

HARRISON GUDU OLAN'G. - MOLTMANN'S THEOLOGY OF  
CREATION

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NAIROBI EVANGELICAL GRADUATE  
SCHOOL OF THEOLOGY

MOLTMANN'S THEOLOGY OF CREATION:  
ITS RELEVANCE FOR AFRICAN CONTEXT  
WITH REFERENCE TO THE ECOLOGICAL CRISIS.

BY

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## ABSTRACT

The Environmental crisis is becoming a more serious life-threatening phenomenon in Africa. The Physical environment is deteriorating, thus affecting the socio-economic life of the people. The continent's ecosystems have been upset. As the result of this change of weather patterns, desertification, soil erosion, deforestation, water pollution and many other environmental issues have increased to an alarming degree.

As a reaction to these strange environmental developments, a number of secular institutions including Governmental as well as Non-governmental bodies have responded with ideas and programmes which are meant to bring solution to the problem.

While all those bodies are working for a change, the fundamental question is, What kind of change will bring about the desired results? Is it a change of environment or a change of man who causes the environmental crisis that is important?

The writer of this thesis agrees with Moltmann that the environmental crisis we are experiencing in our society today has a religious dimension which can only be handled by the Church. By developing the right theology to deal with the problem, the Church will help man to know the Creator, his relationship with the Creator, and also his relationship with the rest of creation. Spiritual change is

essential for man to realize what he calls "Sustainable Development". Thus the first two chapters deal with the theology of conservation developed by Moltmann. Then the degree of theological relationship to the African situation is explored, resulting in the action needed by the Christian Church in Africa to solve these problems from a God-centred rather than anthropocentric stand point.

To  
Jack and  
Dorothy Hull

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## INTRODUCTION

### Moltmann the Person<sup>1</sup>

Moltmann was born in 1926 in Hamburg in West Germany. He grew up in what he calls "a liberal protestant home". During his youth, he was never familiar with the Bible. Christianity and the Church were very remote to him. At the age of sixteen, he wanted to study mathematics and nuclear physics but this plan did not materialize as he joined the German Airforce in 1943. In 1945 he became a prisoner of war first in Belgium and then Scotland and England subsequently. He returned to West Germany in 1948.

Three years spent as a prisoner of war, were the years of transformation of Moltmann's life. It is during this time that, he says, he experienced the collapse of his philosophy of life and in this collapse a new hope for life in the Christian faith. He says, it is during this time when Christ found him and he found the beginning of faith.

Moltmann went through a traumatic experience during his youth of which he says he had to cry to God at the sight of many men who were his comrades, friends and relatives torn apart and shot dead in battle.

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<sup>1</sup>This extract of Moltmann's life is derived from an article; Moltmann, Jurgen: A sort of biography. sent to Torney Lane, January 12, 1985.

He describes life "after Auschwitz"<sup>1</sup> as a concrete experience of a crushing load of guilt and awful absurdity.

Upon his return to West Germany from his prisoner of war camp, Moltmann had a burning zeal to study theology and to discover the power of the hope to which he owed his life. His approach to study was to discover everything for himself. He enrolled at Gottingen where he studied under Hans Joachim Iwand, Ernst Wolf and Otto Weber. After completing his studies, he took up a small Protestant rural parish in Bremen-Wesserborst for five years, after which he became a lecturer in 1958 at a Church Seminary where he met Penningburg. Moltmann is currently a lecturer in systematic theology at the university of Tubingen.

He sees himself as a lecturer and a pastor. Thus he says under the skin of the professor who is supposed to lecture, there probably remains the pastor who has to preach, counsel, exhort and console.

As a theologian, Moltmann traces the roots of his attempts at theology back to the time he was a prisoner of war when his life was changed. His theological framework has been influenced by a number of factors including his own life - experience and contacts with different ideologies and

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<sup>1</sup>Auschwitz: The Nazi Germany's largest concentration and extermination camp located near Polish town of Oswiecim Calicia. See, Encyclopaedia Britanica, 1985 ed S.V. "Auschwitz."

groups of people such as the Jewish, Marxists, Catholics, Political theologies e.t.c. Other factors are his interest in socio-political issues and his travels around the world.

Moltmann's theology confronts modern issues such as Atheism, Marxism, historical criticism, secularism, ecology, suffering e.t.c. His theology is meant for modern man. He grapples with some very basic questions like, What does the Christian faith has to say to the nihilism which underlies the ecological crisis? What new values can be established, and on what basis? How do we understand the world as creation? It is such questions of concern that make Moltmann's theology popular and significant in today's society.

### The Problem Statement

The Environmental crisis has become a global concern and a threat to human society and to the whole creation. It has been predicted that by the year 2040 average global temperature will be higher than at any time for 100,000 years.<sup>1</sup> Our world is saturated with news about the environmental crisis.

A statement by the African Ministerial Conference on the Environment says "Africa is a continent in Crisis." It

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<sup>1</sup>Daily Nation (Nairobi) May 30, 1990, 26.

is suffering from continual drain on, and degradation of its natural resources -plant cover, soils, water, animal resources and climate"<sup>1</sup> A certain commentator gives an alarming report which says:

The accelerating pace of deforestation, soil erosion and desertification now seriously threatens the fertility of Africa's soils and the dependability of the Sahel, for instance, around 1% of natural forest and shrub cover is lost each year, while the Sahara expands by another 1.5 hectares. Overall, sub-Sahara Africa has lost an estimated 10,000 square kilometres of topsoil... Through commercial logging, land clearance and firewood gathering, Africa loses around 1.3m hectares of forest and 2,3m of woodland every year while only 93,000 hectares are replanted.<sup>2</sup>

Another report says:

In the desert and semi-desert of the Sahel and East and Southern Africa, the acute scarcity of vegetation existing will now be worsened by further degradation of the vegetation. In zones of wooded Savanna where population pressure is high, only 25 to 50 per cent of the needs will be met by available resources in the year 2000.<sup>3</sup>

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<sup>1</sup>African Ministerial Conference on the Environment. The Cairo Programme of African Cooperation "Analysis" Na 88-5167.

<sup>2</sup>"Environment and population". Comment: Africa's Development Disaster London 1985.

<sup>3</sup>United Nations General Assembly, Forty third Session, Item 39 of the Provisional Agenda. Critical Economic situation n Africa: United Nations Programme of Action For African Economic Recovery and Development 1986-1990, 1988, A/43/150.

In view of such terrible reports concerning the environmental issues in Africa, one cannot avoid the question, What are the causes of such crisis? Wilkman and Timberlake are quoted as saying:

Perhaps the most commonly held view about African crises is that they are mainly caused by natural disasters, "Acts of God" with inevitable progression from natural disaster to famine and starvation. Natural disasters, draughts, typhoons, plaques of locusts - do occur; they do trigger famine conditions and as a result people die. But they are by no means the only or even the most important cause...<sup>1</sup>

According to Moltmann he is of the opinion that;

What we call the environmental crisis is not merely a crisis in the natural environment of human beings. It is nothing less than a crisis in human beings themselves.<sup>2</sup>

Moltmann traces the roots of this crisis in human beings back to the Christian civilization and belief in Creation which he says has been misunderstood and misused to dominate nature thus leading to the environmental crisis. To help solve the problem the Church has to be involved. And new theology of creation needs to be developed.<sup>3</sup>

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<sup>1</sup>"Geographical Perspective on the Crisis in Africa".  
The Geographical Association. Sheffield, UK, 50.

<sup>2</sup>Jurgen Moltmann, God in Creation: An Ecological Doctrine of Creation (Southampton: SCM Press Ltd, 1985) x1.

<sup>3</sup>Moltmann, 1985, 20 - 23.

Therefore, the problem of this thesis is two fold;

- a. To determine the relevance of Moltmann's theological argument that the environmental crisis has its roots in Christian theology of creation and how that relates to the ecological crisis in Africa.
- b. To establish how the Church in Africa can apply Moltmann's theology in dealing with the environmental issues in the continent.

#### Significance of this thesis

Lausanne II, an Evangelical conference held in Manila, in the Philippines, in July 1989, witnessed a shift in thinking as social concern was accepted as part of the gospel.<sup>1</sup> Among the evils which were deplored were "All forms of exploitation of people and of the earth."<sup>2</sup> In the light of this change of perspective, some Churches and Parachurch organizations are already involved in some form of activities as a way of dealing with the Environmental crisis. Some of these activities however, started even earlier before the Manilla II. Some examples of Church involvement include representatives of Protestant Churches

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<sup>1</sup>Allan Nichols ed., the Whole Gospel for the Whole World (Singapore: LCWE, 1989), 143.

<sup>2</sup>Joseph Sindorf ed; The Manila Manifesto: An Elaboration of the Lausanne Covenant Fifteen Years later. (Pasadena: LCWE, 1989), 163.

from Ghana, Togo, Liberia, Gambia, Nigeria, Cote d'Ivoire and Sierra Leone who met in Ghana for a three day conference in May 1990, to share perspectives on the nature, scale and seriousness of the deforestation problem. Participants also exchanged experience on village-based projects for promoting tree planting and agroforestry.<sup>1</sup> The writer of this thesis also knows of a World Vision Large-scale development programme in Shinyanga region in Tanzania in which tree planting is one of the major components of the programme. The Samaritan Purse in conjunction with African Gospel Church have a tree planting programme currently based in Nairobi Kenya but has projects in some other African countries. A number of such examples could be found in many places in Africa.

Such activities need to be accompanied with sound Biblical teaching or else the trees planted will just disappear like the natural forests which are vanishing like the case of Oku mountain forest in Cameroon which was said to be losing 567 hectares per year between 1983 - 1985.<sup>2</sup>

The purpose of this study is therefore, to challenge the Church in Africa to re-examine her position in the whole issue of environmental crisis, its teaching concerning the

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<sup>1</sup>George Frank Asmah, "Ghana Faces Ecological Disaster" New Africa, 1990, 37.

<sup>2</sup>Heather L. Macleod, The Conservation of the Oku Mountain Forest, Cameroon, Cambridge, England: ICBP, n.d.



stewardship of nature and to explore some feasible and appropriate ways of contributing to the solution of the problem. By doing so, the Church will be able to maintain its position as salt and light of the world (Matt 5:13-16) and also to affirm her true existence into the world (John 17:18) in a practical way. The Church will also contribute to the solution of this life threatening phenomenon - environmental crisis, through deliberate involvement with proper understanding of the crisis, and her role, as a Church.

#### Scope and Limitation of study

Since my intention is to study and present general information concerning the environmental crisis in African and the theological implications involved in it, it is more apposite to remain general in my approach. I will not confine myself to a particular geographical location or to a specific area of environmental crisis. Most of the materials will be drawn from different places in Africa but, that does not mean that the places featured in this work are necessarily my focal points, they are rather typical examples.

Discussions will feature mainly African situations and problems. Some convincing ideas which could be employed in an African context will be brought in when necessary.

This thesis is not a scientific work to discuss the subject from a scientific perspective and language. The discussions will be centered on the general obvious features of the environmental issues in Africa without going deeper into technical matters except where such cannot be avoided.

Most of Moltmann's works will be referred to but this work will be based mainly on his "Ecological Doctrine of Creation" in his book entitled God in Creation. Other works that are written by other people concerning this title will also be read.

#### Method of Study

This study will be based on literary research except where the required information is not available in printed form. In such cases, interviews will be conducted.

Places of research will include the NEGST Library, University libraries in Nairobi, Libraries of other theological schools within Nairobi, public libraries and Resource centres of some organizations where materials which are related to the subject are available. Organization offices in Nairobi which will be visited include; World Vision International, Green Belt, Africa Gospel Church Lang'ata, National Council of Churches of Kenya, Association of Evangelicals of Africa and Madagascar and All Africa Council of Churches and the Environmental Liaison Center.

## Definitions

The length of the topic of this thesis calls for clarification in order to make it meaningful to the reader. Firstly, "Moltmann's theology of creation" means Moltmann's theological system of thought which he calls "Ecological Doctrine of Creation", which will be explained in detail in the first chapter of this thesis. Henceforth the two phrases will be used alternatively thus "Moltmann's theology of Creation" and "Ecological Doctrine of Creation".

Secondly, "Its relevance for the African context", refers to its adaptability in the African setting and its acceptability to the African mind in relation to the Ecological Crisis in Africa.

Thirdly, "Environmental Crisis" is used in reference to the imbalance of the natural order of creation which has been caused by misuse and exploitation of nature by human beings.

The two terms "Environmental Crisis" and "Ecological Crisis" will be used interchangeably since they are more or less related.

Fourthly, the word "creation" and "nature" are used to mean all the visible and the invisible beings that exist in the universe since they are all believed to be God's creation. The two words will be used interchangeably in this thesis.

### Time Scheduled

This work is estimated to be completed by June 1991. The first part of this work include the presentation of the proposal and data collection which should be finished by November 1990.

The second part consists of compiling and presenting a complete thesis by June 1991.

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## CHAPTER ONE

### MOLTMANN'S THEOLOGY OF CREATION

#### The Formation of Moltmann's Theology

Moltmann's Theology in general has been influenced by current socio-political issues. As someone who was involved in the Second World War, where he was as a prisoner-of-war, his theology was heavily influenced by his personal experience. It was during that time when he was a prisoner-of-war that he began to study theology in the English concentration camp.<sup>1</sup> It was a time when shame and despair prevailed in the atmosphere in West Germany.

He began his theological endeavour by exploring and expounding his Theology of Hope which was based on the anticipation that things would soon change and become better as he himself put it that "when I wrote Theology of Hope, I was nursing a certain enthusiasm and a short-term hope that the changes I desired were going to happen soon."<sup>2</sup> After a while Moltmann realized that what he had expected to happen was not going to happen so easily and in such a short time. As the result of this realization, Moltmann embarked on more practical issues such as the Crucified God where he contends that God is suffering with the suffering world and also God in creation where he sees God at work in the present life situation. He says he "become more critical with regard to

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1

Teofilo Cabestrero. Conversation with Contemporary Theologians (New York Mary Knoll 1980), 122.

2

Ibid, 123

the excessive optimistic hopes that things can improve very quickly"<sup>1</sup>.

Moltmann recalls three systems that influenced and shaped his theological and intellectual orientation. These were Biblical theology that was being fashioned by Gerhard Von Rad on the Old Testament; and Ernest Kasemann, on the New Testament, Karl Barth's Dogmatics and the philosophy of Ernst Bloch, the Hope Principle.<sup>2</sup>

In his writings, Moltmann interacts with theologians, philosophers, politicians and even scientists. According to Harvie Conn, Moltmann's ideas have been given attention not only in the United States but also in other countries like Japan, Korea etc.<sup>3</sup>

Moltmann's theological framework can be described as "Eschatological". He says, "the eschatological is not one element of Christianity, but it is the medium of Christian faith as such, the key in which everything in it is set, the glow that suffuses everything here in the dawn of an expected new day"<sup>4</sup>. Traditional Christian theologies, according to Moltmann, did not let eschatology affect other doctrines thus leading the church to what Tony Lane

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1  
Cabestrero, 124.

2  
Ibid, 123

3  
Harvie Conn, Contemporary World Theology(Nutley,N.J. Presbyterian and Reformed Publishing Co., 1973), 59-60.

4  
Jurgen Moltmann, Theology of Hope(London:SCM Press, 1967),16.

described as "conservative, a bastion of the status quo, allied  
to secular power"<sup>1</sup> Moltmann contends that eschatology should  
affect all Christian theologies as he put it that "the  
eschatological outlook is characteristic of all Christian  
proclamation, of every Christian existence and the whole  
church"<sup>2</sup>

Moltmann's effort to bring eschatology into focus in  
Christian theology is commendable. Harvie Conn has rightly  
admitted that "We have often been too guilty of hiding our  
eschatology in the back of our books on systematic theology  
and not infusing our daily life with its perspective"<sup>3</sup>.  
Moltmann argues that faith alone without hope is obsolete as  
he put it that;

Thus in the Christian life faith has the  
priority, but hope the primacy. Without faith's  
knowledge of Christ, hope becomes autopia and  
remains hanging in the air. But without hope faith  
falls to pieces, becomes a fainthearted and  
ultimately a dead faith.<sup>4</sup>

Christian faith, according to Moltmann, is not something that  
only focus our attention to the future and forget the  
present, he says,

Rather, it is itself summoned and empowered to  
creative transformation of reality, for it has  
hope for the whole of reality. Finally, the  
believing hope will itself provide inexhaustible  
resources for the creative, inventive imagination  
of love.<sup>5</sup>

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1 Tony Lane, Theology of Moltmann: Class notes no.1  
Nairobi, 1970

2  
Moltmann, 16

3  
Conn, 63.

4  
Moltmann, 20

5  
Ibid, 34

Christian hope should help Christians to live out their Christian life in the present under the influence of the future hence being more aware of the accountability of life and creation as a whole since one aspect of eschatology is judgment; (Mt. 24:42-51, Mt.25:31-34). It is worth noting however, that Moltmann does not bring out clearly the idea of judgement in his theology of hope.

Moltmann's concept of eschatology is ambiguous. According to the traditional Christian theology, eschatology refers to the parousia, while to Moltmann eschatology implies an open future. It is not clearly defined whether the future is open for God, or for man, or for its own evolutionary process. This openness of the future makes God a captive of time and situation since God has no definite plan for His creation. Harvie Conn has aptly put it that according to Moltmann, "There is no fixed moment when time shall come to an end. The future is an unknown quantity to both man and God."<sup>1</sup> Moltmann's concept of the future thwarts the Biblical teaching where the future is marked with a definite event at the end, thus the second coming of Jesus Christ and the reign of God (Mt. 24:29-31).

Another problem in Moltmann's theology of Hope is his lack of emphasis on the past and the present. According to Moltmann, the present only matters because it has some relationship to the future. In this case, the present does

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1

Conn, 61.



not stand on its own rights, neither does the past have any connection with the future. This concept undermines the basis of the Christian faith. Christianity is based on historical events such as the predicted Messiah, the Son Jesus Christ who came, lived on earth and died on the cross and He who resurrected to be with his people "always even to the end of the age"(Mt.28:20).

In Acts 1:9-11, Jesus' second coming has reference to his going into heaven. Luke the author of Acts put it beautifully that "This same Jesus who was taken up from you into heaven, will so come in like manner as you saw Him go into heaven". Christian understanding of the second coming of Christ must be based on the understanding of his going which is a historical event. Moltmann's open future cannot be the basis on which Christianity can attain its meaning and value. The meaning of Christianity is based on the historicity of Christ and His bodily resurrection which points to His second coming and the resurrection of human beings (1Cor 15:20-24).

Moltmann's theological position however, cannot be accurately determined by reading only one book. One has to read the whole series of Moltmann's works in order to determine his theological position. While Moltmann is found to be more futuristic in his book entitled Theology-of-Hope, his second work the Crucified-God takes a different direction in trying to balance out his theology. There was a

definite change of perspective when he wrote the Crucified God as he himself confessed that;

When I wrote Theology-of Hope I was nursing a certain enthusiasm and a short-term hope that the changes I desired were going to happen soon... I must add, of course, that there are differences. And they are there because in the intervening thirteen years I had changed, experience had made me undergo changes; people are not stones, and I do not remain unchanged."<sup>1</sup>

In the subsequent works, Moltmann pays more attention to the historical as well as current elements of Christianity.

#### **Presentation and Critique of Moltmann's Theology of Creation**

Moltmann's theology of creation has got its roots in the theology of Hope. The eschatological awareness which carries with it a sense of accountability should have some bearings on one's perception of creation as he claimed that "eschatological outlook is characteristic of all Christian proclamation, of every Christian existence and the whole Church."<sup>2</sup>

The connection between Moltmann's theology of Hope and theology of creation is seen in his proposition of the three-phase creation i.e. "Creatio-Originalis, Creatio Continua and Creatio Nova."<sup>3</sup> Since there is the beginning there is also the end which has some relation to the present thus the

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<sup>1</sup>  
Cabestero, 123

<sup>2</sup>  
Look at foot note No. 3 on p. 3.

<sup>3</sup>  
Moltmann 1985, 193

Creatio Continua which is actually pointing to the end, that is the beginning of the new creation (Creatio Nova).

Moltmann calls his Theology of Creation a "Trinitarian Doctrine of Creation". It is trinitarian in the sense that it features all the three persons of the Godhead in the exercise of creation. Each of the persons has some creative role in the process of making the Universe what it is.

According to Moltmann, traditional theologies of creation put more emphasis on the first phase of creation. The other two phases, Creatio-Continua and Creation-Nova<sup>1</sup> "all receded into the background and were forgotten" says Moltmann.

As a result of the lack of balance in the traditional Christian Doctrine of Creation, two theological dimensions have featured in traditional Christian Theology of Creation, i.e. Deism and Pantheism.<sup>1</sup> The two dimensions differed in regard to their emphasis concerning the transcendence and immanence of God respectively. Moltmann argues that "the trinitarian concept of creation integrates the elements of

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1

Deism - Is the belief in the existence of God on the evidence of reason and nature only with rejection of super natural revelation. For detailed explanation, see *Britanica Macropaedia* 26: 606:2a.

Pantheism - Is the belief that stresses the identity between God and the world. *Britanica Macropaedia* 26:589:16.

truth in Monotheism and Pantheism"<sup>1</sup> In the trinitarian approach, the divorce of God from his creation and the emphasis of only God the father as the creator, and the problem of Pantheism, of making God part of creation are tackled. Moltmann however does not regard either Christian Monotheism or Pantheism as fallacious doctrines but rather he views them, as not containing the whole truth about the relation between creation and the creator. In trying to maintain his proposition of a trinitarian approach to the theology of creation, Moltmann quotes Basil as saying:

Behold in the creation of these beings the Father as the proceeding cause, the Son as the one who, createth, and the Spirit as the perfecter; so that the ministering spirits have their beginning in the will of the Father, are brought into being through the efficacy of of the Son and are perfected through the aid of the Spirit.<sup>2</sup>

Moltmann's trinitarian approach however, is undermined by his statement that "By the title 'God in Creation' I mean God the Holy Spirit... This doctrine of creation, that is to say, takes as its starting point the indwelling<sup>3</sup> divine Spirit of Creation" if this is the case then we are dealing with a pneumatological doctrine of creation. This idea is further expressed when he said:

For a long time theological tradition stressed only the first aspect of this process, so as to place God the Father, as Creator and Lord, over against his creation, in a monotheistic way... Here we shall

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1  
Moltmann 1985, 98.

2  
Ibid, 9.

3  
Moltmann 1985, xiii

proceed differently, and shall present the trinitarian understanding of creation by developing the third aspect, creation in the spirit.<sup>1</sup>

It is therefore evident that the main thrust of the book entitled God in Creation is not to present a trinitarian doctrine of creation. Rather, it is to promote a pneumatological doctrine of creation based on a trinitarian perspective with the conviction that the other two aspects of the trinitarian approach (God the father and the Son) have been developed. Moltmann's biblical foundation for this interpretation of creation in the Spirit is Psalm 104:29-30 and also Proverbs 8:22-31.<sup>2</sup>

Moltmann's use of these Old Testament passages assume that the word "Spirit" as used in these passages has the same connotation that it has in the New Testament. This is questionable, Leon Morris comments that:

We have seen that the Old Testament consistently links the Spirit with God. What the Spirit does is the work of God... But we may well go on to ask whether the Spirit is thought of as in any way distinct from God the Father (as in the case of a man's own Spirit) or perhaps for an aspect of the Father (as God in action). Here it must be confessed that there is nothing that compels us to regard the spirit in a Trinitarian fashion... The Spirit as distinct from the Father is a New Testament doctrine.<sup>3</sup>

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1  
Moltmann, 1985, 9.

2  
Ibid, 9-10.

3  
Leon Morris, The Spirit of the Living God  
(London: Intervarsity Fellowship, 1960), 29.

In this case, Moltmann is not clear whether he is using the word in the Old Testament sense, meaning the creative breath or wind of God or in the New Testament idea of the Third Person of the Trinity. Since the Third Person of the Trinity was not known during the Old Testament era, I would therefore argue that the usage of the word Spirit in the Old Testament had no Trinitarian reference. Rather, as Leon Morris, has succinctly expressed it "the Spirit is commonly used to express the thought of God in action."<sup>1</sup> This is because the revelation of the Trinity had not come yet.

In some passages however, such as Isaiah 63:10,11; Haggai 2:5 and Zechariah 4:6; the word is used with some ambiguity which leads one to agree with Morris' conclusion that "there are Old Testament passages which indicate more than a bare unitarianism."<sup>2</sup> But even then, I do not think it would be used to refer to the Third Person of the Trinity. The Trinitarian reference could only be plausible when the passage is approached from the New Testament perspective. There seem to be a distinction between the "Creative Spirit of God" and the Holy Spirit. The "Spirit of God" in this case alludes to God's creative power, which Morris has aptly maintained that "when it (Ruach) is used of God there is the thought of His irresistibility."<sup>3</sup> It contains a connotation of God's power rather than God's Person.

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<sup>1</sup>  
Morris, 29.

<sup>2</sup>  
Ibid, 19.

<sup>3</sup>  
Ibid, 19.

Moltmann does not seem to take the distinction into account. His reference and usage of the word Spirit seem to suggest that the word is used in the Old Testament the same way it is used in the New Testament.

Despite the fluidity in Moltmann's usage of the words "Spirit of God" and the "Holy Spirit" there is a genuine case in his argument for the pneumatological doctrine of creation. The argument presumably based on the fact that if the Second Person of the Trinity was there in the beginning as John states that "In the beginning was the word, and the word was with God and the word was God" (John 1:1), then this implies that the third person of the Godhead was also there since the Holy Spirit is also God as he derives his existence from God the Father.

It is, therefore, true that the Holy Spirit participated in the original creation exercise. The question of how he did participate is not important at this point. In Moltmann's Trinitarian approach, the Holy Spirit is the Spirit of God of the Old Testament. Since there is no easy solution to this problem, Ockenga provides a reasonable conclusion, when he said;

In these works there can be no distinction of persons within the Trinity. In the thoughts and counsels of God being the Father, Son, and Holy Spirit, all create; the Father and Son and the Holy Spirit, all redeem; the Father the son, and the Holy Spirit, all sanctify.. but when the life of God is poured out into the created things, the different operations of the persons of the Trinity occur. Then the distinction must exist not only

in the persons of the Trinity, but also in the activities of the Trinity.<sup>1</sup>

Therefore, Moltmann's Trinitarian doctrine of creation must be understood as having been based on the New Testament perspective of the Trinity. Whether, this act of understanding the Old Testament in the light of the New Testament teaching is justifiable or not, depends on one's own opinion on the relationship of the two Testaments. Nevertheless, Moltmann's objective in amplifying the role of the Spirit in the process of creation is obvious, thus to emphasize, the continuity of God's presence in his creation as he expounds it in the ecological doctrine of creation.

### Ecological Doctrine of Creation

In the light of the Trinitarian approach, Moltmann has developed what he calls the Ecological doctrine of Creation. In this ecological doctrine, he emphasizes "the recognition of the presence of God in the world and the presence of the world in God."<sup>2</sup> He calls this doctrine the "doctrine of the house" following the Greek word "oikos". This is the metaphor of the universe as a house and God as living in the universe. This idea is expressed more explicitly in Moltmann's statement which says "through the energies and potentialities of

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<sup>1</sup> Harold T. Ockenga, The Spirit of the Living God (New York: Fleming H. Revell Company, 1947), 20.

<sup>2</sup> Moltmann, 1985, 13.



the Spirit, the Creator is himself present in his creation. He does not merely confront it in his transcendence, entering into it, he is also immanent in it." <sup>1</sup> Moltmann contends that through monotheism God has been "stripped of his connection with the world" and consequently the world has become more secularized. One must develop a Trinitarian concept of God in relation to His Creation in order to avoid conceiving God's relationship to the world as one-sided as it has been traditionally perceived. A holistic perspective of nature as an integrated entity motivates one to know nature not "in order to dominate or analyse and reduce in order to reconstruct. Our purpose is now to perceive, in order to participate, and to enter into the mutual relationships of the living things." <sup>2</sup>

The ecological doctrine of creation affects all spheres of social and religious settings of the society. On the legal and political area, it has to be seen as "a covenant with nature in which the rights of human beings and the rights of the earth are respected and balanced"; says Moltmann. He also maintains that "On the religious level it has to be interpreted as a community of creation." <sup>3</sup>

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<sup>1</sup>  
Moltmann, 1985, 9.

<sup>2</sup>  
Ibid, 3.

<sup>3</sup>  
Ibid

Moltmann's endeavour to recognize and acknowledge God's immanence in His creation is a vital one. Moltmann, however, seem to hold the opinion that it is only through the concept of Trinity that human beings can gain the realization of the presence of God in the universe. This view poses a problem when applied to the Old Testament era when the chosen people had a sense of the presence of God without the concept of Trinity. For example, Adam was confronted by the presence of God in Eden (Gen.3:9-19). Moses' experienced the presence of God in a burning bush (Exod. 3:1 ff). The Psalmist found himself caught up in God's presence (Plasm 139:7-11), Isaiah experienced The presence of God in a mighty way (Isa. 6:1ff.) What I am seeking to express is the idea that God has many ways to reveal Himself to human beings. The revelation of the Trinity is not the only way. In the New Testament, the Holy Spirit according to Jesus' teaching, will be seen and known only by those who believe (John 14:17), hence it is the personal relationship with God that makes the difference. The Hebrew concept of Shekinah is an example of how a monotheistic society conceived the presence of God in their midst.---The concept of Shekinah cannot be equated with<sup>1</sup> Trinity for the following reasons .

1. Shekinah was regarded as the presence of God in His totality as opposed to the presence of God

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More information about Shekinah can be obtained from the book by Isidore Singer ed. Jewish Encyclopedia Vol. XI New York: Ktar Publishing House Inc. 1901.

through the Holy Spirit which might give an impression of a subordinate-being representing a superior being, especially to those people who do not know the Holy Spirit (John 14.17).

2. Shekinah was a concept held by a people who did not have the revelation of the Trinity, therefore for them, that was their way of expressing the acknowledgement of the omnipresence of God.

3. The concept of Shekinah is found in some New Testament passages where the word glory of the Lord/God is used to express the same idea of the presence of God. In such passages the word has no connection with the Holy Spirit. (see Lk 2:9, Eph 1:6, 2Cor.4:6, 2Pet.1:17) In Acts 17:27-28, Paul the apostle maintains the same idea of God in whom we live and move--the Shekinah--with reference to God the Father.

The presence of God has to be experienced in one's personal life before one can experience it outside himself. This is where the Holy Spirit becomes instrumental in transforming life and in giving a new grid through which one can see God in the world, whether in a trinitarian or monotheistic way. I am afraid that while Moltmann is trying to avoid Monotheism, he may find himself promoting polytheism in the pretext of an attempt to uphold Trinity. Moltmann is also in danger of accommodating Pantheism in his trinitarian concept of creation of which he said,

The trinitarian concept of creation integrates the elements of truth in Monotheism and Pantheism. In the pantheistic view, God having created the world also dwells in it, and conversely the world which he has created exists in him. This is a concept which can really only be thought and described in trinitarian terms.<sup>1</sup>

Moltmann is trying to remind us of a very important lesson that God, as the creator of the Universe, did not abandon His creation after He had finished the original creation. He is still actively involved in the daily affairs of the Universe in terms of giving it the necessary vitality and conservation.

Moltmann's usage of the terms "Creative Spirit" and "Holy Spirit" is ambiguous. Of all the works that are ascribed to the Holy Spirit in the New Testament, there is no work of creating. When Moltmann talks of the spirit which is involved in the Creatio Continua, it is not clear as to whether he means the Holy Spirit or the Spirit of creation according to the Old Testament usage of the term.

Moltmann is also not clear whether by Creatio Continua he means the work that God is doing to conserve creation or whether he means that God is still creating new things. The latter seem to be more likely the case in Moltmann's concept of Creatio Continua since he says that "Creation is not yet finished and has not yet reached its end."<sup>2</sup>

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1  
Moltmann, 1985, 98.

2  
Ibid, 196.

This statement is ambiguous because it may be taken to mean that God is still creating the same objects he has been creating from the beginning or it could mean that God keeps on creating new objects adding on to what he had created in the beginning.

Both concepts have theological problems. Genesis 2:1-2 gives an impression that God did not leave anything incomplete as the scriptures put it.

Thus the heavens and the earth were finished, and all the host of them. And on the seventh day God ended his work which he made; and he rested on the seventh day from all his work which he had made.

To the effect of this passage, a commentator in the NIV Study Bible says,

God rested on the seventh day, not because he was weary, but because nothing formless or empty remained. His creative work was completed ...it did not have to be repeated, repaired or revised, and the Creator rested to commemorate it.<sup>1</sup>

The same concept of a complete creation is expressed by another commentator who said:

"So perfectly had God's purpose been accomplished that on the seventh day He sabbat, i.e. ceased (NFB, Specier), desisted (Driver), completed His work (JB), stopped working (GNB).<sup>2</sup>

Actually, the latter commentator does not approve of the word "rested", he says, it is inappropriate for it implies effort which is not otherwise suggested. The Bible testifies clearly that creative work was completed. Nothing

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1  
NIV-Study-Bible, 1985, Notes

2  
G.C.D. Howley, F.F. Bruce and H.L. Ellison eds). The New Layman's Commentary. (Grand Rapids: Zondervan, 1979.)

which was to be done was left undone or incomplete. This does not mean that God deserted the universe after creating it and retired to some comfortable place to rest from the hard work He had done. The Bible does not say God rested outside His work, it is therefore implied that He rested in His work which He had just finished. Even though some commentators do not prefer the word "rest", the word could be used to describe a state of satisfaction upon the completion of a task as Gen 1:31 says, "And God saw everything that he had made, and, behold, it was very good..."

Since God is creative and his relation to the universe is a creative relationship, his continued relationship to the universe is also described as a creative relation at a different level of preservation. Since the time of Augustine this level came to be known as "continous creativity, in that God out of eternity creates things and time together."<sup>1</sup> This concept was accepted by reformers, Martin Luther and Calvin. Tillich agrees with the idea of God being creative but makes a very decisive distruction in God's creativity when he said:

God is essentially creative and therefore he is creative in every moment of temporal existence, giving the power of being to everything that has being out of the creative ground of the divine

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Paul Tillich, Systematic Theology Vol.1 (New York: SCM Press Ltd. 1951), 262.

life. There is, however, a decisive difference between originating and sustaining creativity."<sup>1</sup>

The distinction in the creative relationship of God with the created universe does not mean that God is inconsistent. He is the same God who originates, sustains, preserves or even continues to create as others would want to put it. His creativity is exhibited in all aspects of his relation to the universe since his ways of doing things are original and creative in themselves.

Based on the premise that God's involvement with the universe is a creative one, despite the form of involvement, I disagree with the concept of Creatio Continua. God's involvement with the universe after the fall of man is neither in the form of a continuation of creation nor a preservation of the fallen creation. Rather it is a redemptive relationship. This proposition is based on the Biblical teaching that the universe was created in its totality by God and nothing was left to be added later nor was there anything left incomplete. Another point is that God cannot preserve what is already affected by sin but instead He redeems it. This proposition implies that God's relation to the universe is not merely based on a "work relationship" where God can only be traced as working, creating new things throughout to maintain His

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<sup>1</sup>  
Tillich, 262

relationship to the world, but rather it is a relationship based on love of what has already been created which can only be understood as the creative-redemptive relation to the universe. It is true as Moltmann said that God is immanent, but when this concept is handled from the Messianic point of view it must have a redemptive force as the point of reference. This redemptive concepts undermines Moltmann's concept of Creatio-Continua which is actually a prologue to his exposition of the theory of evolution. The idea of Creatio-Mutabilis<sup>1</sup> makes God the Creator responsible for all the changes which have taken place in the universe whether these changes are good or evil, hence a human being is not responsible for his sin, that is just a predetermined condition which had to take place.

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Moltmann 1985, 207 - Moltmann contends that creation in the beginning has to be viewed as an "open system" which has neither its foundation, nor its goal, nor its equilibrium, within itself. It is this kind of beginning that Moltmann said "establishes the conditions that make possible its history or perdition and deliverance, as well as its consummation."



## Moltmann's Attempt to Marry Science and Religion

According to Moltmann, the Biblical account of creation and the theory of evolution are two different things concerning which he does not see any contradiction. Moltmann defines "creation" as "...the term that describes the miracle of existence in general" and evolution is concerned with the "making and ordering of creation... the continued building up of matter and systems of life".<sup>1</sup>

Based on the concept of Creatio-Mutabilis, Moltman contends that evolution has a place in the Creatio-Continua, implying that evolution is the creative work of God. Moltmann is influenced by the scientific theory concerning the evolution of the cosmos as exhibited in the evolutionary cosmic movements" in which stars and galaxies come into being, develop and are destroyed"<sup>2</sup>. According to Moltmann those movements are evidences of an unstable universe. Another scientific theory which has influenced Moltmann's theological framework is "the evolution of life". Following these scientific theories, Moltmann states that "This means that the future is not completely inherent in the present. The future also includes randomness, because it can bring something new"<sup>3</sup>.

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Moltmann, 1985, 196.

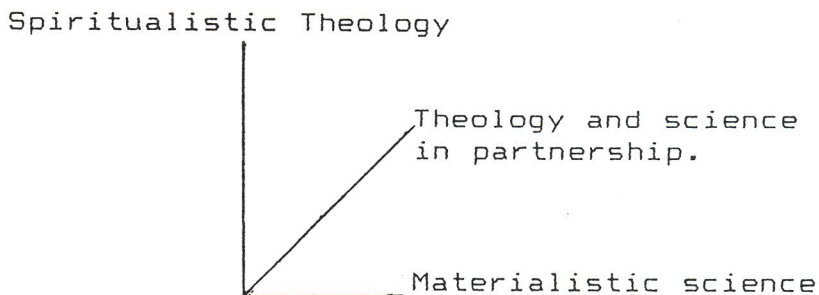
2  
Ibid, 198

3  
Ibid, 201

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Moltmann like Teilhard whom Henderson describes as "the first, perhaps the only, leader of thought in this century to intergrate pure scientific research with a religious vocation"<sup>2</sup>, is trying to marry science and religion. But the question is, is it possible? Teilhard's attempt to marry science and religion has been analysed by Henderson as presented in the diagram below.

Diagram 1: Partnership of Theology and Science



Source: Henderson , 104,

To the effect of this concept, Teilhard is quoted as saying:

In order to sustain and extend the huge, invincible and legitimate effort to research in which the vital weight of human activity is at present engaged, a faith, a mysticism is necessary; whether it is a question of preserving the sacred hunger that impels man's effort, or of giving him the altruism he needs for his increasingly indispensable collaboration with his fellows, religion is the soul biologically necessary for the future of science. Humanity is no longer imaginable without science. But no more is science possible without some religion to animate it.<sup>3</sup>

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Teilhard -Pierre teilhard de Chardin (1881-1955) was a "French philosopher and paleontologist known for his theory that man is evolving, mentally and socially, toward a final spiritual unity. He tried to marry science and religion". For detailed information about Teilhard see Britanica-Micropadia 11:605:3b

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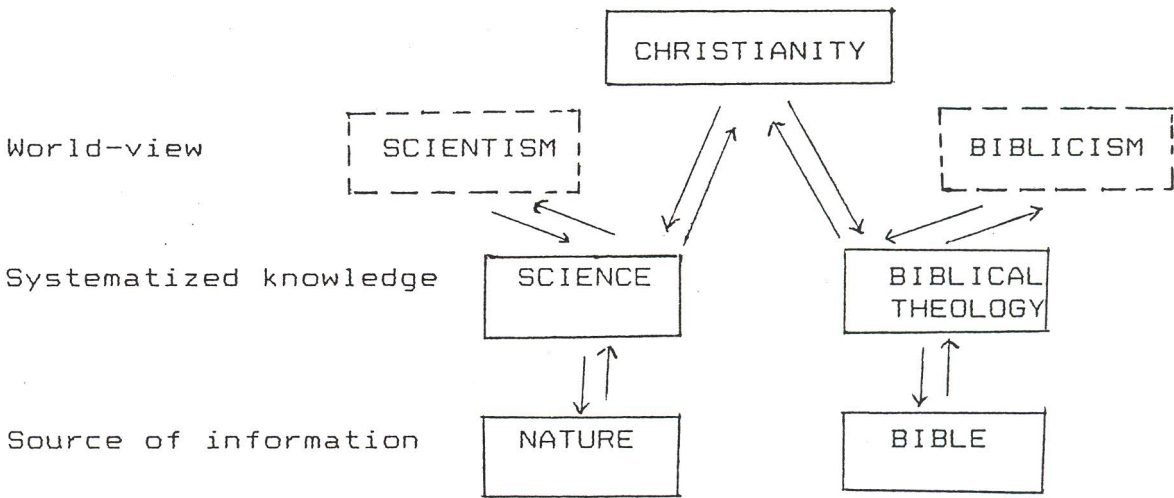
Charles P. Henderson, God and Science: The Death and Rebirth of Theism (Atlanta: John Knox press, 1986), 86.

3

Ibid, 104

As indicated in the diagram and stated in the quotation which has just been cited, Teilhard urges materialistic scientists - whose world view has been called by Fischer "Scientism"<sup>1</sup> --to see the material world as a "source of mystical illumination"<sup>2</sup> as Henderson has put it. At the same time he challenges spiritualistic theologians whose world-view now is described by Fischer as "Biblicism" to see and acknowledge some truths as revealed by science as a contribution to a better understanding of the world and to help them interpret the word of God. Fischer's diagram reproduced below brings out this concept more clearly.

Diagram 2: Biblicism versus Scientism



Source: Fischer, p-91

In the above diagram, the term Scientism refers to a World view which maintains that<sup>1</sup> "There is no valid source of knowledge other than science" and the term "Biblicism" refers

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<sup>1</sup> Robert B. Fischer. God-did it, but how?(Grand Rapids: Zondervan 1981),91 also "Biblicism"  
<sup>2</sup> Henderson, 88

to the world view which claims that nothing outside the Bible is considered valid information concerning the origin of the universe. A traditional Christian according to this chart would hold the world-view which is described in this chart as Biblicism. Fischer like Teilhard argues that the "Spititualistic" theologian and the "materialistic" scientist should leave behind their world views and meet somewhere in the middle.

Moltmann, like many other Christians who want to make Christianity modern and appealing to people with scientific orientation, is already standing in the mid point trying to bring both sides together, in order to make Christianity relevant in the scientific world. The problem with this "partnership" concept of Teilhard and his followers is that it tends to put the supernatural revelation and the word of God on a par with scientific theories. In such a case where the Bible and Science are perceived as being equal, logic becomes the major determinant factor through the assistance of the scientific explanations. In trying to answer religious questions directly, evolution as science may lose its validity as science at a functional level as someone said:

When scientific hypotheses are used directly to answer religious questions, they cease insofar to retain their function and status as scientific theories... first, because their fundamental terms, for example, evolution, have been extended to cover phenomena their scientific use was not designed to explicate; secondly, because their function is now to answer questions quite different from the limited contextual questions of biology; thirdly, because they have thus lost their scientific precision and meaning; fourthly, because

they are no longer verifiable or even, falsifiable in their original scientific context; and thus finally, in doing a vastly different job than they did in science, these terms have joined a different language game, and consequently have ceased to be scientific terms at all.<sup>1</sup>

What Toulmin is saying in essence is that Religion and science cannot mix without one losing its identity. Just as science can lose its validity so can theology. This normally happens where the two contradict each other and one has to give way. For example, to say God is in control of the new developments in Creation robs evolution as a science one of its key causative factors called "chance". Or, to say evolution is Creatio Continua as carried out by the Spirit of God is to say there is a divine causative factor behind the action, hence evolution is not the ultimate origin.

Evolution, as Toulmin has brilliantly concluded is "a myth". And worse still, it is a scientific myth which keeps changing with time and new discoveries. Evolutionists still have a lot to settle in their own camp before they can make their theory fit for public consumption. Furthermore, in connection with our topic of Ecological crisis, Evolution has no place since evolution contributes to knowledge while ecological crisis has nothing to do with knowledge but instead with relationship. In Gen. 3:1-4, the lesson is very clear that man had knowledge, they knew what was required of them but their problem was still there, "to be

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Gilkey, Langdon, Religion and the Scientific future (New York: Harper and Row, 1970), 39.

like God" a relational problem. From that point onward, man has always tried to be like God in his own way not in the "Image of God" as God created him, thus the strained relationship between man and God is what has caused problems even between man and his environment. What man needs to rescue the situation is the proper knowledge of God which will restore the proper relationship between man and God and then between man and his environment. It is this knowledge that Moltmann talks about when he says. "The knowledge of God that confers blessedness comes solely from the 'Supernatural' revelation of God in Jesus Christ, because it is this which leads to perfect fellowship with God".<sup>1</sup> This is to say the knowledge that is based on the Bible is superior to the knowledge based on the study of nature itself through science. It is only when man has an established relationship with God or has acquired a religious grid that he can see things from a religious perspective like Teilhard did. The author of this thesis is not trying to underrate science nor to despise scientific hypotheses. The point is, let them contribute knowledge which would help man to understand his environment even better. But, the knowledge itself that science contributes should not be taken to be final since even scientists themselves know that what they have discovered so far is not all and they cannot call it final and that is why they prefer the word "latest". Why should something which we know is not final affect our

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<sup>1</sup>  
Moltmann, 1985, 57.

interpretation of the word of God to the extent of using it as the guide for interpreting and thence understanding the Bible? Of course, the Bible is not a science text book that it should be used to answer science questions. While science tells us about the creation, the Bible tells us about the Creator and His relationship with His creation.

Furthermore, Moltmann's concept of Creatio Continua and Creatio Nova does not take into account God's grace. Creation is gripped by the process of evolution which is meant to bring it to its perfection; this is what the "Law of complexity consciousness"<sup>1</sup> is all about as the universe moves from the "Alpha" point to the "Omega".

Theology which is based on the theory of evolution is susceptible to the danger of "universalism" a common destination for all creation without going through judgement as the scriptures teaches. Believers and non-believers all end up in one pool.

Finally, Evolution, through some theories like the "Natural selection," tends to deify nature by the fact that nature becomes the determinant factor for the existence of another creature. Therefore, a theology of Evolution is a new form of mechanistic view that makes God a machine-operator rather than the Creator.

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"Law of the complexity consciousness". This is evolutionary process whereby matter becomes increasingly, complex beginning with elemental particles to more complex organisms (For more details see Moltmann 1985 p.203 and Harvie Conn 1973, p. 75).

## CHAPTER TWO

### MOLTMANN'S THEOLOGY OF CREATION AND THE POSITION OF MAN IN THE UNIVERSE

#### The Position of Man

The Theology of creation cannot be complete without putting man into the picture. This is because as Fischer put it, "The Biblical record indicates in several ways that man, while a part of creation, occupies a very unique role in comparison to other parts of that which has been created ... man is described as a being unique in essence."<sup>1</sup> This uniqueness of man is the reason why some traditional theologians do not accept the theory of evolution as Fischer commented that "If man is merely another stage in the long evolutionary process, there is really no basis for considering man to be particularly unique"<sup>2</sup>. Harold J. Ockenga, writing on the same subject said:

In this creation man was complete, finished, and perfected being. He [Holy Spirit] created a perfect creature, endowed with higher spiritual faculties and powers, and not needing any additional touches for his perfection. We repudiate all present theories of man originating in some groveling-[sic] beast.<sup>3</sup>

According to Moltmann, such an anthropocentric concept of human being presented above is "naive"<sup>4</sup> Moltmann refutes the idea that human being is the "Crown of Creation". For

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<sup>1</sup> Fischer, 62-63.

<sup>2</sup> Ibid, 63

<sup>3</sup> Ockenga, 25-26.

<sup>4</sup> Moltmann, 1985, 185.



him, the crown of creation is the Sabbath. Moltmann contends that the creation of a human being has got some evolutionary element which makes human being to be identified with the community of creation. This he expresses by saying "The complex system 'human being contains within itself all simpler systems in the evolution of life because it is out of these that the human being has been built up and has proceeded"<sup>1</sup>.

### Images of Man and their implications

Based on this concept of the evolution of man, Moltmann concludes that man was not only created in the image of God but also in the "image of the world" (imago mundi). Therefore he says, this concept has three implications summarized below.

1. A human being is the embodiment of all other creature.
2. As imago Dei, human beings are God's proxy in the community of creation.
3. In a Christian doctrine of creation human beings must neither disappear into the community of creation, nor must they be detached from that community since human beings are both imago Dei and imago mundi.

Those three points are very important in regard to our subject of ecological crisis in our society. These items will be discussed as identity, responsibility and proper doctrine. All these three items are centred on the relationship between a human being and his environment. As

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Moltmann, 1985, 190.

Christians it is only through the proper doctrine of creation that they can learn to maintain a good relationship with creation. Let us examine each one of these three items more closely.

### Identity

Moltmann describes human beings as imago mundi "as a microcosm in which all previous creatures are to be found again, a being that can only exist in community with all other created beings and which can only understand itself in this community."<sup>1</sup>

Moltmann acknowledges that a human being is the apex of created things, but being the last thing to be created he is dependent on all others. Moltmann expresses this dependency in the following points.<sup>2</sup>

1. A human being is taken from the earth (Gen. 2:7), and he will return to the earth upon death. This unique bond with the earth is not told about other creatures especially animals as Moltmann observes. This implies that there is a very special relationship between human being and the "mother earth".
2. A human being is a living soul (Gen. 2:7) "meaning that the human being is an animated body". Being animated body links man with animals which are also described as "living souls" (Gen. 1:30). According to Moltmann's observation, this means that both "human

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<sup>1</sup>  
Moltmann, 1985, 186.

<sup>2</sup>  
Ibid, 187-188.

beings and animals are breathing creatures which are all alike dependent on the air, and live from it".

3. Both human beings and beasts depend on food to sustain their life (Gen 1:20, 30; 2:19). They all share the same living space and vegetation for food.
4. Both human beings and animals are given the blessing of fertility (Gen 1:22, 28).

This same idea of man's identity with nature is found among Africans as Mugambi and Kirima put it that:

Man according to African thought and belief is not an isolated creature. He is only part of the universe which is full of animals, plants, and inanimate objects. All these components are related to each other in various ways and all of them are dependent on the supreme God for their first appearance and for their continued existence.<sup>1</sup>

According to Mugambi and Kirima, man's relationship is extended to include even the inanimate creatures based on their common origin. Erickson expressed the same thought when he said "Since inanimate material also come from God, I am at base, one with nature, for we are members of the same family"<sup>2</sup>. Man's identity with nature can also be seen in the fact that when man fell into sin the whole creation shared in the consequences of his sin (Gen 3:1-19).

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Jesse Mugambi and Nicodemus Kirima. The African Religious Heritage (Nairobi: Oxford University Press 1976), 9.

2

Millard J. Erickson, Christian Theology Vol. 1 (Grand Rapids: Baker Bookhouse 1983), 377.

According to Moltmann, it is the Christian anthropology of the Middle Ages as it was influenced by the Ptolemaic world-view which elevated man to the extent of removing him from the fellowship with creation. This led to the present anthropocentricism<sup>1</sup>. Moltmann however, seem to blame the society in which the systems of thought are contained but man's self isolation from nature cannot be blamed on society as Erickson pointed out that.

The society was also part of what God made, and it was very good. To regard society as the cause of sin is therefore an inaccurate and misleading ploy. Since society was originally good, we must ask ourselves the question, How did it get to be the way it is today?<sup>2</sup>

The answer is what one commentator said that "at the fall God enslaved nature to futility and decay"<sup>3</sup>. Man's attempt to stand above and apart from the community of creation is due to his desire to be like God which led him to fall into sin. Man, according to God's plan is as Moltmann said "a creature in the fellowship of creation"<sup>4</sup>

#### Responsibility

Moltmann states that "creation has its meaning for human beings, and human beings have their meaning for the Creation"<sup>5</sup>

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1 Moltman, 1985, 186.

2 Erickson 183,376

3 The New Layman's Bible

Commentary. Grand Rapids: Zondervan, 1979.

4 Moltmann, 1985, 186.

5 Ibid, 189.

Human beings have to find out what their God-given meaning for the creation is and that is when their sense of responsibility is ignited.

Moltmann presents three points in regard to man as Imago Dei. Let us consider two of these points and how they relate to our subject of man's responsibility.

First Moltmann says "As God's image, human-beings are God's proxy in his creation and represent Him"<sup>1</sup>. To the effect of being a proxy, man is understood to be acting on behalf of God. This is one thing that distinguishes human-beings from animals and gives man a more responsible position in the community of creation. The Psalmist acknowledged this fact when he said:

What is man that you are mindful of him, the son of man that you care for him? You made him a little lower than the heavenly beings and crowned him with glory and honor. You made him ruler over the works of your hands, you put everything under his feet. All flocks and herds, and the beasts of the field, the birds of the air, and the fish of the sea, all that swim the paths of the sea. (Ps.8:4-8. NIV)

Some commentators say that Psalm 8:5 refers to Jesus Christ who was made "a little lower than the angels". But since this can only apply to His incarnation, the phrase, as well as the whole chapter can be rightly said to have reference to man<sup>2</sup>. This being the case, Boice has aptly put it that

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<sup>1</sup>  
Moltmann, 1985, 188.

<sup>2</sup>  
James Montgomery Boice, Genesis: An Expository Commentary Vol.1 (Grand Rapid: Zondervan, 1982), 84 foot notes.

"As the Bible describes them, the man and the woman were made a little lower than the heavenly beings,...that is, they were placed between the highest and the lowest beings, between angels and beasts."<sup>1</sup>

Moltmann highlights two things that distinguish man from the lower beings. Firstly, is the charge to subdue. While it is true that the divine charge "to subdue" the earth has been misinterpreted and misused by some people in order to justify their abuse of responsibility attached to it, Moltmann's interpretation is also questionable. Moltmann argues that:

He [human being] is distinguished from the earth by the divine charge to subdue that earth, although according to Gen. 1:28 this means nothing but the injunction to eat vegetable food<sup>2</sup>

It is not clear how Moltmann got the idea of eating in Gen. 1:28. The Hebrew word Kabash which is rendered in English translation as "to subdue" has no connotation of "eating" at all.

According to Strong's concordance, the 'Kabash' means "to tread down" "to disregard" "to conquer",..."subdue", bring into subjection<sup>3</sup> etc. The word is used seven times in the

1  
Boice, 1982.

2  
Ibid

3  
Strong's Exhaustive Concordance, Compact Edition. n.d.

Old Testament (Gen:1:28,1Chro.17:10,Psal.47:3,Isa.45:1,Dan.& :24,Mic7:19,Zec:9:15). In all these passages, the word is translated into English as "to subdue". As used in those passages, the word carries the idea of conquering, bringing into subjection, putting under control etc. Therefore Moltman's idea of the injunction to eat vegetables based on this passage and specifically on the word "to subdue" has to be repudiated.

On the other hand, the phrase "to subdue" does not necessarily mean to destroy or misuse the earth for selfish reasons. It denotes the idea of being able to maintain nature and to keep it in a condition that is pleasing to God (Gen2:15). As Wright put it, "God owns the earth but has entrusted it into the keeping of mankind whom he has equipped for the task and whom he holds accountable for his trusteeship"<sup>1</sup> Therefore a human being is distinguished from animals by the fact that he has been put in a position of responsibility over the whole community of creation. For human beings to be destroyed by creation or to destroy creation is contrary to God's will and plan for the relation of human being to creation.

Secondly, as Moltmann put it, "He [human being] is distinguished from the animals because he is supposed to give them their names and they are to be called by the names he gives them (Gen2:19)"<sup>2</sup> The act of naming has some

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<sup>1</sup> Christopher J.H. Wright, Living as the People of God (Leicester, England: Intervarsity Press, 1983), 68 .

<sup>2</sup> Moltmann, 1985, 188.

elements of superiority and responsibility. Some one said "The act of naming is a very important symbol. It has in it an element of creative activity. To know the name of a person or thing is to know its essential nature and to have power over it"<sup>1</sup>. Another commentator also put it that, "In the ancient World to give a person a name was a sign of authority over him, (2kings 23:34,24:17) So the naming of the animals was the first recorded act of dominion over them<sup>2</sup>. The dominion however, is not for the gratification of human greed. Rather, it is to be used for God;s glory as employed in what Wright calls "economic stewardship"

The second thing that Moltmann says about human beings is that "As God's image, human beings are for God himself a counterpart, in whom he desires to see himself as if in a mirror."<sup>3</sup> As counterparts of God, human beings says Moltmann, "represent his glory and his will."<sup>4</sup>

The concept of counterpart carries with it some elements of the nature of the two parties. Human beings have some reflective qualities through which God can be made manifest. This does not mean that God and human beings are equal. God, being as superior as He is, has allowed himself to

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1

Mathew Black and H.H. Rowley eds.  
Peake's Commentary on the Bible (Berkshire: Van Nostrand Reinhold,1962).

2

G.C.D. Howley ed. A Bible Commentary for Today (London:Pickering & Inglis 1979)

3

Moltmann, 1985, 188.

4

Ibid, 190



be known through human being whom He has by grace chosen to "represent His glory and will."

The idea of being a representative suggests responsibility and accountability. Man as a representative is charged with responsibility and is also accountable to whom he represents-God.

To the effect of the concept of being counterpart and representative of God a human being has to exhibit some characteristics of God to the creation. Such characteristics as love mercifulness, righteousness, justice etc, should be displayed in human life so that he can be real "justice of the peace" as Moltmann describes him. God's desires to see Himself in human life as in a mirror as Moltmann has put it, indicates God's expectation which man has to meet. Whatever a human being does or what he becomes has to conform to what is expected of him as a reflection of God.

#### Proper Doctrine of Creation

Moltmann contends that Christianity has some contribution to the present ecological crisis. This is revealed in his statement which says "The Christian belief in creation as it has been maintained in the European and American Christianity of the Western churches is therefore not guiltless of the crisis in the world today."<sup>1</sup>

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1

Moltmann, 1985, 21.

The contribution of Christianity to the modern ecological crisis is contained in the modern civilization which has Judeo-Christian tradition as the base of its formation.

Therefore, according to Moltmann,

A theological doctrine of creation which can responsibly be maintained must first of all come to terms critically with its own tradition and history of its influence, before it can face up to the dialogue with the modern natural sciences and the contemporary philosophy of nature.<sup>1</sup>

The modern scientific and technological advancement has created a tradition in which human being stands as the owner of creation, and even worse, a careless owner. Technology, as it has been pointed out in the W.C.C. report,

can be made to serve human welfare, the general good, but it can also be made to serve evil purposes, destruction, enslavement, exploitation, to achieve diabolic purposes in respect to individuals social groups, nations, and even human kind.<sup>2</sup>

This is the upshot of what Moltmann holds the church responsible for.

The church's involvement in the development of such a state of affairs according to Moltmann, can be traced in three stages of relationship between theology and science.<sup>3</sup>

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1  
Moltmann, 1985, 21

2  
Report of the World Council of Churches' Conference on Faith, Science and Future. Faith and Science in an Unjust World (Geneva: WCC 1980), 81.

3  
Moltmann, 1985, 33 - 34, (a detailed account of the three stages are given in those pages).

The first stage from the Medieval era to the Reformation is what I would call the era of religious cosmology. This is the time when the biblical traditions and the ancient world's picture of the universe were fused into a religious cosmology. Throughout the medieval period, the theology of creation was based on the cosmological exposition of the six days work according to Genesis 1. This is the cosmology that according to Moltmann, modern sciences successively freed themselves from.

The second stage covering the timespan from the Reformation to the early twentieth century was the period of separation. This was the time, when the sciences emancipated themselves from the religious cosmology. During this time religious cosmology was reduced to personal belief. The religious world - view of creation was discarded as being unscientific, and historical criticism reduced biblical creation narratives to mere myths at this stage. Both science and theology were busy, each trying to define its limits so as to maintain a peaceful co-existence on the basis of mutual irrelevance.

The last stage, the present time, is what would be called the time of companionship in tribulation. This is the time when both science and theology find themselves under the pressure of the ecological crisis. Both science and theology have to work together to reach a solution which will save the world from the threat of ecological crisis.

Moltmann is right to claim that all those three stages of relationship between theology and science have some impact on the Christian theology of Creation today. In order for the church to develop a theology of creation to encounter the ecological crisis of our time, those three stages have to be studied and analysed to find out how they can help the church to formulate a proper doctrine of creation.

### **Brief Analysis of Moltmann's three stages**

During the medieval period, the church was known to be the centre of formal education. It was the monasteries where manuscripts were being copied. It is said that "Monks and Priests passed on the culture of Greece, and Rome, together with the teachings of the church."<sup>1</sup> There are three factors that made this period susceptible to the authority of the church and its teachings.

The first factor was the fact that the church was the centre for formal education which was conducted by the monks and the priests who were actually responsible for the formal educational sector. Since very few people could possess copies of the Bible and be able to read it in Latin and the original languages, it was only the church through the clergy who could interpret the Bible and give the teachings which had to be accepted without much criticism. This is

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<sup>1</sup>  
George K. Anderson, William E. Buckler and Mary Harris Veeder, The Literature of England 3ed.(Dallas: Scott Foresman and company 1979),7.

why it was possible for the theology of creation to be based on the cosmological exposition with less opposition. The expression "less opposition" however, should not be overemphasized. The influence of Greek philosophy during this period must not be underrated in regard to the Christian doctrine of creation. According to Professor Hooykaas,

To most Greek philosophers nature was a living, divine organism, producing all things, all gods, men and animals by generation. Hesiod thought that the earth generated the mountains, whereas according to the book of Genesis it was by God's command that the dry land was separated from the sea.<sup>1</sup>

It is for this reason that Professor Hooykaas said "there has been a never-ceasing protest from Christian theologians against this naturalism which detracted from God's sovereign power."<sup>2</sup>

Secondly, as George Anderson and his colleague put it, "In medieval thought church and king were necessary instruments for maintaining order in society, they were considered 'The two swords' of God."<sup>3</sup> The Church had the position of authority in matters of religion and philosophy of which it is said that "it is true that the Church insisted upon its own authority in matters of faith and dogma and that many philosophical questions were settled by

1

R. Hooykaas, Religion and the Rise of Modern Science (London:Scottish Academic Press 1972), 9.

2

Ibid, 7

3

George Anderson & others, 7.

reliance upon principles accepted on faith (on the authority of God or of the Church)."<sup>1</sup>

The third factor was the social structure of the time. Upto the end of the twelfth century, In Europe there were "only two social classes: The aristocratic nobles (both secular and ecclessiatical)and the serf" This kind of structure minimized the number of people who would rise to question, the teachings of the church since not many people had access to formal education and an opportunity to present their views in a formal way which could impact the society in a larger way.

The period following Mediaeval, generally known as "Renaissance" witnessed a great awakening in learning. One of the aspects which was included in this awakening was the development of science. This particular development was received with mixed feelings in the society. Some people like Francis Bacon (1561-1626) saw the rise of science as a means to regain dominion over nature which man had lost and encouraged Christians not to fear scientific development. Professor Hooykaas reports Bacon's thought as saying that:

We ought not, out of fear that scientific investigation might lead to a lack of reverence for God's revelation, to fall into the opposite error thinking that investigation of any part of nature should be forbidden. It is wrong to transfer the prohibition against a too curious penetration into the mysteries of God's being to the investigation of the mysteries of nature for nowhere in scripture is this forbidden.<sup>2</sup>

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<sup>1</sup> George Anderson & Others, 8.

<sup>2</sup> Hooykaas, 68.

According to Hooykaas, Bacon's ideas were received positively by Christians especially the Puritans as he concluded that:

The Puritans, through the whole spectrum of their views from the right to the left, were the main support of the new science before the Restoration, and they left their indelible stamp on the next generation.<sup>1</sup>

The rift between science and theology which Moltmann traces back to this period can only be accounted for as the result of controversy that existed between the Puritans and the non-Puritans like John Saltmarsh who "was prepared to allow learning its place anywhere in the Kingdom of the world, but not in the Kingdom of God"<sup>2</sup>. As a result of this, many of the controversies between Puritans and non-Puritans, or within the Puritan sects, made manifest the age-old and underlying tension between Athens and Jerusalem, the two poles of the Western spiritual heritage.<sup>3</sup>

The present period has been called by Moltmann the time of Companionship in tribulation. Both scientists and non-scientists find themselves caught in the toils of the perils of scientific advancement. Aeschliman, quotes Max Born, the winner of the 1954 Nobel Prize for Physics, as saying:

I am haunted by the idea that this break in human civilization, caused by the discovery of the scientific method, may be irreparable...The Political and military horrors and the complete

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1  
Hooykaas, 148.

2  
Ibid, 146.

3  
Ibid.

breakdown of ethics which I have witnessed during my life may be...a necessary consequence of the use of science...If this is so, there will be an end to man as a free, responsible being.<sup>1</sup>

Some philosophers like Hans Jonas have noted that science reduces even human beings to just objects of observation as he is quoted saying:

Yet even in the so-called 'human sciences' whose object of attention and study is man ... the object remains lower than man:"for a scientific theory of him to be possible, man including his habits of valuation, has to be taken as determined by causal laws, an instance and part of nature."<sup>2</sup>

The "companionship of Science and religion" as Moltmann calls it if properly used, is not only in crisis but also in supplementing each other. Writing about Missiological Anthropology, Luzbetak stresses that "Just as it is impossible today to practice theology without taking the secular science into account, so it is impossible to practice missiology without taking secular sciences, particularly anthropology into account"<sup>3</sup> Langdon Gilkey, writing on "Religious dimensions in Science" contends that the war between science and religion is over and even traces some religious dimension in science which he expresses by quoting Stephen Toulmin who said:

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<sup>1</sup> Michael D. Aeschliman, The Restitution of Man: C.S. Lewis and the case against Scientism (Grand Rapids: William B. Eerdmans, 1983); 47.

<sup>2</sup> Ibid 54.

<sup>3</sup> Louis J. Luzbetak. S.V.D., The Church and Culture:- New perspective in-Missiological Anthropology (Maryknoll, New York: Orbit Books, 1988),8-9.



Whatever phrases one uses, inescapably since we are dealing with the foundations, the presuppositions of knowing, our language transcends assertions. Assertions are based more on deep intuitions and on faith than on argument—since we are dealing with the foundations of all arguments.<sup>1</sup>

While it is true that there is some degree of harmony between science and religion<sup>2</sup> it is also true that absolute Biblicism and absolute Scientism have a great potential for antagonism whenever they inter-act. The idea of science and religion being companions or being in harmony should be handled with care lest either of the two lose their identity and distinctiveness.

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1  
Gilkey 1970,63

2  
An example of where Science has supplemented Theology is in the area of archaeology.

## Implications of Moltmann's Theology of Creation and the Position of Man

The critique of Moltmann's Theology of Creation has been done along with presentation of his theology. At this stage, I would like to draw out some basic lessons deduced from Moltmann's ecological doctrine of creation. There are three lessons that stand out more conspicuously which are worthy of our consideration.

### 1. God is at work in and through His creation.

This concept of the presence of God in His creation is highlighted in Moltmann's statement which says:

An ecological doctrine of creation implies a new thinking about God. The centre of this thinking is no longer the distinction between God and the world. The centre is the recognition of the presence of God in the world and the presence of the world in God.<sup>1</sup>

According to Moltmann, this presence is not in things as in Pantheism or animist religions. God's presence is revealed in his actions like covenant and promises in the Old Testament. He says, God "reveals himself in history"<sup>2</sup>. Moltmann might be understood to be overemphasizing the immanence of God, which is true, but he justifies his

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1

Moltmann, 1985, 13.

God works through creation in such ways as multiplication through reproduction as in Gen 1:11-12. It does not mean that the creatures through which God works becomes like Him or take His responsibility. Rather, He uses them as His tools, or servants to accomplish His will.

2

Ibid.

position by claiming that he is trying to restore a concept which had been underemphasized. He calls his emphasis "a return to the original truth".

The understanding of God as present in His creation is the key to understand the concept of God being at work in His creation.

It is this concept of God being at work in His creation that prompts Moltmann to trace God even in the process of evolution, which according to him is not just a mere randomness without God. It is what he calls "an intentional fortuitousness"- and describes it as "free creations of God for the purpose of the self-communication of his goodness with His glorification as their end and goal."<sup>1</sup> It is true that Moltmann is trying to harmonize science and theology by giving scientific theories religious explanations. Moltmann can be said to be a follower of Pierre Teilhard De Chardin, whom Anderson describes as "the first, perhaps the only, leader of thought in this century to integrate pure scientific research with a religious vocation."<sup>2</sup> Moltmann's thesis however, is quite clear that God is present in the universe and He is controlling the affairs of the whole universe. Scientists and non-scientists alike are under His presence and control. God wants to communicate His goodness

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<sup>1</sup> Moltmann, 1985, 207.

<sup>2</sup> Charles P. Anderson, Jr., God and Science: The Death and Rebirth of Theism (Atlanta: John Knox Press, 1986), 86.

through his presence and creative involvement in the universe. This involvement has a goal which is to glorify Him.

Not only does God work in creation to make it what it is but He also works through creation to make other creatures what they are. Hence there is no part of life where God is not there in the universe. Like William Shedd, we should say:

Nothing other than God is self-sufficient or eternal. Everything else, every object and every being, derives its existence from Him. It exists to do His will... Everything else exists for His sake, not He for its sake.<sup>1</sup>

2. Human beings have special place and responsibility within the Community of creation.

According to Shedd, "As the conflict has shifted, from one science to another, so it has also moved from one area of doctrine to another. Thus, while the prime area of tension was at one time the doctrine of creation today it is the doctrine of man"<sup>2</sup>. In describing what a human being is, Moltmann says, "as His image human beings represent God on earth; as His similitude, they reflect Him."<sup>3</sup> According to Fischer,

Man is described not merely as another one of the plant or animal forms which the earth brought forth.

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1  
William G.T. Shedd, Dougmatic Theology 2nd Ed. (Nashville:Thomas Nelson Publishers, 1980),386.

2  
Ibid, 378.

3  
Moltmann, 1985, 219.

Rather man is described as a being unique in essence ...created in the image of God, and unique in role on earth...responsible for dominion or rule over the rest of creation."<sup>1</sup>

The Stockholm Declaration on the Human Environment describes man as "...both creator and moulder of his environment, which gives him physical sustenance and affords him the opportunity for intellectual, moral, social and spiritual growth."<sup>2</sup>

The three descriptions of human beings quoted above seem to maintain the "Law of complexity Consciousness" -from being representative to ruler and then creator. While all the three descriptions have their theological implications and differences, they are all meant to underscore the fact that human beings are unique not only as the images of God but also in terms of their role and responsibilities on earth. According to Banana, "Man's purpose consists in his mission to subdue and cultivate the world."<sup>3</sup>

The question is, how responsible have fallen human beings been in this universe?

3. There is a connection between the environmental crisis and the human spiritual crisis.

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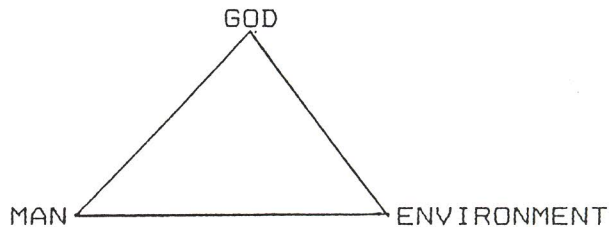
<sup>1</sup>  
Fischer, 62-63.

<sup>2</sup>  
United Nations Environmental Programme, In defence of the Earth. (Nairobi, 1981), 41.

<sup>3</sup>  
Canaan S. Banana, The Theology of Promise (Harare: College Press, 1982), 14.

Moltmann contends that, "What we call the environmental crisis is not merely a crisis in the natural environment of human beings. It is nothing less than a crisis in human beings themselves"<sup>1</sup> The relationship between God, human beings and environment can be illustrated as follows:

Diagram 3, God, Man and Environment relationship



According to Jeremiah 7:19-20, the consequences of Sin affect both human beings and their environment. Sin affects man's relationship with God and also relationship with his own environment as one Biram Gueye of Senegal put it, "People talk about desertification. That's just bunk, ...We are the ones who have turned the country into a desert"<sup>2</sup> One of the consequences of the fall of man is the ecological imbalance (Gen 3:16-19), following the curse of the ground. It is a fact that, "from the very first man as such has a continual illusion about himself. He wants always to be more than a creature. He does not want merely to be under the universe Lordship of God."<sup>3</sup> In the effort to elevate himself above other creatures, man uses other creatures to support and

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1 Moltmann, 1985, X1.

2 Africa Farmer: April 1990, 17.

3 G.W.Broomiley ed, Karl Barth: Church Dogmatics (Edinburgh: T & T. Clark 1961), 148.

implement his self-promotion to what he calls a "good living standard". The "good living standard" has been sought at the expense of the wellbeing of other creatures including the wellbeing of human beings. Therefore the environmental crisis according to Moltmann<sup>1</sup> is a crisis which human beings have brought on themselves and their natural environment, and into which they are driving both themselves and the environment more and more deeply"

Moltmann, however, does not attribute the environmental crisis to the spiritual crisis but he uses terms that suggest spiritual crisis; for example, he uses the terms "exploitation of nature", "dominion over nature" by human beings etc. Clause Westermann notes that "A relation of dominion in which the ruler simply enjoys the benefit provided by his subjects, is unthinkable in the Old Testament."<sup>2</sup>

Writing on the subject of "Christian Perspective on Creation in a Time of Ecological Unsustainability", Vitaly Borevoys says;

The word crisis is a judgment not only on the secular, non-religious, non-believing world, but rather and primarily on our historical Christianity...This is the essence of the contemporary crisis, the crisis in the human being, the crisis of humanity itself, the crisis which is religious, the crisis of Christendom as such<sup>3</sup>

It is therefore necessary to consider the religious aspect when the solution for the present environmental crisis is to be found.

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<sup>1</sup>Moltmann, 1985, 23.

<sup>2</sup>

The report of the WCC Conference on Faith and Science (Geneva, 1980), 76.

<sup>3</sup>

Ibid, 84.

## CHAPTER THREE

### CURRENT ENVIRONMENTAL ISSUES IN AFRICA

Environmental issues in Africa are numerous and complex.

Dr. Mostafa Tolba<sup>1</sup> gives us a very full picture of the situation when he said;

Nowhere is global injustice more striking than in Africa. The continent's natural resource base is being dismembered. The environmental crisis is reaching a critical stage. Over and above resource destruction, a recent report discovered-- for the first time-- high levels of ozone and acid rain-- pollution associated with industrialization-- over virgin forests of Central Africa. Air pollution in some parts of Africa is comparable to levels in Europe and North America. Thus Africa faces the worst effects of industrialization-- widespread pollution-- without reaping the<sup>2</sup> benefits of industrialization-- economic growth.

In a speech delivered at Kenyatta University in August 1989, Dr. Tolba reported that soil erosion has increased 20 fold in the last three decades and claims 200-300 tonnes per hectare per year. Up to 90 percent of rangeland and 80 percent of cropland is affected by desertification. The productivity of the savannah has dropped by 35 per cent<sup>3</sup>. It is apparent that African soil is both deteriorating and decreasing at alarming rates while the population is escalating, the trend which Tolba describes as "a collision

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<sup>1</sup> Dr. Mostafa Kamal Tolba is the Executive Director, United Nations Environment Programme.

<sup>2</sup> UNEP, "Global Environmental Justice" Information Green Paper No. 1 (Nairobi: Information and Public affairs, UNEP, 1989), 7.

<sup>3</sup> Ibid.



course, between sky-rocketing population and a global environment under seige."<sup>1</sup>

Environmental issues are interconnected since "relationships exist between and among non-living and living elements of the environment, including people"<sup>2</sup>. This is why population alone cannot be said to be the only factor causing environmental problems. For instance, people who live in sparsely populated areas could still create environmental problems for themselves in such ways as poor farming methods and land use, and also through poor methods of disposal of human waste, and in many other ways. No single human community, small or large, can claim to be free from the environmental crisis, not even a single living creature can be said to be free from the problem. The following is an overview of major environmental issues affecting Africa today.

### Water Pollution

Water is one of the most essential substances that makes life possible on earth. According to Gus Tillmann" our planet contains an estimated 336 million cubic miles of water...nearly 95% of this prodigious supply is salt."<sup>3</sup>

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1

UNEP, Information Green Paper No1, 7.

2

UNEP, The United Nations System -wide Medium term Environment Programme 1990 - 1995, (Nairobi, 1988), 3.

3

Gus Tillmann, Environmentally Sound Small Scale Water Projects (New York: Codel Vita Pub., 1981), 1.

This distribution is clearly shown in the table below. It is important to note that these water distribution estimates vary between 93% and 97%.

Table 1, Approximate distribution of water in the hydrosphere

Type of water	% of <u>total</u> water	% of <u>fresh</u> water	% of <u>available</u> water (i.e. fresh and unfrozen)
TOTAL:			
Salt	95		
Fresh	5		
FRESH:			
Frozen	4	80	
Liquid	1	20	
FRESH LIQUID:			
Groundwater	0.99	19.7	99
Lakes	0.01	0.2	1
Soil	0.002	0.04	0.2
Rivers	0.001	0.02	0.1
Atmospheric	0.001	0.02	0.1
Biological	0.0005	0.001	0.005

Source: FAO Man's Influence on the hydrological cycle, 3.<sup>1</sup>

The amount of water which could be said to be available for human use is 3.36 million cubic miles of which 98.55%, or according to our table above, 99% is ground water. Lakes contain 1% while the rest is contained in the soil, rivers, atmospheric vapor and also in plant and animal tissue.<sup>2</sup>

1

Food and Agriculture Organization, "Man's Influence on The Hydrological cycle" Irrigation and Drainage Paper: Special Issue 17 (1973):3, photocopied.

2

Tillman, 1-2.

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1

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2

Tillman, 1-2.

According to a UNEP report, 97% is salt water and 99% of the remaining 3% is out of reach.<sup>1</sup>

Apart from being a global problem, water pollution has become a serious problem in Africa. About 136 million people (in 1981) mostly in the rural areas of the continent have no reasonable access to safe water.<sup>2</sup> This is mainly due to unequal distribution of water supply as well as the contamination of the available water-sources.

The word "pollution" is defined in the UNEP Environmental Law Guidelines and Principles as follows:

"Pollution" means the introduction by man, directly or indirectly, of substances, or energy into marine environment which results or is likely to result in such deleterious effects as harm to living resources and marine ecosystems, hazards to human health, hindrance to marine activities including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities.<sup>3</sup>

With this broad definition of the word "pollution" in mind, we are going to cite a few cases from different parts of the continent to illustrate the seriousness of the problem of water pollution.

Professor Charles Okidi, the Dean of the Moi University School of Environmental Studies, raised a concern about "the

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<sup>1</sup> UNEP, UNEP Profile (Nairobi, 1990), 12.

<sup>2</sup> Tillman, 2.

<sup>3</sup> UNEP, Marine Pollution from Land-based Sources: Environmental Law Guidelines and Principles (Nairobi, 1985), 16-17.

relentless abuse fresh water sources have been subjected to by the careless activities of man and industry". The Professor cited an example of a senior Kisumu Municipal employee who authorized the dumping of a cylinder containing toxic substances into the lake. He also claimed that what is true of Lake Victoria is also true of Lakes Naivasha, Elementaita and River Nzoia and its tributaries. According to Professor Okidi, "pollution of Lake Victoria for instance did not start yesterday - it has been an on-going process ever since industry came into Kisumu and Western Kenya."<sup>1</sup>

In Swaziland, ground water pollution is found around the Matsapha Meat Corporation and also in Botswana around the Bostwana Meat Corporation abattoir. In these places it is said, "the quality of the ground water has deteriorated due to increased amounts of chloride ions in the water."<sup>2</sup>

Charles Mbage's article entitled "Dar-es-Salaam Hit by Water Pollution" says, "Water pollution in Tanzania's capital city, Dar-es-Salaam; has become a big problem to Environmentalists in the country". This article maintains that "the lower part of the Msimbazi river which passes through most of the city is extremely polluted by many sources". This pollution stems mainly from industrial waste and city garbage

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1

Daily Nation, (Nairobi) January 3, 1991, 6.

2

Miranda Miles and Professor P.S. Maro, "Review of Swaziland's Current and likely future Environmental Problems with Respect to Manufacturing and Industry". Presented to Swaziland National Seminar on the Environment 9th-12th May 1988, (Pigg's Peak, Zwaziland), 5.

and sewage discharges according to Mr H. Lann the Principal Environmental Protection Advisor in the Ministry of Lands, Housing and Urban Development (during the time this article was written).<sup>1</sup>

A report from Egypt shows that salinity and agricultural chemicals are the water pollutants of the rural areas while raw sewage and Industrial effluent are the predominant pollutants in cities. For instance, only 25% of Cairo and Alexandria had sewage systems in the mid 70s. The report also maintains that more than one hundred towns out of 120 towns in Egypt lacked a sewer system, hence diseases related to poor sanitation were rampant.<sup>2</sup>

Another report from Ghana says:

The principal sources of land-based pollution are municipal, industrial and agricultural discharges which are usually untreated and unregulated... municipal or domestic sewage input is the most common source of pollutants into the environment.. Agricultural practices may also contribute to the release of pollutants, mainly pesticides and fertilizers, into the coastal zone through land runoff, river and atmospheric transport.<sup>3</sup>

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Charles Mmbaga, "Dar-es-Salaam Hit by Water Pollution" Forwarded to All Africa Press Services Syndication, May 31, 1988, Typewritten - Special Collection of the Environmental Liaison Centre Library, Nairobi.

2

Arid Lands Information Center Office of Arid Lands Studies "Draft-Environmental Report on Arab Republic of Egypt" (Tucson, Arizona, 1980), 59.

3

First Meeting of West African Sub-Regional Environment Group (WASREG) Anglophone Sub-Group, Accra 23-27 October 1989. Republic of Ghana Country Paper. Photocopy Available at UNEP, Regional Office, Nairobi.

Water pollution has become a life-threatening component of the environmental crisis in Africa. Water-borne diseases such as typhoid, dysentery, cholera and gastroenteritis, all diarrheal diseases caused by micro-organisms in dirty water, are rampant in most parts of Africa and are responsible for many deaths: as one reporter put it, "Up to one out of three deaths in the Third World is a child dying of diarr<sup>1</sup>hea." Other diseases are malaria, yellow fever and filariasis caused by mosquitoes which breed in stagnant water. Malaria alone is said to "affect 800 million and kills one million people annually"<sup>2</sup> (worldwide estimates). Diseases that are passed into the soil through faeces like hookworm, roundworm and whipworm are not uncommon in Africa. Guinea worm, and the waterborne disease is thought to be the leading cause of debility in rural Ghana.<sup>3</sup>

Water pollution is not just a product of some sophisticated industrial activities. Even the simple acts of man like careless disposal of human-waste and domestic gabbage can cause environmental problems which are very detrimental to the life system. Some of the waterborne diseases which are the products of water-pollution could be easily avoided if people were made aware of the causes and simple ways of avoiding those diseases. Activities should include boiling drinking water,

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Environmental Liaison Centre, Report and Directory on some Issues, and Organizations, Related to the Environmental Questions Affecting Water (Nairobi, 1981),13.

2

Ibid

3

Ibid.

clearing the bushes and grass around human residences and covering holes and containers which could hold water and create breeding places for mosquitos. Good management of water sources including dams, wells or piped-water, are of paramount importance in improving the condition of the environment.

Users of chemicals whether in agricultural setting or industrial places need to be made aware of the consequences of mishandling those substances in relation to the environment. A provision for safe disposal of such substances should be made available within reach of the users of those chemicals.

Large-scale pollution caused by manufacturing industries, agroindustries and other activities of that kind can be handled at all levels including individual institutions, local, as well as the national authorities. Two suggestions are given. According to the UNEP guidelines, the first step should be to create public awareness as the report reads,

Providing environmental information both to the general public and to special publics is a crucial element in creating environmental awareness and spreading an understanding of sustainable development. An immense number of people in all countries have never been exposed to formal environmental education.<sup>1</sup>

If for example, this awareness could help people to improve water condition, according to Tillmann, waterborne diseases could be reduced significantly as shown in the following table.

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UNEP, System-wide, 98



Table 2, Percentage Reduction of Disease by Water Improvement

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<u>Disease</u>	<u>Estimated reduction by water improvement (%)</u>
Cholera	90
Typhoid	80
Hepatitis (Infectious)	10?
Bacillary Dysentery	50
Amoebic Dysentery	50
Gastroenteritis	50
Scabies	80
Yaws	70
Leprosy	50
Diarrheal Diseases	50
Ascariasis	40
Schistosomiasis	60
Guinea worm	100
Sleeping sickness	80
Onchocerciasis	20?
Yellow Fever	20?

(after Bradley in  
Feachem, 1977)

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Source: Tillmann, 35.

The second suggestion is for the responsible bodies to formulate policies and by laws which are relevant and practical within their context. Such laws "should lay down criteria for environmental protection measures at the planning stage [of a] project. Every project with possible environment impact should be scrutinized according to the law." <sup>1</sup> To the effect of water legislation, one problem is that until recently, more than forty countries had not developed policies of their own. They have continued to adhere to colonial water codes which were

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Mmbaga

actually developed for European Countries which are distinctly different in climate from most African Countries which are in regions such as arid, semi-arid, tropical, winter rainfall, etc. According to this observation, it is therefore said that, "It is subsequently necessary for the newly independent countries to evolve their own doctrines of water legislation more suitable to the local conditions."<sup>1</sup>

Together with the formation of the policies, stringency is also necessary to see to it that they are enforced and adhered to accordingly.

#### Deforestation

Wood products are of countless use within the community of living creatures as a whole. Trees and other vegetation provide quite substantial basic requirements of man such as food, shelter, fuel, furniture etc. Any threat against these ecosystems is actually a threat against life in its totality. It is known however, that the rate of deforestation is so high that action has to be taken immediately.

According to 1980 data some 11 million hectares of natural forest are cleared each year, more than 10 times the rate of reforestation[sic]. The direct causes of deforestation are to make room for shifting cultivation by landless farmers, to provide land for what is expected to be permanent agriculture, including cattle ranching, and to provide fuel and timber.<sup>2</sup>

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<sup>1</sup> Food and Agriculture Organization, 1979, 57.

<sup>2</sup> UNEP, Wide-System, 35.

The report continues to warn that:

Unless management of tropical forest and woodland ecosystems is significantly improved, by the year 2000 more than half the population of the developing world will be short of fuel wood or lack it altogether; many indigenous peoples will have been displaced, their culture lost, some 10-20 per cent of the world's plant and animal species will have become extinct; many more watersheds will be severely degraded and the potential for continuing to harvest valuable timber will have disappeared.<sup>1</sup>

Even though this data represents the conditions of forests and woodlands in a global perspective, Africa's situation is equally alarming.

Another observer put it this way:

In 'Black African countries (ie all sub-Sahara states minus South Africa), an estimated six million hectares of forest were destroyed from the beginning of decolonization at the end of the fifties up until the end of the seventies. By 1983, forest loss had amounted to 11m hectares. Today even conservative estimates for forest loss point at a figure of 30m hectares, over 10 per cent of the forest surface that existed 30 years ago.<sup>2</sup>

According to this report Africa had 188m hectares in 1978. By the year 2000 there will be 150m hectares thus 20 per cent loss of forest.

Ethiopia which is said to have been "a heavily forested country with originally 40% of the area under high forest, is left now with less than 4% of closed forest cover." <sup>3</sup> The destruction of the forest has been caused by shifting cultivation and grazing practices. As a result of this, it

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<sup>1</sup> UNEP, System-wide, 35.

<sup>2</sup> South (Dec 1990/Jan 1991):74.

<sup>3</sup> Food and Agriculture Organization, Tropical Forest Resources Assessment Project: Forest Resources of Tropical Africa

has been estimated that 52% of the country's area loses annually an estimated amount more than 2,000 tons of topsoil<sup>1</sup> per km. A report from Ivory Coast maintains that:

Around the year 1900, there were 15.6m hectares of tropical forest. Half a century later, there were only 3.2 hectares left. Hundreds of thousands of hectares, have been cut down every year especially in the early eighties. This combined with a plague of wood fires in 1983, have laid Ivory coast practically bare.<sup>2</sup>

As a result of this serious deforestation, "rainfall has dropped 25 percent over the last twenty years"

The same problem is said of Cameroon which loses between two and three percent of its woodland every year and less than half of this loss is being regenerated.<sup>3</sup>

Somalia is said to be losing 10,000 ha of woodland Savannas and 40 ha of scrub formations a year due to shifting cultivation and over grazing.<sup>4</sup> The upshot of this loss of natural vegetation is desertification which is speedily encroaching on that country. According to Child, Somalia ranks second after Sudan among the countries that are leading in Pastoralism in Africa. Somalia is followed by Chad, Ethiopia, Kenya, Mali and Mauritania—each of which possesses one million or more Pastoralists.<sup>5</sup> Africa has 55 per cent

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1  
FAO, Tropical Forest Resources

2  
South

3  
Ibid

4  
FAO, 465.

5  
Dennise R. Child, and others, Arid and Semi-Arid land: Sustainable Use and Management in Developing Countries (Morrilton, Arkansas: Winrock International 1984), 51.

of the world pastoralists.<sup>1</sup>

While Pratt argues that "overgrazing may often be the direct result of human biological needs."<sup>2</sup> I think Child is more right in regard to the current overgrazing in Africa which he says is a product of economic specialization which influenced the traditional pastoralism, for example, "pastoralism of the Fulani, Tuareg, Baggara, Bedouin, or Somali ... is traditionally highly market-oriented."<sup>3</sup> This traditional commercial pastoralism has been boosted by the Western economic system which is also highly market-oriented.

High rate of deforestation in sub-Sahara Africa in the post-colonial days is a result of the influence of the European economic system. These young nations were forced to "sacrifice the environment on the altar of economic growth"<sup>4</sup> in order to survive. It is obvious that these nations followed the example of their "masters" in depleting the forest. For instance, Ivory Coast's forest was reduced from 15.6m hectares around the year 1900 to 3.2m hectares in the middle of the century. The colonial rule which was in power during that time in that country was responsible for the deforestation.

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<sup>1</sup> Child, 44.

<sup>2</sup> D.J. Pratt and M.D. Gwynne eds., Rangeland Management and Ecology in East Africa (London: Hodder and Stoghton, 1977), 38.

<sup>3</sup> Child, 46.

<sup>4</sup> Susan H. Greensberg, "Grass-root Greens" Newsweek (April 22, 1991): 38.

Deforestation in Ghana according to Robert D. Mann, a British tropical agriculturist, is attributed to the high export of wood of which he said rose from 42,450 cubic metres in 1939 to 1,471,600 cubic metres by 1987.<sup>1</sup> The independent Ghana inherited the export of wood as one of the income-generating activities. The increase of the volume of export can only be attributed to the market and demand factors and not otherwise.

### Land degeneration

According to the recent research, there are four major causes of land degeneration.<sup>2</sup>

The first one is excessive irrigation of badly-drained land in hot climates. This results in salinization of the soils as the water pumped over the fields evaporates and leaves dissolved salts on the soil hence the soil fertility is reduced.

The second cause of soil degradation is through biological and physical damage. This happens when the soils are deprived of essential fertilizers, the soils' naturally available nutrients cannot sustain intensive crop growth and become infertile. Repeated use of heavy equipment on soil can also damage the soil.

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New Africa, May 1990, 37.

2

All four causes of land degeneration given above are derived from an article by David S. Lazarus "Save our Soils"Our Planet Volume 2, number 4 (1990): 10 - 11.

Wind erosion is also another major cause of soil degeneration. This happens mainly when soil is left bare of vegetation and mostly in arid and semi-arid areas where land is overgrazed and overstocked. This kind of erosion accounts for 22.4 percent of soil erosion in Africa north of the equator.

The fourth and most common form of soil erosion is water erosion. This kind of erosion happens when sloping and steep lands are left bare, exposed to the effects of heavy rain and also when they are unwisely farmed.

The problem of soil degeneration has been known to be "The most serious environmental and economic problem facing Africa today." <sup>1</sup> Nigeria's annual soil loss is estimated at 30 million tonnes of which 50 per cent occurs in the Eastern states". The report continues to maintain that,

In the Agulu-Namka region (Anambra State) an area of about 1,100km<sup>2</sup> is affected by gully erosion-a process which may have started as far back as 1850 at the rate of an estimated 20-50m per year. In 1mo state some gullies measure 3km long, 2km wide and 120m deep. The Amucha gully for example has grown from 6m deep in 1970 to 48m deep now[1990].<sup>2</sup>

In Southern Africa, "More than 20 per cent of communal land is already very seriously eroded and only 60 per cent is still considered to be good (in Zimbabwe)" <sup>3</sup>,

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<sup>1</sup> Simon Muchiru, "African soils: A Threatened Resource" A Paper Presented to the International Conference on Save Our Soils 6th-8th October, 1987 Amsterdam, Netherlands, 1. photocopied.

<sup>2</sup> Th.M. Boers, "Controlling Erosion in South-Eastern Nigeria" Development and Co-operation (4/90): 24.

<sup>3</sup> Development and Cooperation (4/90): 26.

according to The International Institute for Applied Systems Analysis (IIASA) assessment. Another survey done in Zambia on 165,000 hectares of farmland shows that 36 percent has been eroded either by gullies or other forms of erosion.<sup>1</sup> Tunisia loses about 600 tons per square kilometre each year from the central region bordering the Sahara.<sup>2</sup>

Ethiopia, Sudan and Northern Kenya have been seriously affected by biological soil degeneration which has affected the fertility of the soil and resulted in degradation of vegetation.<sup>3</sup>

#### Desertification

It is estimated that " In the Sahel, each year 27 million hectares of agriculture-land become barren, affecting 850 million people directly"<sup>4</sup> Due to deforestation and overgrazing the problem of desertification has become a reality in many African countries. The table next page adopted by Muchiru from Mahhut 1984 shows how desertification has affected the Sahel. The Sahel stretch 4000 kilometres across Africa from Cape Verde to the Red Sea.

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1  
Development and Cooperation (4/90) : 26.

2  
Muchiru, 5.

3  
Ibid

4  
Ibid, 5.



Table 3, Sahelian Desertification

Type of Land use	Area affected (in million hectares)	% of type affected	Population Affected (million)
Rangeland	342	90	7.0
Rainfed Farming	72	80	20.0
Irrigated	0.5	30	0.5

Source: Muchiru, 5

A report from Sudan reads;

Desertification is fast on the move in Sudan, causing declining food productivity, declining wood and gum production, sand movement and dunes, and a deterioration in habitat for human and animals.<sup>1</sup>

Desertification in Ethiopia is reported as extending" from the lowland regions... mainly in the eastern parts of the country to the highlands."<sup>2</sup>

As the result of the desertification, Dr Mostafa Tolbat said that "The productivity of the Savannah, where most of Africa's population lives, has dropped by 35 per cent."<sup>3</sup> This decrease in productivity leads to more serious problems viz. starvation, malnutrition and even death of both human-beings and animals.

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<sup>1</sup> Janet H. Bruhjell, "Country Profile: The Democratic Republic of Sudan" Mission Brief for Mr. M. Ferrari, Director Regional office for Africa (UNEP 1985): 5.

<sup>2</sup> \_\_\_\_\_ "Country Profile: Socialist Ethiopia" (UNEP 1985), 5.

<sup>3</sup> Mostafa K. Tolba, "Global Environmental Justice" Information Green Paper No. 1 (Nairobi 1989), 7.

It is generally agreed that man is the primary cause of almost all the environmental problems that are known to exist today. Dr. Mostafa aptly put it that "...the main reason for today's mass extinction is all too clear. Human action is the prime cause of a global biological diversity killing ground."<sup>1</sup> (Emphasis is mine).

In the Stockholm Declaration it is stated that:

We see around us growing evidence of man-made harm in many regions of the earth: dangerous levels of pollution in water, air, earth and living beings; major and undesirable disturbances to the ecological balance of the biosphere; destruction and depletion of irreplaceable resources, and gross deficiencies, harmful to the physical, mental and social health of man, in the man-made environment.<sup>2</sup>

Some of the human actions which have led to the present ecological crisis are actions which could be attributed to ignorance or biological requirements which had to be met such as cutting too many trees for fuel, drilling of boreholes to provide water in arid areas etc. Nevertheless, these actions cannot be justified in comparison to the damage that has been done. Some actions are the product of man's development as rightly maintained in the following statement.

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<sup>1</sup>  
Mostafa Tolba, Green Paper No. 1,4.

<sup>2</sup>  
UNEP, Stockholm Declaration: Environmental Law Guidelines and Principles (Nairobi, 1972), 1.

As the power of people has been increased by the awesome development of technology and as their numbers have grown, the human species has become more than ever the single most significant agent of environmental change.<sup>1</sup>

### Moltmann's Theology Of Creation and The Environmental Crisis In Africa

Moltmann's argument that man is the cause of the environmental crisis needs no debate since no normal human being would have enough reasons and facts to repudiate it.

Moltmann, however, contends that Christian theology of the Western churches has some contribution to the present environmental crisis. Is this true of the environmental crisis in Africa?

In all stages of life-style, man's interaction with environment has always had some negative effects. For instance as a hunter/food-gatherer, "Intensive hunting especially the communal hunting, often necessary, would have tended to drive wild animals out of an area."<sup>2</sup> Also as pastoralists, among other destructive practices was the use of fire to control the spread of tick and diseases while the regrowth provided succulent grazing.<sup>3</sup> Slash and burn

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1  
UNEP, System-Wide, 3.

2  
Pratt, 34.

3  
Ibid, 35.

practice evolved with the agricultural development in the traditional society which also had some negative effects on the ecosystem involved. Like Pratt we can say,

Within its own territory each social group affects the ecosystem, exploiting its potential for immediate gain but with little understanding, bound nevertheless by the same ecological conditions as affect on other animal species.<sup>1</sup>

The influence of the Western culture on African Society is quite obvious and significant. It is multi-dimensional in nature, affecting all areas of life viz. social, economic, religious etc. Large-scale environmental problems in Africa today have their roots in the Western economic system of mass-production. History tells us that;

By the seventeenth century, Europeans had developed an increasing powerful and growing ability to modify large areas of the environment. As explorers and colonialists, they concentrated on transplanting their own cultures to the lands they visited and settled and showed little interest in learning from the indigenous peoples - who had in many places developed sophisticated methods of managing their own environment. Soil erosion and the destruction of natural vegetation and wildlife accompanied the spread of European colonization in the Americas, and later in Asia, Australia, and Africa.<sup>2</sup>

The struggle for clean environment started in Europe even much earlier before the Industrial Revolution of the eighteenth century. For instance in 1273 the first smoke abatement law was passed in England.<sup>3</sup> By the nineteenth century following the Industrial Revolution, people like

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<sup>1</sup>  
Pratt, 34.

<sup>2</sup>  
UNEP, The Public and Environment: The State of the Environment 1988. (Nairobi 1988), 3-4.

<sup>3</sup>  
Ibid

Alexander Von Humboldt had started to react vehemently against "deforestation, clearing of plains and the cultivation of indigo" which he claimed to be the "cause of the gradual decrease of Lake Valencia in Venezuela." <sup>1</sup>

Some historians and sociologists attribute the present economic system to the sixteenth Century Christian teachings and lifestyle. One American sociologist put it that:

The duty of the believers was to abstain from pleasure and to work for the glory of God. But because of their great psychological anxiety about their ultimate destiny the Calvinists looked for "signs" that they were among the elect and <sup>2</sup> were pleased to take worldly success as just a sign.

<sup>3</sup>  
This argument is supported by Linder who pointed out that:

1. Early protestants stressed that a man's Christian commitment should have a practical effects on his social and economic behaviour.
2. Historically, protestants emphasized the dignity of a man's vocation as a calling of God.

The emphasis on work apparently did not take into account the conservation of the environment. Much emphasis was laid on generating more wealth and power hence encouraging the exploitation of nature.

The wholesale initial approval of science by Puritants in the sixteenth and seventeenth centuries, and the

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<sup>1</sup>  
UNEP, State of Environment 1988, 4.

<sup>2</sup>  
Ian Robertson, Sociology (New York: Worth Publications, 1977), 45.

<sup>3</sup>  
Clark, F.H. Henry, Baker's Dictionary of Christian Ethics (Grand Rapids: Baker book house 1973), s.v. "Protestant Ethics" by Robert O. Linder.

withdrawal of theology from science in order to maintain a peaceful co-existence on the basis of mutual irrelevance in the later centuries have some contribution to the present environmental crisis.

With these three points i.e. Too much emphasis on generating wealth with less or no emphasis on conservation of God's creation, the initial wholesale support of science without considering the side effects and the later total withdrawal from science, make Moltmann's argument that Christianity has some contribution to the present environmental problems, more convincing and acceptable. It is true as one writer pointed out that "The church's inability to affirm the world as God's creation, to affirm it generously and whole-heartedly, has brought us to this point."<sup>1</sup>

*The coming of Christianity in Africa*, as brought by Western Missionaries not only introduced a new religion but also a new culture and economic system. African cultural socio-economic institutions and practices were seen as backward and inadequate. The gospel was preached not only to deliver Africans from spiritual darkness but also to deliver them from their cultural inheritance.

In the process of the transformation from one culture to the other (supposedly inferior to superior), even the

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Jeannette Angell - Torosian, "Preserving God's Holy Grounds" Sojourners (Feb-Mar, 1991): 47.

African religious taboos which were meant to protect some species of animals [and even of birds] were discarded. Religious sanctions that prevented the destruction of some forest groves and plants disappeared. Some traditional practices to prevent soil erosion and to maintain its fertility were forgotten.<sup>1</sup> This is what Moltmann means when he said, "Nature is stripped of her divinity. The world is turned into passive matter."<sup>2</sup>

In African belief, there is a strong connection between the internal faith and the external objects as Mugambi and Kirima put it that:

Africans do not worship physical objects: through them they realize the symbolic manifestation of their inward experience of God. Thus the inward and the non-material experience is directly related to the outward and material universe, and the two outward and material universe, and the two are inseparable.<sup>3</sup>

Christian teaching as it has been in Africa, lacks the emphasis on God's relation to the material universe. Salvation has been so personalized that its effect can only be realized within the human society. But if man is to be saved from sin which made the earth to be cursed, is it not true that his salvation should also make the earth to be blessed?

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1  
UNEP, The Public and Environment, 3.

2  
Moltmann, 1985, 13.

3  
Jesse Mugambi and Nicodemus Kirima, The African Religious Heritage (Nairobi: Oxford University Press, 1976), 13.

Or, will the church in Africa continue to venerate crosses and chalices and at the same time poison rivers, pollute the air,<sup>1</sup> and destroy vegetation?

The gap between the personal spiritual life and material universe has affected man's relation to his environment. It is true that African Christians "have by and large misplaced their sense of what is holy."<sup>2</sup> The economic systems that are found in Africa today whether it be free economy or controlled economy are all built on this distorted relationship which has consequently led to the environmental crisis which we are experiencing in Africa today.

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1

Angell-Torosian, 47.

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Ibid



## CHAPTER FOUR

### THE CHURCH AND THE ENVIRONMENTAL CRISIS IN AFRICA

#### Current Church Involvement

The word "church" as used in this topic refers to a body of people who call themselves Christians at all levels of existence as a group, whether as local body or any higher bodies representing a group or groups of Christians. This definition includes even parachurch organizations which work alongside or through the Church to express or enable the Church to express the love of Christ as they respond to the felt needs of human beings.

Understood in this context, the Church has been involved in environmental issues since the emergence of the Missionary enterprise in the continent. The first missionaries encountered environmental change. They had to find ways and means of survival in such a new environment which actually seemed to be a threat to their lives. David Livingstone almost lost his left arm after being attacked by a lion.<sup>1</sup> Henry Morton Stanley is quoted as saying.

The greatest danger ... an ever recurring one, is that which we have to encounter each time the wild howling cannibal aborigines observe us. Indeed the sense of security is short-lived and our pleasure evanescent; but the sense of danger is always present and pervades our mind whether in our sleeping or in our walking hours.<sup>2</sup>

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<sup>1</sup>J.H.Worcester, Jr, David Livingstone: First to cross Africa with the Gospel (Chicago: Moody Press n.d),20.

<sup>2</sup>Stephen Neill, A History of Christian Missions, rev. ed. (Harmondsworth, England: Penguin Books, 1964), 320.

As a response to the environmental challenges, Missionaries began to include medical facilities in their field packages. As the result of this practice, medical services became part and parcel of the evangelization endeavours on the continent. Kane has rightly put it that "In the bush country missionaries opened clinics and dispensaries. Often they did not bother with a building. Under the open sky they pulled teeth, set bones, lanced boils, washed wounds, and dispensed pills."<sup>1</sup> Today, the struggle against the environmental challenges has gone beyond hospital walls to the digging of water-wells, re afforestation etc. Old mission stations in the country-side, for example, in my home country, were known to be bushy homes. Those stations are becoming fewer and fewer as missionaries chose to live in the urban settings which have increased in the country-side where most of the services required both for personal life and for the work are available. Environmental challenges have been dealt with through what has been referred to as "Development Programmes." "Environmental Crisis" is a relatively new topic in Church circles. Most of the projects if not all which are related to environment are implemented as Development Projects sometimes with little or no awareness of the environmental elements of the project. Some environmental aspects could also be found in departments of Medical Services or Social Services. For instance, the Kenya Catholic Secretariat has

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<sup>1</sup>J. Herbert Kane, A Concise History of the Christian World Mission, rev. ed. (Grand Rapids: Baker Book House, 1982), 168 .

"Development and Social Services" as one department, and "Medical Department" as another separate department. These two departments handle most of the environmental issues.<sup>1</sup>

The Church in Africa has responded to environmental issues accordingly. A number of development programmes are carried out in the continent in terms of material supplies and/or in creating an awareness. Some of the programmes are:

All Africa conference of Churches (AACC)

One of the recent activities by AACC in relation to the environmental crisis in Africa was the exchange visit to Ghana. Six church Development workers from Burundi, Benin, Ethiopia, Tanzania, Zimbabwe and Kenya, participated in the visit. The goal was "to learn about the Agroforestry and Natural Resource Conservation activities of the Christian Council of Ghana".<sup>2</sup> This kind of exposure does not only educate but also challenges one to be more careful on how to handle environmental issues and substances which cause the problem.

The National Council of Churches of Kenya, under the Rural Development Programme, has sponsored a number of projects including the provision of piped water, roof catchment tanks, wells, spring covers and sub-surface dams. These

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<sup>1</sup>Kenya Catholic Secretariat, "The Catholic Church in Kenya serving you" (1990).

<sup>2</sup>Mosi Kisare, "The Church and the Environmental Crisis in Africa". Interview by: the Writer, May 28, 1991.

projects include Sampu Water Project in Masailand. It covers a total length of 72 kms. In Machakos, Kitui and Laikipia, a total of 600 cement jars with a capacity of 500 gallons each and about 150 wells and subsurface dams have been completed. There are 35 tree nurseries in Solai, Laikipia, Ukambani, Embu, Marsabit, Turkana, Isiolo, Kajiado and Rhamu in Mandera which are producing thousands of different types of seedlings including fruit trees seedlings.<sup>1</sup>

Association of Evangelicals of Africa and Madagascar.

This body responds to contemporary social issues through its Department on Ethics, Society and Development (ESD). This department functions through Six Programmes i.e. Networking, Development education, Church and society, Theological Institutes, Resource center and Publications. Through these programmes the department interacts with society. Salt and light series 1 and 2 are some of the best publications concerning development. The AEAM's approach to environmental problems is to work through the individuals who become instruments for structural change. This transformation takes place when the individuals "inward and outward environment" is brought under the Lordship of Christ.<sup>2</sup> National bodies and local churches are encouraged through the seminars and consultations to respond to the felt needs of their people as

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<sup>1</sup>National Council of Churches of Kenya "What it is...What it does..." September 1989.

<sup>2</sup>Emmanuel S.A. Ayee and M.L. Otto de Bruijne, eds. Partnership in Development (Nairobi: ESD, 1987), 7.

they see fit and possible. One example of this kind of project run by National fellowship and/or local church is the Sonadi Project of the African Inland Church of Loglogo on the Isiolo Marsabit road, 40 km south of Marsabit. Along with the provision of water, the project is also an attempt to help the community increase their food production.<sup>1</sup>

In the northern part of Tanzania, in Kwimba district of Mwanza region, African Evangelistic Enterprise is involved in a tree planting scheme which over a five year period will see 1.74 million trees in the ground. Financial contribution from Australia of about half a million US dollars will enable about 40,000 inhabitants of twenty villages to plant a total of 50 hectares in five years.<sup>2</sup>

Samaritan Purse in conjunction with World Gospel missionary Rev. Gene Lewton are involved in Agroforestry Projects in Kenya, Ethiopia, Zaire and Tanzania. In Ethiopia they work with Kale Haywit church. In Zaire, Nyakundi Hospital is their partner. The hospital is run by six different denominations. In Tanzania, they have a greenhouse at Tabora where World Gospel Mission work together with the African Gospel Church as partners in the programme.

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<sup>1</sup>Philip Bair, "Water to the Nomads" Evangelical Ministries Vol 3 No 1.(Jan - Apr 1984): 27-28.

<sup>2</sup>Brian Polkinghorne "AEE Plant Trees in Northern Tanzania" African Voice No 1, 1990.

The plans to extend this project to Madagascar and Mozambique are underway.<sup>1</sup>

Nakuru Baptist Church is another example of a local church which is involved in a project with environmental impact. The project is sponsored by KENGO and Forestry Department. The project maintains a nursery where they grow a variety of seedlings of different kinds of trees and flowers. One unique characteristic of this project is that it is run by church women.<sup>2</sup>

Rev. Harold Mwang'ombe of the Department of Christian Outreach and Rural Development Department of the Nation Council of Churches of Kenya observed that most of the independent churches in the Western Kenya Province have water project as their top-most priority. He cited the African Church of the Holy Spirit in Kakamega district and the National Independent Church of Africa as the examples of the Independent Churches which have water projects as their number one priority.<sup>3</sup>

Shortcomings of the current Church Development Activities.

This study has shown us that the Church is actively involved in activities which are supposedly meant to solve environmental problems in Africa. It is noted, however, that there are a few pitfalls which need to be pointed out to make

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<sup>1</sup>Gene Lewton, "The Church and Environment" Interview by writer 24/5/91.

<sup>2</sup>Noah Wangai, "The Church and Environment" Interview by writer 16/5/91.

<sup>3</sup>Harold Mwang'ombe, Interview by writer, 16/5/91.

the Church's undertakings more effective in solving the environmental problems in the continent. Some of the shortcomings which have been noted are:

#### Anthropocentric Philosophy of Development

This philosophy has some connection with the modern theological anthropology which has made man the centre of creation as opposed to the Biblical view in which man is the crown of creation. Being the centre of creation means everything has to be seen as directly related to him and for his well-being. According to Moltmann, this kind of world view wants to understand a human being by asking questions such as "What distinguishes human beings from animals?" instead of "What links human beings with animals and all other creation?"<sup>1</sup>

Dr. Tukunboh Adeyemo noticed this weakness among the Evangelicals. In referring to a description of Development which he found in the information booklet on Partnership, World Vision - Africa Office he said:

The second limitation observed in the WV1-description is that it seems to restrict development to man (or people) exclusively. This is generally the case in many works on development. The Bible relates development primarily to MAN but not exclusively so. The created order is included in the Biblical concept of development.<sup>2</sup>

One of the major perils of the exclusive man-centred development approach is that often it does not consider the side-effects which do not have any direct or immediate repercussions on human life. An example of how

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<sup>1</sup>Moltman, 1985, 185.

<sup>2</sup>Ayee and Otto de Bruijne, 5

Anthropocentric Philosophy of Development can be of great danger to the society is the Cameroon Baptist Convention's project of constructing a rest house, a volley ball court and other recreational facilities in a two hectare area of forest land within an area which is supposed to be protected within the Oku Mountain Forest.<sup>1</sup> This project did not consider the environmental dimension. As the result of that the Cameroon Baptist Convention had to sign an agreement with the Forestry Department promising not to continue with further "developments" on the land and to observe all the conservation aspects concerning the protection of the forest.<sup>2</sup>

Provision of water for domestic use in arid and semi-arid areas is another activity which has caused a number of cases of environmental degradation. This happens because the main thrust in such project is to rescue human beings. What the project means to the same human beings physical environment remains nobody's business. This is one of the weaknesses which has even led the Church to contribute to the degeneration of environment.

The Prompting Factors.

One question that one might want to ask is, Why do churches or a church get involved in development work? There

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<sup>1</sup>Heather L. Macleod , 25.

<sup>2</sup>Ibid, 26.



are a number of factors that have been identified. Some are apparent while others are latent. Some of the apparent ones include such factors as socioeconomic pressures, sociopolitical dynamics and sometimes a true compassion.

The factor that I considered latent is what I would call the sponsors' survival struggle. The established sponsoring bodies (organizations) have to be maintained and kept functional. To prove that they are active, they must show how much involved they are. Their involvement is often measured in terms of quantity of human beings, nations and even assets. In such situations where these bodies are in the process of extending their wings in order to expand the pockets, financial incentives are used to attract attention and eventually to recruit a new territory of "beneficiaries". Delegates of the African Consultation on Diakonia which took place in Nairobi in April 1989 observed that "... diakonia in most of the churches is mainly project oriented, underlining the fact that available funds have determined the shape of a given project rather than the concrete needs of the people".<sup>1</sup> Sponsors' survival struggle works well in situations where recipients have their own needs which do not necessarily represent the needs of the people they represent. This practice of creating projects in order to tap the

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<sup>1</sup>Mosi Kisare, Meeting the Future :A Guide to. Rethinking African Churches Involvement in Development. (Nairobi: AACC, Research and Development Consultancy Service, 1991), 15.

available resources rather than responding to the real needs of the people is both unbiblical and unethical. Jesus' response to the needs of the people was always preceded by the identification of the needs by the needy people themselves, their representatives or even by Christ himself (Mt. 8:1-3 17:14-8, Mk.6:35-44, Jn. 5:1-9). The healing of the lame man in Acts 3:1-7 is a good example of how the Church should respond to the real needs of the people rather than just giving away what is available even when what is available is irrelevant. When such irrelevant assistance is given in material form, it might end up being a "white elephant" with some environmental implications in the society. This practice is also unethical because it undermines the integrity of the Church in terms of her true commitment to the service of man.

#### Inadequate Female Participation.

In Africa 60-80% of all agricultural work is done by women.<sup>1</sup> This implies that women contribute to a large degree all the environmental problems which are related to agricultural activities. Trying to solve these problems without involving women more significantly would only mean waste of time and resources. It is also said that "in developing countries there are more rural than urban women."<sup>2</sup>

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<sup>1</sup>Marg Durnin, "Credit where Credit is Due" Earthkeeping Vol 6 No 2 (Aug. 1990): 22.

<sup>2</sup>Ibid, 9.

According to the International Labour Organisation, "roughly two-thirds of the Third World women workers are engaged in agriculture."<sup>1</sup>

In the area of forestry, observation on the use of firewood has shown that "90 per cent of the energy is lost" through the traditional method of cooking on a fire between three stones.<sup>2</sup> Assuming that cooking in Africa is largely done by women their co-operation in the solution of this problem is essential.

According to the observation done by Mosi Kisare of AACC, the participation of women in development is still very low. This is indicated by the participation in a training programme viz. "Media Training for Church Development Workers" held in Nairobi in September 1990. According to Mr. Kisare.

In some cases where the participation of women was specifically requested, men were sent ... and where the choice was left open 83% of those sent were male. This is reflected in the following table.<sup>3</sup>

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<sup>1</sup>Durnin, 21.

<sup>2</sup>Charles Van Der Lecuw " Swapping Trees for Firewood" South (Dec 1990/ Jan 1991):75.

<sup>3</sup>Mosi Kisare, 1991, 35.

Table 4, Number of Participants by Gender.

country	No of Participants	Gender	Requested	Church/Organ.
Angola	1	M	M	Igreja Evanglic de Angola
Ethipia	1	M	open	Mekane Yesus
The Gambia	1	M	F	Diocese of the Gambia
Ghana	1	M	M	Methodist church of Ghana
Kenya	2	F	F	NCKK
"		M	Open	Church of the Holy Spirit
Lesotho	1	M	Open	Evangelical Church
Malawi	1	M	M	Christian Council of Malawi
Nigeria	1	M	F	Women Education and Development Programme, Enugu
Tanzania	2	M	Open	Free Church of Africa
"		M	M	Diocese of Zanzibar and Tanga
Uganda	1	M	Open	Church of Uganda
Egypt	1	F	Open	Coptic Orthodox Church

Source: Mosi Kisare, 35.

The Church should neither entertain nor encourage low participation of women in matters of development and more so in the area of improving human environment. Doing so is being unbiblical since the injunction to subdue nature was given to both man and woman (Gen 1:27,28), and likewise the consequences of sin affected both man and woman (Gen. 3:1 ff) When God wanted to redeem the world, He chose to use a woman to channel His redemption to the world (Mt.1:18-25). In Jesus Christ therefore, "There is neither Jew nor Greek, there is neither bond nor free, there is neither male nor female: for ye are all one in Christ Jesus" (Gal 3:28). Women should be encouraged and given chance to participate fully on development issues and more so in trying to find solutions for the environmental crisis which we have in Africa today.

The Church's involvement in environmental issues was not a deliberate one. Any improvement in the environment which came out as a result of Church development projects can only be explained as by-products. According to Rev. Lewton of Africa Gospel church, Rev. H. Mwang'ombe of NCCK and Mr. Kisare of AACC, the church's awareness of environmental issues is still very low, especially at the grass-roots level.

The deliberate attempts to deal with the environmental problems in Africa have been made by Governments and Non-governmental organizations (NGOs). These bodies base their activities on sociol-political factors. Their main aim is to change the environment.

The problem with such programmes is that changing the

environment without changing the man who destroys the environment does not yield any long-lasting and quality results as desired. When I visited the UNEP headquarters at Gigiri in Nairobi during the time I was doing this research I was very pleased with the physical environment but I was also very disturbed by the pollution which was taking place in the corridors of these splendid buildings by way of cigarette smoke. Some of those who caused the pollution were the experts who were meant to protect the environment. This is to show that even education alone is not enough to help people to change their environment for the general good of the whole creation. There is a dimension of human development which can bring about the true "Sustainable Development" to which the Church can give -- the spiritual dimension.

RECOMMENDATIONS:

Since the churches are already involved in development work, what they need to know is how they can do what is now referred to as "Sustainable Development". This is the kind of development which takes into account the well-being of the physical environment. These following recommendations are meant to help the Church to create awareness among her members concerning environmental issues and also to enable the Church itself to implement her development programmes without causing any further problems.

A need for sound Biblical Theology on Conservation.

There is a need to develop a sound Biblical theology of Conservation. This theology should address issues such as the relationship between God man and other creatures from an African perspective.

Furthermore, the Church's teaching of stewardship needs to be given a wider scope to include conservation of creation as opposed to the present emphasis which is only limited to "giving." Genesis 1:28 should be read in conjunction with Genesis 2:15. Both passages contain injunctions which need to be observed, thus "to subdue" the earth and "to dress and keep" it respectively.

The Church in Africa needs to develop a more holistic theology of Salvation which will be able to bridge the gap between personal spiritual life and the material world. This follows the belief that there is a connection between the two

aforsaid in both African world-view and the Biblical world-view of creation.

In the process of developing such a theology, the Church needs to be guarded against the dangers of "syncretism by assimilation"<sup>1</sup> and Pantheism which could easily find their way in and corrupt Christian doctrine.

#### Christian Education curricula.

There is a need to incorporate conservation/environmental issues in the Christian education curricula at all levels of Christian Education, from Sunday School to the higher learning institutions. There is evidence that some theological schools in the continent have in their curriculums a course or courses on development. A school like St. Paul's Theological College in Limuru Kenya has had a course on Social Development since 1930. The Reformed Theological College of Nigeria has emphasized social responsibility since the time it was founded in 1972. The Evangelical Bible Seminary of Southern Africa, at Pietermaritzburg, an interdenominational college, offers three units of credit for a short course, Evangelicals and Social Action.<sup>2</sup> Schools with such courses as Development or social responsibility should include environment/conservation as at least one of the topics if not as a full course.

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<sup>1</sup>"Syncretism by assimilation" is the form of Syncretism which incorporates elements of non-Christian religions, assuming there is no qualitative differences between the Christian faith and other faiths.

<sup>2</sup>Arthur P. Williamson, Images of Leadership (Monrovia, CA:MARC Publications 1987), 10-11.



For African students such courses should be made compulsory rather than being offered as electives. Schools which do not have such courses are encouraged to offer them.

Christian institutions are also encouraged to participate in activities involving environmental issues such as national tree-planting day, week of environment etc. Speakers from outside could be invited to give talks on issues that concern environment in order to acquaint the institutions or communities with the environmental issues within their localities.

The introduction of clubs such as Wild Life Clubs in Christian learning institutions should be encouraged.

Developers of Christian Learning Materials such as Sunday School materials and Bible study materials including Bible study guides should include environment and related subjects/topics in their works reflecting the African Christian theology of environment/conservation of creation:

Church and Para-church organizations which are involved in development work need to train their workers on environmental issues so as to enable them to embark on "Sustainable Development" which is free of environmental side-effects as they implement their projects' activities. More women should be encouraged and be given the opportunity to participate in such programmes.

### Local Churches Level.

Through Christian Education programmes, Church leaders should be able to gain some awareness on environmental issues which they can also share with their local congregations. Like the learning institutions, local churches/congregations are also encouraged to observe national tree-planting periods and participate in the activities. An example of Nakuru Baptist church was cited. This church, according to the report from their church secretary, organized a tree-planting campaign during the nation's tree planting week.

The campaign involved women and children from the church and the church tree-nursery project members who are not members of the church were also involved.<sup>1</sup> Sundays preceding or following such campaigns should include sermons, Biblical teachings or even liturgies concerning environment in the worship services and even in Sunday School or Bible study classes. In some African countries like Zimbabwe, Conservation Sunday has been held in churches there for many years.<sup>2</sup> Other countries where there is nothing like the Conservation Sunday are urged to develop some programme of the sort.

Apart from the big events, local churches should develop some activities in between the events to keep reminding the congregation of their environmental responsibility.

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<sup>1</sup> Interview, Noah Wangai.

<sup>2</sup> The New Road. Issue No 1 Winter 86/87.

Those other activities could involve different groups in the church at different times.

A group of local churches could also join together to sponsor some seminars, workshops and even conferences within their localities as a means of reaching more people and creating awareness in a larger group of people representing a bigger area. Some other activities which could be sponsored by a local church include communal tree planting and community - wide environmental campaign in which all the environmental hazards in the community would be identified and destroyed.

Church youth could be involved in such programmes.

Local churches should also be encouraged to utilize the Government and non-government extension services which could help them to improve their environment.

#### **National Church bodies:**

The National Church bodies represent the church at a higher level. They interact with higher authorities and policy makers. Their challenge and influence on matters concerning the welfare of the society have a greater impact. They influence not only the outside decision-makers but even the Church itself. These National Church bodies would be of great help in addressing the environmental issues in our society if they would stand firm and play their prophetic role in exposing the evil practices whether economic or social which affect our environment adversely. They need to condemn those practices and challenge the decision-makers concerning

those issues. They also need to challenge the local church bodies to be more sensitive to the issues which cause environmental degradation and take appropriate measures to deal with those environment-degrading issues within their areas.

The national church bodies need to challenge the authorities concerning the state of environment in the slums of African cities. They also need to find ways to help the slum-dwellers devise some appropriate ways of improving their environment in conjunction with the local churches which minister in those areas. Projects sponsored by these national church bodies should be planned very well to make sure that no environmental side-effects are realized as the result of those projects. This might necessitate those bodies to require approval from the local authorities to guarantee that no environmental side-effects would be anticipated under the normal implementation of the plans of those projects. The same condition should be applied by the Church and parachurch organizations which sponsor projects.

#### CONCLUSION.

This study has shown that Moltmann's Theology of Creation has been found relevant in dealing with the environmental issues in Africa. It challenges the church to pay attention to the environmental problems in Africa. It also exposes some weakness in the traditional Christian Theology which has contributed to the environmental crisis in our society today.

Moltmann, also highlights some theological issues such as the immanence of God, the eschatological implications in the present life and the relationship between man and his environment.

It has also been found that the church in Africa has been involved in activities which are related to environmental issues. This has been an indirect involvement through development projects. These activities have been undertaken sometimes with very minimal environmental awareness. As the result of such involvements without environmental awareness, some development projects have turned out to be an environmental problem or the cause of environmental hazards in the community.

The Church in Africa is determined to undertake development work to contribute to the improvement of the life standard of the African peoples. It is therefore necessary that their awareness on environmental issues is raised. This will help the church to undertake "Sustainable Development" which will be beneficial to both human beings and the whole Community of Creation.

Another finding is that there has been very little done in developing African Christian theology to address the environmental crisis in Africa today. A theology of Development Social Action which is there is not holistic in the sense that it is exclusively man-centred. It does not accommodate the whole creation. It is out of this theology

that we find the predominant anthropocentric philosophy of development.

The limitations and scope of this study does not allow the writer to develop the necessary theology. It is my prayer that someone will pick up this interest and develop a theology of creation which is more holistic and beneficial to the whole Community of Creation. It should be understood that this work is not in any way exhaustive. It is just an introduction to the formidable environmental issues in Africa from a Theological point of view.

# VEGETATION MAP OF AFRICA

F. WHITE

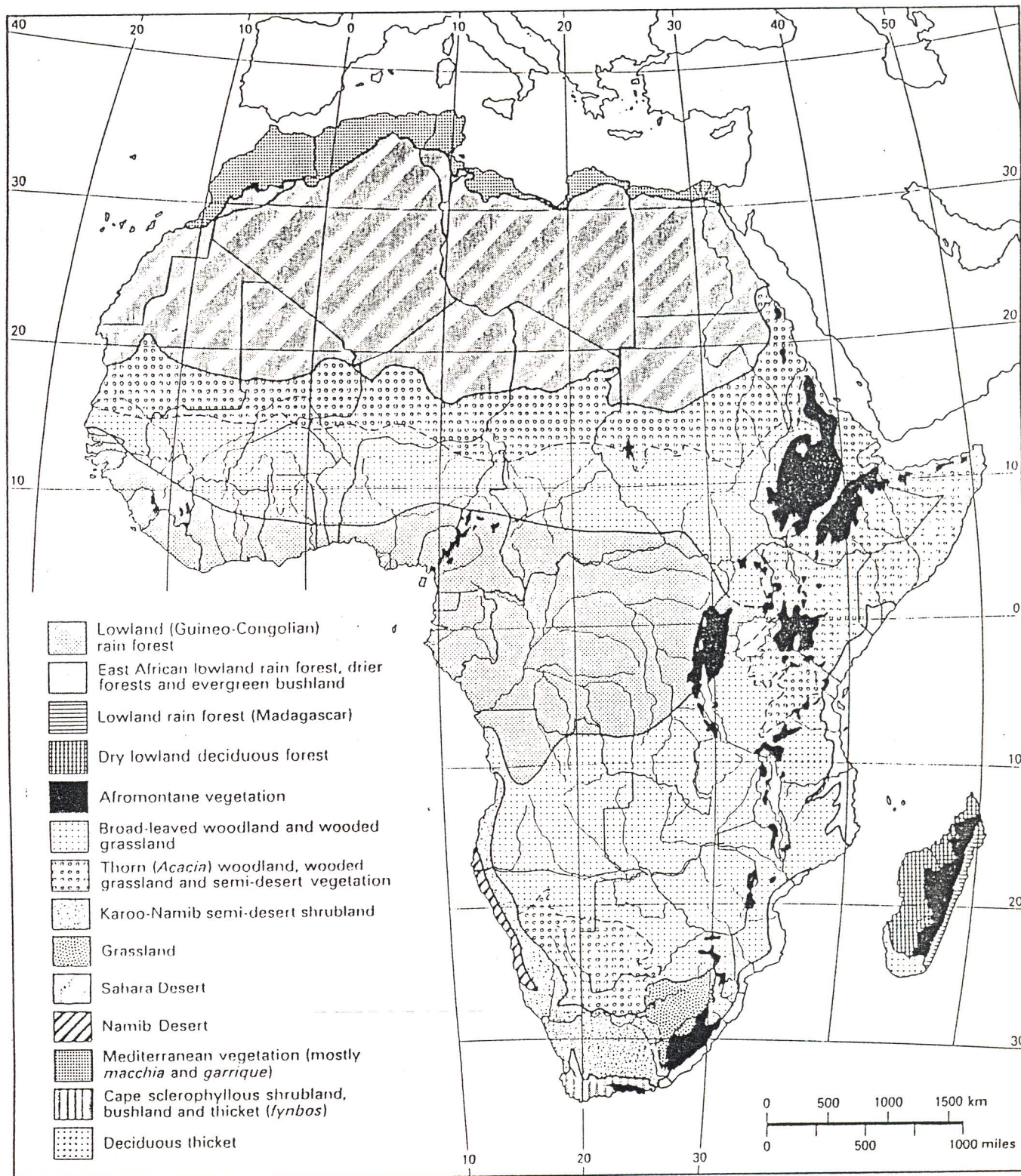


Table 5: Status of Moist Tropical Forests of Africa

Forest Type and Definition	Distribution	Importance	Threats and Problems	Management Tasks
<p>I. Dense, Humid Lowland Forests</p> <p>(i) <i>Guinean</i> Wet and moist evergreen to semi-deciduous forests. Three distinct layers of woody vegetation with minimal ground cover.</p>	—Occur in narrow belt along West Africa coast from Sierra Leone to southwestern Ghana, where average annual precipitation 2,000 mm.	<ul style="list-style-type: none"> <li>—Timber.</li> <li>—Subsistence and plantation agriculture.</li> <li>—Water catchment areas.</li> <li>—Gathered subsistence products.</li> <li>—High degree of plant and animal endemism.</li> </ul>	<ul style="list-style-type: none"> <li>—Highly degraded by shifting cultivation, especially in Sierra Leone and Liberia.</li> <li>—Degraded by over-exploitation for timber followed by ill-supervised agricultural occupation.</li> <li>—Pressure of human population.</li> <li>—Dislocations caused by development projects.</li> <li>—Uncontrolled exploitation of wildlife.</li> <li>—Policy, legislation, administrative structure and law enforcement regarding resource use weak or non-existent.</li> </ul>	<ul style="list-style-type: none"> <li>—Formulation of land-use policy and appropriate legislation.</li> <li>—Reduction of rates of forest exploitation and clearance for agriculture and human settlements.</li> <li>—Strengthening of organization and training of personnel with responsibility for managing and protecting forests.</li> <li>—Inventory and mapping of forests of this zone to deline sub-types, specify degrees of degradation and to formulate plans for regeneration, protection and conservation areas.</li> </ul>
<p>(ii) <i>Congolian</i> Similar to I (i), from which it is separated by the 200 km "Dahomey Gap" where rainfall is too little to support rain forest.</p>	—Southern Nigeria, Cameroon, Gabon, Congo, Central African Republic and Zaïre. (Divisible into "Biafran" and Cameroon-Congo areas, which are separated by the Cameroon Mountains).	<ul style="list-style-type: none"> <li>—Timber.</li> <li>—Agriculture.</li> <li>—Water Catchment.</li> <li>—Gathered subsistence products.</li> <li>—Great scientific value, holding clues to the theory of continental drift.</li> </ul>	<ul style="list-style-type: none"> <li>—Similar to I (i), especially in Nigeria and Cameroon, where monocultural reforestation programmes being implemented.</li> <li>—Large-scale agricultural developments and human settlements.</li> </ul>	<ul style="list-style-type: none"> <li>—Bio-ecological studies, inventory and mapping and monitoring in order to formulate management policies for these forests.</li> <li>—Urgent need to establish conservation and protection areas for representative samples of this forest type, particularly in Nigeria.</li> </ul>

Table 5: Status of Moist Tropical Forests of Africa (Continued)

Forest Type and Definition	Distribution	Importance	Threats and Problems	Management Tasks
(ii) (Cont'd.)	(See above)	(see above)	—Lack of adequate scientific knowledge precludes sound, ecologically based planning for resource development.	—Protection of existing conservation areas by improved planning, legislation, administration and law enforcement.
<p>(iii) <i>Guineo-Congolian Swamp and Evergreen Lowland Rain Forest</i> Characteristic of low-lying, permanent or seasonal swamp areas (or adjacent areas) where humidity is high and average annual precipitation is around 2,000 mm.</p>	—Large tracts in Central Congo Basin, Zaïre and large areas of Nigeria and Ivory Coast.	<ul style="list-style-type: none"> <li>—Timber (although swampiness and difficulty of access limits exploitation).</li> <li>—Copal.</li> <li>—Habitat of rare, freshwater biota.</li> <li>—Unique opportunity for scientific research because so little modified by man.</li> </ul>	<ul style="list-style-type: none"> <li>—Inadequate scientific information.</li> <li>—Relatively secure from human interference owing to unattractiveness for human settlement and access problems.</li> </ul>	<ul style="list-style-type: none"> <li>—Review and monitoring of existing conservation to check adequacy.</li> <li>—Creation of additional reserves and protected areas.</li> </ul>
<p>(iv) <i>East African Humid Lowland Forest</i> Coastal, riverine and swamp forests.</p>	—Lowland East Africa; closely associated with the coast or large river basins.	<ul style="list-style-type: none"> <li>—Timber.</li> <li>—Gathered wild products.</li> <li>—Wildlife.</li> </ul>	<ul style="list-style-type: none"> <li>—Human population pressure.</li> <li>—Destruction by subsistence cultivators and for large-scale commercial agricultural schemes.</li> <li>—Over-exploitation of timber.</li> <li>—Uncontrolled use of fire.</li> <li>—Poaching.</li> </ul>	<ul style="list-style-type: none"> <li>—Formulation of ecologically based land use policy and sound legislation.</li> <li>—Strengthening of institutions and upgrading of scientific and technical manpower charged with management of these forests.</li> <li>—Bio-ecological studies for improved management (particularly of the reserves and parks).</li> </ul>



Table 5: Status of Moist Tropical Forests of Africa (Continued)

Forest Type and Definition	Distribution	Importance	Threats and Problems	Management Tasks
(iv) (Cont'd.)	(See above)	(See above)	(See above)	—Improved protection and conservation measures and creation of reserved areas. All remaining pockets of coastal moist forest should be preserved.
(v) <i>Dense, Humid Forests of Southwest Indian Ocean Islands</i> Well-stratified forests with canopy trees reaching a height of 20-30 m.	—Eastern and northern Malagasy Republic from 0-1,300 m, Mascarene Islands, Seychelles and Comores.	—Timber and related forest products. —Rare wildlife. —Phytogeographically important, containing Indo-Pacific and African elements. —Scientifically important because of exceptionally high degree of endemism in both flora and fauna.	—Human population pressure. —Inadequate land-use planning, conservation policy and legislation and weak enforcement of existing legislation. —Government agricultural and reforestation systems utilizing fast-growing timber-producing trees. —Introduced biota. —Uncontrolled use of fire. —Poaching. —Encroachment on already protected areas.	—Control of human population. —Formulation of overall land use policies —Protection of representative and unique habitats from all human interference. —Public education for conservation and rational land use. —Scientific value of endemic biota requires: (a) monitoring of status of endangered species. (b) creating of biosphere reserves. (c) Special studies to complete bio-ecological knowledge. (d) heightened appreciation by governments of the scientific value of the endemic biota.

RENEWABLE NATURAL RESOURCES & THE ENVIRONMENT

Table 5: Status of Moist Tropical Forests of Africa (Continued)

Forest Type and Definition	Distribution	Importance	Threats and Problems	Management Tasks
2. Semi-Evergreen, Lowland Forests (i) <i>Guinean</i> Occurs north of humid forest largely as a consequence of diminished rainfall (1,600-2,000 mm/yr) with a 3-4 mo. dry season. Mixed forest, with humid and dry components and tracts of savanna grass. Forest layering less distinct than in adjacent humid formation.	—Immediately north of type I (i), from Sierra Leone to Togo.	—Highly productive forest type for timber. —Diverse biota.	—Destruction by cultivation, human settlement and development schemes (for palm oil, cocoa and coffee plantations). —Over-exploitation for timber. —Reforestation with species better favoured for timber. —Uncontrolled hunting and poaching.	—Formulation of better land use policies. —Strengthening of legislation and enforcement of conservation and protection laws. —Creation of additional conservation areas. —Public education.
(ii) <i>Congolian</i> Characteristics similar to type I (ii). Dominated in moister areas by Meliaceae-Leguminosae and in drier parts <i>Celtis-Triplochiton</i> association is common. Savanna grasses, encouraged by forest opening, occur.	—Extensive to north and south of Congolian Evergreen Lowland Forest.	—Highly productive forest type for timber. —Diverse biota.	—Destruction by cultivation, human settlement and development schemes (for palm oil, cocoa and coffee plantation). —Over-exploitation for timber. —Reforestation with species better favoured for timber. —Uncontrolled hunting and poaching.	—Formulation of better land use policies. —Strengthening of legislation and enforcement of conservation and protection laws. —Creation of additional conservation areas. —Public education. —Additional reserved areas are particularly necessary in Zaïre and Nigeria.

THE HUMID TROPICAL ZONE

Table 5: Status of Moist Tropical Forests of Africa (Continued)

Forest Type and Definition	Distribution	Importance	Threats and Problems	Management Tasks
<p>3. Moist Montane and Transition Rain Forests</p> <p>(i) <i>West African</i> Occurs at elevations beyond 1,000 m and includes gallery forests, closed forest similar to the lowland type, Guinea savanna, montane grasslands and sub-montane shrub savanna. Strongly influenced by the southwest monsoons.</p>	<p>—Associated with the mountains and high plateaux of West Africa: Simandou, Fouta Djallon, Loma, Tingi, Nimba, the Cameroon Mountains, the Bamenda Highlands, and the Bauchi Plateau.</p>	<p>—Timber. —Gathered forest products. —Watershed protection. —Wildlife habitat. —Limited recreational use. —Scientific and educational value, including endemics.</p>	<p>—Pressure of human population. —Increasing subsistence cultivation and accelerated soil erosion. —Uncontrolled fires. —Commercial agricultural developments (especially for citrus, mango, cola, coffee, cotton, peanuts). —Uncontrolled exploitation of timber. —Over-exploitation of wildlife. —Open-cast mining (especially Nimba and Mount Peko).</p>	<p>—Creation of additional forest protection and conservation areas.</p>
<p>(ii) <i>East African</i> Forests of the East African Highlands and high mountains, especially those related to the Rift Valley system. Conifers comprise an important component as do bamboo forests.</p>	<p>—Mostly in eastern Zaïre, Rwanda, Burundi, Uganda, Ethiopian Mountains, Kenya, Tanzania and Malawi.</p>	<p>—Watershed protection. —Timber. —Gathered forest products. —Wildlife for tourism and education. —Scientifically important because of many endemic species.</p>	<p>—Human population pressure for settlements and agriculture (especially in Ethiopia, Burundi and Rwanda). —Degradation during timber extraction, combined with poor cultivation practises, which cause accelerated soil erosion. —Clearing for the mono-culture of timber species, especially pine. —Uncontrolled burning. —Poaching.</p>	<p>—Improved land use planning and implementation of plans. —Bio-ecological studies to provide baseline data for conservation and land use planning. —Consolidation and protection of existing parks and reserves. —Creation of additional biosphere reserves. —Improved public education and awareness.</p>

RENEWABLE NATURAL RESOURCES & THE ENVIRONMENT

Table 5: Status of Moist Forests of Africa (Continued)

Forest Type and Definition	Distribution	Importance	Threats and Problems	Management Tasks
<p>(iii) <i>Southwest Indian Ocean Islands</i> Forests above the 1,000 m elevation.</p>	<p>—Malagasy Republic (principally in the Ankaratza and Isaratanana); Mascarene Islands, Seychelles, and the Comores.</p>	<p>—Phytogeographic importance. —Scientific value, owing to endemism. —Locally important gathered forest products.</p>	<p>—Human population pressure and clearance for cultivation, especially at lower elevations. —Government development schemes for forestry and agriculture. —Uncontrolled burning. —Accelerated soil erosion. —Introduction of exotic biota. —Inadequacy of bio-ecological information.</p>	<p>—Improved land use planning and legislation. —Bio-ecological studies to provide information for sound resource planning. —Enforcement of legislation for protected areas and increased protection against fire and invasion by exotic biota. —Creation of genetic resource banks either in additional sanctuaries or in botanic gardens.</p>

THE HUMID TROPICAL ZONE

Compiled by authors from IUCN (1978).

Adopted by the writer of this thesis from: Ruddle, Kenneth and Walther Manshard pp. 38-43

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