

**The Church and Sustainable Development: A Case Study of the Role of  
the All Africa Conference of Churches in the Conservation of Forests in  
Africa.**

By

Gichira, Peter Solomon

Reg. No: C/50/P/9098/04

UNIVERSITY OF NAIROBI LIBRARY  
EAST AFRICANA

A research project submitted in partial fulfillment of the requirements for the degree of Master of Arts in Environmental Planning and Management in the Faculty of Arts, University of Nairobi – Kenya.



**2009**

## Declaration

This research project is my personal work and has not been presented for a degree award in any other University.



Gichira, Peter Solomon

Reg. No: C/50/P/9098/2004

## Approval

This Research Project Has Been Submitted For Examination with Our  
Approval as University Supervisors

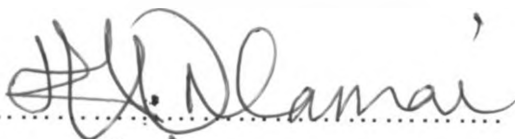
Prof. Evaristus M. Irandu



Date.....

16/11/09

Mr. Haggai W. Namai



Date.....

17/11/2009.

## **Dedication**

This work is dedicated to my wife, Miriam Ndunge and my two children, Raynner Makena and Lennox Kinuthia for their love, prayers and support through out this study period. I also wish to dedicate this work to my mum, Alice Wanjiru Kagema as a "mission accomplished" in her efforts to single handedly educate her children; my mother-in-law, Phyllis Mutua for her prophecies-come-true and lastly to my brothers, Muriuki, Munene, Mwea and Nguyu for their accompaniment in many years of toil.

## **Acknowledgement**

This research was undertaken under the guidance and supervision of Prof. Evaristus Irandu and Mr. Haggai Namai both lecturers at the Department of Geography and environmental Planning of the university of Nairobi. I am greatly indebted to both for their great commitment, support and dedication through out this study.

This study also benefited greatly from the support of both academic and non-academic staff in this department. In particular, I wish to acknowledge the support of the Chairman of the department, Prof. E.H.O Ayiamba and the course coordinator, Dr. J. K. Musingi. I am also greatly indebted to Dr. F. Mwaura, Dr. Nyangaga, Dr. Moronge, Mr. I. Ndolo and Dr. Owuor all from the department of Geography and Environmental Studies. I am greatly indepted to Dr. Kinuthia Ngugi from the College of Agriculture and Veterinary Medicine of the University of Nairobi, Upper Kabete Campus and Prof. J. Mugambi of the department of philosophy and religious studiesUniversity of Nairobi for their encouragement and advice.

I wish also to acknowledge my employer, the All Africa Conference of Churches - especially the immediate former General Secretary, Rev. H. Mvume Dandala - for his unrelenting support while undertaking this course. I wish also to thank all my respondents for their cooperation in responding to my questionnaires and interviews. This study would not have been successful without you all.

Lastly, thank God for his strength and provisions of finances and health so that this study was a success.

## **Abstract**

This research sought to understand the relationship between the attitudes of Christians as defined by their belief and teachings and how this has affected the conservation of forests in Africa. It did so by understanding perceptions of the leadership of churches under the All Africa Conference of Churches as major actors in influencing attitudes and behaviors of church adherents.

Primary data was obtained using a census that was carried out in the entire 169 membership of the study population and 66 complete questionnaires were received. Secondary data was also acquired through reviews including the review of Forest Acts in 13 African Countries to help assess the level of compliance in relation to legislation. This data was analyzed and used to draw inferences and conclusions for this study.

This research found out that although economic status at the micro-level have a direct impact on forest conservation efforts, this is not the case at the macro-level, as a countries economic indicators have no bearing on its conservation abilities. At the same time, many countries had strived to enact elaborate legislations for sustainable use of forests. However, levels of degradation have not been reduced by these efforts. This implies that it is not just economic and legal aspects that influence, there is also as issue of attitude and perception. Indeed, the study found out that environmental education was an important asset for environmental conservation. It denotes that for secure forests, both policy and local levels must be involved in the making of decisions.

This research recommends the need for the church to re-examine its perception about humanity in relation to the rest of creation for sustainable development to be achieved.

**TABLE OF CONTENTS**

The Church and Sustainable Development: A case Study of the Role of the All Africa Conference of Churches in the Conservation of Forests in Africa .....	i
Declaration .....	ii
Approval.....	iii
Dedication.....	iv
Acknowledgement.....	v
Abstract.....	vi
Acronyms.....	viii
Operational Definitions.....	ix
Lists of Maps, Tables and Figures.....	xi
<b>CHAPTER 1 .....</b>	<b>12</b>
<b>INTRODUCTION .....</b>	<b>12</b>
1.1. Background.....	12
1. 2. Statement of the Problem.....	14
<b>CHAPTER 2 .....</b>	<b>18</b>
<b>LITERATURE REVIEW.....</b>	<b>18</b>
2.0. Introduction .....	18
2.1. Ethics and Philosophy .....	18
2.2. Efforts under the Auspices of the United Nations.....	20
2.3.1.0 Biodiversity Hotspots in Africa .....	22
2.3.1.1 Coastal Forests of Eastern Africa.....	22
2.3.1.2 Eastern Afromontane Forest.....	23
2.3.1.3 Guinean Forests of West Africa.....	24
2.3.1.4 Succulent Karoo Forests .....	24
2.3.1.5 Cape Floristic Region.....	25
2.4.1. Depletion of Forest.....	25
2.4.2 Disconnection of Christianity from the Natural World.....	26
2.5 Objectives of the Study .....	29
2.6 Hypotheses .....	30
2.7 Theoretical Framework .....	30
2.7.1 Conceptual Framework.....	31
2.8 Justification .....	36
2.9 Conclusion .....	39
<b>CHAPTER 3.....</b>	<b>40</b>
<b>METHODOLOGY.....</b>	<b>40</b>
3.0 Introduction .....	40
3.1 Location of Study .....	40
3.1.1 Positions, Size and Population .....	40
3.1.2 Climatic Conditions .....	42

3.1.3 Forest Types and Protection in Africa .....	45
3.1.4 Study Population and Scope.....	54
3.2.1 Sampling Procedure .....	55
3.2.2 Data Collection .....	55
3.2.2.1 Survey Instruments.....	55
3.2.2.2 Primary Data.....	56
3.2.2.3 Secondary Data .....	57
3.2.2.4 Methods of Data Analysis ....	57
3.3. Research Limitations .....	58
3.3.1. Identity of Organization under investigation .....	58
3.3.2. Data Sources and Availability .....	59
3.3.3. Financial Resources .....	59
3.3.4. Time .....	60
3.4. Conclusion .....	61
<b>CHAPTER 4 .....</b>	<b>63</b>
<b>MAIN FINDINGS .....</b>	<b>63</b>
4.0 Introduction .....	63
4.1. Findings .....	64
4.1.2 Existence of Forests and Forest Status .....	64
4.1.3 Economic Status of Congregations .....	66
4.1.4 Governments and Congregations work in Forest Conservation .....	67
4.1.5 Theological Basis for Conservation .....	72
4.1.6 Dialogue with Nature .....	76
4.1.7 Size of Forests Conserved by Churches .....	76
4.1.8 Role of the Church in Forest conservation .....	77
4.2.1 Analysis and Discussions .....	77
4.2.2 Comparative Review of Forests Acts in Africa.....	80
<b>CHAPTER 5 .....</b>	<b>84</b>
<b>CONCLUSIONS AND RECCOMENDATIONS.....</b>	<b>84</b>
5.0 Conclusions .....	84
5.1 Recommendations .....	87
5.1 Recommendations to the Church .....	87
5.1 Recommendations to Policy Makers .....	88
5.1 Recommendations to Scholars .....	90
References .....	91
Appendices .....	94
Appendix 1 Questionnaire .....	94
Appendix 2 Chi-square computations ....	96
Appendix 3 Forest Law Reviews in 13 African Countries.....	97
Appendix 4 Key Economic Indicators.....	100

## Acronyms

AACC	All Africa Conference of Churches
ADRA	Adventist Relief Agency
AU	Africa Union
CAid	Christian Aid
CBD	Convention on Biological Diversity
CEPCA/FEMEC	Conseil des Eglises Protestantes du Cameroun
CIPCRE	International Circle for the Promotion of Creation
COP	Conference of the Parties
CRS	Catholic Relief Services
DRC	Democratic Republic of Congo
ECOSOC	Economic and Social Council of the United Nations
EPEPPA	Eminent Persons Ecumenical Program for Pearce in Africa
EU	European Union
FAO	Food and Agriculture Organization
FECCLAHA	Fellowship of Christian Councils in the Great lakes and Horn of Africa
FECCIWA	Fellowship of Christian Councils in Western Africa
FOCCISSA	Fellowship of Christian Councils in Southern Africa
FOCCOCA	Fellowship of Christian Councils in Central Africa
GDP	Gross Domestic Produce
ICRAF	International Center for Research in Agriculture and Forestry
IFF	Intergovernmental Forum on Forests
IPF	Intergovernmental Panel on Forests
IRAD	Institute of Research in Agriculture and Development
IUCN	Union for the Conservation of Nature
IUPN	International Union for the Protection of Nature
MA	Millennium Ecosystem Assessment
NCA	Norwegian Church Aid
NCC	National Christian Councils
OAIC	Organization of African Instituted Churches
SAFCEI	South African Faith Communities Environmental Institute
SECAM	Symposium of Episcopal Conferences in Africa and Madagascar
SIDS	Small Island Developing States
SPSS	Statistical Package for Social Sciences
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environment and Development
UNCHE	United Nations Conference on Human Environment
UNEP	United Nations Environment Programme
UNFF	United Nations Forum on Forests
UNFCCC	United Nations Framework Convention on Climate Change
WCC	World Council of Churches
WCED	World Commission on Environment and Development
WCSD	World Summit for Sustainable Development
WDR	World Development Report
WRI	Water Resources Institute
WWF	World Wide Fund for Nature



## Operational Definitions

**Biodiversity:** The variety of different species, the genetic variability of each species, and the variety of different ecosystems that they form. The measure of the health of an ecosystem where a health depicts greater variety and variation in plant and animal life than an unhealthy one.

**Church:** One of the groups of the Christian faith with their own beliefs and form of worship. It is used in this context to mean the wider association of people and groups that could be said to belong to the Christian faith.

**Religion:** A system of human thought which usually includes a set of narratives, symbols, beliefs and practices that give meaning to the practitioner's experiences of life through reference to a higher power, deity or deities, or ultimate truth.

**Faith:** Can refer to a religion itself or to religion in general example, the Christian Faith. It refers to a trusting belief in a transcendent reality, or else in a Supreme Being and/or this being's role in the order of transcendent, spiritual things.

**Conservation:** The act of preserving, guarding or protecting of a thing in a safe state or improvement of that state by preventing loss or injury or other change. Used in this research to imply the art or science of ensuring the sustainable yield of natural resources and preservation of biodiversity.

**Ecology:** From Greek words: *oikos*, "household"; and *logos*, "knowledge", Ecology is the scientific study of the distribution and abundance of living organisms and how the distribution and abundance are affected by interactions between these organisms and their environment.

**Ecosystem:** A natural unit consisting of all plants, animals and micro organisms in an area functioning together with all the non living physical factors of the environment.

**Environment:** This is a set of interlocking systems which could be either natural or biophysical, and human made or social within which all living things operate. These include the natural environment which consists of biological environment- plants, animals and micro organisms; physical environment - the atmosphere, hydrosphere,

and pedo-lithosphere. And the social environment which is the various attributes of human societies that usually serve various needs including the needs for the management of the environment such as knowledge, skills and attitudes. These also make a basis for human activities upon the natural environment.

**Ethics:** Of or relating to ideas of right and wrong.

**Ecumenic:** Concerned with promoting unity among churches or religions.

**Man:** In this study, the word man has been used to represent both men and women.

**Management:** The science or art of directing and controlling entities for the purpose of coordinating and harmonizing those entities towards accomplishing specified goal. In regards to the environment, this is the management of ecosystems for sustainability.

**Natural Resources:** Actual and potential naturally occurring substances that are considered valuable in their relatively unmodified form.

**Philosophy:** The study of general and fundamental problems concerning matters such as existence, knowledge, truth, beauty, law, justice, validity, mind, and language.

**Semitic:** Of or relating to the group of same group or language.

**Sustainable development:** The state in which environmental sustainability does not preclude economic development but which ensures that economic development is ecologically viable now and in the long term. WCED (1987) defines it as “the development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.

**Sustainability:** Capacity to maintain a certain process or state indefinitely. The capacity to provide the best outcomes for both the human and the natural environments in the present and in the indefinite future.

**Theology:** From the Greek word *theos*; the rational and systematic study of religion and its influences and of the nature of religious truth. Aristotle saw theology as one of three parts of theoretical philosophy and which corresponded to metaphysics, which included discussion of the nature of the divine.

## List of Maps

Map 1: Natural Vegetation in Africa.....	44
Map 2: Forest Type and Protected Area Distribution.....	47
Map 3: Frontier Forests and threats.....	49
Map 4: Religions and their spread in Africa.....	51

## List of Tables

Table 3.1: Religious adherence in Africa.....	40
Table 3.2: Total forest Area and area of protected forest in each country .....	53
Table 4.1: Total area of forest in each country, with percentage protected .....	70
Table 4.2: Forest Area and Area Change .....	74
Table 4.3: Size of forest conserved by churches.....	76
Table 4.4: Total area of each forest type with percentage protected in Africa.....	78
Table 4.5: Poverty and degradation levels.....	79
Table 4.6: Degradation levels and Environmental Education.....	80

## List of Figures

Figure 4.1.....	64
Figure 4.2.....	65
Figure 4.3.....	65
Figure 4.4.....	66
Figure 4.5.....	67
Figure 4.6.....	67
Figure 4.7.....	68
Figure 4.8.....	69
Figure 4.9.....	71
Figure 4.10.....	72
Figure 4.11.....	75
Figure 4.12.....	75

# CHAPTER 1

## INTRODUCTION

This chapter introduces the subject matter of this study and the statement of the research problem. In general it lays the basis for the study by giving a background and setting the scene for literature review.

### 1.1 Background

The debate of good and evil; order and chaos, has been on going for many decades and more so in the Church (Mingiore 1991). In the meantime, earthquakes, volcanic eruptions, black holes and collisions of space objects continue as if to manifest the violent and destructive nature of the cosmos. These could be the reason why Haught (2000) argue that evolution in its nature is wasteful as it condemns most emergent life forms to early extinction, while natural selection appears to be replete with pain, injustice, contingency and spillage. Haught (2000) concludes that the natural process eliminates ruthlessly and mindlessly all those that are not "fit" to survive and to reproduce. This depicts nature in the contradicting dichotomy of a mother and a destroyer at the same time. She brings forth life but also puts it to an end.

Many people have explained such occurrences as been "acts of God" while a section of society, including the church, has taken time to try to understand and or reveal this God.

Africa has not been excluded from these natural experiences. Floods and

droughts, rich harvests and poor crops, sickness and health, a high infant and adult mortality rates and many other hazards around every day's life have been a constant occurrence. Indeed, such experiences may explain why Africans are notoriously religious (Mbiti 1969).

Recognizing this attribute (notoriety) and the day-to-day struggles with life among communities in Africa, the church has over the years established faith based development organizations - such as the Norwegian Church Aid (NCA), Catholic Relief Services (CRS), Christian Aid (CAid), Adventist Relief Agency (ADRA) and national Christian councils (NCCs) and at the continental level, the All Africa Conference of Churches (AACC), Symposium of Episcopal Conferences in Africa and Madagascar (SECAM) among others – all aimed at establishing a bridge between the religious attribute of the African person and his day-to-day life struggles.

Further, it may be argued that the involvement of the church in development initiatives emanates from both its grassroots operations and as a divine calling to serve human kind as well as the rest of creation. This makes the church a strategically placed institution for influencing effective management of resources by communities. The involvement of the church as a grassroots institution is further justified by livelihood patterns of most of the African population which directly depends on the environment, 53% of whom are church adherents<sup>1</sup> thus church's fear of peril if nature is destroyed. At the same time, though churches

---

<sup>1</sup> [http://en.wikipedia.org/wiki/Religion\\_in\\_Africa#Aggregate\\_estimates](http://en.wikipedia.org/wiki/Religion_in_Africa#Aggregate_estimates)

have para-church institutions that focus on development, there is little or no policy oriented programmes on the area of forest conservation. This may be argued to be the reason why documented evidence of community conservation efforts as influenced by the church is scarce.

## **1.2 Statement of the Research Problem**

The Semitic versions of monotheism regard humans as having or exhibiting the image of God. For the church, Genesis Chapter 1 elaborates the creation account which is said to have satisfied God. The same account depicts God creating to his satisfaction vegetation, seed yielding plants, fruit bearing trees in which there are seeds.

Of particular importance to this study however, is verse 27, "*...so God created human beings making them to be like him*". Verse 28 goes further to say that, "*... and God told him to bring the earth under his control*". According to popular translation by the church, these two verses imply that human beings were more important and therefore superior to than the rest of creation even though God was satisfied with it. This superiority claim is further affirmed by Psalms 8 verse 7 which puts all things at man's feet. Later on man is asked to go forth to the word and multiply, thus the problem of unplanned population increase at the expense of the rest of creation. By design or by default, the scriptures have thus given man license to exercise his whim and will over the rest of the creation.

However, it would seem illogical for this God to have created trees that have the freedom to bring forth new life forms and to have at the same time given another

part of His creation instructions to tamper with this attribute of regeneration. Is it possible that God could have negated his own attribute by declaring man superior and giving him authority over the rest of His creation? Or could God have meant something different from what man has perceived as dominion thus man's commitment of "Environmental Sin<sup>2</sup>"?

Though the depletion may have existed within the concept of self-sustenance as exemplified by the food chain and other natural cycles, it can be argued that replenishment also existed within the same term. This would then cause the changing and re-arranging of the environment by man through the use of technology as captured in the agrarian and industrial revolutions to be the true expressions of the principle of dominion and thus the unreplenishable depletion.

And with this the intricate and interdependent web between physical, biological and social factors of an ecosystem were thrown into imbalance when strain began to get exerted in one of the systems – the biological factors including forests. This means that there is need to examine the concept of development so that development is not conceptualized on the principle of dominion for it to be suitable to other self-sustaining life forms. For the church in Africa, such development would be "godly" as it would be taking place within the attributes of God, what man has come to refer to as sustainable development.

The urgency for this "godly development" is critical for Africa against a background of violence and destruction that keeps revisiting its population from

---

<sup>2</sup> In a March 2008 list of what was called "Social Sins", the Vatican declared environmental pollution as sin

time to time. This is made even more pressing by the increase in population in sub-Saharan Africa. In 2004 population in Africa was increasing at a rate of 2.5% with a projected increase of up to 5.1 % by the year 2050. It is estimated that the continents' population will be 733 million, 1120 million and 1701 million in the years 2004, 2025 and 2050 respectively (WPS 2004). Apparently, these increased populations will be utilizing the same size of land in terms of acreage for livelihood as the current population to meet their increasing food demands.

According to Mastrantonio and Francis (1997) agriculture will always tend to have forest resources as its first casualty because forests are perceived as fertile lands and thus able to give quick return on investment once converted into agricultural lands. In the meantime, due to population increase, the demand for industrial and domestic products will also be on the increased. At this point, it may not be possible to fake some sort of equilibrium in the wider ecosystem – Earth. Mother Nature may rear her ugly head once again and things may completely fall apart to the peril of man whatever their call or vocation.

Once adversely affected by the imbalance in the wider ecosystem, African communities would turn to the church, among others, for answers. For the church, judgment may have been fast forwarded to the detriment of all including itself.



According to religious population estimates,<sup>3</sup> Christians formed 53% of Africa's population, if targeted, the Christian population can play a critical role in the management and conservation of forests in Africa.

It is therefore imperative that all aspects of creation are accorded their importance without giving undue privileges and attention to one section of creation. This is what will finally lead to each creation playing its rightful role in the existence of the cosmos as it ought to be. This will ultimately lead to the harmonization of development activities with proper management and conservation of natural resources at the individual, community and national levels, a subject of concern to the church. In essence therefore, "sustainable management" and the care of ecology, particularly, forests, is an inescapable challenge for the church as they make the basic livelihood reservoirs for communities that the church serves. The lack of clearly defined policies and models of putting theological lessons into practice begs for an explanation. Indeed, there exists a gap between orthodoxies and orthopractices of the church in the area of conservation of forests towards sustainable development.

This study is undertaken in order to assess the role of the church in the conservation of forests in Africa. This will be done through investigating perceptions towards forest resources and investigating development initiative plans and their implication to forests.

---

<sup>3</sup> [http://en.wikipedia.org/wiki/Religion\\_in\\_Africa#cite\\_note-1#cite\\_note-1](http://en.wikipedia.org/wiki/Religion_in_Africa#cite_note-1#cite_note-1)

## CHAPTER 2

### LITERATURE REVIEW

#### 2.0 Introduction

This chapter introduces literature review on the subject of church and forest conservation. It also introduces objectives of the study, study justification, research questions, expectations and the theoretical framework of the study.

#### 2.1 Ethics and Philosophy

According to Plato<sup>4</sup>, justice is not just a social virtue, having only to do with relationships between men (people), but it is an all encompassing virtue which can sorely reconcile mind and matter, inner life and social life, and also give man unity within and without. Plato asserts that it is this justice which makes it possible for man to build his own being and therefore attain happiness.

But Plato sees man as a social being that is influenced by the social environment in such a way that it is difficult to judge who between man and the environment makes the other. This implies that there exists an intimate, intertwining and interdependent relationship between man and his environment. Any kind of eventuality including decay to either will therefore without delay, affect the other. This then makes it necessary for man to mind about the sustainability of the environment as a precondition for self-actualization and attainment of happiness.

---

<sup>4</sup> <http://plato-dialogues.org>

According to Timaeus (theoretical treatise of Plato) Greek philosophers are recorded as having speculated that elements that form the physical world as being earth, air, fire and water<sup>5</sup>. According to them, a state of homeostatic equilibrium in nature was deemed essential for survival of life<sup>6</sup>. Infact, it may be argued that this could be the basis on which Kings and Emperors lay their claim that their duty included that of preserving animal life and trees for sustenance of this equilibrium, alongside protecting citizens and punishing wrong doers<sup>7</sup>.

According to W.I Vernadsky (1926), the ideal state of natural equilibrium existed when biosphere and technology were balanced such that social, economic and ecological systems interacted without depletion of either. He termed this as the happy state or noosphere (self-sustainability). He however hastened to caution that increased rates of environmental transformations that were taking place would make the attainment of this state an impossibility<sup>8</sup>.

This is the conviction that led Aldo Leopold<sup>9</sup> to propose the need for a land ethic that would reflect the existence of an ecological conscience thus leading to individual responsibility for the health of the land.

This can be argued as having been the genesis of ecological theology first through the Faith-Man-Nature Group convened by Philip Joranson in 1963 with the support

---

<sup>5</sup> [http://en.wikipedia.org/wiki/Timaeus\\_\(dialogue\)](http://en.wikipedia.org/wiki/Timaeus_(dialogue))

<sup>6</sup> The Gaia Hypothesis in CHAPTER 5: The Universe, Earth, Natural Spheres, and Gaia; <http://www.physicalgeography.net/fundamentals/5d.html>

<sup>7</sup> ... Meaning of the duty of the rulers... in Ashoka the Great; <http://www.en.wikipedia.org/?title=Ashoka>

<sup>8</sup> [http://en.wikipedia.org/wiki/Vladimir\\_Vernadsky](http://en.wikipedia.org/wiki/Vladimir_Vernadsky)

<sup>9</sup> Aldo Leopold; Essay on The Ecological Conscience; <http://www.public.iastate.edu/~fridolph/leopold.html>

from the National Council of Churches<sup>10</sup>. Earlier efforts had been made by Joseph Sittler in a speech at the WCC calling for earthly Christology and greater emphasis on cosmic redemption<sup>11</sup> and the prophetic nature writing *Silent Spring* by Carson in 1962.

## **2.2 Efforts under the Auspices of the United Nations<sup>12</sup>**

According to the United Nations Conference on Human Environment held in Stockholm in 1972, forests form the largest, most complex and self-perpetuating of all ecosystems and thus called for sound land and forest use policies, monitoring of world's forests and the introduction of forest management planning. It also recommended that countries should strengthen basic and applied research for improved forest planning and management, with emphasis on environmental functions of forests; and modernize forest management concepts by including multiple functions and reflecting the cost and benefits of the amenities that forests provide.

This was critical because it caused many countries to introduce environment in their development plans. This further led to the formation of UNEP to coordinate the promotion of environmental programmes among UN institutions because global environmental problems were having profound implications on human development at a fast pace.

---

<sup>10</sup> Series Forward in Hessel, D.T et al (2000)

<sup>11</sup> Sittler, J.A; "Called to Unity" , The Ecumenical Review, 14 January 1962: 177-87 in

[www.augie.edu/pub/values/sittler.pdf](http://www.augie.edu/pub/values/sittler.pdf)

<sup>12</sup> <http://www.v.biotica-dova.org/Countdown/historia.html>

These implications were confirmed by the World Commission on Environment and Development's report "Our Common Future" (1987). The Commission called for responsible exploitation of natural resources and recommended focus on environment and development. Similar recommendations were later repeated at the 1992 UNCED in Rio de Janeiro.

Out of the UNCED conference, numerous efforts towards environmental sustainability emerged. Among them were commitment to sustainable forest through the Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests (the "Forest Principles"). This formed a common basis for action at the national, regional and international levels. Ad Hoc Intergovernmental Panel on Forests (IPF) (1995–1997) and subsequently the Intergovernmental Forum on Forests (IFF) (1997–2000) later led to the establishment of the UNFF.

The UNFF not only provides a forum for sharing experiences and lessons on implementing sustainable forest management, including IPF/IFF Proposals for Action, but has also hosted a ministerial segment and organized multi-stakeholder dialogues.

According to various assessments on changes in forest cover over the past 30 years<sup>13</sup> forest areas were on the decline and forest ecosystems were fast getting degraded. For instance tropical deforestation was calculated at 11.3 million ha a

---

<sup>13</sup> *Tropical Forest Resources Assessment* by FAO and UNEP; FAO and UNEP 1982, FAO 1995, FAO 1997, FAO 2001b, UNEP 2001 and WRI 1997

year (FAO 1982).

Later studies estimated that the extent of the world's remaining closed natural forests (where crown cover is more than 40 per cent) in 1995 was 2 870 million ha, about 21.4 per cent of the land area of the world (UNEP 2001). About 81 per cent of these forests were concentrated in just 15 countries. Ranked in the highest to lowest order these are the Russian Federation, Canada, Brazil, the United States, Democratic Republic of the Congo, China, Indonesia, Mexico, Peru, Colombia, Bolivia, Venezuela, India, Australia and Papua New Guinea. The first three countries contain about 49 per cent of the remaining closed forests.

The critical role of forests in the sustenance of food resources and as habitats for huge numbers of life forms led the IUCN and the UNEP to designate some of these forests as biological hot spots and, therefore, special protection areas. The following are just a reflection of these hot spots areas in Africa.

### **2.3.1.0. Biodiversity Hotspots in Africa<sup>14</sup>**

#### **2.3.1.1. Coastal Forests of Eastern Africa**

These are tiny and fragmented forest remnants that stretch along the eastern edge of Africa from the Jubba and Shabelle Rivers in southern Somalia through Kenya, where it occurs in a relatively narrow coastal strip of about 40 kilometers in width, into Tanzania and along nearly the entire coast of Mozambique, ending at the Limpopo River. It is also found in the offshore islands, including Pemba,

---

<sup>14</sup> E:\Biodiversity Hotspots -html (NB: for all of the cited hot spots literature )

Zanzibar, Mafia and the Bazarruto Archipelago off Mozambique. The hotspot's vegetation is a complex mix of moist forests and dry forests, with coastal thicket, fire-climax savanna woodlands, seasonal and permanent swamps, and littoral habitats that include mangrove vegetation along some parts of the coast. Trees dominate the coastal flora, but lianas are also common as are shrubs, herbs, grasses, sedges, ferns, and epiphytes.

This hotspot is also home to a variety of primate species including three endemic and highly threatened monkey species and two endemic species of bush babies.

### **2.3.1.2. Eastern Afromontane Forests**

The mountains of the Eastern Afromontane hotspot are scattered along the eastern edge of Africa, from Saudi Arabia in the north to Zimbabwe in the south. The Albertine Rift harbors more endemic mammals, birds, and amphibians than any other region in Africa. The geological turmoil that created the mountains of this hotspot has also yielded some of the world's most extraordinary lakes. Due to these large lakes, a vast amount of freshwater fish diversity can be found in the Eastern Afromontane region, which is home to 617 endemic fish species.

The main part of the hotspot's more than one million square kilometers stretches from south-eastern Kenya to southern Tanzania and Malawi, with small outliers in eastern Zimbabwe and western Mozambique; the Albertine Rift includes portions of Rwanda, Burundi, Uganda, Tanzania and the Democratic Republic of Congo; and the Ethiopian Highlands covers much of Ethiopia, as well as small parts of

Eritrea, Djibouti, and Sudan, and is bisected by the Great Rift Valley. Also included are a number of outlying mountains; Mt Kilimanjaro, Mt Meru, Mt Kenya, Mt Elgon, Aberdares Range, and other peaks), the Asir Mountains of southwest Saudi Arabia, the highlands of Yemen, and the Chimanimani Highlands of eastern Zimbabwe.

The main threat to this hotspot is the expansion of agriculture, especially large crop plantations for crops like bananas, beans, and tea.

### **2.3.1.3. Guinean Forests of West Africa**

The Guinean Forests hotspot encompasses all of the lowland forests of political West Africa, stretching from Guinea and Sierra Leone eastward to the Sanaga River in Cameroon. This geographical region extends to cover Liberia, Cote d'Ivoire, Ghana, Togo, Benin, and Nigeria and is home to more than a quarter of Africa's mammals, including more than 20 species of primates. The hotspot also includes four islands in the Gulf of Guinea: Bioko and Annobon, which are both part of Equatorial Guinea, and Sao Tome and Principe. Logging, mining, hunting and human population growth poses the greatest threat to these forests.

### **2.3.1.4 Succulent Karoo**

The Succulent Karoo stretches along the Atlantic coast between southwestern South Africa and southern Namibia, covering 102,691 square kilometers of desert. It boasts the richest succulent flora on earth, and has a 69 percent plant endemism. It is also one of only two entirely arid ecosystems to earn hotspot



status, and is home to the tree-like succulent, the halfmens, as well as many unique species of lizards, tortoises and scorpions.

It is a winter rainfall desert with a mild climate moderated by cold Atlantic Ocean currents. This mild climate has contributed to the evolution of a rich array of endemic species.

### **2.3.1.5 Cape Floristic Region**

This hotspot is located entirely within the borders of South Africa and is one of only two hotspots that encompass an entire floral kingdom (the other being New Caledonia). The vegetation on the Cape is dominated by fine bush, a shrub land comprising hard-leaved, evergreen, and fire-prone shrubs that thrives on the region's rocky or sandy nutrient-poor soils. This hotspot holds five of South Africa's 12 endemic plant families and 160 endemic genera. The geometric tortoise and the Cape sugar-bird are characteristic of the hotspot.

### **2.4.1. Depletion of Forests**

Goaming argues that population growth among the poor could increase their direct reliance on the environment for their livelihoods and this could result in the destruction of the environment and eventually a vicious cycle of poverty and deforestation<sup>15</sup>.

While supporting this position, Harding (1968) goes further to assert that ownership regimes are a major contributor in the destruction of forests. She

---

<sup>15</sup> Gaoming, J, "Fighting Poverty and saving the environment" in "China and the World Discuss the Environment" [www.chinadialogue.net](http://www.chinadialogue.net)

argues that destruction of commonly held resources is as a result of "each person being locked into a system of competition for their best interest in a limited world that purports to uphold the freedom of the commons. Freedom of the commons brings ruin to all<sup>16</sup>."

However, Achermanll (1993) argued that this was not the case before colonialism as "common goods" were well institutionalized in the African way of life and the sanctity of resources was valuably observed<sup>17</sup>. This position is reaffirmed by Adam when he points that some communities have continued to live sustainably with their common forests over many generations as the case with Indians of Totonacapan in Guatemala and the Amazon<sup>18</sup>.

#### **2.4.2. Disconnect of Christianity from the Natural World**

According to Thomas Berry (1999), Christianity lost intimacy with the natural world in three phases. The first phase occurred with the meeting of early Christian's spirituality with Greek humanism to form the basis of an anthropocentrism that would in the course of the centuries exalt the human as to lose the sense of the human as an integral component of the larger community of existence. He argues that biblical revelations would overwhelm the revelation of the natural world; concern for the misery of the human would leave little concern for the non-human world. Intensity of direct spiritual commitment to the Divine would weaken concern for the experience of the wonder and awesome qualities of the natural world. The

---

<sup>16</sup> Garrett Hardin;(1968) Tragedy of the Commons (vol. 162): [www.garretthardinsociety.org](http://www.garretthardinsociety.org)

<sup>17</sup> Achermanll, E. (1993) Cry Beloved Africa; A Continent Needs: African University Studies, Walter Verlag AG, Düsseldorf. Pg 185-198

<sup>18</sup> Adams. P. op cit Pg 77.

world would eventually be perceived as a distraction from higher things.

Berry argues that the second phase occurred with the Black Death epidemic in Europe in the period from 1347 – 1349 when people had no explanation for the thousands of deaths in the continent because they had no knowledge about germs. He argues that the only explanation that people came up with was that God was punishing the world because of her wickedness. Berry further argues that this led to the development of a spirituality that was disengaged from worldly concerns. This teachings found expression in the theologians of the 15<sup>th</sup> century and led to the development of the Puritanism in the Protestant world and the Jansenism of the Catholic world. He asserts that the western soul had established its radical alienation from the natural world. He notes that instead of a delight in the natural world and the omnipresent experience of the Divine in the beauty, wonder, and awesome qualities of the world about us, a psychic-spiritual withdrawal from a too intimate relationship with the natural world developed.

Berry's expounds that the third phase occurred with the advent of the industrial revolution which is founded on utter exploitation of earth's resource without care about their renewal.

Berry's argument gives credence to the notion that if the church in Africa is founded on this alienation, then there is little hope that the church would be keen to address challenges of accelerated depletion of the environment. But a dilemma may arise if the church has not completely alienated itself from the

African believe which Achermanll says were in harmony with nature.

According to Duschinsky (1921), the reduction of man's reliance on God - which he traces to Noah's invention of the plough - ushered in a secularization process that diminished the status of Noah's righteousness<sup>19</sup>. This could have influenced Lynn White's<sup>20</sup> assertion that "Christianity bears a huge burden of guilt". In other words, White was saying that Christianity has failed to secure that which had been purposed by the creator. However, White does not show how Christianity could be used to harness human efforts in securing global forests.

According to Odum (1969) the relationship between the living things and the non-living ones - all of which he calls the ecosystem - is inseparable<sup>21</sup>. This is to say that almost everything that humans are involved in ranging from economic, political and socio-economic issues touch on the environment.

While this may be true, it is not clear what the church has been doing to ensure that the relationship between the living and the non-living does not lead to the demise of the living (ecosystems). This makes it important for one to interrogate the "dominion" principle in Genesis Chapter one. Indeed, in its 1988 call for true reverence of God's creation,<sup>22</sup> the WCC seems to begin this journey of interrogation of the meaning of dominion.

---

<sup>19</sup> Duschinsky, C (1921), *The Rabbinate of the Great Synagogue*, Oxford University Press, London.

<sup>20</sup> Lynn White (1962) *Historical Roots of Our Ecological Crisis* in Hawkin, D.J (1999) *the Disenchantment of Nature and Christianity's "Burden of Guilt"* pg 65-71

<sup>21</sup> Odum, P. Eugene, (1969), "The Strategy of Ecosystem Development: An Understanding of ecological succession provides a basis for resolving man's conflict with nature.

<http://habitat.aq.upm.es.boletin/n26/aeodu.en.html>

<sup>22</sup> [www.hope.edu/jointarchives/collects/registers/hope/gran-mic.html](http://www.hope.edu/jointarchives/collects/registers/hope/gran-mic.html)

The principle of dominion as exercised by man has led to the destruction of nature (UNEP 2001). The centrality of creation to human development seems to have obstructed man from recognizing the ultimate implication of his actions. When this happens in Africa, it contradicts the very basis that made Mbiti (1969) to argue that Africans were notoriously religious.

It is imperative therefore to seek to understand what the church perceives as its role in the conservation of the environment and forestry in particular, to understand how it interprets poverty among its congregations in the midst of depletion of forests, to understand what the has done so far to align its teachings and practices to the environmental and forestry realities of the day and, to understand if the church would be willing to review its position in the event that it finds position against the general good for forest conservation.

## **2.5. Objectives of the Study**

The general objective of this study is to examine the role of the Church in ensuring that human development protects the environment especially, forests.

The specific objectives of the study are to:

- i. Discuss the position and the role of the church in Africa regarding management and conservation of forests.
- ii. Explain the relationship between the poverty and forest degradation as experienced by the leadership of churches in Africa.
- iii. Examine the impact of national economic performance on efforts to conserve forest in Africa.

- iv. Recommend suitable opportunities for a more forest sensitive development paradigm.

## 2.6. Research Hypotheses

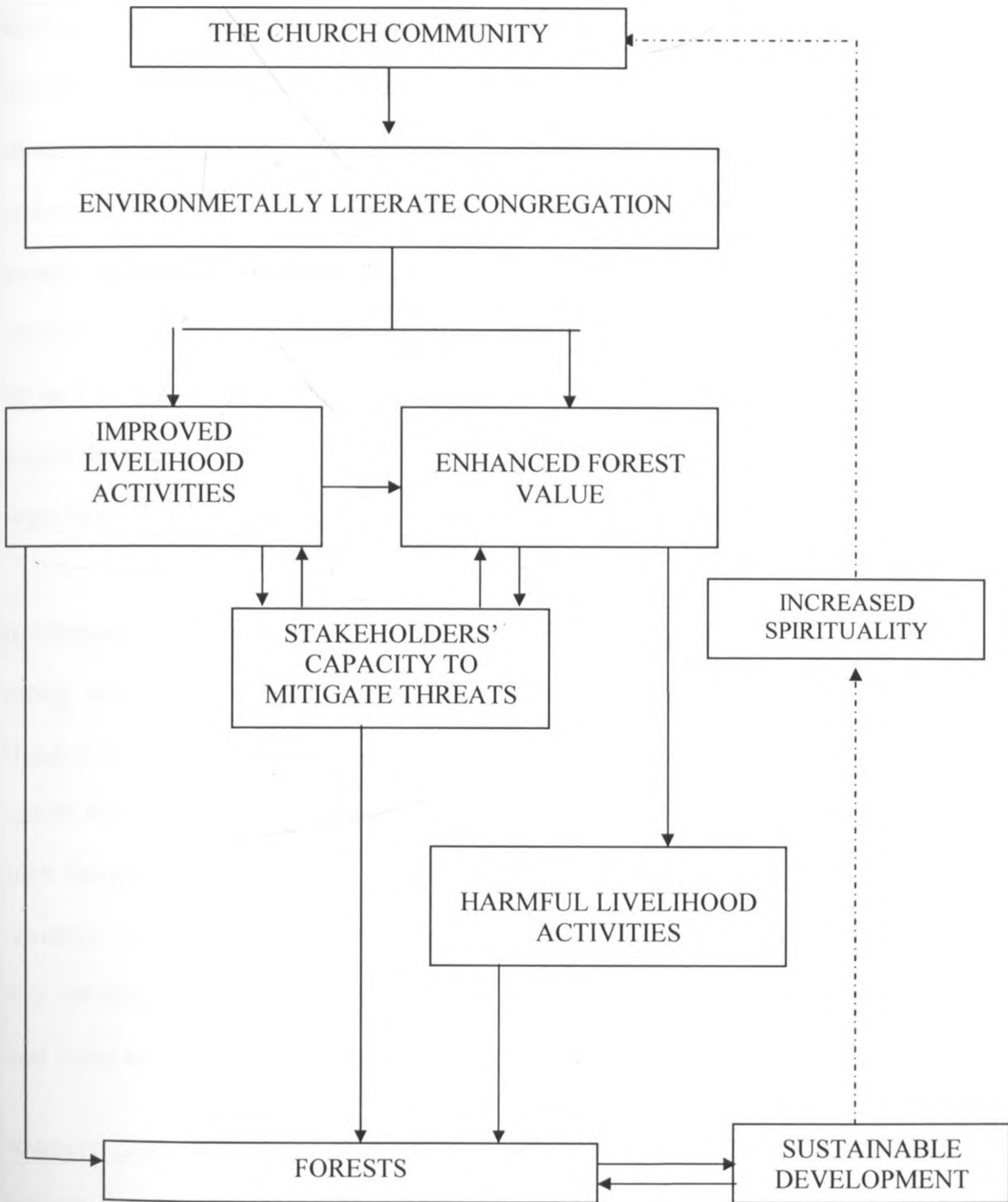
The study hypotheses are:-

- i. **Ho** There exists no relationship between a country's capacity to conserve forests and her economic performance.  
**Hi** There exists some relationship between the capacity to conserve forests and a country's economic performance.
- ii. **Ho** There is no significant relationship between poverty levels and forest degradation.  
**Hi** There is a significant relationship between poverty levels and forest degradation.
- iii. **Ho** There is no significant difference between the quality of forests among church congregations with environmental education and those without.  
**Hi** There is a significant difference between the quality of forest in church congregations with environmental education and those without.

## 2.7. Theoretical Framework

This study has employed two theoretical frameworks which have been linked with Christianity's loss of intimacy with the natural world. From these theories the study can be summarized in the following conceptual framework.

### 2.7.1 Conceptual Framework



Source: Adopted from Clarke, 1995's model illustrating relationship between population dynamics and environment in Darkoh. M and Rwomire. A (ed.) (2003).

The first theoretical framework is captured by the Malthusian theory. According to Malthus, population growth will always put pressure on the ability of land and resources to support the growing population. He argues that food production takes an arithmetical progression while on the other hand, population grows at a geometrical progression. This scenario continues until a time when population growth surpasses food production. At this point, other natural forces come in to stabilize the population. Initially, the gap between food and population growth is big and so it acts as a stimulus for population growth. But with time, population growth begins to exceed the production of food and then poverty and misery begin to set in as food becomes scarce.

In retrospect one may argue that the Malthusian theory was correct about the strong relationship existing between food and population growth especially in Africa. However, like it has been argued by critics of Malthus, there are other factors that control population growth, making it to be in check with food levels. Such factors include scientific and technological innovations - like the green and industrial revolutions – thus increased food production while at the same time, they are also used to check population growth. This has made it possible for the food curve to remain above that of population growth.

However, given the scarcity of fresh water and the slow pace of adaptation to new technology in particular Africa, there is a real reason to worry about the relationship between food production and population growth. For a student of the environment in Africa, Malthusian theory is still very relevant because it remains



key to unraveling the direct dependence of Africa's increasing population on the environment and the depletion arising thereof.

As the struggle to feed one self and to meet other societal needs increased, people turned upon any available natural resources with such impunity that they did not care that nature needed time to replenish itself; a time to "breath".

Gradually and without human notice, nature began to be unable to meet the demands of these populations. This eventually resulted in reduced food production, hunger set in; poverty and misery become established as witnessed today in Africa.

Could the church have contributed to the diminishing of natural goods and services to humans? Is it possible that humans and the environment could have lived harmoniously before Christianity?

The second theoretical framework used in this study is that of the theory of social representation by Serge Moscovici. According to Moscovici there exists some relationship between the individual and the world which they inhabit (Moscovici 1998).

He argues that this relationship is based on what he terms as social representations which he says are systems of values, ideas and practices which simultaneously establish an order which will enable individuals to orientate themselves in their material and social world and to master it (Moscovici 1973).

He asserts that social representations are systems of knowledge, ideas and mutual understanding. That they are the tools which people use to make sense of their worlds, interpret the novel, the unfamiliar, and the strange. He argues that social representations guide people through the shifting scenes, developing characters, and twisting story lines of their everyday activities. That they enable people to embed themselves within a community of others, and build bonds of association while establishing a unique identity.

It can be argued that one of the major social representations that have marked the African continent in the last century is the church. Indeed, the theory of social representations can be used to explain diversity and conformity, the threat and the appeal of difference, and the communal and individual aspects of scriptural interpretations within the Church in regards to forest use and conservation.

Indeed, Genesis 1:27-30 has become the locus classics of the Christian attitude towards the environment as it espouses the principle of human domination over nature. But it may be urged that according to Berry (1999), this is just an interpretation based on other Western traditions that seem to be supportive of the idea that nature is made for the sole convenience of human beings and thus not derived from the bible itself.

This may be the case when one looks at Genesis chapter 2 verse 15, which says that man was put in the Garden<sup>o</sup>f Eden to “*dress it and keep it*”. Indeed, Luke 12-27, places trees and flowers above the “wisest” human - Solomon. However this position has never found its rightful place for explicit use thus dominion and mans’

unrelenting manipulation, modification and transformation of the environment.

But the Church claims that God is self-sustaining yet the command to “dominate” and its effects would be negated such as an attribute in God. If humanity, as argued by Christians, was created in the image of God, then must humanity not perceive creation in the same way that God did? These questions are beyond the scope of this study but are important in calling Christians to re-read the mind of God in order not to contradict Him and His manifest attribute – nature thus offering stewardship to God's creation.

UNIVERSITY OF NAIROBI LIBRARY  
EAST AFRICANA

According to Wiredu,<sup>23</sup> the exaltation of the passage in Genesis 1:28 was not aimed at causing environmental degradation. He presupposes that the real cause of environmental problem is to be found in the growth of technology ahead of knowledge, a knowledge that tends to grow ahead of wisdom and moral virtue. By arguing this way, Wiredu presupposes that though technology is based on knowledge, once that technology is brought forth, questions regarding its impact begin to emerge. He argues that without morality, no human community can be sustainable. He falls short of telling us what the role of the church is.

This argument by Wiredu seems to answer critics of Malthus who argued that technology helps to keep the food production curve above that of population growth. Wiredu seems to say that as technology changes, lifestyles also change. This results to unexamined acquisition and consumption of goods and services

---

<sup>23</sup> Wiredu, K. *Philosophy, Humankind and the Environment* in Oruka, H.O; (1994), page 34.

which inherently exerts more pressure on the environment thus depletion of resources, including forests.

After reviewing literature, the following research gaps were identified. Does the church in its practice today have any interest in the revelatory power of the natural world or does it reinforce the principle of man's domination over the rest of the creation (nature)?

How does the church perceive man's unnecessary acquisition and consumption against the attribute of self-sustenance that God bequeathed His creation?

What has been the role of the church in Africa as a shaper of social representations - in the management and conservation of forests?

There is also a gap in establishing and acknowledging the relationship between the church or religion on one hand and the conservation of forests on the other hand, especially in Africa.

## **2.8. Justification**

The church as an institution has been able to command some level of societal moral authority through its work and call. Therefore, the church is in a position to have its congregations and people in authority paying attention to its message and in most instances follow, and/or implement communication from church leadership. It follows then that the Church can be instrumental in influencing people's and government's attitudes, participation in and/or decision making

processes for the conservation and respect for forests.

However, there is little documentation of what the church is doing in regards to the management or influencing the management of forest resources in Africa. If the documentation of such activities exists, then it does so in volumes that have not been able to capture wide audience and therefore the need to increase such documentation. This study therefore seeks to establish and document accomplishments as well as existing opportunities for the church in conservation of forests in the continent.

In addition, the understanding behind eco-theology is that a church that is committed to ecological management will foster liturgical reformation that will respond to what God is doing as Creator and nurture environmental spirituality. Important to this study therefore is to investigate how the Christian faith and ethics as practiced today are oriented in the knowledge that the cosmic bodies exhibit the power, wisdom and love of God and how such knowledge influences human actions in that cosmos.

By studying the All Africa Conference of Churches – a leading policy organ of the church in the continent - this study seeks to fill these research gaps and facilitate the studying of other aspects of the work of the church in forest conservation. Further, if the centrality of creation in human development has obstructed humanity from recognizing the ultimate implication of their destructive actions, the study purposes to inform the Church in Africa –given that its adherents form a

large portion of the population in their countries of belonging<sup>24</sup> and can therefore impact greatly if talked into – on its role in the conservations of forests and also in helping in identifying strategic intervention mechanisms towards the same.

The findings of this study will therefore be useful in enabling a holistic approach in forest conservation efforts by highlighting the need to bring on board the wisdom and clout of the church and religions in conservation of forests and nature which may not have been seen as vital in the past.

The researcher envisages that the findings of this study will be used by the All Africa Conference of Churches and its membership as well as other church bodies and congregations to foster forest conservation efforts among their memberships. Others who will find these findings useful are state and inter-state agencies and non-governmental organizations concerned with environmental, food security and poverty issues.

This information will also be useful to educational institutions, and in particular those interested in environmental, food security and poverty as well as theological institutions. The general public will also find the findings of this study useful in understanding the role of the church in conservation efforts particularly those focused on forests.

---

<sup>24</sup> See Table 3.1 on Religious adherence in Africa pg 39

## **2.9. Conclusion**

It seems that Mbiti's argument that Africans are notoriously religious was born out of a sustainability discourse that had existed through various expressions including lifestyles, rituals and thereafter through science, new religion including Christianity. It is interesting to note that this discourse has not resulted in significant forest conservation efforts, thus the current pillage of forests. It would be interesting to find out what it is that has caused this discourse to cause depletion. Is it continuing in the present day or has it redefined attitudes and cultural practices among the people of Africa to be incompatible with forest conservation? If this was the case then, it will be important therefore to interrogate what institutions that are custodians of attitude and culture including the church need to do to reverse this situation. In this case then, the physical and in numerical reach of the church can play an effective role towards forest conservation and sustainable development as a whole.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.0 Introduction**

This chapter gives a general background of the study area. This will include location, climatic conditions, topography, ecology, demography and socio-economic background of the study area. It will give the reader an understanding about the area and factors that may influence its forestry situation. It will also examine the research methods that have been employed in this study. It shows the various sources of data utilized, methods of data collection, and techniques of data analysis, interpretation, presentation and study limitations.

#### **3.1. LOCATION OF STUDY**

##### **3.1.1 Position, size and population**

The study investigated the work of the church as covered under the All Africa Conference of Churches – an umbrella church organization with a membership of 169 churches and national Christian councils in Africa.

Africa lies between latitudes 36°S and 35°N and longitudes 53°E and 24°W. It borders the Indian Ocean to the East, the Southern Ocean to the south, and Atlantic Ocean to the West, the Mediterranean Sea and Europe to the North, and the Middle East and Saudi Arabia to the northeast. Africa is the second largest of the earth's seven continents after Asia. It covers about 30,330,000 sq km (about 11,699,000 sq mi), including its adjacent islands. Straddling the equator, Africa



stretches 8050 km (4970 mi) from its northernmost point, Ra's al Abya in Tunisia, to its southernmost tip, Cape Agulhas in South Africa. It comprises about 22% of the world's total land area.

In spite of the many challenges that Africa has consistently faced, the population of the continent has been growing steadily over the years. In 1990 about 12 percent of the world's population, an estimated 642 million people lived in Africa, making it the world's second-most populous continent after Asia. Today, Africa has a population of more than 956 million<sup>25</sup> people. It is projected that this population will grow to 1,323 million and 1,941 million people by the year 2025 and 2050 respectively. Africa has a population density of approximately 76 people per square mile.

**Religious adherence in Africa (2006 estimates)**

Region	Total population (2006)	% Christian 506,664,287 53%	% Muslim	% Traditional	% Hindu	% Bahá'í	% Jewish	% No religion	% Atheist
Middle Africa	118,735,099	81.3% or 96,531,635	9.6%	8.0%	0.1%	0.4%	0.0%	0.6%	0.0%
Eastern Africa	302,636,533	62.0% or 187,634,650	21.1%	15.6%	0.5%	0.4%	0.0%	0.3%	0.0%
Northern Africa	209,948,396	9.0% or 18,895,356	87.6%	2.2%	0.0%	0.0%	0.0%	1.1%	0.1%
Southern Africa	50,619,998	82.0% or 41,508,398	2.2%	9.7%	2.1%	0.7%	0.1%	2.7%	0.3%
Western Africa	274,271,145	59.1% or 162,094,247	21.9%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%

Source: [http://en.wikipedia.org/wiki/Religion\\_in\\_Africa#Aggregate\\_estimates#Aggregate\\_estimates](http://en.wikipedia.org/wiki/Religion_in_Africa#Aggregate_estimates#Aggregate_estimates)

Table 3.1: Religious adherence in Africa

<sup>25</sup> Sum total of 2006 population figures by the Association of Religion Data Archives, Pennsylvania State University in [http://en.wikipedia.org/wiki/religion\\_in\\_Africa](http://en.wikipedia.org/wiki/religion_in_Africa)

The Sub-Saharan part of the continent covers an area about 9,379,573 square miles and has a population of 733 million people, translating to 78 people per square mile.<sup>26</sup> This also happens to be the region in which Christianity is concentrated. Apparently also it is in this region that majority of the members of the AACC are found.

### **3.1.2 Climatic conditions<sup>27</sup>**

The climate of Africa, more than that of any other continent, is generally uniform. This results from the position of the continent in the Tropical Zone, the impact of cool ocean currents, and the absence of mountain chains serving as climatic barriers. Seven main African climatic zones can be distinguished. The central portion of the continent and the eastern coast of Madagascar have a tropical rain forest climate. Here the average annual temperature is about 26°C (about 80° F), and the average annual rainfall is about 1780 mm (about 70 in). The climate of the Guinea coast resembles the equatorial climate, except that rainfall is concentrated in one season; no months, however, are rainless.

To the north and south the rain forest climate is supplanted by a tropical savannah climate zone that encompasses about one-fifth of Africa. Here the climate is characterized by a wet season during the summer months and a dry season during the winter months. Total annual rainfall varies from 550 mm (20 in) to more than 1550 mm (more than 60 in). Away from the equator, to the north and south, the savannah climate zone grades into the drier steppe climate zone.

---

<sup>26</sup> 2004 World Population Sheet; Population Reference Bureau, Washington DC

<sup>27</sup> [www.afrol.com/features/10278](http://www.afrol.com/features/10278)

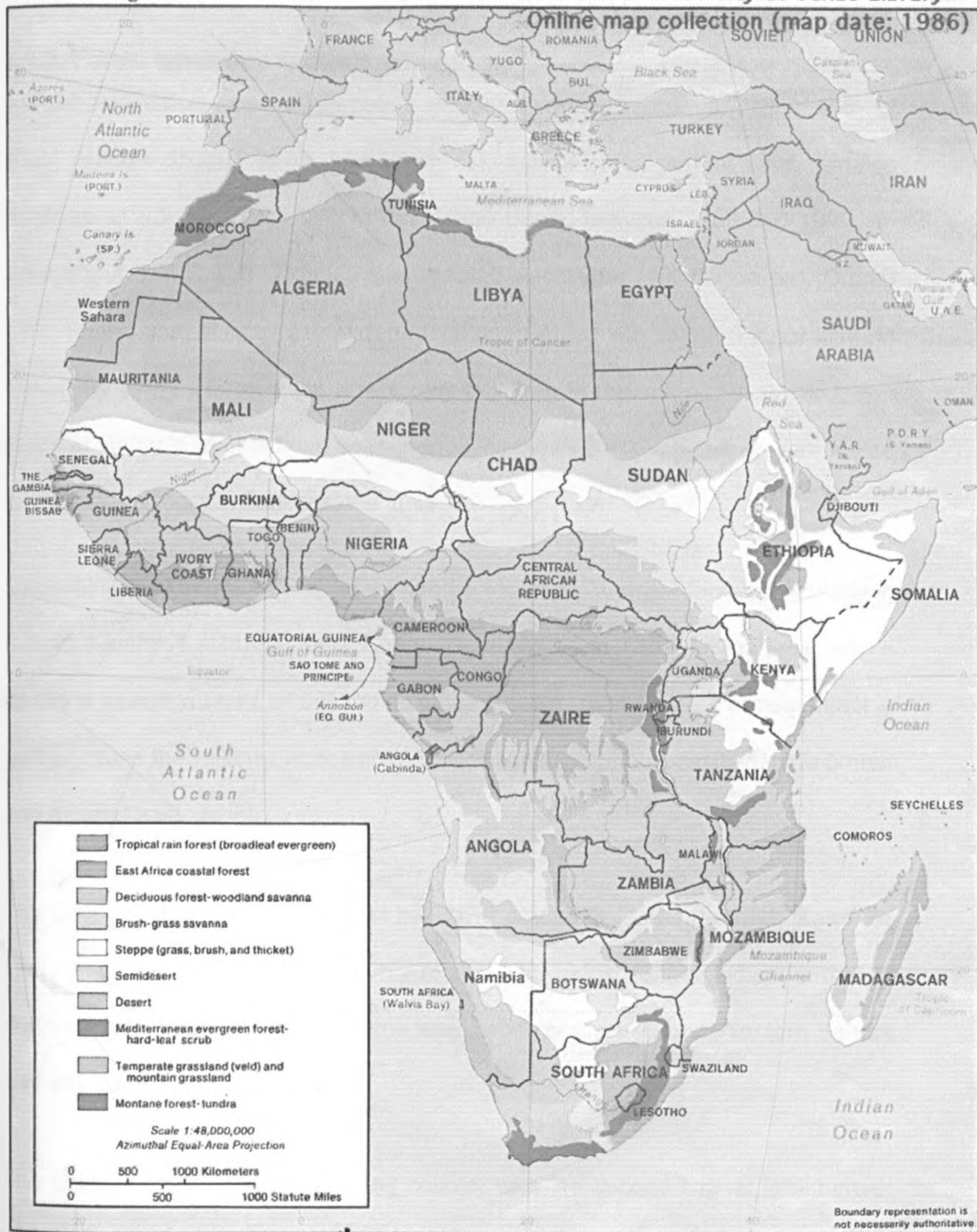
Average annual rainfall varies between 250 and 500 mm (10 and 20 in) and is concentrated in one season. Africa has a proportionately larger area in arid, or desert, climate zones than any continent except Australia. Each of these areas—the Sahara in the north, the Horn in the east, and the Kalahari and Namib deserts in the southwest—has less than 250 mm (less than 10 in) of rainfall annually. In the Sahara, daily and seasonal extremes of temperatures are great. The average July temperature is more than 32.2° C (90° F); during the cold season the night time temperature often drops below 0° C (32° F).

Mediterranean climate zones are found in the extreme northwest of Africa and in the extreme southwest. These regions are characterized by mild, wet winters and warm, dry summers.

In the highlands of eastern Africa, particularly in Kenya and Uganda, rainfall is well distributed throughout the year, and temperatures are equable. The climate on the high plateau of southern Africa is temperate.

# Natural Vegetation in Africa

SOURCE: University of Texas Library  
 Online map collection (map date: 1986)



800630 (547147) 6-86

Map 1: Natural Vegetation in Africa

### 3.1.3. Forest types and Protection in Africa <sup>28</sup>

Almost 6.8 million square kilometers of Africa were originally forested, 90% of West Africa's original forest has been lost; only a small part of what remains qualifies as *frontier forest*. Within the Congo Basin, between 1980 and 1995, an area about the size of Jamaica was cleared each year (1.1 million ha). During 1990-95 the annual rate of total deforestation in Africa was about 0.7 per cent. In Africa, for every 28 trees cut down, only one tree is replanted. Since 1957, two thirds of Gabon's forests have been logged, currently being logged, or were slated for logging as logging concessions in 1997.

Large blocks of intact natural forest can be found in Central Africa, particularly in Congo Kinshasa, Gabon, and Congo Brazzaville. In Congo Kinshasa, which contains more than half of this region's forest cover, many forests remain intact in part because the nation's poor transportation system can not easily handle timber and mineral exploitation.

The 2005 forest assessment report by UNEP placed the DRC (formerly Zaire) as being the most forested country in Africa<sup>29</sup>. The report further indicates that of countries with forests, Eritrea had the least, while Mauritania and Western Sahara had absolutely no forest cover.

The UNEP report put Angola as the country with the second largest forest cover with just over a quarter of the amount of forest in the DRC.

---

<sup>28</sup> <http://www.africanonline.co/1/cl.html>

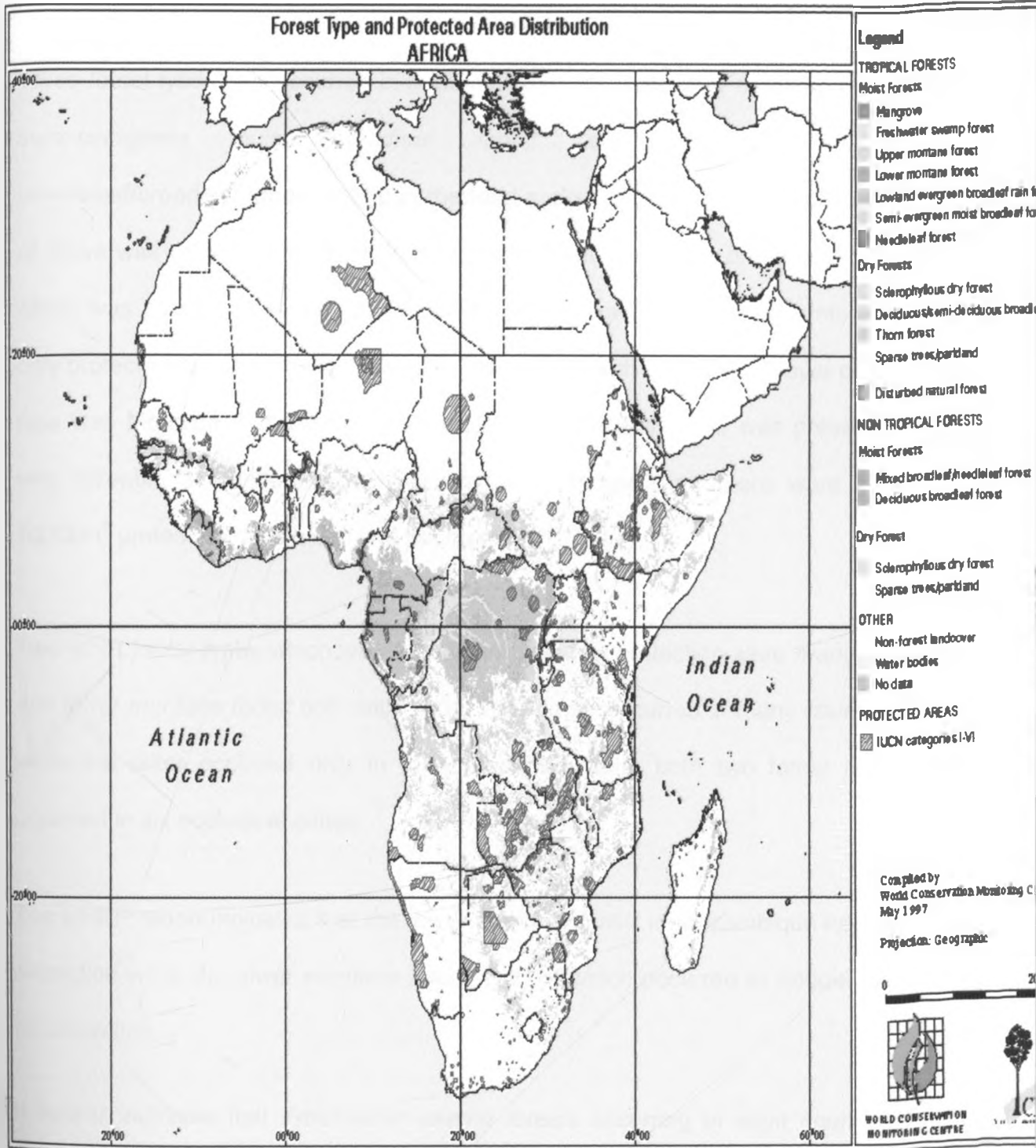
<sup>29</sup> <http://www.unep-wcmc.org/forest/data/cdrom/afrchts.htm>

This report placed the DRC as been the most forested country in Africa. The report further indicates that of countries with forests, Eritrea had the least, while Mauritania and Western Sahara had absolutely no forest cover. It also put Angola as the country with the second largest forest cover with just over a quarter of the amount of forest in the DRC.

Out of the 50 countries and territories reported by the UNEP report, 13 had more than 10% of their forests protected.

However, the total area of forest protected for some of these countries was lower than other countries with more forest, e.g., Rwanda - which had the highest percentage in forest protection at 50% or (4,530km<sup>2</sup>) under protection against Angola's 2.6% or 9,772 km<sup>2</sup> of forests under protection. The report identifies 14 different forest types in Africa out of which only four were more than 10% protected. These were the *upper montane rain forest*, *deciduous/semi-deciduous broadleaf forest* and both *tropical and non-tropical sparse trees and parkland*.

*Non-tropical sclerophyllous dry forest*, mainly in the Mediterranean (North African) countries, had the lowest percentage protection of any forest type. Only one forest type, the *non-tropical sparse trees and parkland*, was confined to one country, Algeria where it was over 80% protected. The most abundant forest type was *tropical deciduous/semi-deciduous broadleaf forest*, which covered even more ground than the *lowland evergreen rain forest*. Much of the former comprise the Miombo woodlands of south-central Africa.



Source: <http://weber.ucsd.edu/~jmoore/apesites/Maps/mapintro.html>

Map 2: Forest Type and Protected Area Distribution

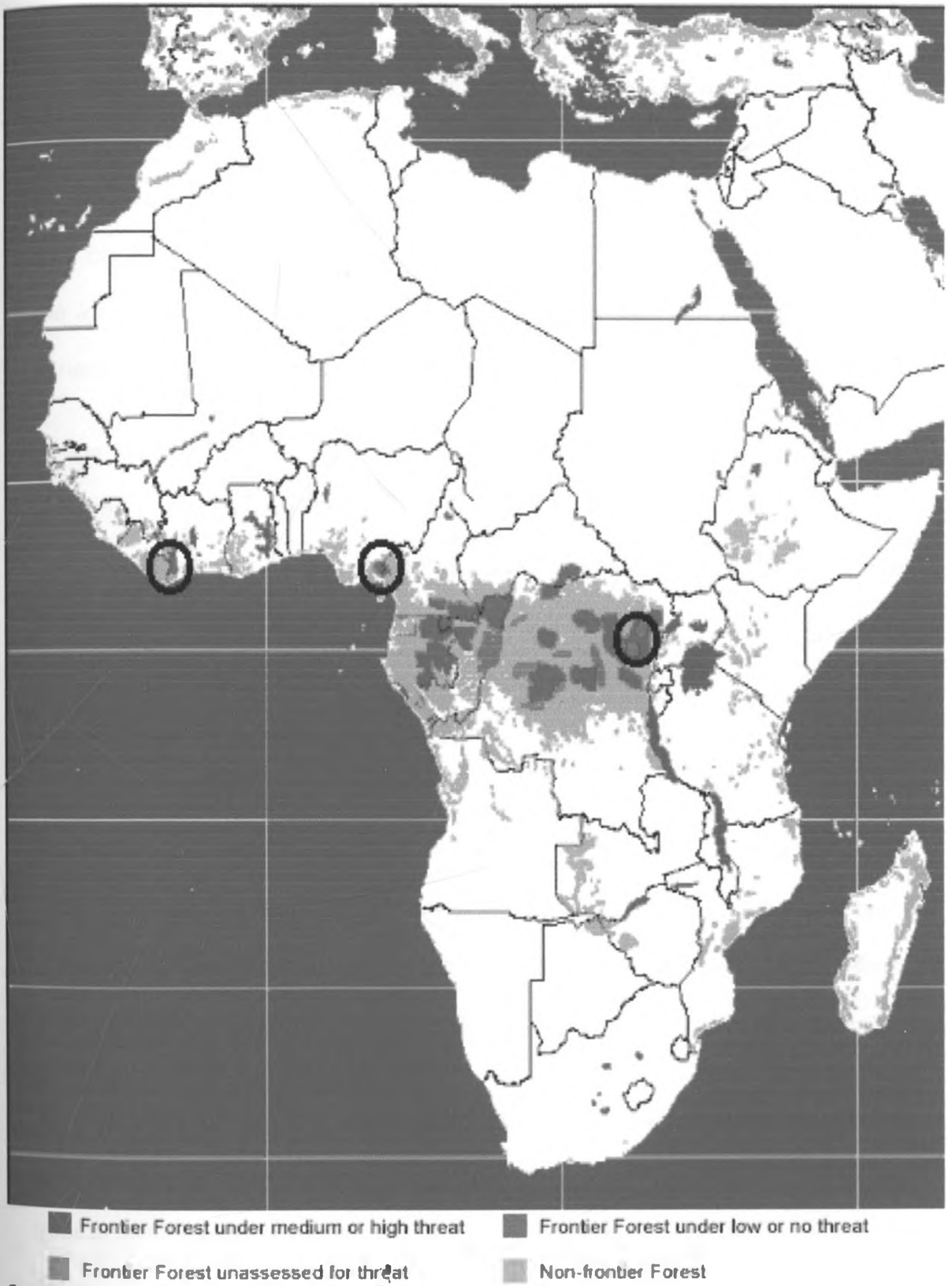
Three forest types only occurred in three countries, *tropical lower montane forest*, *semi-evergreen moist broadleaf forest*, and non-tropical *mixed needleleaf/broadleaf forest*, although the total and protected forest cover of each of these was much greater than that of non-tropical *deciduous broadleaf forest*, which was present in seven countries but in comparatively small amounts, and only protected in two of these (Table 2). The country with the highest cover of this type was Morocco, but it was not protected there. *Thorn forest* was present in very sizeable amounts in both Somalia and Ethiopia, and there were over 1000km<sup>2</sup> protected in each of these countries.

Two other forest types which were shown to have low protection were *mangrove* and *lower montane forest* both with 1.4%. The former occurred in many countries while the latter occurred only in three countries while both two forest types occurred in six ecological zones.

The UNEP report indicates that the *lower montane forest* in Mozambique had no protection while the *lower montane forest* most of which occurred in Angola had no protection.

It further indicates that *Freshwater swamp forests* occurring in eight countries<sup>s</sup> were protected at only 2.4% in four countries it occurred. This forest type had no<sup>o</sup> protection in Cameroon, Congo, Gabon and Mozambique.





Source: Interactive Maps

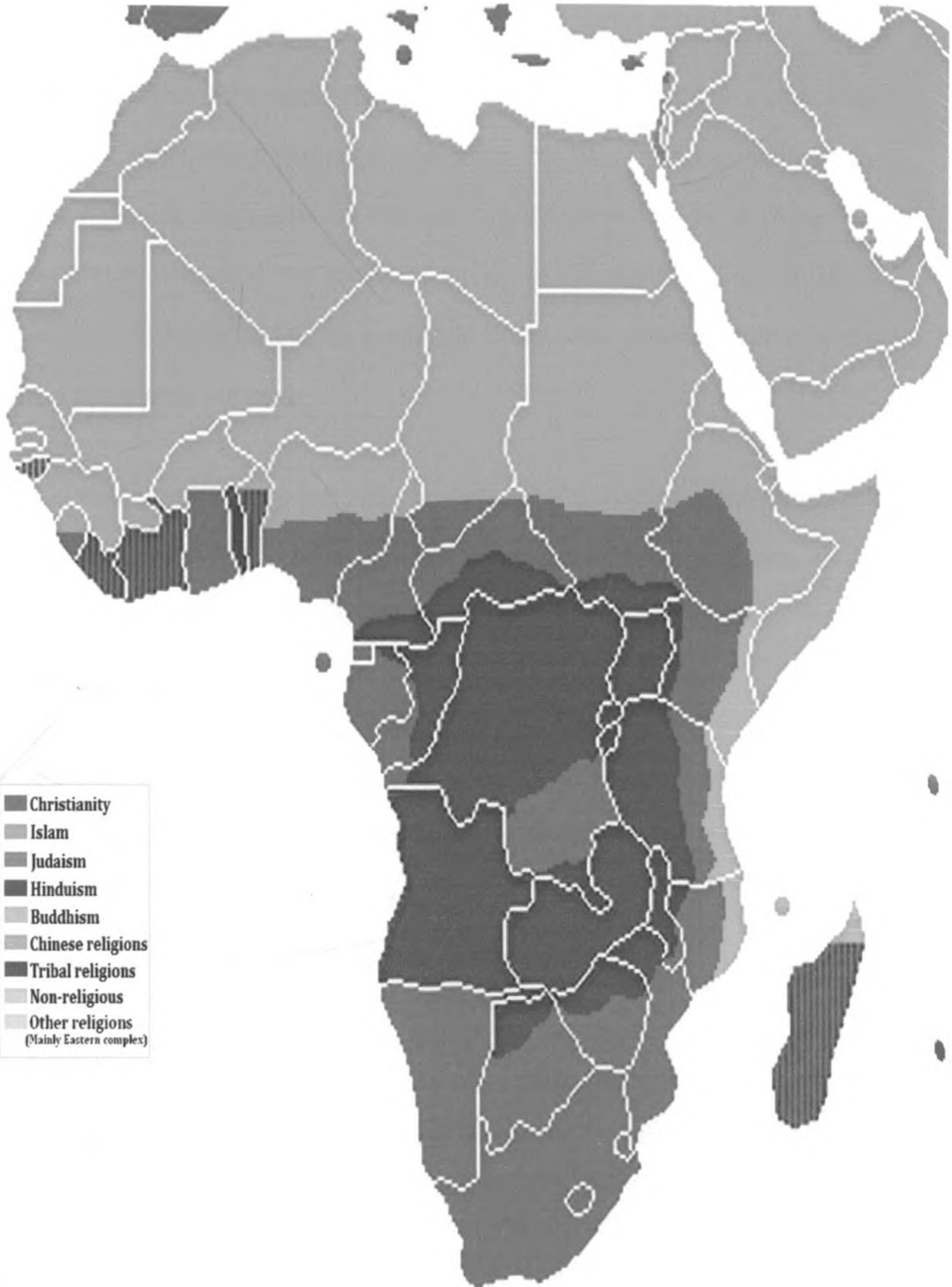
Map 3: Frontier Forests and threats

This forest type is spread over eight different ecological zones but protected only in three. The unprotected zones include very small areas in the *lowland wet* and larger areas in the *lowland moist with short dry season* and *lowland moist with long dry season*. It is only Cameroon that supports the only forest of this type in the *lowland wet* region and therefore, only country that can protect this forest variant.

Of the various ecological zones that support forests, the largest forest cover occurred in the *lowland moist-short dry season* zone. However, they were only 3.9% protected and quite a sizeable proportion of the forests were disturbed. This zone supported a greater area of *lowland evergreen broadleaf rain forest* than any other with the *lowland very moist* zone coming in a close second. Five of the thirteen ecological zones had more than 10% of the forest protected.

The *alpine* zone had the highest percentage of protected forest at 70%. This zone, however had the least amount of forests of all the zones, the total being 10,904 km<sup>2</sup>. The *montane dry* zone had a comparatively similar amount of forest at 12,583km<sup>2</sup> but had only just under 5% protected.

There were seven different forest types in the *alpine* zone, including both tropical and non-tropical forests. All were protected to a certain degree except the non-tropical *sclerophyllous forests* which is also not protected in the *montane dry* zone.



Source: [http://en.wikipedia.org/wiki/File:Religion\\_distribution.png](http://en.wikipedia.org/wiki/File:Religion_distribution.png)

Map 4: Religions and their spread in Africa

The report indicates that these two forests types may not differ significantly between these two zones because in most cases the *alpine* and the *montane dry* zones occur beside each other in the locations of these forests. It makes an assertion that protection in the *montane dry* zone where the forests are more abundant would probably therefore contribute significantly to the presence of the species in these ecosystems.

The report further attempts to indicate natural forest variants which may be under the most immediate threat of destruction. The provided list pinpoints those variants under 100 km<sup>2</sup> in extent which have no legal or actual protection.

Some of these forest variants may indeed be truly rare and unprotected types; others are clearly fragments of forest of these variants that could still be found in Africa. Two categories are used in indicating the forest type. That is Tropical Forest type (T) or Non tropical Forest type (N):

1. *Freshwater swamp forest* (T) in the Lowland wet zone
2. *Thorn forest* (T) in the Lowland very moist zone
3. *Thorn forest* (T) in the Montane moist zone
4. *Sparse trees and parkland* (T) in the Lowland very moist zone
5. *Sclerophyllous dry forest* (N) in the Lowland arid / desertic zone
6. *Sclerophyllous dry forest* (N) in the Premontane moist zone
7. *Sclerophyllous dry forest* (N) in the Montane moist zone
8. *Sclerophyllous dry forest* (N) in the Alpine zone
9. *Mixed needleleaf/broadleaf forest* (N) in the Montane moist zone

Total forest area and area of protected forest in each country.

Country	Area of forest km <sup>2</sup>	Area of forest protected km <sup>2</sup>
Algeria	26946	991
Angola	375662	9772
Benin	21040	2904
Botswana	121231	24092
Burkina Faso	56667	9011
Burundi	3582	436
Cameroon	289965	17854
Canary Islands (Spain)	630	0
Central African Rep.	199018	41608
Chad	63735	1478
Congo	278797	12935
Cote d'Ivoire	77875	7780
Djibouti	327	0
Egypt	1380	0
Equatorial Guinea	23540	0
Eritrea	10	0
Ethiopia	167409	32755
Gabon	239369	8975
Gambia	4830	180
Ghana	59712	1978
Guinea	76627	1365
Guinea - Bissau	20078	0
Kenya	61762	3607
Lesotho	889	77
Liberia	63218	967
Libyan Arab Jamahiriya	526	0
Madagascar	72498	3837
Madeira (Portugal)	54	0
Malawi	38301	3262
Mali	64684	1430
Morocco	18621	490
Mozambique	358417	25307
Namibia	34362	3626
Niger	269	42
Nigeria	279010	13031
Reunion	54	0
Rwanda	4530	2266
Sao Tome and Principe	304	0
Senegal	111101	13045
Sierra Leone	13625	694
Somalia	133308	1494
South Africa	103849	5472
Sudan	181585	20299
Swaziland	2861	92
Tanzania	152625	22935
Togo	4251	144
Tunisia	3005	67
Uganda	57569	18503
Zaire	1439178	93160
Zambia	220276	70231
Zimbabwe	153967	18733
<b>Total</b>	<b>5683131</b>	<b>496928</b>

Source: [http://www.unep-wcmc.org/forest/data/cdron2/stat\\_ref.htm](http://www.unep-wcmc.org/forest/data/cdron2/stat_ref.htm) (1997)

Table 3.2: Total forest Area and area of protected forest in each country

### **3.1.4. Study Population and Scope**

The study focused its investigation on the AACC. The AACC has a membership of one hundred and sixty nine (169) members comprising of one hundred and thirty four (134) member churches and thirty five (35) national Christian councils in forty countries in Africa constituting a total of one hundred and twenty million faithfuls in continent.<sup>30</sup>

The researcher chose to study the AACC because it forms a big representation of churches in Africa forming almost 24% of the Christian population. The choice of the AACC is therefore strategically justified because with such a population forming its membership, it has a real possibility of influencing a large constituency in Africa. In addition, as indicated in its annual reports for 2005, 2006, and 2007, the AACC works in close collaboration with other organizations with a similar portfolio including the Symposium of Episcopal Conferences of Africa and Madagascar (SECAM) and the Organization of African Instituted Churches (OAIC) and Association of Evangelical in Africa (AEA). By understanding the AACC and its work in forest conservation, these organizations could benefit from the research outcome. Finally, the choice of the AACC as the institutions of study was further made relevant because the researcher is a staff of the organization and therefore the possibility of putting the findings into use there after.

Whereas the study of these other organizations would make the scope of the study wider, needing more time and resources and therefore not feasible for the

---

<sup>30</sup> AACC Annual Report 2007

researcher within his means and time, the possibility that these religious and Christian institutions, may be doing a lot in regard to forest conservation was not lost to the researcher. The researcher is suggesting that there is need for further research in regard to the work of these organizations in forest conservation.

### **3.2.1 Sampling Procedure**

A list of all the members of the AACC was made available to the researcher. The researcher felt that the number of elements in the population was manageable and therefore carried out a census. Because the study investigates both policy and implementation aspects of churches work in forest conservation, data was obtained from senior personalities at the policy level within the member churches. This included bishops, general secretaries, executive directors of specialized church agencies, retired bishops, board members and church elders or trustees at the headquarters of member churches and Christian councils. The researcher also used in-depth interviews to obtain data from people he considered to be key informants.

### **3.2.2. Data Collection**

#### **3.2.2.1 Survey Instruments**

A questionnaire with both closed and open ended questions was mailed to respondents for filling in and mailing back. The questionnaire was used to collect data from senior church administrators and programme personnel from member churches and Christian councils whom the researcher could not have face to face interviews with.

Further an interview schedule highlighting the various issues that the researcher was investigating was developed and used in guiding his in-depth interviews with key informants within the church structure that governs the study organization.

Two types of data were used in this study.

### **3.2.2.2. Primary Data**

The survey was conducted for slightly over 390 days (13 months) between the months of November 2006 and January 2008. At the start of the survey, the researcher pre-tested his survey instrument in 4 randomly selected member churches of the study organization in Kenya. Observations made were recorded in field notes and were used to adjust the questionnaire for accuracy of information to be obtained from the survey and interviews.

During the 13 months period, a complete survey was carried out by sending out questionnaires electronically to all AACC member churches and National Christian councils for filling in and generation of qualitative data.

Out of the 169 members of the AACC only 66 or 39% completed the questionnaire and returned them to the researcher. At the time, key informants included the General Secretary of the AACC and two general committee members of the AACC and the four chairpersons of FECCLAHA, FOCCISSA, FECCIWA and FOCCOCA regional fellowships, and the co-coordinator of the Eminent Persons Ecumenical Program for Peace in Africa (EPEPPA), who is



also the envoy of the AACC to the Africa Union were interviewed by the researcher.

From these interviews, the researcher was able to obtain vital information about the role of churches, past experiences, attitudes and perceptions towards forest resources and involvement in forest conservation programmes and future plans for conservation.

### **3.2.2.3. Secondary Data**

Not all data used in this study was derived from primary sources. Secondary data sources mainly publications and unpublished materials were also used. Some of these sources included government publications, church related non-governmental organizations and church publications and reports. The study also included a review of forests Acts in 13 countries where the AACC draws its member churches to give a much generalized view of the legal situation on forest conservation in these countries.

Other secondary sources included maps showing countries in which AACC draws its membership, the spread of various forests within the continent and important those about temperature, rainfall and climatic zones.

### **3.2.2.4. Methods of Data Analysis**

The Statistical Package for Social Sciences (SPSS) Programme was used to analyze most primary data. As a result descriptive analysis and tabulations are used to report the findings of this study.

The researcher further studied answers provided by respondents to create categories of responses which he inferred to make conclusions. This categorization was made using a criterion of whether the response given by a respondent was positive, negative or non-committal/non-indicative. Secondary data sources was used to generate quantitative data and therefore used in establishing correlations, modes and means of variables of data in the study.

### **3.3. Research Limitations**

In this section, the major difficulties encountered by the researcher in carrying out his study are discussed. These are namely, the scope of the study, data sources, data availability, lack of time and limited financial resources. Means used by the researcher to overcome these difficulties for him to collect data as accurately as possible are mentioned.

#### **3.3.1 Identity of organization**

First, the All Africa Conference of Churches which is the subject of this study is a continental umbrella church organization. Therefore this study was faced with the inevitable question about the area of study. Is this research being carried out in the entire continent or not? This question kept coming to the mind of the researcher through out the period of the study. In addition to this dilemma, the nature of the membership of the AACC also implied that the researcher was again by default investigating the more than 120 million adherents of churches spread widely across the continent. To carry out a continental study would have been scientifically challengeable. However, given the time, resources available

and practicability of studying such a huge population, the researcher tried to draw a distinction between the continent and the organization. He perceived the AACC to be made up of a specific membership which - though spread across the continent - could be identified and investigated. He was therefore convinced beyond doubt that information obtained from the church administration, leadership and key informants was representative of the various congregations and therefore representative of the entity under investigation.

### **3.3.2. Data Sources and Availability**

The researcher faced the problem of poor or inadequate documentation and archiving by churches and the AACC itself. This meant that a lot of time was spent searching for secondary data sources on the subject and in some cases such data ended up not being available. This made it difficult for the researcher to trace the history of environmental projects by the church. Without documentation, it may pass that the church had never been involved in environmental projects which may not be the case.

### **3.3.3. Financial Resources**

The membership of the AACC spreads far and wide in the continent and therefore a huge budget was needed. Shortage of funds for field work and other related research activities like constant follow ups was one of the most significant limitations. To overcome these limitations, the researcher considered collecting data through electronically relayed medium. Due to limited finances, the researcher was forced to wait until his key informants came to Nairobi for

meetings and other work related engagements for him to interview them. As seen in 3.3.4 below, this would also impact on duration of the study.

#### **3.3.4. Time**

A number of issues came in to impact on the time spend on the study. These include distance, length of time spend to get feed back, difficulties in follow ups as well as having to wait to have key respondents near the researcher through AACC meetings as a result of financial implication (3.3.3). Due to the geographical spread of the membership of the AACC and the medium used to collect data (electronically relayed questionnaire); time became an issue to consider. In the first instance, it took a long while for respondents to send back their filled in questionnaires. Follow ups in the case of this study were done at two levels. One, follow ups in form of reminders to get respondents to fill in and submit their questionnaires and two follow ups on unclear information in submitted questionnaires or interviews.

Further to this, it emerged that a number of members of the AACC did not have access to emails, had changed their email addresses, their addresses were not functional at the time of the study or officers to fill in the questionnaire were not competent in computer applications. Some were not aware that the questionnaires had been mailed for them to fill up nor could they access them even after they were informed using other means. This forced the researcher to resend some questionnaires through postal mailing which resulted in a prolonged

period of data collection. This was further complicated by the fact that each respondent would submit their questionnaire at his/her convenience.

### **3.4. Conclusion**

Whereas policy and regulatory functions continue to remain with central governments, the increased demand for public accountability has opened avenues for the public participation in the planning and better delivery of goods and services even in regards to administration of forests in Africa. The management of resources is gradually being transferred to sub-national authorities who in turn delegating more functions down the chain of command.

Though exhibiting a rich heritage of forestry resources and types, it is very evident that Africa risks of losing much of its forests. Indeed, even in areas where protection has been indicated, the real practice of protection may be missing.

The gap between policy/legal restrictions and the actual practice of protection could be an indication that society is not efficient in bridging policy/law. As a sharper of social representation the Church in Africa - considering the huge number of adherents it commands - is put on the spotlight in regards to its contribution to forest conservation.

This study faced the challenged of the application of established research methods to the subject of this study, the All Africa Conference of Churches. This was brought about by the wide geographically spread of its membership which is

continent wide. However, as an entity, the organization can be studied as indicated in this study. However, the collection of primary and secondary data faced constraints related once again to the geographical spread of the membership. This demanded for more time than earlier anticipated. Even with increased time period, the researcher was concerned with the low response received.

## **CHAPTER 4**

### **DISCUSSION OF FINDINGS**

#### **4.0 Introduction**

This chapter presents major findings of this study. It also presents data tabulations which are used to discuss the findings and over all strengths and constraints in the role of the church in forestry management. The chapter also provides - in its conclusion – the general feeling of the findings that guide the recommendations in the subsequent chapter.

#### **4.1 Findings**

The study found out that Churches in Africa recognized conservation of nature in general as part of their duty and calling. This was explained to be the reason behind various collaborations that the church had entered into with professional organizations and research bodies. These collaborations were aimed at educating church populations on environmental matters as well as creating an avenue for use of new technologies for sustainable development at the church level. The most outstanding and notable collaboration was the one between the council of churches in Cameroon (CEPCA/FEMEC) and the International Circle for the Promotion of Creation (CIPCRE) the World Wide Fund for Nature (WWF), the International Center for Research in Agriculture and Forestry (ICRAF) and the Institute of Research in Agriculture and Development (IRAD). It was also established that the United Presbyterian Church in South Africa has established the South African Faith Communities Environmental Institute to teach environmental management from a Christian perspective.

#### 4.1.2 Existence of Forests and Forests status

Asked to state how they perceived the status of forests near them, 80% of the respondent indicated that forests near them had been degraded. 21% of the respondents said that their forests were extremely degraded while 36% said their forests were very degraded and another 24% said that their forest were degraded. 18% of the respondents said that forests in their areas were not degraded. They all stated that their church recognized forests degradation as an issue of concern.

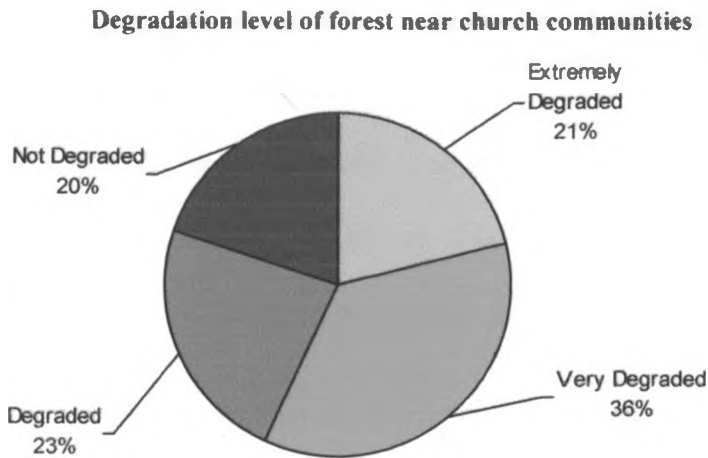


Figure 4.1

Asked why they think forests existed, 47% of the respondents said that forests were created for man's use, 23% said that forests were created as complete entities for a self-sustaining creation citing the "fall of man" as the event that corrupted this self-sustenance while 28% said that forests were created by God for His own good citing God's satisfaction as contained in scriptures.



Purpose for existence of forests

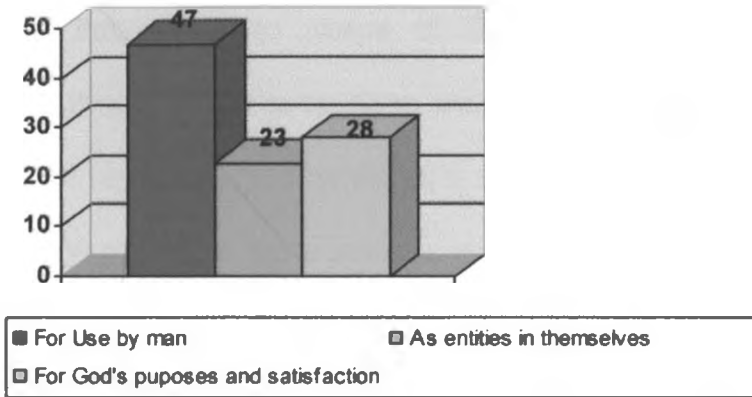
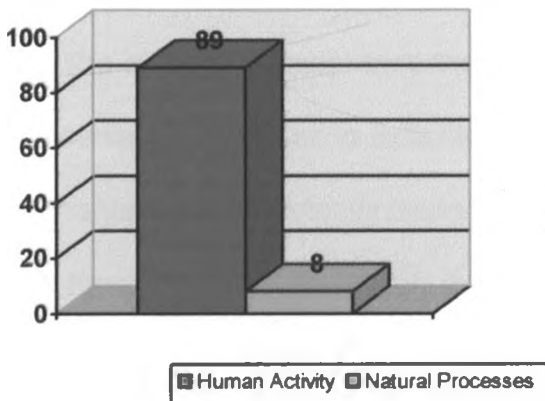


Figure 4.2

Asked what they thought was the main cause of forests degradation, 89% of the respondents said that human activities (which included tree harvesting for both commercial and domestic purposes and also clearance of forests for the creation of agricultural lands and settlements) as the main cause. 8% said that the degradation of forests was a natural process that was bound to happen anyway.

The main cause of Forest Degradation in church communities



UNIVERSITY OF NAIROBI LIBRARY  
EAST AFRICANA

Figure 4.3

### 4.1.3 Economic Status of Congregations

Asked to assess the economic status of their congregations, 27% of the respondents said that their congregations were extremely poor, 40% said that their congregations were very poor while 30% said that their congregations were poor. Less than 2% classified the economic status of their congregations as not poor.

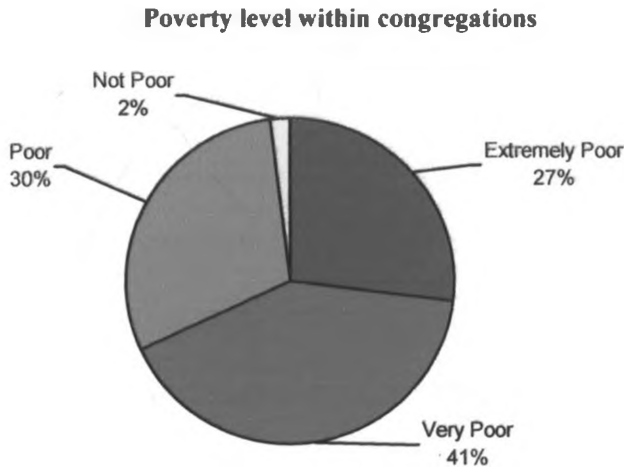


Figure 4.4

Asked if they felt that there was a relationship between economic status of their congregations and the state of forests near them, all the respondents said yes. 78% of the respondents went further to indicate that their political environments had once been authoritative or constantly under civil strife which affected country economy thus may have impacted negatively in the management of forests. 13% said they had had severely struggling economies in the past which may have affected the management of their forests. 21% said that thought they have had relatively stable economies; their forests were not spared from political plunder and mismanagement.

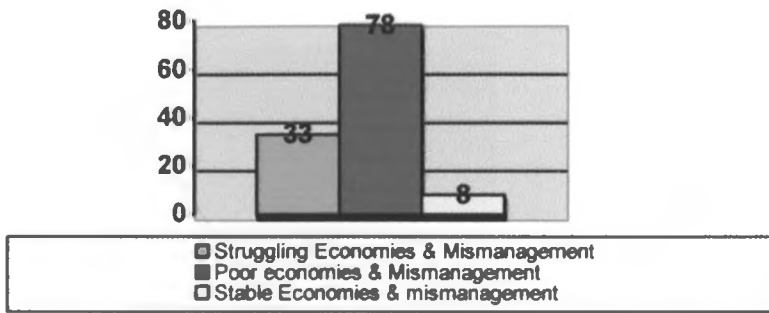


Figure 4.5

#### 4.1.4 Governments and congregations work in Forests Conservation

Asked if they felt that their governments were doing enough to address the problem of forest degradation they all said no. 62% said that their governments were not doing enough citing high level policies that did not translate into action on the ground. 28% said that their governments were not doing enough because poverty had caused people to view forests as a resource for their livelihoods while aiding corruption thus hindering the enforcement of forest protection law.

Asked if their congregations were doing enough to address the forest degradation problem, 33% said yes, 59% said no, while another 8% could not gauge how much their congregation was doing.

#### Obstacles to governments' adequate mitigation of forest degradation

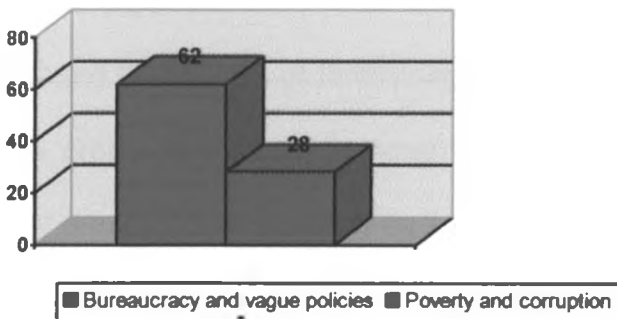


Figure 4.6

### Congregations are addressing Forest Degradation

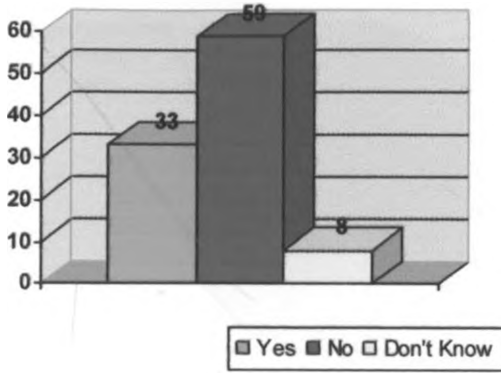


Figure 4.7

Asked if their churches had any project aimed at addressing forest degradation, 94% of the respondents said yes. Asked to give examples of these projects, 51% of the respondents said they were engaged in tree planting, awareness creation and lobbying for effective policy and legal framework for forest protection; 43% said community development initiatives focusing on good agricultural practices, small enterprises for diversification of resources, water harvesting and tree planting.

On further probing to say how they were creating awareness among their congregations, 41% of the respondents said that they had collaborations with forestry conservation organizations in their churches and that these were used to create awareness and the effects of forest degradation; 22% said that they were using sermons to create awareness among their congregations while another 36% said that they encourage groups within their congregations to plant trees.

### Means for creating awareness among congregations

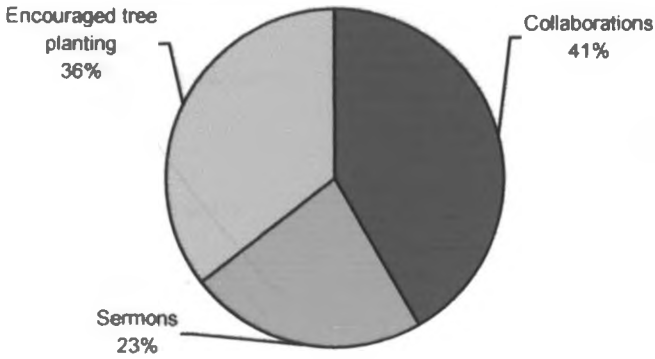


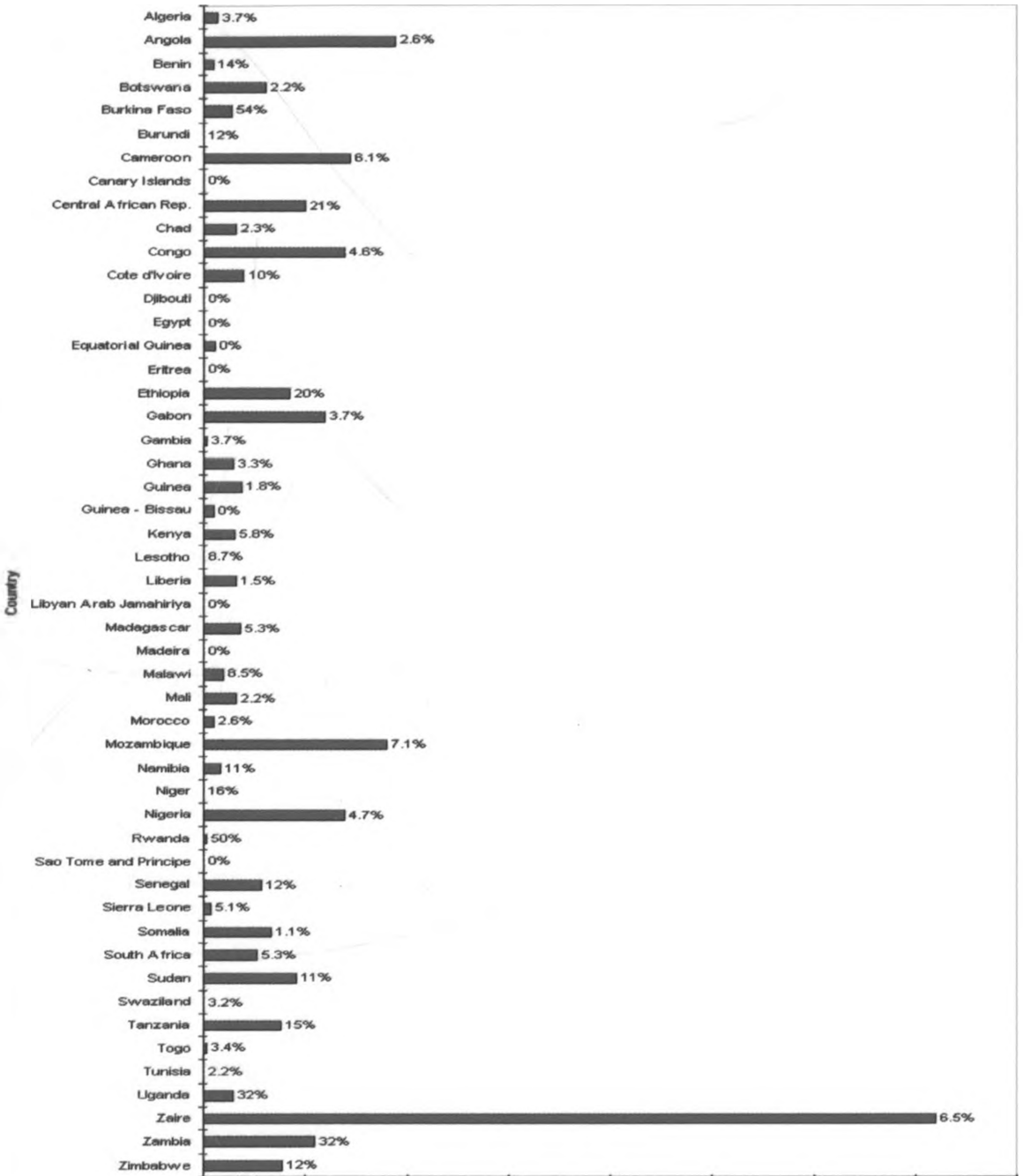
Figure 4.8

When asked to indicate if at any given time they had given a sermon to their congregations with any element of forest conservation in it, only 23% of the respondents said yes while the rest said no.

Asked if they perceived any differences in the way Christianity and African religions related with forests, 66% said that there was a difference, adding that African religions preferred to celebrate rituals in the forested areas and that this gave such forests/trees sacred status, thus evoking reverence for forests thus conservation.

At the same time, 23% of the respondents said that there was no perceived difference in the way the two religions treated forests adding that individual perceptions towards forests determined how forests were treated and that the economic and population situation has greatly changed over the years thus making it impossible to compared two religions. 11% of the respondents said they could not tell.

## Africa



Source: [http://www.unep-wcmc.org/forest/data/cdron2/stat\\_ref.htm](http://www.unep-wcmc.org/forest/data/cdron2/stat_ref.htm) (1997)

Table 4.1: Total area of forest in each country, with percentage protected

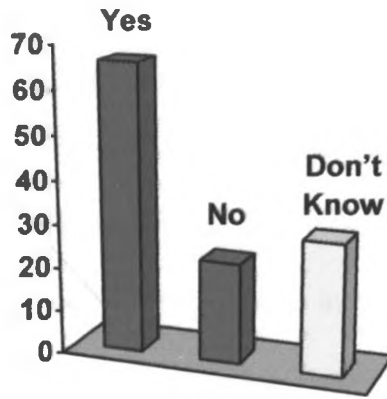


Figure 4.9

Asked if there were any direct benefits that the church draws from the existence of good forests in its environment, no respondent could directly point at any benefits accrued by the church from such forests. However, 56% of the respondents said there were indirect benefits because people near healthy forests were also healthy and relied less on the church for handouts. They identified clean water, good farm returns, wild foods, raw materials, fuel wood and entertainment as benefits. They said that because of the availability of these benefits, the church was able to attend to other needs.

39% of the respondents said that no benefits from the forests went to the church at all but rather to the people around the forests. They saw the role of the church as merely that of encouraging good stewardship of forest resources.

#### 4.1.5 Theological Basis for Conservation

Asked what it was that caused the church to engage in conservation of creation, 99% of the respondents said that it was a mandate that the church gets from its mission from the holy scriptures. 56% of the respondents said that they felt obliged to ensure there was good environmental stewardship, 32% said that they felt obliged to ensure that there was some continuity in the work of creation and good stewardship. At the same time 7% of the respondents said that the environment existed to serve the needs of man while 3% could not explain why they felt obliged to get involved.

*"Cutting of a tree from a holy place was an act of defilement, it was an abomination. Offenders would be punished through the planting of twice the number of trees they cut and their nurturing till maturity. The twin approach of divination and rewards through nature on one hand and a punishment that introducing new life and ensured its nurturing, instilled inert respect and care in all".*

*-Rev. Dr. John Gatu*

**There exists a mutual benefit relationship between healthy Forests and the Church**

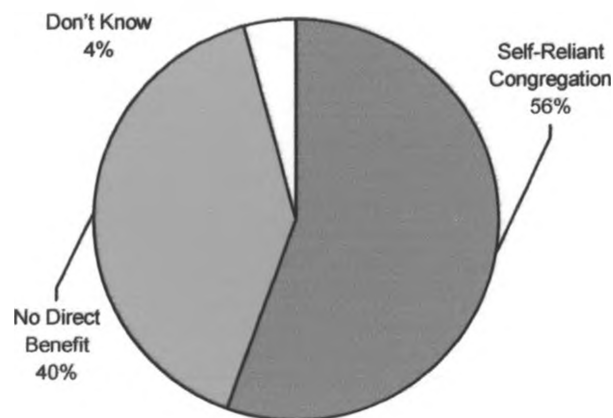


Figure 4.10



*“A community living near a healthy forest is also a healthy and wealthy community; hence the forest was perceived as a blessing and so taken care of. However, since the 1994 war in Rwanda, forests in the DRC have carried a curse with them because armed groups continue to perpetrate many ugly atrocities from their safe hide outs deep in the dense forest. This has contradicted the earlier belief that forests are a blessing”.*

*- Bishop Dieudonne Mbaya Tshiakany, President of Eglise du Christ au Congo, DRC & Chairperson of FECCLAHA.*

TABLE 2  
Forest area and area change

Country/area	Total land area ('000 ha)	Forest area, 2000				Forest cover change, 1990-2000	
		Total forest ('000 ha)	% of land area	Area per capita (ha)	Forest plantations ('000 ha)	Annual change ('000 ha)	Annual rate of change (%)
Africa, total	2 978 394	649 866	21.8	0.8	8 036	-5 262	-0.8
Algeria	238 174	2 145	0.9	0.1	718	27	1.3
Angola	124 670	69 756	56.0	5.6	141	-124	-0.2
Benin	11 063	2 650	24.0	0.4	112	-70	-2.3
Botswana	56 673	12 427	21.9	7.8	1	-118	-0.9
Burkina Faso	27 360	7 089	25.9	0.6	67	-15	-0.2
Burundi	2 568	94	3.7	n.s.	73	-15	-9.0
Cameroon	46 540	23 858	51.3	1.6	80	-222	-0.9
Cape Verde	403	85	21.1	0.2	85	5	9.3
Central African Republic	62 297	22 907	36.8	6.5	4	-30	-0.1
Chad	125 920	12 692	10.1	1.7	14	-82	-0.6
Comoros	186	8	4.3	n.s.	2	n.s.	-1.1
Congo	34 150	22 060	64.6	7.7	83	-17	-0.1
Cote d'Ivoire	31 800	7 117	22.4	0.5	184	-265	-3.1
Dem. Rep. of the Congo	226 705	135 207	59.6	2.7	97	-532	-0.4
Djibouti	2 317	6	0.3	n.s.	-	n.s.	n.s.
Egypt	99 545	72	0.1	n.s.	72	2	3.3
Equatorial Guinea	2 805	1 752	62.5	4.0	-	-11	-0.6
Eritrea	11 759	1 585	13.5	0.4	22	-5	-0.3
Ethiopia	110 430	4 593	4.2	0.1	216	-40	-0.8
Gabon	25 767	21 826	84.7	18.2	36	-10	n.s.
Gambia	1 000	481	48.1	0.4	2	4	1.0
Ghana	22 754	6 335	27.8	0.3	76	-120	-1.7
Guinea	24 572	6 929	28.2	0.9	25	-35	-0.5
Guinea-Bissau	3 612	2 187	60.5	1.8	2	-22	-0.9
Kenya	56 915	17 096	30.0	0.6	232	-93	-0.5
Lesotho	3 035	14	0.5	n.s.	14	n.s.	n.s.
Liberia	11 137	3 481	31.3	1.2	119	-76	-2.0
Libyan Arab Jamahiriya	175 954	358	0.2	0.1	168	5	1.4
Madagascar	58 154	11 727	20.2	0.8	350	-117	-0.9
Malawi	9 409	2 562	27.2	0.2	112	-71	-2.4
Mali	122 019	13 186	10.8	1.2	15	-99	-0.7
Mauritania	102 522	317	0.3	0.1	25	-10	-2.7
Mauritius	202	16	7.9	n.s.	13	n.s.	-0.6
Morocco	44 630	3 025	6.8	0.1	534	-1	n.s.
Mozambique	78 409	30 601	39.0	1.6	50	-64	-0.2
Namibia	82 329	8 040	9.8	4.7	n.s.	-73	-0.9
Niger	126 670	1 328	1.0	0.1	73	-62	-3.7
Nigeria	91 077	13 517	14.8	0.1	693	-398	-2.6
Reunion	250	71	28.4	0.1	3	-1	-0.8
Rwanda	2 466	307	12.4	n.s.	261	-15	-3.9
Saint Helena	31	2	6.5	0.3	2	n.s.	n.s.
Sao Tome and Principe	95	27	28.3	0.2	-	n.s.	n.s.
Senegal	19 252	6 205	32.2	0.7	263	-45	-0.7
Seychelles	45	30	66.7	0.4	5	n.s.	n.s.
Sierra Leone	7 162	1 055	14.7	0.2	6	-36	-2.9
Somalia	62 734	7 515	12.0	0.8	3	-77	-1.0
South Africa	121 758	8 917	7.3	0.2	1 554	-8	-0.1
Sudan	237 600	61 627	25.9	2.1	641	-959	-1.4
Swaziland	1 721	522	30.3	0.5	161	6	1.2
Togo	5 439	510	9.4	0.1	38	-21	-3.4
Tunisia	16 362	510	3.1	0.1	202	1	0.2
Uganda	19 964	4 190	21.0	0.2	43	-91	-2.0
United Republic of Tanzania	88 359	38 811	43.9	1.2	135	-91	-0.2
Western Sahara	26 600	152	0.6	0.5	-	n.s.	n.s.
Zambia	74 339	31 246	42.0	3.5	75	-851	-2.4
Zimbabwe	38 685	19 040	49.2	1.7	141	-320	-1.5

Source: WDR 2007

Table 4.2: Forest Area and Area Change

**Reason for Church's interest in forests conservation**

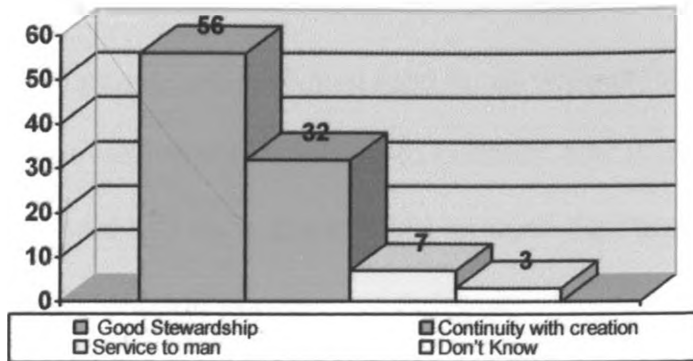


Figure 4.11

Asked whether man held a special place among the rest of the creation, all the respondents said yes. However, they could not agree on the reason that made man special as 75% of the respondents said that man was special because the rest of nature existed to enable him meet his needs, 20% said that man was special because he was to take care of what God had created while 5% said the scriptures said man was special.

**Reasons for Church's belief that man is special than the rest of creation**

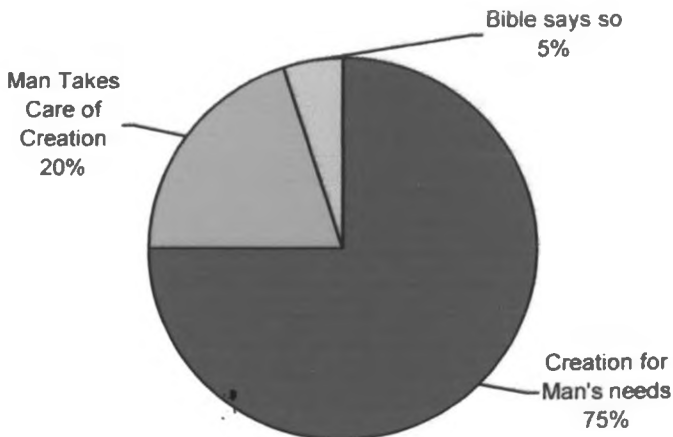


Figure 4.12

#### 4.1.6 Dialogue with Nature

Asked what they regarded as possible effects of a human-nature dialogue instead of humans domination over nature, 49% of the respondents said that such dialogue would lead to peace and sufficient food for all while 31% said that it would result to sustainable development, reduction in conflicts and increased spirituality in man. Another 16% said that such it is too late for such dialogue to exist because humans cannot comprehend the purpose for dialogue.

Asked what they intent to do to begin creating human-nature dialogue, 21% of the respondents said that they were already creating the dialogue through good stewardship sermons. 59% indicated that though they had been engaged in awareness creation, they would incorporate biblical reflections in their programmes to link the utilization of natural resources with human spirituality and wellbeing. Another 6% indicated that they would consider reviewing their theological training programmes to incorporate "environmental spiritualism" as a theological subject. 13% said that it is not possible to create such a dialogue.

#### 4.1.7 Size of Forest Conserved by Churches

Asked to indicate the size of forests their churches have conserved or have directly influenced in their conservation, the following responses were obtained.

Variable in ha <sup>2</sup>	Frequency of respondents
Less than 10	31
10-50	19
50-100	8
100-150	5
150 and above	3
<b>Total</b>	<b>66</b>

\*Respondents to 100 ha and above were all national councils

Tables 4.3 Size of forest conserved by churches

#### **4.1.8 Role of the Church in Forest Conservation**

Asked of what difference the role of the church would make in conserving forests, 76% respondents thought that the church was strategically placed to influence communities and individuals for sustainable utilization of forest and natural resources while 23% said that it was important for the church to be visible in regard to the conservation of forests for people to connect spirituality and conservation.

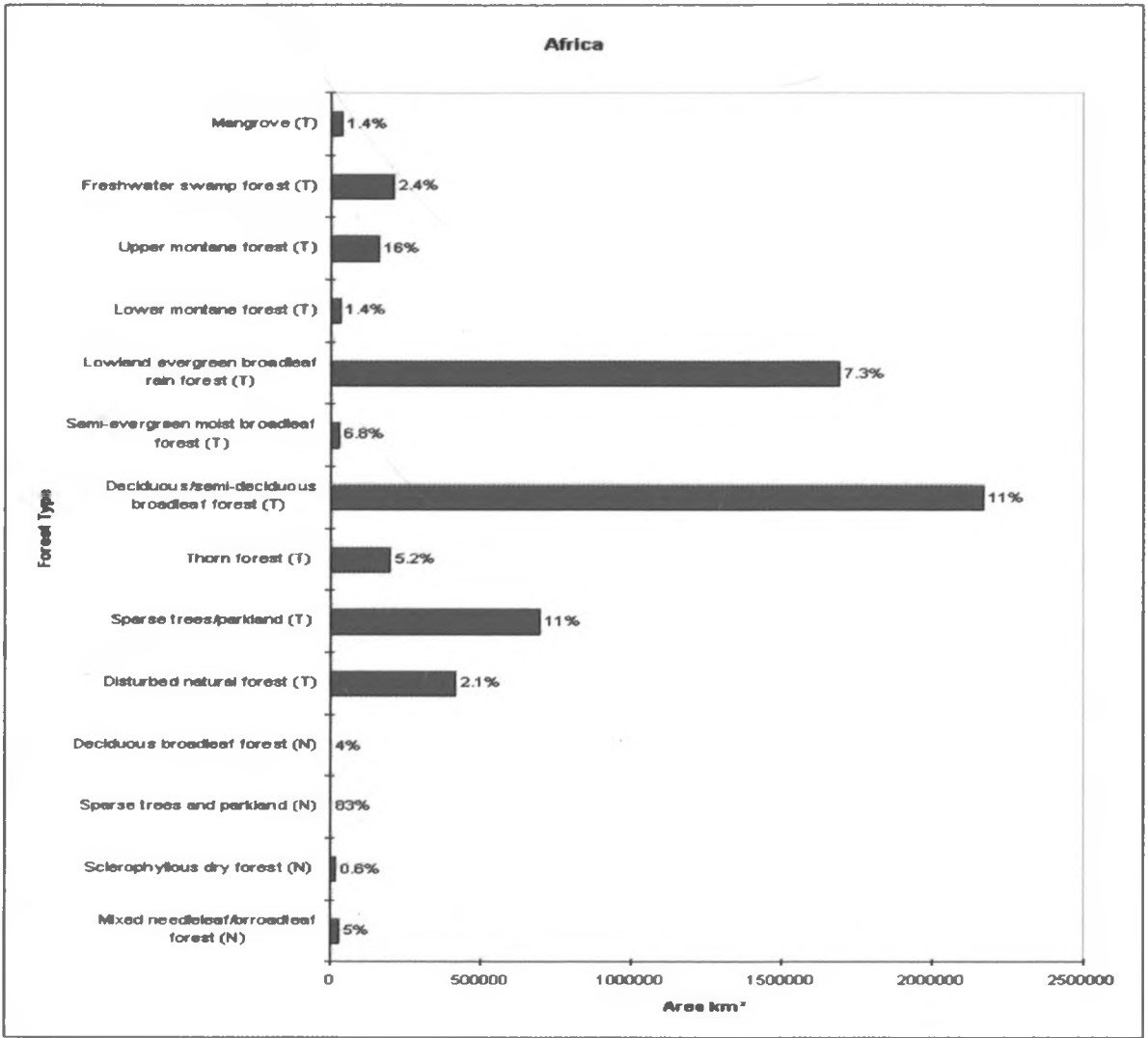
#### **4.2.1. Analysis and Discussions**

Though all the respondents indicated that there was a relationship between economic status of their congregations and the state of forests near them, 78% of them went ahead to justify why that was the state. In so doing, they were observing that poverty per se was not the only determining factor for forest degradation.

Using ANOVA test, the researcher sought to test the first hypothesis by establishing whether there exists any correlation between country's GDP against forest protection, country's economic growth and percentage of forest protection; and country's' economic growth against rate of change of forests in 34 African countries using key economic indicators (Appendix 4), Total area of forest in each country with percentage of protected forests (table 4.1) and Forest Area and area change (Table 4.2).

A very weak correlation of 0.22 was established between GPD and percentage of forest protection; another very weak correlation of 0.17 was established between the economic growth in countries, and the percentage of forest protection; and yet another very weak correlation of 0.26 was established between economic growth and the rate of change of forests. The researcher therefore accepted the null

hypothesis that there exists no relationship between a country's capacity to conserve forests and its economic status.



Source : <http://www.unep-wcmc.org/forest/data/cdrom/afrehts.htm>

Table 4.4: Total area of each forest type with percentage protected in Africa.

The researcher further observed that more than 83% of all the respondents who had stated that they considered their congregations poor, very poor or extremely poor also reported that forests near them were degraded. This is against 1.5% of the respondents who considered their congregations not to be poor while also stating that forests near them were not degraded. This was implying that the

quality of a forest was found to be directly proportional to the poverty levels of its neighbouring community.

Poverty Levels	Frequency of respondents	
	Forest Degraded	Forests Not Degraded
Extremely Poor	16 (24.2%)	2 (3%)
Very Poor	22(33.3%)	5 (7.6%)
Poor	17(25.7%)	3(4.5%)
Not Poor	0	1(1.5%)
Don't know	0	0
<b>Total</b>	<b>45 (68.2%)</b>	<b>11 (16.7%)</b>

Table 4.5: Poverty and degradation levels

Using table 4.5 the researcher sought to, the researcher sought to test the hypothesis that “there exists some significant relationship between poverty levels and the level of forest degradation” using chi-square test. He established a  $X^2$  of 9.85 at a degree of freedom ( $df$ ) of 4, thus a Probability value ( $P$ ) that was lesser than 0.05 but greater than 0.025. Thus  $X^2$  calculated was higher than  $X^2$  critical and therefore the researcher rejected the null hypothesis and accepted the alternative hypothesis which states that there exists a significant relationship between poverty levels and the level of forest degradation.

This is an important finding for this study because it contradicts Ehrlich and Holden (1971)<sup>31</sup> model on environmental impact which assumes that Impact is only caused by affluence and not the lack of it.

Using chi-square test again, the researcher further sought to establish whether or not there existed any relationship between environmental education and quality of forest (Table 4.6).

<sup>31</sup> Model I = PAT by where I = Impact on Environment; P = Population (size, distribution, and rate of growth); A = Affluence (per capita consumption, determined by income and lifestyle) and; T = Technology (level of Impact of consumption)

Degradation Levels	Frequency of respondents	
	Environmental Sermons Taught	Environmental Sermons never Taught
Extremely Degraded	0	14 (21.2%)
Very Degraded	2 (3%)	22 (33.3%)
Degraded	4 (6%)	11(16.7%)
Not Degraded	9 (13.6)	4 (6%)
Don't know	0	0
<b>Total</b>	<b>15 (22.7%)</b>	<b>51(77.3%)</b>

Table 4.6: Degradation levels and Environmental Education

He had observe that more than 67% of the respondents who stated that their congregations never had environmental sermons preached or taught also reported that and their forests were degraded, very degraded or extremely. This is against 9% of those respondents who had stated that though their congregations have had environmental sermons preached or taught, their forests were degraded.

The researcher arrived at a  $X^2$  of 22.78 and at a degree of freedom ( $df$ ) of 4, thus Probability value ( $P$ ) of lesser than 0.001. Thus  $X^2$  calculated was higher than  $X^2$  critical and therefore the researcher rejected the null hypothesis and accepted the alternative hypothesis which states that there exists a significant difference between the quality of forest in church congregations with environmental sermons and those without environmental education.

A ratio analysis of churches against the percentage of forest protected per country in the five regions of the AACC had from the highest to the lowest as North Africa, West Africa, Eastern Africa, Central Africa and Southern Africa respectively.



#### 4.2.2. Comparative Review of Forest Acts in Africa

A comparative review of forest laws in 13 African countries indicates an attempt to explore ways that would bypass the monopoly of the state in sustainable utilization and conservation of forest. These include increasing the democratic process in policy formulation, liberalization of market players and increased decentralization of responsibilities which has caused local communities to assumed responsibilities which were initially a preserve of the state. All the 13 country-laws converge in terms of issues linked to conservation, sustainable forest resource utilization, participatory management, and the implementation of forest management operations among others. Concepts such as permanent and non-permanent forest domain, sustainable management, participatory management, safeguarding biodiversity, the certification of forest products and community forestry are now almost universally embodied in all the 13 forestry legislations and policies.

However, challenges of implementation of these legislations are very evident. For instance, in Cameroon and Gabon, both the status of natural forests and the way they are managed suffer from a kind of fuzziness, due to cultural dualism and past policies. The legislation in these Central African countries stipulates that the natural forests belong to the State. But in the customary view of things, these same forests also belong to members of the various tribal lineages. This fosters an overlay of different entitlements concerning the trees, the forests, and the land on which they grow.

Forest law is easily and frequently circumvented, or is hard to enforce. Enforcement and monitoring problems in management programmes constitute major challenges to sustainable forest management at the country level, as do institutional weakness and instability. Indeed only Ethiopia, Gambia, Guinea,

Kenya, Lesotho and Zimbabwe out of the 13 countries reviewed have recognized training and research in their forest laws.

Angola does not have a forest code or a legal framework for one. Its forestry sector still makes use of the edict established by Decree Law n°44531 of 21<sup>st</sup> June 1962, which remains to this day the sole legal instrument covering forestry, wildlife and fisheries. The Decree does cover the use and harvesting of forest resources and wildlife, but makes no mention of management while its terms are vague and imprecise. Even after undergo review in 1981-82 and in 1989, it still seems poorly suited to the situation on the ground.

The divide between land laws and forestry laws was very thin that in some situations what should have been defined in the forest Act was actually defined in the land Act. In Angola and Burundi for instance it is the land Act that stipulates ownership of natural forest.

The status of natural forests varies from country to country. Forest laws in these countries had categorized ownership regimes as: state-owned (public domain) forests; communal forests and; privately-owned forest. In almost every country of the sub-region, national law stipulates that all natural forest other than privately-owned forest belongs to the state and thus generally comes under the responsibility of the public forestry administrations. These may, however, sub-contract specific operations to individuals, private concerns or community organizations. However, there was a general trend in having policy and regulatory functions remain with central governments, while the private sector and civil society are taking charge of operations.

There was also an indication that many forestry administrations that have national responsibility for conservation and extension are moving towards a three-tier system: a national component to direct and implement change; regional units to coordinate activities and give technical guidance; and municipal or local units to manage the resource. Sudan offered the best case of this.

These laws did not show the inter-linkage between forestry management and other development sectors. For instance, the linkage between forestry and energy regulation was not captured in almost all these Acts, yet it is the source of wood fuel which is a primary fuel in Africa. This was also true in relation to water regulation which rarely appreciates the need to plough back water related benefits into the forests.

## CHAPTER 5

### CONCLUSIONS AND RECOMMENDATIONS

#### 5.0 Conclusions

The survey findings which are a representation of the perceptions of the top leadership of churches in Africa could be generalized to indicate that they also permeate down to the other lower levels of the church including dioceses, parishes and other organized as well as unorganized church groups. Thus the findings shows that majority of churches in Africa are aware of the importance of forest conservation and management and the need for grass-root decision making processes that do not harm the environment. It was not clear when such awareness was imparted on churches, but there were indications that the level of awareness may have steadily increased in the last few years. This could probably have resulted from impacts related to land degradation on local situations.

Assuming that human attitude towards nature has been consciously or unconsciously conditioned by his religious worldview as held in Genesis 1:27, then its only religion which can revoke its enduring civilization and moral transformation values to project persuasive visions of a sustainable future. The findings support this argument by indicating that the church has a way of perceiving the emergence of life as a provision of the primary revelatory experience of the divine thus reverence for nature and therefore forests and so its eventual conservation. The findings indicate that the church could galvanized its moral authority and elaborate institutional framework, as a liberating instrument which could help effect change in attitudes, practices, and public policies that would lead to conservation of forests.

The findings were overwhelmingly indicative of the fact that degradation levels were reported to be less in areas where sermons on nature were taught, than those where sermons were not taught. This is an indication that religious teaching, example, and leadership are powerfully able to influence personal conduct and commitment and therefore the need to enhance its role in conservation of forests.

Critical aspects regarding the understanding of interrelatedness of issues for the church to play its role in environmental sustainability were brought forth in this study. For instance, while the church has high regard for agriculture and water security, the same did not apply to forestry *per se* on which the performance of the former two highly depends. This is worrying and needs to be addressed. Critical also is the need to clearly explain the linkage between poverty and food on one hand, and forestry on the other.

At the same time the findings of this study indicate some level of awareness among the churches in Africa about the economic, social, cultural and environmental benefits of forests and forestry. There was also an indication that there was an emerging attempt to capture the unvalued benefits derived from forests products and services, especially those about spirituality.

The study points at the need for various social and development sectors to complement and support each other. For instance, the need for research organizations to collaborate with existing localized decision processes emerged. This calls for development of training mechanisms that would bridge the gap between scientific knowledge on one hand and awareness and its application on the other, in forestry conservation. This could potentially improve how uncertainties

and limitations facing forestry management are understood and addressed. This calls for increased. One target group for such training would be the clergy.

The study indicates that forestry has received low priority in the face of competing demands within the church. Though funding was not ranked very high as a need, it is critical for implementation of projects. Funding will bring to reality the aspirations that churches and the communities they serve, have towards food and water security by ensuring that forestry projects are developed and implemented as a precursor to food/water security and eventually poverty eradication therefore ecologically sustainable development in Africa.

While there is an indication of increasing efforts for continuous review of legislation for improved management of forests, it also emerged that there was need to create awareness among the general populace about these legislations. More importantly, also is the need to synthesis what is legal and what is moral for optimization of results.

Besides the use of this study by churches in Africa, it also seeks to influence the agenda of development partners outside the continent. Therefore this study recommends that society –governments, civil society and the private sector - recognizes the significance of forestry as a “life support” system and root for its conservation within a broader perspective beyond economic and market indices.

## **5.1 RECCOMENDATIONS**

Recommendations emerging from this study have been divided into three sections.

### **5.1.1 Recommendations to the church**

As an important vessel for grass root development in Africa and having identified conservation of the environment as an area of interest there is need for the church to increase efforts in reposition itself in shaping the world view of its adherents towards the protection of forests, other natural resources and the environment as a whole. This could be done through the development of a contextualized approach by churches in the area of forest conservation as a mechanism towards sustainable development. This entails the infusion of environmental education into theological and seminary syllabus to prepare church leaders in sensitizing their congregations and helping them once they get into active ministry. In-service training programmes could be established for church leaders are already in the field.

There is an immediate need for the church to enhance its awareness creation and mobilizing efforts for adherents to not only appreciate the bleak state of forests and therefore avoid further damage, but also to utilize their numeric advantage for conservation of forest. The church has numerous means in which it could educate its congregants about the environment including the use of its specialized departments, group activities and even sermons.

There is need for the church to develop structured mechanisms for engagement with the environment. There seems to be total lack of policies and guidelines for the churches' involvement in this task which leads to lack of sustained practical follow-ups on conservation efforts. Church environmental Institutes, specialized

programmes, departments, ecumenical agencies such as the AACC could facilitate the drafting, adoption and the practical application of grassroots oriented policies for forest sensitive development through.

There is an overwhelming need for strengthening of institutional collaborations to build the capacity of churches to comprehend the wider perspective regarding forestry management. This will aid in elaborating the inter-linkages between forestry, food security, health, and other political, economic and social aspects.

There is need dire for the church to value research as a strategic information tool in advising and decision making on the various challenges confronting itself and/or its adherents and the general populace. This will aid the church to comprehensively map its various policy issues and see how they inter-link with other spheres of life including forestry. This will help in its formulation of policies that adequately address the issue at hand and also inform its engagement with other stakeholders.

Churches should be encouraged to actively engage their membership in political processes because they directly or indirectly impact the use or misuse of available resources including forests. Such involvement would increase government's accountability to the citizenry. This would also enable the church to better lobby against policies and political processes that are against forestry conservation and sustainable development in general.

### **5.1.2 Recommendations to Policy Makers**

It emerges from this study that there is need to view forestry beyond the narrow domain of economic benefits. This is because some benefits – abstract benefits –



like the carbon and nitrogen cycles while not easily measurable within the ordinary scales of economics, they could be more essential than what is economically measurable. Otherwise the disregard of such threatens the entire biosphere.

While the study has established that many African governments have deliberately put a lot of efforts in establishing comprehensive legal frameworks towards forest protection and conservation, there is need to appreciate that compliance is not only a legal issue and therefore broaden their efforts to include incentives towards compliance. This says that there is need to revisit the October 2003 NEPAD African ministers pledged to fight violations to forest law by strengthening national initiatives and collaborating on a bilateral, regional and multilateral basis.

Public education and awareness; and market restrictions at national and international levels could be important avenues for limiting existing opportunities for illegally trade in forest resources.

There is also need for policy makers to recognize the utility and economic benefits accruing from forests as seen by local communities. As new demands for forest products and services increase, there is need to put a price tag on goods and services derived from forests and capture accruing benefits to the economy in a manner that appreciates their source as forests. This will enhance investment in sustainable forest management. This realization will serves as an opportunity to have all players "minor or major" playing their part in sustainable management of forests.

This study tells the case of missed opportunities and the dire need for policy makers and the civil society to engage the spiritual section of the society in their efforts to address forest conservation and the ultimate well being of the

environment. This is even more imperative because the reviewed Acts indicate that communities near forests are valued by the law as key agents in their conservation.

### **5.1.3 Recommendations to Scholars**

This study establishes that environmental destruction in Africa is caused more by poverty than affluence as is opined by Ehrlich and Holden (1971), it would be interesting to establish if the other parameters that Ehrlich espoused also lead to environmental destruction or not. It may also be of interest to establish whether there exists some level of affluence in Africa that may indict Ehrlich et al argument and who may be in control of such affluence.

It would also be interesting to also establish what other sections of the church have done in relation to forestry management in Africa including the Catholic Church as well as other faiths like African indigenous religions and Islam among others.

It would also be interesting to also establish whether there is any relationship between the spread of forests or/and vegetation and the spread of religion in Africa.

## REFERENCES

- Achermann, E; (1993) Cry Beloved Africa: A Continent Needs Help; African University Studies, Walter Verlag AG, Düsseldorf.
- Adams, P, et al; (1985) In the name of Progress: The Underside of Foreign Aid, Energy Research Foundation, Toronto.
- Austin, V; (1961) Rural Industrial Development; Cassel limited.
- Berry, T, (1999), The Great Work: Our Way into the Future; Crown Bell Publishers, MA
- Carson R, (1962), Silent Spring, Houghton Mifflin, NY
- Cointreau, Sandra J., (June 1982) Environmental Management of Urban Solid Waste in Developing Countries: a project Guide, Urban Development Technical paper No.5 World Bank, Washington DC.
- Darkoh. M and Rwomire. A (ed.) (2003), Human Impact on Environment and Sustainable Development in Africa. Hampshire, England, UK
- Dieter, H. and Ruether, R. R, Eds (2000); Christianity and Ecology: Seeking the well being of earth and humans, Harvard University Press, MA
- Duschinsky, C (1921), The Rabbinate of the Great Synagogue, Oxford University Press, London.
- Gardener, G. (2006), Inspiring Progress: Religions' Contribution to Sustainable Development, W.W. Norton and Company, NY.
- Gardener, G. (2002), Invoking the Spirit: Religion and Spirituality in the Quest for a Sustainable World, World watch Paper 164.
- Gitau, S.K, (2000), The Environmental Crisis: A Challenge for African Christianity, Acton Publishers, Nairobi.
- Efiong Utuk, (1997) Visions of Authenticity: The Assemblies of the All Africa Conference of Churches 1963 - 1992; All Africa Conference of Churches, Nairobi.
- Hamalainen, T(Ed) (1969); Principal Features of the evaluation of integrated Forest Industry Enterprise in Svendsrud.
- Hardoy. J E, and Satterthwaite, D, (1989); Squatter Citizen Life in the Urban Third World; Earthscan Publications Ltd, London.
- Hardoy, J.E, Cairncross, S and Satterthwaite, D (1990); The Poor Die Young: Housing and Health in Third World Cities; Earthscan Publications Ltd, London.
- Haight, J.F, (2000) God after Darwin: A theology of evolution; Boulder: Westview Press,

Jovchelovitch, S. (1996). In defence of representations. *Journal for the Theory of Social Behavior*, 26, 121-136.

Keezer, D.M, (1950) *Making capitalism Work*, McGraw Hill Book Company, New York

Lonergan, A and Richard, C. Eds (1987), *Our Future on Earth: Where Do We Go From Here? Thomas Berry and the New Cosmology*, Twenty-third Publications, CT.

Mastrantonio J. L. and John K (1997), *A Student Guide To Tropical Forest Conservation*, International Institute Of Tropical Forestry, University 01 Puerto Rico.

Mbiti, S.J, (1969) *African Religions and Philosophy*; Heinemann Educational Books, Nairobi

Mbiti, SJ, (1970) *Concepts of God in Africa*; Heinemann Educational Books, Nairobi

McCabe, J.T, (1990) *Turkana Pastoralism: A Case against the Tragedy of the Commons*, *Human Ecology*, vol. 18, No.1.

Migliore, D.L,(1991) *Faith Seeking Understanding*; Grand Rapids WB Eerdmans.

Moscovici, S. (1961). *La psychanalyse, son image et son public*. Paris: Presses Universitaires de France.

Moscovici, S. (1963). Attitudes and opinions. *Annual Review of Psychology*, 14, 231-260.

Moscovici. S, Zavalloni. M (1969), *The group as a polarizer of attitudes*, *Journal of Personality and Social Psychology*.

Moscovici, S. (1973), Foreword. In C. Herzlich (Ed.), *Health and illness: A social psychological analysis* (pp. ix–xiv). London/New York: Academic Press.

Moscovici, S. et al (1984), *Social representations*, Cambridge University Press, Cambridge.

Moscovici, S. (1988). "Notes towards a description of social representations". *Journal of European Social Psychology* 18: 211–250.

Moscovici. S, Marková. I, (1998), *Presenting Social Representations: A Conversation in Sage Journal Culture & Psychology*, Vol. 4, No. 3, 371-410 (1998).

Mugambi, J.NK; (1997) *Democracy and Development in Africa: The Role of Churches*, All Africa Conference of Churches, Nairobi.

Muthoka, M.G, Rego, A and Rimbui, Z, (1998) *Environmental Education: Essential Knowledge for Sustainable Development*; Longhorn Publishers, Nairobi.

Odera, O.H, (1994) *Philosophy, Humanity and Ecology*, ACTS Press, Nairobi.

Osborn, F, (1948) Our Plundered planet, little brown & Company, Boston

Palmer, M and Finlay, V; (2003) Faith in Conservation: New Approaches to religions and the Environment, The World Bank, Washington. DC.

Pausewang, Siegfried; (1973) Methods and Concepts of Social research in a Rural developing Society: A critical appraisal based on experience in Ethiopia; Weltforum Verlag, Muchen.

Phiri, I. A et al; (1996) The Role of Christianity in Development, Peace and Reconstruction: Southern Perspectives, All Africa Conference of Churches, Nairobi.

Port Huron Statement of the Students for a Democratic Society 1962 in <http://coursesa.matrix.msu.edu>

Sanger, C, (1977), Trees for People: International Development Research Centre, Toronto.

Sittler, J.A; (1962); Called to Unity, the Ecumenical Review, 14 January pg 177-87 in [www.augie.edu/pub/values/sittler.pdf](http://www.augie.edu/pub/values/sittler.pdf)

Tropical Forest Resources Assessment reports FAO and UNEP 1982, FAO 1995, FAO 1997, FAO 2001b, UNEP 2001 and WRI 1997

UNCHS (HABITAT) (2001); The State of the World Cities, Earthscan Publications Ltd, London.

UNCHS (HABITAT) (2001); Cities in a Globalizing World: Global Report On Human Settlement; Earthscan Publications Ltd, London.

Ward, B; (1988), Progress for a Small Planet: Earthscan Publications Ltd, London.

World Commission on Environment and Development (1997), Our Common Future, Earthscan, Publications Ltd, London.

The Revised Standard Version Bible.

[www.africanaonline.com/c1imate.htm](http://www.africanaonline.com/c1imate.htm)

[www.biodiversityhotspots.htm](http://www.biodiversityhotspots.htm)

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

[www.plato-dialogues.org](http://www.plato-dialogues.org) [www.biotica-moldova.org/Countdown/istoria.htm](http://www.biotica-moldova.org/Countdown/istoria.htm)

[www.unep-wcmc.org/forestldata/cdrom2/atfabs.htm](http://www.unep-wcmc.org/forestldata/cdrom2/atfabs.htm)

[www.unep.org/GEO/qeo3/english/178.htm](http://www.unep.org/GEO/qeo3/english/178.htm)

# Appendices

## Appendix 1: Questionnaire

Name of Respondent ..... Name of Church/Council.....  
Name of Country..... Position held .....

**The purpose of this questionnaire is purely academic, confidentiality of information given will be observed and only discussed and presented as data or permission sought for use.**

1. What is it that would cause the church to be interested in the conservation of nature?  
.....  
.....

2. What is the role of the church is the well being of nature?  
.....  
.....

3. Do you think that man holds a special position in relation to the other creation?  
Yes [ ] No [ ].

If yes, how?  
.....  
.....

4. (i) Why in your opinion do you think forests exist?  
.....  
.....

(ii) Do you recognize forest degradation as a problem of concern?  
Yes [ ] No [ ]

5. What in your opinion is the condition of forest in your community?  
[ ] Extremely Degraded [ ] Degraded  
[ ] Very Degraded [ ] Not Degraded

6. What would your say is the main cause of forests degradation within your community?  
.....  
.....

7. (i) Is your government doing enough to address the problem of Forest Degradation in your country?  
.....  
.....

(ii) Is your congregation doing enough to address the problem of Forest Degradation in your community?  
.....  
.....

8. How do you rate poverty level within your congregations?  
[ ] Extremely Poor [ ] Poor  
[ ] Very Poor [ ] Not Poor

3 Do you think that there is anything in common between the economic status of your congregations and the state of forests near them?  
Yes [ ] No [ ]

If yes, kindly explain.

.....  
.....

- 3 Does your church have any project aimed at addressing forest degradation?  
Yes [ ] No [ ]

If yes, give details.

.....  
.....

- 3 Do you think there exists some benefit-enrichment relationship between Forests and your Church?  
Yes [ ] No [ ]

How?

.....  
.....

12. Do you think Christians treatment Forests differently from the way indigenous African religions did?

.....  
.....

13. (a) What do you regard as possible effects of human dialogue with nature instead of human dominance over nature?

.....  
.....

b) What would you do to begin creating this dialogue between humans-nature?

.....  
.....

14. What size of forests can you say that your church has been able to conserve or influence for conservation so far? (**Tick one**)

- <10 hectares [ ] 10-50 hectares [ ] 50-100 hectares [ ] 100-150 hectares [ ]  
>150 hectares [ ]

15. In your assessment, what difference would the role of the church would make in conserving forest?

.....  
.....

16. What other comments would you like to make in regard to the role of your church in forest conservation?

.....  
.....

Thank you.

Appendix 2  
Chi-square Computations

Poverty Levels	Frequency of respondents	
	Forest Degraded	Forests Not Degraded
Extremely Poor	16 (24.2%)	2 (3%)
Very Poor	22(33.3%)	5 (7.6%)
Poor	17(25.7%)	3(4.5%)
Not Poor	0	1(1.5%)
Don't know	0	0
<b>Total</b>	<b>45 (68.2%)</b>	<b>11 (16.7%)</b>

Poverty Level	Degradation Level	O	E	O-E	(O-E) <sup>2</sup>	$\frac{(O-E)^2}{E}$
Extremely Poor	Degraded	16	15	1	1	0.07
Very Poor	Degraded	22	22.5	-0.5	0.25	0.01
Poor	Degraded	17	16.7	0.3	0.09	5.39
Not Poor	Degraded	0	0.8	-0.8	0.64	0.8
Don't Know	Degraded	0	0	0	0	0
Extremely Poor	Not Degraded	2	3	-1	1	0.3
Very Poor	Not Degraded	5	4.5	0.5	0.25	0.06
Poor	Not Degraded	3	3.3	-0.3	0.09	0.03
Not Poor	Not Degraded	1	0.2	0.8	0.64	3.2
Don't Know	Not Degraded	0	0	0	0	0

**X<sup>2</sup> = 9.86**

Degree of freedom (df) = (r-1) × (c-1), where r = 5 and c=2; = 4 × 1, df=4; thus 0.05 >P>0.025

Degradation Levels	Frequency of respondents	
	Environmental Sermons Taught	Environmental Sermons never Taught
Extremely Degraded	0	14 (21.2%)
Very Degraded	2 (3%)	22 (33.3%)
Degraded	4 (6%)	11(16.7%)
Not Degraded	9 (13.6)	4 (6%)
Don't know	0	0
<b>Total</b>	<b>15 (22.7%)</b>	<b>51(77.3%)</b>

Poverty Level	Environmental Sermons	O	E	O-E	(O-E) <sup>2</sup>	$\frac{(O-E)^2}{E}$
Extremely Degraded	Taught	0	3.2	-3.2	10.24	3.2
Very Degraded	Taught	2	5.5	-3.5	12.25	2.23
Degraded	Taught	4	3.4	0.6	0.36	0.11
Not Degraded	Taught	9	3.0	6	36	12
Don't Know	Taught	0	0	0	0	0
Extremely Degraded	Not Taught	14	10.8	3.2	10.24	0.95
Very Degraded	Not Taught	22	18.5	3.5	12.25	0.66
Degraded	Not Taught	11	11.6	-0.6	0.36	0.03
Not Degraded	Not Taught	4	10.0	-6	36	3.6
Don't Know	Not Taught	0	0	0	0	0

**X<sup>2</sup> = 22.78**

Degree of freedom (df) = (r-1) × (c-1), where r = 5 and c=2; = 4 × 1, df=4; thus 0.001 >P

NB: The arrived at X<sup>2</sup> is outside the X<sup>2</sup> table.



## Appendix 3

Forest Laws Reviews in 13 countries in where the AACC draws members in Africa: Comparative evaluation of Regulation intensity in Forest Laws by Countries (-not mentioned: \* mentioned: \*\* partly regulated: \*\*\*regulated)

	Criteria	Benin	Burkina Faso	Cameroon	Ethiopia	Gabon	Gambia	Guinea	Kenya	Lesotho	Madagascar	Senegal	Tanzania	Zimbabwe
1	<b>Objectives and functions of forestry</b>													
1.1	Sustainable multifunctional forest management	-	***	*	*	**	*	***	*	-	-	*	***	*
1.2	Conservation of natural resources and the environment	-	***	**	*	*	*	***	***	-	-	*	***	*
1.3	Integration of forestry in environment and development policies	-	***	*	*	*	*	***	***	-	-	*	***	*
2	<b>Forestry sector development planning</b>													
2.1	National Development planning in forestry	-	-	-	**	**	***	***	***	**	**	-	***	-
2.2	Inventory and monitoring	-	-	*	*			*	**	**	*	-	**	*
2.3	Co-ordination /interfaces with planning in other sectors	*	**	*	*	***	***	**	*	**	-	-	**	*
3	<b>Forest and forest land</b>													
3.1	Definition of forest and forest land	***	***	***	***	**	***		**	**	***	***	**	**
3.2	Classification of forest and forest functions	***	***	***	***	**	***		***	**	***	***	***	**
3.3	Rules for the preservation	***	***	***	***	**	***		***	**	***	***	***	**
3.4	Conditions for demarcation/change of forest land	***	***	***	**	**	***		**	-	***	***	**	**
4	<b>Property rights and management systems</b>													
4.1	Attribution of management rights	***	***	***	***	***	***		***	***	***	***	***	**
4.2	Options for the transfer of management rights	***	**	**	*	**	***		**	**	***	***	***	*
4.3	Consideration of traditional use rights	**	***	***	**	***	***		*	*	***		**	-
5	<b>Institutional Framework</b>													
5.1	Forest administration	-	*	*	*	*	***		***	**	**	**	**	**
5.2	Cross-sectional advisory bodies and commissions	-	-	-	-	-	**		**	*	-	-	*	*

	Criteria	Benin	Burkina Faso	Cameroon	Ethiopia	Gabon	Gambia	Guinea	Kenya	Lesotho	Madagascar	Senegal	Tanzania	Zimbabwe
5.3	Mechanisms for participation of forest owners	*	-	-	*	-	**	*	*	-	*	-	**	*
5.4	Involvement of the public in forest development decisions	-	-	-	*	-	*	*	*	*	-	-	**	-
5.5	Assistance to forest owners	**	*	-	*	-	***	*	*	**	-	-	*	-
5.6	Forest fund, objectives, financing sources	*	-	*	-	*	***	**	**	**	**	***	***	*
6	<b>Utilization of forests</b>													
6.1	Conditions for the utilization of forests	***	***	***	*	***	***	***	***	**	**	***	***	*
6.2	Forest utilization	***	***	***	*	***	***	***	***	*	**	***	***	*
7	<b>Assessment and distribution of benefits</b>													
7.1	Fees for the use of products from state forests	*	***	***	-	***	***	***	*	**	**	***	***	*
7.2	Fees for products from community private forests	*	***	***	-	*	***	***	**	***	**	***	***	-
7.3	Distribution of revenue from forest products	-	**	***	-	**	***	***	*	***	***	**	***	*
7.4	Special fees	-	-	-	-	-	-	-	-	-	-	-	-	*
7.5	Valuing environmental services	-	-	-	-	-	-	-	*	-	-	-	-	**
8	<b>Regulation of trade and transport</b>													
8.1	Transport trade e*port	*	*	-	*	***	*	**	*	*	*	**	**	**
8.2	Regulation of certification of forest products	-	-	-	-	*	-	*	-	-	-	-	-	**
8.3	Forest produce processing industry	-	-	-	-	***	-	*	-	-	-	-	-	**
9	<b>Protection of forests</b>													
9.1	Species and biodiversity	**	**	-	**	***	**	***	**	**	***	***	***	**
9.2	Pest and diseases	-	**	-	**	-	**	**	-	***	-	-	***	*
9.3	Fire	**	*	-	***	-	***	***	*	***	***	***	***	-
9.4	Grazing	**	*	-	***	-	***	**	*	**	***	***	*	-

	Criteria	Benin	Burkina Faso	Cameroon	Ethiopia	Gabon	Gambia	Guinea	Kenya	Lesotho	Madagascar	Senegal	Tanzania	Zimbabwe
9.5	Seed's and plant control	-	-	-	-	-	-	-	-	-	-	-	-	**
10	<b>Training and research</b>													
10.1	Institutions for applied research	-	-	-	*	-	-	*	**	*	-	-	*	*
10.2	Institutions for training	-	-	-	*	-	**	*	**	*	-	-	-	-
11	<b>Enforcement rules</b>													
11.1	Classification of offences and penalties	***	***	***	***	***	***	***	***	***	***	***	***	*
11.2	Prosecution powers	***	***	***	***	***	***	***	***	***	***	***	***	
11.3	Utilization of revenues from penalties	**	**	**	-	**	***	**	-	**	**	**	***	

### FOREST LAWS REVIEWED

1. *Benin* 1993: Loi 93-009 du 2 juillet 1993 portant régime des forêts en République du Bénin
2. *Burkina Faso* 1997: Loi 006/97/ADP portant Code Forestier au Burkina Faso
3. *Cameroon* 1994: Loi 94/01 du janvier 1994 portant régime des forêts, de la faune et de la pêche
4. *Ethiopia* 1994: Proclamation 94/1994 to provide for the conservation, development and utilization of forests

5. *Gabon* 2001: Loi 016/01 portant Code Forestier en République Gabonaise
6. *Gambia* 1998: The Forest Act
7. *Guinea* 1999: Loi L/99/013/AN portant Code Forestier
8. *Kenya* 2005: Forest Act
9. *Lesotho* 1998: Forestry Act
10. *Madagascar* 1997: Loi 97-017 du 16 juillet 1997 portant révision de la législation forestière
11. *Sénégal* 1998: Loi 98-03 de janvier 1998 portant Code Forestier
12. *Tanzania* 2002: The Forest Act
13. *Zimbabwe* 1996: Forest Act, Chapter 19:05, Revised Edition

Source: [www.fao.org.legal/prs-ol/2004](http://www.fao.org.legal/prs-ol/2004)



