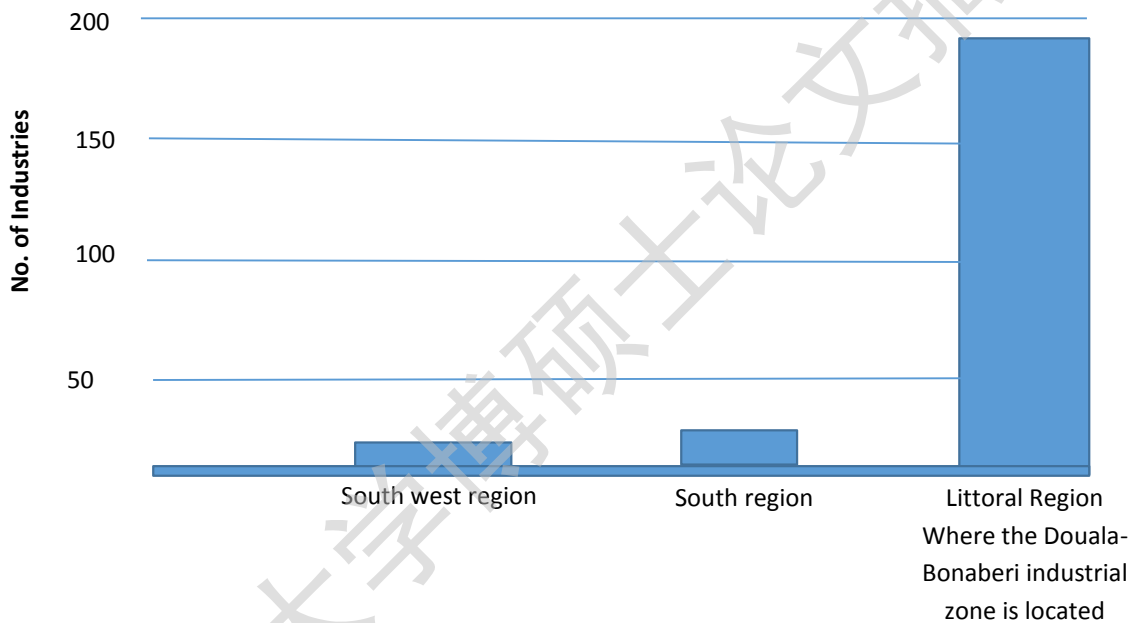


Figure 1.2: Representation of industries among major industrial regions (Alemagi, 2006)

In Cameroon, industrial pollution remains a serious concern to the government and society especially in the urban metropolis of Douala. The high rate of industrial development and population concentration in the Douala-Bonaberi urban district is a key danger to safety, health and the coastal environment. The locations of the designated industrial zones of Bassa (Douala) and Bonaberi were chosen due to easy and fast means to drain generated wastes into streams, rivers and eventually into the Atlantic Ocean.

River Wouri and Dibamba and other streams that flow through the industrial localities removes the wastes from the immediate terrestrial environment occupied by the human population. However, with swelling human population, urban development, industrialization and pastoral expansion especially in the littoral region of Cameroon, it is obvious that domestic and industrial discharges will continue to pose dilapidation problems in this area. In the Douala and Bonaberi area, these wastes end up in water

bodies from city pipes, channels, into the land-water interface of the metropolitan city, with resultant damage to the environment, aquatic life and surface water for human intake, crops and cattle. Many factories or plants in this urban area operate without existing adequate and efficient monitoring of their activities.

According to Angwe and Gabche (1997), 60% of Cameroon's national industrial sector is located on the Douala shoreline. Major industrial concerns here includes agro-industrial, food processing, chemical, textiles, accessories, mining, construction material, paper, and wood processing etc.

In spite of the economic contribution of the industrial segment to the national budget, industrial pollutants like lead, cadmium, mercury, aluminum etc. that spring from industrial actions on the coast of Cameroon seems to have inflicted a wide range of problems to security, health and environmental excellence.

Contact with aluminum contaminated sites has serious health effects and can injure the central nervous system, cause dementia, goad loss of memory and severe trembling, Alzheimer's disease, lung fibrosis, kidney glitches (Lenntech, 2004). Streams which flows through the Bassa industrial zone and pours into Atlantic Ocean on the coast of Cameroon are highly polluted. *Fongwe et al (2000)*, submits that the coastal layout listed the highest grade of aluminum contamination in Cameroon in the months of May and June in the year 2000. Local residents in the Douala and Bonaberi neighborhoods, became victims to extreme aluminum pollution arising from industrial activity in the area. Researchers discovered that aluminum wastes contributed the greater part to the infections. In alliance with global agencies and non-governmental groups, Cameroon has taken significant initiatives to curb industrial pollution.



Figure 1.3: Industrial concentration sites in Cameroon (Source: Folack 1997)

However, by examining the existing texts and through field observation, it is flawless to establish that the overall effectiveness and efficacy of these initiatives is deficient (Alemagi, Oben, Ertel. 2006).

With this in mind, and given the current state of environment in the industrially concentrated Douala-Bonaberi neighborhoods, it is my desire to understand and redress the role of these industries in mitigation industrial pollution by re-introducing the theory of corporate responsibility as a contrivance for environmental and coastal sustainability.

It is the general purpose of this paper to scan the edges that have been formulated by these industries through government’s legal and regulatory structure to control industrial pollution and to present and elucidate on business environmental machineries on the proposed sustainability action plan.



Figure 1.4: Spatial Planning of the Douala-Bonaberi Metropolitan Area
 (Source: www.ecrcom.net)

1.2 PROBLEM STATEMENT

The rapidly expanding coastal population of Douala has exerted an ever-increasing pressure on coastal habitats and resources. Coastal activities, such as industry, agriculture, sand mining, coastal urbanization, deforestation etc., have altered the natural conditions and processes, degrading coastal resources and habitats. The effects have serious socio-economic consequences (Ngoran, 2014). Environmentalists have since publicized the worsening state of pollution in the city Douala and its environs. The experts says this is due to the increasing concentration of industrial plants and poor handling of industrial wastes especially by companies that deal in petroleum, plastic, metal and chemical products (Asaah et al, 2006).

Because Douala and its neighbor-hoods are the main industrial hub of the central African sub region, demographic explosion, poor wastes management and the ever declining margin between industrial zones and inhabited areas have resulted to severe coastal, environmental and societal issues. It is very common to find factories burping obscene smells and wastes dumped in the surrounding with scant respect for environmental laws.

Although according to United Nation's Report, household waste plays an important role in pollution, there is sufficient indication that industrial waste alone is estimated at about 2,187 metric tons per year in biochemical oxygen demand with a corresponding 48,000 metric tons per year in suspended solids in the Cameroon's coastline cosmopolitan of Douala alone (UNEP,1982). It is therefore coherent to settle that this has doubled or multiplied severally over the latter years. Heavy industrial water users produce large quantities of wastes products and they rely on watercourses to dispose the wastes (Oben and Oben, 1999).

Uncontrolled urbanization by the government and poor waste management systems by corporations has resulted to water, air and land depreciation in Douala. Most industries operating in Douala discharge untreated and toxic effluents directly on open residential lands and into canals, streams, and rivers that end up causing widespread deterioration in the water quality and the health of the coastal ecosystem. Coastal and upstream non-point sources of pollution from agricultural and hazardous waste sites constitute sources of contamination of both surface and groundwater sources (Ngoran, 2014).

Marine pollution is another issue that must be reckoned. Because Douala and Bonaberi lie on the Atlantic coast of Cameroon, the pollution of the ocean by humans on the Atlantic shoreline is prominent. Some of the common sources for marine pollution in the study site include land waste, oil spills, sewage water, invasive species and metal wastes from the factories. Marine pollution on the coast of Douala is very complex in nature and stems from land wastes, oil spills, sewage water, invasive species and metal wastes from mines. The oil spills ensues from the National Corporation for Petroleum Storage and Distribution hydrocarbon plants located on the coast and factories located in the Douala and Bonaberi

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