



August 2023

The Ecological Crisis in Africa:

A Call for Social Justice



Featured Topics

- 
- ❖ Catholicism and Ecological Consciousness Today
 - ❖ Ecological Crisis in Africa: The Catholic as a Voice of Reason
 - ❖ African Contribution to Her Ongoing Continental Ecological Crisis
 - ❖ Renewing the Face of the Earth: A Pastoral Perspective of Deforestation Today
 - ❖ A Christian Approach to the Ecological Crisis
 - ❖ Ecological Significance of Stewardship: A Shift from Instrumentalization of Creation
 - ❖ Major Issues on the Ecological Crisis Affecting Africa and a Way Forward
 - ❖ The Connection Between Ecological Crisis in Africa in Relation to Laudato Si
 - ❖ A Christian Approach to the Ecological Crisis in Africa

An annual publication of Don Bosco Utume, Salesian Theological College
Nairobi Kenya

Utume Theological *e-Journal*: An annual publication of Don Bosco
Utume, Salesian Theological College

Nairobi - Kenya.

Director: Fr. Thathi Njeru Abel

Editor: Haule Dunstan Christantus

Editorial Board:

Fr. Phiri Mark

Fr. Mbogo David Victor

Fr. Njenga Mburu Anthony

Proof Readers:

Frs. Preston Francis SDB & Obiero Nicholas CP

Design & Layout:

Clerics: Uwora Moses Paul, Nkandu Pascal & Deacon Cleofas
Leonard Msofe

TABLE OF CONTENTS

Word from the Director	1
Editorial	4
Catholicism and Ecological Consciousness Today: A Theological Exposition Between Pierre Teilhard de Chardin and Pope Francis	8
Rev. Dr. Robert O. Wafula, CSsp	
Ecological Crisis in Africa: The Catholic Church as A Voice of Reason	66
Okafor Charles Ifeanyi, SDB	
African Contribution to Her Ongoing Continental Ecological Crisis.....	78
Otieno Isaiah Mwango SDB	
Renewing the Face of the Earth: A Pastoral Perspective of Deforestation Today	91
Rev. Sr. Dr. Mary Wambua Nzilani, SMMG	
Ecological Significance of Stewardship: A Shift from Instrumentalization of Creation ..	116
Pascal Nkandu SDB	
Major Issues on the Ecological Crisis Affecting Africa and A Way Forward	126
Christopher Nonde SDB	
The Connection Between Ecological Crisis in Africa in Relation to <i>Laudato Si</i>	138
Anonymous Student of Don Bosco Utume Theology	
A Christian Approach to the Ecological Crisis	150
Rev. Dr. David MBUGUA	

Word from the Director

The Ecological Crisis and the Moral Imperative for Our Action as a Religious Community

Pope Francis' encyclical, "Laudato Si"¹ by which he addresses himself on the concerns about the care for our common home, may not have been the first attempt to call attention to the situation of mother Earth and the threat to life that now is clearly visible. It is, however, the illumination it casts on the interconnectedness of all creation, and the introduction of the spiritual dimension in this interconnectedness, that makes his appeal noble. Addressed, as it were, to "every person living on this planet,"² the need to care for our common home loudly resounds to us here in Don Bosco Utume Salesian Theological College microcosm. This is because we, too, live on this planet. We are called therefore to understand the ecological crisis that faces the earth, and to soul-search for a moral imperative for action that could urge our community on to pay attention to the issues at hand.

The term "ecological crisis" has come to refer to a severe and widespread disruption of the natural systems and environments that support life on Earth. It typically encompasses a range of interconnected environmental issues. These include biodiversity loss, climate change, pollution, and habitat destruction. This disruption of natural systems threatens the delicate balance of the Earth's ecosystems that have reached a critical point and are posing significant challenges to the health of ecosystems, biodiversity, and the overall balance of the planet's natural processes.

By a common definition, a crisis could be "a time of intense difficulty or danger", or "a time when a difficult or important decision must be made", or "the turning point of a disease when an important change takes place, indicating either recovery or death."³ Hence when we say that there is an ecological crisis, we could be referencing any one of the three senses, or all of them, with regard to the current situation of the Earth. Certainly, as Pope Francis indicates, certain difficult decisions will have to be made to alleviate the

¹ Pope Francis: Laudato Si': On Care for Our Common Home:
w2.vatican.va/content/francesco/en/encyclicals/documents/papafrancesco_20150524_enciclica-laudatosi.html

² Laudato Si, §3.

³ <https://languages.oup.com/google-dictionary-en/>

threat, because the ecological crisis represents one of the most pressing challenges facing humanity in the modern era.⁴

Religious communities, with their deep-rooted values, ethical principles, and moral teachings, have a unique role to play in addressing the ecological crisis; hence this reflection. As a religious community we ask: what is the moral imperative for action and what are the potential contributions that we, in our own ecosystem of Don Bosco Utume faith-based organization can make towards sustainable solutions?

My contribution to this search for a moral or ethical imperative in the context of our community proposes two sources. Firstly, I wish to underscore that the Christian religion to which we belong holds the core values of compassion, justice and responsible stewardship very highly. The consequences of ecological degradation that humanity is witnessing are clearly incompatible with these core values of compassion, justice, and stewardship. Hence our moral imperative to protect the environment does not spring solely from an ecological concern; it is also a matter of social justice, as vulnerable communities disproportionately bear the brunt of environmental degradation. The need and urge to care for the Earth should therefore move every one of us to feel with the environment, and especially with the poor marginalized communities that suffer most as a result of the ecological degradation.

Secondly, our call to conversion towards taking greater care of the environment may be better augmented by reframing how we view and talk about the ecological crisis. I propose looking at the problem in terms of what George Lakoff calls systemic causation, as contrasted to direct causation.⁵ Direct causation is all over and we know it even when we are children, that, for example, putting soap water in the eye will result to teary and itching eyes.

Systemic causation on the other hand is not easy to grasp in our state of nature as it requires us to observe and notice the reverberation of our little actions beyond our sphere of influence. What I mean is, ecology is a system of interconnected realities that depend on each other. My little action of littering with that plastic bag has consequences beyond that act, that time, that place, because all parts of the system are interconnected

⁴ Cf. Pope Francis. *Laudato Si.*, §186.

⁵ Lakoff, George. *Don't think of an Elephant: Know your Values and Frame the Debate*. USA: Chelsea Green Publishing Vermont

and harm to one part of the system just does not leave the other parts unaffected. This is what we are turning our backs to: avoiding to think about the wellbeing of the other. I am not in this mother Earth alone; there are plants and black ants too! Hence Pope Francis rightly insists that “the climate is a common good belonging to all and meant for all.”⁶

Therefore, in the context of our little ecosystem in our college and wherever we are to be found, the thought of the other should evolve in us an imperative to resist doing any actions that could threaten the integrity of the other, even the Eskimo in Greenland far away from here. Our interconnectedness is our means of survival. On the same token, our core values as Christians ought to urge us on to be our brother’s keeper. In this sense, even the birds and wolves are our brother as we learn from Francis of Assisi, who inspired Pope Francis.

Fr. Abel Njeru SDB

Rector – Don Bosco Utume

⁶ Laudato Si, §23.

Editorial

The Promotion of Human Dignity and the Protection of Our Common Home

Pope Francis issued his second Encyclical on “*Laudato Si*”: On Care for Our Common Home. With this Encyclical, the Pope intended that the Encyclical would lead to the Christian holistic response to the ecological crisis facing Mother Earth today. Dear E-Journal Readers, in line with the *Laudato Si*, in this Vol. 4 of Don Bosco Utume - Salesian Theological College E-Journal, the focus is on the Ecological Crisis in Africa: A Call for Social Justice from a Christian Perspective. This Journal is a deliberate effort to appeal for a Christian response to the environmental crisis arising in the African continent today. The Journal aims to contribute to ecological conversion by providing a theological reflection and practical answers to the Catholic Social Teaching on the “Care for Our Common Home.” The articles of this Journal are the results of the Theological Symposium held in Don Bosco Utume in the Second Semester of the Academic year 2022 – 2023. From a Christian view, it is a call for the Church and the world to see the urgency of the environmental crisis and the need for integral human development. Notably, almost eight years after issuing *Laudato Si*, this journal was published when Pope Francis confirmed his desire to write part two of the *Laudato Si*. A renewed consciousness of the current environmental questions that threaten human existence is needed to become good stewards of the common home of our time. In his goodness, God has entrusted the responsibility of caring for the earth and all that it contains to humanity. This makes the ecological crisis more of a moral evil than a natural one (an outcome of human activities).

Therefore, a Christian holistic understanding of human nature and dignity should be upheld for better sustainability of the ecological system. Human beings are neither creators nor objects but subjects and stewards. In short, the ecological crisis touches the core of a spiritual dimension of humanity. We must acknowledge the nature and moral responsibility of the human person in relation to God the Creator of the world, and all that is in it. The biblical Christian understanding of the human person would lead to a relational paradigm on a vision, discerning, and caring for our common “African home.” The Bible tells us that when humans began to lead immoral lives and went far from God’s

ways, they experienced self-destruction (Gen: 6: 5-22). The current journal contains nine articles collected mainly from students and a few from lecturers. The nine articles of this journey are of the utmost importance because an ecological crisis leads to an existential crisis. There is a need to remind humanity of its shared origin, mission, and destiny.

The first article, “Catholicism and Ecological Consciousness Today: A Theological Exposition Between Pierre Teilhard de Chardin and Pope Francis,” by Rev. Prof. Robert O. Wafula, CSsp, presents anthropocentrism as a major source of the ecological imbalances that humanity is witnessing today; has no place in our time and the future. Therefore, authentic ecocentrism is needed as a paradigm shift from the past imbalances of theories and ideologies that preclude the redemptive work of Jesus Christ. Fr. Wafula then gives us Teilhard de Chardin’s cosmic vision and Pope Francis’ ecological concerns as a beacon of light and hope for authentic human progress.

The second article is from Okafor Charles Ifeanyi, SDB, and offers insights into the Catholic Church as a voice of reason for the ecological crisis in Africa. The writer describes Africa as rich in natural resources but has succumbed to environmental challenges that need a combined effort, namely the African great sense of the sacred and the Catholic Church’s teachings and initiatives on ecological care for the earth.

The contributor of **the third article** is Otieno Isaiah Mwango, who presents “African Contribution to the On-Going Continental Ecological Crisis.” In his article, he describes how African societies today face a situation that needs a unique and particular remedy, care, and response. Unprecedented and massive destruction of living ecosystems affects the African Continent. Africa and its people are currently victims of desertification, a prolonged dry season, and the extinction of animal species. Furthermore, an overview of the significant environmental problems, their negative impact on the African region's ecology, and a need for a Christian approach to the crisis are outlined.

Rev. Sr. Dr. Mary Wambua Nzilani, SMMG, wrote **the fourth article**. This article is titled “Renewing the Face of the Earth: A Pastoral Perspective of Deforestation Today.” The reports point out greed, disrespect of nature, individualism, plundering, and a decline of the dignity of a human person as the contributing factors to the worsening of the environment. The writer underlines a need for constant vigilance and active

involvement to prevent the negative challenges related to environmental issues. Sr. Mary appeals for a better renewal in and of our common home from the Christian perspective.

The fifth article by Nkandu Pascal SDB underlines the “Ecological Significance of Stewardship: A Shift from Instrumentalization of Creation.” The newness of this article is the meaning and interconnection he gives between stewardship and the environment, as well as the place of human beings in the ecological system. Then, he dedicates a section to a necessary shift from the instrumentalization of creation towards environmental stewardship and its significance in ecological stewardship.

The sixth article is on the connection between the “Ecological Crisis in Africa with *Laudato Si.*” According to the writer, the foundation of Christian ecological ethics is love. By destroying nature, we deny and reject God’s love by making ourselves masters rather than stewards of this world.

The seventh article is by Nonde Christopher on the “Major Ecological Issues Affecting Africa and A Way Forward.” He underlines the need for environmental consciousness and a deep knowledge of the necessity of a co-existence between humanity and nature for a sustainable life. The emphasis is on the relational dimension of humans and the rest of God’s creation. According to Nonde, African environmental issues are caused by anthropogenic effects on the African natural environment and significantly impact humans and all forms of endemic life. The significant ecological challenges include deforestation, soil degradation, air pollution, water pollution, garbage pollution, climate change, and water scarcity, to mention but a few.

The eighth article is by Rev. Prof. Richard Rwiza. This article is part of his talk at Don Bosco Utume, Salesian Theological College, during the 9th Theological Symposium in 2022. In his well-researched presentation, he underlined the nature of the Ecological Crisis in Africa and a Christian approach to the ecological crisis, focusing on *Laudato Si.*

The ninth final article is part of the response during the Theological Symposium by Prof. Mbugua David to Rev. Prof. Rwiza’s presentation on a Christian Approach to the Ecological Crisis. Based on Prof. Rwiza’s views, Fr. Mbugua states that it is increasingly apparent that all is not well with our common home. He insisted that the current situation is so grave as to talk of an environmental crisis. Prof. Mbugua asserts

that the global nature of the problem is critical in that what happens in one particular nation impacts not only that nation but also the earth as a whole. His response underlines the truth that nature is part of God's creation to be heeded and cared for by humans as good stewards. Thus, nature has been entrusted to human beings in trust. There is a need to cultivate a spirituality of justice-seeking. Ultimately, humanity must rediscover the internal spiritual values and attitudes of living harmoniously with the entire creation. Therefore, a proposal is made to integrate the Christian view of ecology and the African spiritual view of holistic existence.

Dear loyal readers, we sincerely apologize that this year's Don Bosco Utume – Salesian Theological College's E-Journal could not be issued on the day of the inauguration of the New Academic Year 2023-2024 as in the past years. Despite the delay, we trust that you find the present articles, mainly from the theology students, useful for your personal and institutional reflection on the ecological crisis in Africa and a call for a Christian response. May we all become genuine and authentic stewards of "our common home."

Lastly, this journal could not have been possible without the valuable contributions of students of theology and lecturers, especially those who have contributed articles to this journal. We thank the director of Don Bosco Utume for his introductory word, the entire Editorial Board, the proofreaders Rev. Fr. Francis Preston and Rev. Fr. Nicholas Obiero, and Clerics Moses, Paschal, and Deacon Msofe for Cover Design and layout.

Rev. Fr. Dunstan Christantus Haule SDB
Editor

Catholicism and Ecological Consciousness Today: A Theological Exposition Between Pierre Teilhard de Chardin and Pope Francis

Rev. Dr. Robert O. Wafula, CSsp.

Abstract

This article demonstrates that anthropocentrism, being a major source of the ecological imbalances humanity is witnessing today; has no place in the 21st century and beyond, and the Catholic intellectual tradition (Catholicism) and its spiritual-self-consciousness are the bulwarks in embracing an authentic ecocentrism as a paradigm shift from the past two millennia's tyrannical anthropocentric-utilitarianism. That is, our human scientific, technological, economic and political progress should not preclude the redemptive work of Jesus Christ today and in the future, and Teilhard de Chardin's cosmic vision and Pope Francis' ecological concerns are a beacon of light and hope for an authentic human progress.

1.0 Introduction

Presently, humanity is at the crossroads of economy and *integral ecology*. In this exposé, I endeavour to bring to light the ecological concerns of the two Jesuits: Pierre Teilhard de Chardin (1881-1955) and Pope Francis, (Jorge Mario Bergoglio, 1936-) in making the case that their ecological concerns, arguably, stand out as not only relevant for this century and beyond, but equally relevant for our human race and the biodiversity of this planet Earth. Teilhard de Chardin's cosmic vision is in line with what Pope Francis argues for and stands for in his *Magna Carta* on the environment – Encyclical Letter *Laudato Si'* (2015).

In the two visions of these men, a new ecological consciousness can be re-imagined in *seeing* what is really happening in the Anthropocene Age as clearly articulated by Vatican II Council in its *Pastoral Constitution on the Church in the Modern World*, (*Gaudium et Spes*). In our reflections therefore, we argue that the Church has an enduring responsibility to not only speak about but more importantly, teach all people of good will, our human inter-connectedness with our environment (nature and its cosmic complexities). And this role can be exponentially achieved nowhere else other

than in our Catholic institutions and especially in our higher learning institutions like colleges and universities.

In doing so, we will make a case about the relevance of Teilhard's and Pope Francis' ecological consciousness in the Anthropocene age in showing the theological importance for all humanity in understanding how the universe works and more so its cosmic evolution, and after which, I will offer my own conclusions in the light of African ecological consciousness today; as epitomized in the three powerful prayers, one from Fr. Teilhard de Chardin himself on *Christ-Ever-Greater* and the other two prayers from the Pope on union with Creation and care for our only home – Earth. All these three prayers are about our human connectedness with God's entire creation or rather the entire universe and how our ecological awareness can be embraced today in the Anthropocene Age; in which human activity is negatively impacting the Earth's atmosphere: (the troposphere, the stratosphere, the mesosphere, the thermosphere and the exosphere), but more so its biodiversity or rather the Earth's variety of plant and animal life and particularly their respective habitats.

The ecological crisis humanity is currently facing, and as exposed by the Pope in his encyclical; the human world is effecting change in the natural world at a pace beyond measure. Therefore, human circumstances are changing, new and unforeseen challenges are becoming real that need new thinking, new solutions, and new developments not only scientifically and/or technologically but also theologically, spiritually and above all economically in relation to how the universe works.⁷

In our reflections below, we argue that the Church (the *Christosphere* for Teilhard) has an enduring responsibility today and in the future to continue not only speaking about but more resolutely, teaching the faithful and all people of good will how our human inter-connectedness with our environment (*ecology*⁸) on this planet earth is, and show through sustained studies and education that we humans are literally at the mercy of this planet – Earth's biodiversity.⁹ Presently, humanity is at the critical

⁷ **Nature**, in the broadest sense, is the natural, physical or material world or simply all that God created and continues to create, i.e., the universe. Nature can also refer to the phenomenon of the physical world, and also to life in general.

⁸ **Ecology** is the scientific study of the relationship of living organisms (plants and animals) and to their respective physical surroundings, (environment).

⁹ Cf. Kingsley Ndubueze & Johan De Tavernier, "Rethinking Our Excessive Lifestyles: Assessment of Laudato Si's Plea for Ecological Conversion," in *African Christian Studies*, Vol. 33, No. 1, March (2017), 7-35.

crossroads of economy and ecology. The spiritual and intellectual awareness we are witnessing in the noosphere¹⁰ globally should lead us now and henceforth to integrate well with other species or creation at large; the way Teilhard and Pope Francis ably argue out, though, each from a different perspective; but still converging on a higher reality of the futurity of not only the human species but above the entire created order.

Indeed, there is a striking commonality between Teilhard and Pope Francis in the sense that, both are calling for a global paradigm shift from the old cosmology of a universe that is static, and mechanistic to an evolutionary cosmology that is dynamic, evolving, and complex in its operations; which demands an ecocentric (*home-centric*) understanding and no longer an anthropocentric utilitarian domination. In fact as we shall show, there is a very strong convergence between Teilhard and the Pope on this reality as each in his own way and capacity, argue that because of this anthropocentric understanding of the world – the human detachment from other creatures (non-human world) that has crept into the human consciousness through the millennia, due to the old cosmology, that all creation is meant for us humans, or put it simply, anthropocentrism, is a major source of the ecological imbalance that humanity is witnessing today.¹¹ With the old cosmology, Teilhard and Pope Francis observe that human beings have become absolutely arrogant with the power of intelligence and technology, and our human perception of reality has become purely anthropic and materialistic; a radical dualism that is tearing and devouring earth's ecosystems, i.e., *ecocide* as the deliberate destruction of the natural environment.

In this article therefore, we are arguing that the intellectual and spiritual-self-consciousness or spheres that we are witnessing today; emerging from both believers and non-believers, (environmentalists) and the ability of humanity 'of rising above themselves, choosing again what is good' to reflect on itself and its future survival are and will be important evolutionary factors to influence the ecological balance and the sustained awareness that Teilhard and Pope Francis are calling for.¹² Thus, from the very

¹⁰ According to Teilhard, the **Noosphere** is the sphere of the human mind. The layer of the reflective beings, who are encompassing irreversibly the planet earth and now space, with their increasing complex and unifying network of communication and collective thought.

¹¹ Diarmuid, O'Murchu, *Evolutionary Faith: Rediscovering God in Our Great Story*, New York: Maryknoll, Orbis Books, 2002, 20, 69, 100, 170, 179.

¹² Teilhard de Chardin, *The Future of Man*, trans, Norman Denny, New York: Harper & Row, 1964, 227-237, on "*The Directions and Conditions of the Future*". See also Martin Palmer, "*The Ecological Crisis and Theology*", in Vincent Brümmer, editor, *Interpreting the Universe as Creation: A Dialogue of*

beginning of creation, there is an inherent inorganic and organic mutual interdependence and interrelatedness of all creation, and Pope Francis in particular, is very clear and intent in calling for a major shift in current human ecology, (our human attitudes and behaviour and values towards nature) – environment.¹³ That is, a shift from anthropic utilitarian principles to ecological-interrelatedness and interdependence awareness.

In other words, an *integral ecology* is called for where the principle of the common good becomes the common denominator of justice and peace to ourselves as human beings and to the future generations and justice to our environment that, without it, our existence on this planet is radically unthinkable.¹⁴ Specifically, Pope Francis is simply ringing a wakeup call for an ecological-awareness not only to all Catholics around the world but equally to all people of good will¹⁵ by affirming that the divine mission of the Church to evangelize (*Mt 28:18-20*) is ever taking on new dimensions; like today the mission of ‘*New Evangelization*’¹⁶, and is still fresh as ever, as humanity now scientifically and theologically reflect on the question of creation and redemption right is the quantum physics to its astrophysics. That is, we shall be arguing forcefully by examples, that human progress (secular progress) does not preclude the redemptive work of Christ today and in the future, and Teilhard’s and Pope Francis’ ecological visions and awareness come across as a timely prophetic call, a wake-up call for all humanity to re-examine critically and objectively our current status of utilitarian-anthropocentrism attitudes and actions towards our only home planet earth that we can return after exploring matter and energy on other planets and space.

Science and Religion, The Netherlands: KOK Pharos Publishing House-Kompen, 1991, 132-146. Cf. also *Laudato Si’*, no. 205.

¹³ The natural environment is composed of all living (organic) and non-living (inorganic) things occurring naturally. The term environment is most often applied to the Earth-planet or some part of earth. This environment encompasses the interaction of all living species and non-living organism, climate, weather, and natural resources that affect human and non-human species and their economic activities.

¹⁴ Cf. *Laudato Si’*, no. 156. The common good though is not common to all, is the sum total of those conditions of social life (biodiversity) that allows individuals and group entities access their own fulfilment.

¹⁵ Cf. *Laudato Si’*, nos. 13-16.

¹⁶ Pope Benedict XVI, *Homily for the Concluding Mass of the Synod of Bishops, October 28, 2012*. The Pope spoke of *New Evangelization* as “the urgent need to proclaim Christ anew in places where the light of faith has been weakened, in places where the fire of God is more like smouldering cinders, crying out to be stirred up, so that they can become a living flame that gives light and heat to the whole house”. Cf. also *Synod of Bishops, XIII Ordinary General Assembly on The New Evangelization for the Transmission of the Christian Faith, Instrumentum Laboris*, Vatican City: 2012, *Chapter II: Time for a New Evangelization*, nos. 41-89, but especially no. 45.

1.2 Teilhard de Chardin's Ecological Consciousness

It must be noted that Teilhard de Chardin lived at a time in which the natural sciences had grown in confidence of being able to unravel all the secrets of nature in quantum physics, molecular biology, geochemistry, astrophysics, genetics, name it. And as a Catholic priest and palaeontologist by training, Teilhard earnestly desired to look forward with the help of sciences and religion and by unmatched intent he managed to combine his Catholic faith/theology and the scientific insights of his time in order to make sense of his worldview – the cosmos in evolution. Many of his acquaintances say that it became a challenge for Teilhard to talk meaningfully about the God of the Bible and the God of the cosmos without integrating both science and religion.¹⁷ It goes without saying that much of what Teilhard said and talked about in his life, especially in his countless lectures, seminars, boardrooms-meetings and much of what he experienced and wrote down in his field of study in relation to his theological faith, was either not understood or it was initially and maybe still looked upon with great suspicion both from religious circles and scientific community.

Since after his death, (1955) much of what he foresaw and expressed, sometimes in visionary (mystic) language as expressed in his books, i.e. (*The Divine Milieu*, *Hymn of the Universe*, *The Prayer of the Universe*, *The Mass on the World*, and *The Future of Man*) and sometimes purely in scientific language, i.e. (*The Phenomenon of Man*, *Man's Place in Nature*, *Science and Christ*, *Christianity and Evolution*, etc) has been and is being confirmed cumulatively both in religious circles, in theological circles and sometimes in scientific community, i.e., *quantum physics*, *dark Matter*, *black holes* and presently with the question of biocentrism that Pope Francis decries as a misguided anthropocentrism.¹⁸ Teilhard's ecological consciousness which we are developing here in relation to the ecological awareness of Pope Francis are, a rare opportunity that Catholicism around world must not miss for the effective new evangelization¹⁹ that the Church is calling for in order to understand better and meaningfully the God of creation

¹⁷ See Pierre Teilhard de Chardin, *Letters from My Friend – Correspondence Between Teilhard de Chardin and Pierre Leroy 1948-1955*, New York: Paulist/Newman, 1979; See also Neville Braybrooke, editor, *A Radio Script*, in *Teilhard de Chardin: Pilgrim of the Future*, London: Darton, Longman & Todd Ltd, 1964, 111-128.

¹⁸ Cf. *Laudato Si'* no. 118.

¹⁹ Cf. Synod of Bishops, XIII Ordinary General Assembly, *Instrumentum Laboris*, on *The New Evangelization for the Transmission of the Christian Faith*, Vatican City: 27 May 2012. See also Pope Francis, *Post-Synodal Apostolic Exhortation Evangelii Gaudium*, on *the Proclamation of the Gospel in Today's World*, 24 November, 2013, in AAS 105 (2013), 1019-1137.

and the God of redemption in relation to a world which is still becoming, (cf. *Catechism of the Catholic Church*, nos. 306, 307-310).

Teilhard invites us to critically question the reality in our visible world experience and Pope Francis calls our attention to objectively re-examine our ‘tyrannical anthropocentrism’ which includes both biological, ecological, economic, political and above all of spiritual dimensions of not only human beings but also non-human world. Teilhard considers human consciousness as a primal arrow of evolution and humankind as the climax of the self-consciousness of the organic evolution. Evolution for him, is a phenomenon of interrelated events with two dimensions: one of outwardness – the development and growth of physical complexity and one of inwardness – mental and spiritual energy.

Therefore, the ecological consciousness that Teilhard is calling us to today, in relation to the timely call of Pope Francis, is that, we must rethink Christianity within the framework of our present understanding (knowledge) of the world – both inorganic and organic and see how interrelated things are from the beginning of God’s creation. If we believe and think Christianity within this framework; then we will see how Christ through his mysteries of creation, incarnation and resurrection, continually is transforming creation as the *Alpha*, and guiding it to its completion as its *Omega*. Christ is cosmic for Teilhard and *in* and *through* him the cosmos moves forward. In this perspective, the Mystical Body of Christ – the Church, for Teilhard, and rightly so for us, becomes a catalyst that transforms this evolving cosmos into the *Living Host*²⁰– the celestial *Eucharistic Banquet* for all creation, where God becomes all in all, (1 Cor 15:28). That is why for Teilhard, to worship God does not only mean placing God before all things, but also seeking God in and through all things, i.e., true scientific investigations become a true form of *adoration* in seeking the ultimate truth- the God of the visible world and the God of invisible world.²¹

²⁰ See St. Pope John Paul II, Encyclical Letter, *Ecclesia de Eucharistia*, on *The Eucharist: The Life of the Church*, Nairobi: Paulines Publications, April 17, 2003, no. 8, in AAS 95 (2003), 433-475. Cf. also Thomas M. King, *Teilhard’s Mass: Approaches to “The Mass on the World”*, New York: Paulist Press, 2005, 59. See also Teilhard, *Letters from My Friend*, translated by Mary Lukas, New York: Paulist Press, 1979, 196.

²¹ Teilhard, *Christianity and Evolution*, 64. Cf. also Neville, *Pilgrim of the Future*, 114 & 120. See also King, *Teilhard’s Mass*, 132-137.

2.0 Pope Francis' Ecological Consciousness

Pope Francis throughout his public life and ministry as a priest, Bishop and now Pope, has been noted for his concern for the poor and marginalized and his emphasis on God's mercy. He opposes consumerism, irresponsible development and supports strongly any positive actions on climate change; a case in point is his encyclical letter *Laudato Si'* (2015) that is under our consideration here. His major papal documents to date include the three encyclicals: *Lumen Fidei* (29 June 2013), *Laudato Si'* of (May 24 2015) and *Fratelli Tutti* on Fraternity and Social Friendship, (October 3, 2020) and his five Post-Synodal Apostolic Exhortations on *Evangelii Gaudium* (24 November 2013) on the proclamation of the gospel in world today, *Amoris Laetitia* (March 19, 2016), on the Joy of Love in the family, *Gaudete et Exsultate* on the call to holiness in today's world, (19 March 2018), *Christus Vivit*, - *Christ is Alive*, on Young people and to the entire people of God, (25 March 2019) and *Querida Amazona* on Beloved Amazon, to the People of God and all persons of good will, (2 February 2020).²²

Thus, Pope Francis' concerns for the poor and marginalized, his emphasis on the divine mercy of God and his outright opposition to consumerism and irresponsible human development or rather tyrannical anthropocentrism can be clearly discerned in some of his major papal documents as shown above.

2.1 Brief Background of Laudato Si'

Pope Francis, following the footsteps of his two predecessors: Pope John Paul II and Benedict XVI, (cf. *Laudato Si'* nos. 5, 175, 193) has on various occasions described environmental concerns as a great contemporary challenge. The Pope in solidarity with the Greek Orthodox Church Patriarch, Bartholomew, are of the believe that human development and progress should respect God's creation, and any form of exploitation of the earth's resources, is nothing but sin.²³ Francis on different occasions has forewarn many international conferences on agriculture, environmental care and even mining plants that a lack of protection for the ecology is a source of problems not only for the future of the human species but also of other living ecosystems on the planet earth.²⁴

²² Cf. (<https://www.vatican.va/content/francesco/en/encyclicals.index.html>) and (https://www.vatican.va/content/francesco/en/apost_exhortations.index.html). Accessed on June 22, 2022.

²³ See *Laudato Si'* no. 8.

²⁴ See Pope Francis, *Speech to Participants in 38th Conference of the Food and Agriculture Organization of the United Nations* [FAO], 20 June 2013; *Message to the Executive Chairman of the World*

Therefore, in writing this encyclical, he hopes to enhance our human awareness of the critical imbalance that is being experienced in the ecosystems of our planet Earth that our survival as a species depends on since the emergence of thought and in the distant future. He does so in making a critical distinction between the basic human needs which are *limited* and human wants [appetites] which are *unlimited*.²⁵

Francis considers that the basic human needs are quantifiably scarce, small and non-negotiable, and human wants are potentially unlimited. Although he asks for the use of renewable energy instead of conventional fuels; he believes that it would be not enough unless our human society turns down the unlimited greed of wants that manifests itself in wanton individualism, utilitarianism and consumerism and this demands a cultural revolution. For Pope Francis, St. Francis of Assisi demonstrates how inseparable the bond is between concern for nature and justice for the poor, (*cf. Laudato Si' no. 218*). And in one way or the other, the following text, which I consider to be the epitome of what Francis wants to communicate to his fellow Christians and all people of good will; which forms the basis of my argument about Catholicism and ecological consciousness is this:

We lack an awareness of our common origin, of our mutual belonging, and of a future to be shared with everyone. This basic awareness would enable the development of new convictions, attitudes and forms of life. A great cultural, spiritual and educational challenge stands before us, and it will demand that we set out on the long path of renewal.²⁶

Economic Forum on the occasion of Annual Meeting at Davos-Klosters, Switzerland, 17 January 2014 and of 30 December 2015 respectively; *Speech to Participants in the Meeting sponsored by the Science and Life Association*, 30 May 2015; *Message of the Holy Father to the President for the Celebration of the World Day of Prayer for the Care of Creation*, 1 September 2016; *Message of the Holy Father to the President of the Conference of the Parties to the United Nations Framework Convention on Climate Change [COP22]* Marrakech, 7-18 November 2016 (10 November 2016). Cf. these Speeches and Messages from the Vatican Websites with respective dates: (<https://www.vatican.va/content/francesco/en/speeches/2013/june.index.html>) and (https://www.vatican.va/content/francesco/en/messages/pont-messages/2016/documents/papa-francesco_20161110_messaggio-cop22.html). Accessed on July 31, 2022.

²⁵ See *Laudato Si'* nos. 27-42 and 43-61 respectively.

²⁶ Pope Francis, *Laudato Si'* no. 202.

2.2 What is Happening to Our Common Home

According to Francis, what is really taking place on our planet earth is the unprecedented pace of change of the working of complex ecosystems due to human activity that totally contrasts the “naturally slow pace of biological evolution” (*cf. Laudato Si’ no. 18*). This human activity includes various forms of pollution, i.e., air, soil, water. As a result of all this, there is an accelerated loss of biodiversity on a large scale in certain ecological systems that need greater protection because of their immense importance for the global ecosystem balancing.

Examples of these ecosystems are the *Amazon Forest* and its biodiversity, the *Congo Basin* and its niche, and other aquifers and glaciers around the planet. This unprecedented pace of change in biodiversity is directly and indirectly affecting the quality of human life and even a breakdown of human society, i.e., global inequality (the poor and the rich) that not only affects individuals but even the entire region, continent or hemisphere.

However, Francis observes that, even if there are clear noted weak responses from among some established powers that govern our globe; he is of great hope that humanity can always rise to these challenges in solving their common problems if only they can embrace a collective awareness and not individually; through long-term sustained education on the care for our environment and home – the Earth.

2.3 The Gospel of Creation

First of all, this section contains Pope Francis’ text about the vision of Teilhard de Chardin that not only motivates me most as a Teilhardian, but more so, encourages us all to further our understanding on what Teilhard de Chardin stood for on cosmic Christ. In this text Francis reminds that:

The ultimate destiny of the universe is in the fullness of God, which has already been attained by the risen Christ, the measure of the maturity of all things. Here we can add yet another argument for rejecting every tyrannical and irresponsible domination of human beings over other creatures. The ultimate purpose of other creatures is not to be found in us. Rather, all creatures are moving forward with us and through us towards a common point of arrival, which is God, in that transcendent fullness where the risen Christ embraces and illumines all things.

Human beings, endowed with intelligence and love, and drawn by the fullness of Christ, are called to lead all creatures back to their Creator.²⁷

This text is indeed the fulcrum of our fore coming discussion on Catholicism and ecological consciousness in the 21st century and beyond; where we will argue that in Teilhard's perspective, there is need to re-interpret the Western Christian thought of redemption in order to shift from its strong embedded anthropocentric redemption to creation centred or cosmic redemption as an important and critical understanding of the Church's mission today, i.e., new evangelization. Francis in this chapter says that "Science and religion, with their distinctive approaches to understanding reality, can enter into an intense dialogue fruitful for both."²⁸ It is clear right from the beginning of this encyclical that Francis wants us today to go further than the textual literalisms found in our sacred texts as he explains that the anthropocentrism presented by these narratives today; need an appropriate contextual hermeneutic that "implies a relationship of mutual responsibility between human beings and nature."²⁹ For Francis, there is no place for a tyrannical anthropocentrism unconcerned for other creatures.³⁰

On the mystery of the universe, Francis clearly observes both in astrophysics' view and religious' faith that "in this universe, shaped by open and intercommunicating systems, we can discern countless forms of relationship and participation. This leads us to think of the whole as open to God's transcendence, within which it develops. Faith allows us to interpret the meaning and the mysterious beauty of what is unfolding."³¹ In fact, without openly affirming Teilhard's *Law of Complexity – Consciousness*, Francis argues that the emergence of human consciousness in the universe is so unique that it cannot be fully explained by the evolution of other open systems. He says this:

Our capacity to reason, to develop arguments, to be inventive, to interpret reality and to create art, along with other not yet discovered capacities, are signs of a uniqueness which transcends the spheres of physics and biology. The sheer novelty in the emergence of a personal being within a material universe

²⁷ Pope Francis, *Laudato Si'*, no. 83. See footnote no. 53 where the Pope explicitly applauds the theological and scientific contributions of Fr. Teilhard de Chardin's cosmic vision.

²⁸ *Laudato Si'*, no. 62.

²⁹ *Laudato Si'*, no. 67.

³⁰ Cf. *Laudato Si'*, nos. 10, 65-75. Cf. also *The Catechism of the Catholic Church*, nos. 339 & 2416 respectively.

³¹ *Laudato Si'*, no. 79.

presupposes a direct action of God and a particular call to life and to a relationship on the part of a 'Thou' who addresses himself to another 'thou'. The biblical accounts of creation invite us to see each human being as a subject who can never be reduced to the status of an object.³²

There is so much that can be said from the above condensed statement of Pope Francis in relation to Teilhard's ecological consciousness; but one thing that emerges out clearly is that as Teilhard was never satisfied with the Darwinian theory of evolution; the same way Pope Francis also debunks Darwinian scientism to embrace a cosmic evolution under guidance of the risen Christ to its final destiny in the fullness of God; which has already been attained by the risen Christ; and we human beings endowed with intelligence and love, and drawn by the fullness of Christ's cosmic dimensions, are called to lead all other creatures back to their creator.³³ And in that sense, our natural environment is a collective good, the patrimony of all humanity and the responsibility of everyone to care what cares us most – the Earth.³⁴

2.4 Human Roots of the Ecological Crisis

The observations of Pope Francis serve us right and especially in this period of the global pandemic Covid-19; when he sees that humanity has entered a new era in which our technical prowess puts us at crossroads; hence the crisis and effects of modern anthropocentrism fueled by the practical relativism which sees everything as irrelevant unless it serves one's own immediate interests (wants/economics). Francis contents that human progress and development when well directed, should result into improving the quality of all and not making others wealthier and others poorer.³⁵ A case in point is on the front of human energy where Francis clearly notes that nuclear energy, biotechnology, information technology, knowledge of our DNA, and many other abilities humanity has attained; give humans tremendous powers. However, he wisely warns that, it is extremely risky for a small part of human race to possess these powers for they will use these powers and knowledge for dominance over the others and the entire world, and

³² *Laudato Si'* no. 81.

³³ See *Laudato Si'*, no. 93.

³⁴ See *Laudato Si'*, no. 95.

³⁵ Cf. *Laudato Si'*, no. 103.

turn into absolute masters of all sorts with the anthropocentric tyranny extended to earth's ecosystems on the economic front.

Therefore, Francis unwaveringly advocates for an adequate presentation of a Christian anthropology that will give rise to a rightful understanding of the true relationship between human beings and the non-human world.³⁶ He points out this: "There can be no renewal of our relationship with nature without a renewal of humanity itself. There can be no ecology without an adequate anthropology."³⁷ This renewal has a long path that humanity has to embrace in terms of true knowledge, authentic responsorial freedom, and integral spirituality, (*cf. Laudato Si' Chapter Six*).

2.5 Integral Ecology

Something integral is that which is not only essential for the functioning of the whole but also plays an important part or role of something else or other things. Now, Francis once a chemical technician himself, knows too well that ecosystems interact dynamically in dispersing toxic elements in our environments, purifying water, controlling some fatal illnesses and epidemics, forming soil, breaking down all forms of waste to wit, we as a human community either over-look or simply do not know about it. Francis desires that human society right from an individual level, societal levels and global levels be educated in this reality, i.e., about our utter dependence on the larger ecosystems in the world for our existence and for our qualitative life as a common good. Indeed, the Pope is calling for a new humanism that is capable of bringing together the different fields of human knowledge, including economics, in the service of a more integral and integrating human vision. This can be achieved by strengthening country to country levels of institutional effectiveness; embracing an evolving cultural ecology of daily lifestyle and principles that embrace the principle of the common good.³⁸ For

³⁶ Ibid., no. 116.

³⁷ Ibid., no. 118.

³⁸ The principle of the common good according to the teachings of Catholic Social Doctrine states that it is the 'sum total of social conditions which allow people, either as groups or as individuals, to reach their fulfilment more fully and more easily'. The common good does not consist in the simple sum of the particular goods of each subject of a social entity. Belonging to everyone and to each person, it is and remains 'common' because it is indivisible and because only together is it possible to attain it, increase it and safeguard its effectiveness, with regard also to the future. Just as the moral actions of an individual are accomplished in doing what is good, so too the actions of a society attain their full stature when they bring about the common good. The common good, in fact, can be understood as the social and community dimension of the moral good'. See "The Principle of the Common Good – Meaning and Primary Implications," in Pontifical Council for Justice and Peace, *Compendium of the Social Doctrine of the Church*, Nairobi: Paulines Publications Africa, 3rd reprint, 2012, 90ff.

Francis, when the human culture evolves to these levels of understanding/awareness, then there will be meaningful justice between generations, and meaningful intergenerational and intrageneration solidarity.

2.6 Lines of Approach and Action

In this chapter Francis is not purporting to propose anything new in terms of the current human approach and action towards environmental care other than the formation of worldwide ecological education and spirituality. However, he sees the following four dialogical approaches as a sure path for a sustained and long-term means that would make our human consciousness heighten more to the care of our home – the Earth:

a) ***Dialogue on the environment in the international community*** on:

- i. Planning a sustainable and diversified agriculture.
- ii. Developing renewable and less polluting forms of energy.
- iii. Encouraging a more efficient use of energy.
- iv. Promoting a better management of marine and forest resources.
- v. Ensuring universal access to drinking water.

b) **Dialogue for new national and local policies:**

It is to Francis' observation that the existing world order is proving powerless to assume its true responsibilities, and he proposes that local individuals and groups can make a real difference in the sense that, in and among the individuals and groups, there lies a great sense of responsibility for the community, and an inherent readiness to protect each other and what belongs to them rightly and physically indivisibly, i.e., land, forest, mountains, rivers, waters, etc. Francis argues that unless citizens themselves control political power – county governments, national governments, regional governments, etc, it will not be possible to control any damage to our environments.³⁹

c) **Dialogue and Transparency in Decision-Making.**

This is important for Francis and for every citizen because, an honest and open debate mitigates particular self-interests or ideologies that more often surface in international meetings on conservation and environmental care that end up prejudicing the common good and those who suffer most are the poor of the human society.

³⁹ See *Laudato Si'*, no. 179.

d) Politics and Economy in Dialogue for Authentic Human Progress and Fulfilment.

Pope Francis has observed given his personal experience as a bishop and archbishop of Buenos Aires, Argentina, (1992-2013) that politics and the economic interests tend to blame each other when it comes to poverty and environmental degradation debates, (*cf. Laudato Si'*, no. 198). For Francis, conflict of interest(s), i.e., power and financial gains are placed first at the expense of the common good or the well-being of the larger human society. This is a dangerous trend for authentic human progress in the future.⁴⁰

e) World Religions in Dialogue with Science.

Obviously, empirical sciences neither provide complete explanations on life nor on the meaning of creation but can in an unparalleled manner show the interrelationship of all creatures as a cosmic reality. Every sphere of human knowledge has its planetary and cosmic limits. However, Francis is of the opinion that faith should encourage the scientific community to remain constantly open to this cosmic reality in all its inexhaustible richness. Because with faith, one's reason is awakened to the critical sense of preventing human research from being satisfied with its own mathematical formulae and empiricism and helps reason to realize that nature is always greater than its mathematical measurements. By stimulating wonder before the mystery of creation; something that Teilhard strongly believed in human research, there lies proper *adorative-faith* which broadens the horizons of reason to shed greater light on the mystery of creation that continues to disclose itself to the scientific community down the centuries and millennia.

2.7 Ecological Education and Spirituality

Besides the five *lines of approach and action plan* proposed by Pope Francis in chapter five, in this last chapter, Francis takes an important religious stance that the human community on earth ought to embrace and develop an *ethics of ecology* in terms of the present and of future survival not only of the human species but also of other non-human

⁴⁰ See Joshtrom Isaac Kureethadam, "Green Commandment VII: Learn a New Way of Dwelling in Our Common Home," & "Green Commandment VIII: Educate toward Ecological Citizenship," in *The Ten Green Commandments of Laudato Si'*, Minnesota: Liturgical Press, 2019, 127- 141 & 143-159 respectively. Kureethadam is a Catholic priest, he serves on the staff of the Vatican's recently created *Dicastery for Promoting Integral Human Development*. Prior to this work, he was professor of *Philosophy of Science* at Rome's Pontifical Salesian University. His previous book is *Creation in Crisis: Science, Ethics, Theology*.

species and, indeed, the entire creation at large. This universe is staggeringly huge and majority of humans lack that awareness. With certainty, Francis is quite aware that we humans considerably, we lack an awareness of our common origin, of our mutual belonging and of our common future to be shared by everyone.

This awareness would enable the development of the following attitudes and spirituality among us: a) new convictions, b) new attitudes and c) new forms of life.⁴¹ In short, Francis sees the present and the future of humanity, there stands a great cultural, spiritual and educational challenge that is of a long path of renewal. However, upholding his optimism even higher in human conversion; the Pope believes that no system can completely suppress human openness to what is good, true, and beautiful or our God-given abilities to respond to his grace. The only drawback to this human openness is that, collectively, we have not as yet, developed a universal awareness so timely needed to achieve this. In Francis' perspective, humanity is faced with an educational challenge to do the following:

- a) Restore the various levels of ecological equilibrium – human-ecology.
- b) Establish harmony with ourselves and with others – inter-human relationships - Anthropology.
- c) Establish harmony with nature and other living creatures – Eco-centric relationship
- d) Establish harmony with God – theocentric relationality.

These restorative convictions, attitudes and life styles and establishment of good will for the common good henceforth need an *ethics of ecology*. For example, an ethics of ecology will strengthen our convictions and change our attitudes of:

- a) Avoiding the usage of plastic paper bags that are non-degradable – something that is achievable by many countries, i.e., Kenya and Rwanda in East African region have passed their respective environmental legislations on this, (e.g., *National Environmental Management Authority in Kenya*).⁴²
- b) Reducing unnecessary water consumption.
- c) Recycling what is possible.

⁴¹ Cf. *Laudato Si'*; nos. 203-220.

⁴² Cf. www.nema.go.ke : *Ban on Manufacture, Importation, Supply/Distribution of Plastic Carrier Bags in Kenya, 2018*. The Cabinet Secretary, *Ministry of Environment and Natural Resources* through a **Gazette Notice No. 2536**, banned the use, manufacture and importation of plastic bags used for commercial and household packaging.

- d) Showing care for other living beings.
- e) Understanding our earthly atmospheric systems and cycles that care for us most in our troposphere, stratosphere, mesosphere, thermosphere and exosphere: i.e., oxygen cycle, carbon dioxide cycle, nitrogen cycle, hydrogen cycle, etc.

This environmental ethics is sweeping across the world in the social-political arena not only of the Western regions of our globe but even now in East African regions today and across African at large. A case in point is what Ferdinand Nwaigbo from Nigeria observes that “it is no longer useful to engage in theology that derides and ignores the world and confines God’s purposes only to heaven in the eschatological future.”⁴³ It is the same way Pope Francis teaches that “encountering God does not mean fleeing from this world or turning our back on nature.”⁴⁴

Of great importance for those in the realms of church leadership is what Pope Francis proposes that the social-political institutions and above all our seminaries and centres of Catholic education ought to unreservedly embrace this *ethics of ecology* in order to help raise many peoples’ ecological awareness. How good it were if this ecological conversion is manifested among all the clergy who are privileged each Sunday, each week, each month, to reaching many faithful individually and sometimes even physically in their small Christian communities.

For Francis, all these proposals need only one thing, i.e., an authentic *ecological conversion* that is anchored on a long path of *civic* and *political love*, on a *culture of care*, and a *civilization of love*.⁴⁵ This ecological conversion for Francis, will help our Catholicism grow and the human community at large to see the sacramentality of God’s creation, where the entire universe unfolds in God who fills it completely.⁴⁶ This sacramental perception of this universe was quite important for Teilhard for it helped him to understand that scientific investigations are an adoration in themselves, and for Pope Francis, it helps him to see the inter-relationality of everything created, the same way St. Francis of Assisi did see ‘brother’ sun, ‘brother’ wind, ‘brother’ fire or ‘sister’ moon, or ‘sister’ water⁴⁷ hence the Pope going ahead to composing two powerful prayers

⁴³ Nwaigbo, “Pope Francis,” 215.

⁴⁴ *Laudato Si’* no. 235.

⁴⁵ *Laudato Si’*, no. 231.

⁴⁶ *Ibid.*, nos. 233-236.

⁴⁷ *Ibid.*, no. 87.

at the end of this encyclical: *A Prayer for Our Earth* and *A Christian Prayer in Union with Creation* respectively. This is a spirituality that demands not only an intellectual conversion in how nature works (science) but also a religious conversion of our faiths seeking understanding of the mystery of the universe – “*intellego ut credam.*”⁴⁸

3.0 Teilhard, Evolution and Human Ecology

Inasmuch as theology per se is a systematic way of a faith seeking understanding and it seeks to discern and exhibit that internal intelligibility of divine revelation and show its connections with other fields of scientific knowledge,⁴⁹ it is with Teilhard de Chardin that in a rare manner his Catholicism can be combined with philosophical, theological and scientific studies to developing a cosmic awareness in line with the scientific evolutionary theory as developed particularly by Charles Robert Darwin (12 Feb 1809 – 19 April 1882) who postulated that organisms change over time as a result of changes inheritable of physical or behavioural traits.⁵⁰ For Darwin, evolution is a gradual change in the heritable characteristics of biological populations over successive generations – *morphology* and *embryology*.⁵¹ These long-term evolutionary processes give rise to biodiversity at every level of biological organization; including the levels of *speciation* in the individual organisms.⁵²

In this theory of evolution, repeated formation of new species (*speciation*), change within species (*anagenesis*) and loss of species (*extinction*) throughout the evolutionary history of life on earth are demonstrated by shared sets of *morphological* and *biochemical* traits, including shared DNA sequences. These shared traits are more similar among species that share a more recent common ancestor and can be used to reconstruct a biological “*tree of life*”⁵³ based on evolutionary relationships

⁴⁸ Cf. Pope John Paul II, *Fides et Ratio*, nos. 24-35.

⁴⁹ Cf. Pope John Paul II, *Encyclical Letter, Fides et Ratio, on Faith and Reason*, Vatican City: Libreria Editrice Vaticana, 14 September 1998, nos. 84-85, in *AAS 91 (1999)*, 1-92.

⁵⁰ Charles, Robert, Darwin, *The Origins of Species by Means of Natural Selection*, editor, J.W. Burrow, England: Penguin Books Ltd, 1859, 397-434.

⁵¹ Darwin, *The Origin of Species*, 415-428.

⁵² A species is the basic unit of biological classification and taxonomic rank. A species is the largest group of organisms in the 8 major taxonomic ranks (Life-Domain-Kingdom-Phylum-Class-Order-Family-Genus-Species) in which two individuals can produce fertile offspring, typically by sexual reproduction, that have similarity in DNA morphology and even ecological niche.

⁵³ Pierre Teilhard de Chardin, *The Phenomenon of Man*, translator, Bernard Wall, (With an Introduction by Sir Julian Huxley), New York: HarperPerennial Modern Thought, 2008, diagramme 2 The ‘*Tree of Life*’, 135. Cf. also Pierre Teilhard de Chardin, *The Human Phenomenon, A New Edition and Translation*

(phylogenetics) using both existing species and their fossils. Therefore, the existing patterns of biodiversity today, ecologists argue, have been shaped both by *speciation* and *extinction*. Thus, Teilhard's ecological consciousness combines the scientific findings and theology as faith seeking understanding (philosophy) respectively; specifically in the field of paleontology and Christology in a comprehensive, harmonious and dynamic whole, which expounds with a deep scientific cum spiritual vision of the interior unity, complexity and diversity of the cosmos in evolution, i.e., the law of complexity-consciousness.

Teilhard's cosmos is a cosmos that has its origins and its ultimate purpose in God the Creator. For Teilhard, evolution portrays God still actively involved in creating and guiding his creation forward and upwards in an ever evolving and complexifying consciousness.⁵⁴ Teilhard saw evolution as a *light*⁵⁵ that illumines all facts about the universe and its relationship with God.⁵⁶ In fact, Teilhard developed a personal way that one may call it 'mystical', of seeing and understanding the physical world by applying the scientific findings as he avers that our universe originated from a primordial *stuff*⁵⁷ and in a ten billion-year period of development of inorganic matter that began with the initial flaring forth of energy; the emergence of the first quarks and leptons, leading through to star formation and culminating in our solar system and eventually the development of the mineral world and later on *life* and *consciousness* on Earth.⁵⁸ Then one billion years after our planet was formed, life suddenly emerged on earth.⁵⁹ Thence, the appearance of the *Prokaryotic*⁶⁰ cells and *Eukaryotic* cells led to the formation of

of Le phénomène humain by Sarah Appleton-Weber, with a Foreword by Brian Swimme, Great Britain: Sussex Academic Press, 2015, *Figure 2: The 'Tree of Life' according to Cuénot*, 86.

⁵⁴ Consciousness in a layman's language, is the state of being aware of something; or the state of being able to use one's senses and mental faculties to understand what is happening around oneself. But Teilhard uses this term in a very restricted but comprehensive manner in all his fields of study, especially when it comes to human fossils – palaeontology. Evolving human consciousness for Teilhard refers to one's level of self-awareness and one's relatedness to others (human-ecology) and to the whole of creation or non-human creatures, nature (ecology) and above all to God – (*The Divine Milieu*). Consciousness is not a product of space and time nor the product of mind and evolution. Consciousness mirrors the observer's state of being. For some quantum physics, we might be living in a higher dimension (11/or 26) but our senses cannot perceive them yet. They are mere possibilities of no physical forms.

⁵⁵ Teilhard, *The Phenomenon of Man*, 241.

⁵⁶ See *The Phenomenon of Man*, 47, 51, 60-62, 64-67, 78-80, 96-98.

⁵⁷ See "The Total atomicity and organicity of the universe in space and time," in Teilhard, *Science and Christ*, 222-223. Cf. also *The Phenomenon of Man*, 43-81.

⁵⁸ See *The Phenomenon of Man*, "The Polymerizing World", 76-77.

⁵⁹ See *The Phenomenon of Man*, *Book Two: Life*, 85-177.

⁶⁰ Prokaryotic cells are only the single-celled organisms of the domains Bacteria and Archaea are classified as prokaryotes – *pro* means **before** and *kary* means **nucleus**. Animals, plants, fungi and protists are all **Eukaryotes** – *Eu* means **true** and are made up of **Eukaryotic cells-true cells**. The distinction is that

*Proteins*⁶¹ which in turn, led after billions of years of evolution to other *forms of life* and lastly to humans – the most complex organism on earth today, i.e., a *conscious* and a *knowing* species which *knows that it knows*.⁶²

Following this scientific skein of thought, at about 200, 000 year ago, another important human phase began, i.e., the human *culture* and *spiritual* consciousness that has now unreservedly embraced science and technology.⁶³ For our case here, although we know that the biological evolution of the human body is a contested subject matter as of today in many scientific and religious circles,⁶⁴ in reality the cosmos and particularly the earth planet that we humans inhabit now, unquestionably is not as it were some billions of years ago; and for Teilhard, it is an ever expanding, dynamic process (geogenesis) not only on a geological scale, but also on a biological scale and intellectual-noogenesis, (consciousness) scale; a process Teilhard refers to as the *Noosphere*⁶⁵ and on religious scale he names it as the *christosphere* with the emergence of Jesus the Christ.⁶⁶ In other words, as on the geosphere scale matter is mineral or inorganic, and as on the biosphere scale matter acquires a new aspect, that is, a living cell or becomes organic; on the noosphere scale, matter begins to manifest a more deeply cultural, intellectual and spiritual consciousness of itself and of its environment.⁶⁷

Teilhard here, employing purely the findings of science, argues convincingly that the subsequent evolution or rather development of “*things within things*”⁶⁸ is the basis of understanding today the ecological biodiversity of life on the earth. Put it differently, one can argue that Teilhard’s cosmology resonates well with the today’s scientific

eukaryotic cells have a true nucleus containing their DNA, whereas prokaryotic cells do not have a nucleus. Both eukaryotic and prokaryotic cells contain large RNA/protein structures called ribosomes, which produce protein.

⁶¹ Proteins are large biomolecules or macromolecules, consisting of one or more long chains of amino acids residues. Protein is found throughout the body – in muscles, bone, skin, hair, and virtually every other body part or tissue.

⁶² Teilhard, *The Phenomenon of Man*, 183-4.

⁶³ See *The Phenomenon of Man*, *The Birth of Thought and The Development of the Noosphere*, 181-228.

⁶⁴ Pope Pius XII, Encyclical *Humani Generis*, *Concerning Some False Opinions Threatening to Undermine the Foundations of Catholic Doctrine*, August 12, 1950, nos. 36-37, in AAS 42 (1950), 561-578. See also Pope John Paul II, *Message to the Pontifical Academy of Sciences on Evolution: Magisterium is Concerned with the Question of Evolution for it involves Conception of Man*, Vatican City: 22 October 1996, nos. 3-6.

⁶⁵ *The Phenomenon of Man*, 80, see the last paragraph and the footnote no. 4.

⁶⁶ *The Phenomenon of Man*, 325-26.

⁶⁷ Cf. Deepak Chopra & Menas Kafatos, “When Atoms Learned to Think,” in *You Are the Universe: Discovering Your Cosmic Self and Why it Matters*, London: Rider, 2017, 153-154.

⁶⁸ *The Phenomenon of Man*, 58ff.

biochemical and genetic argumentation of our inherent interrelatedness – ‘sharedness’ of the morphological and genetic structures with other animals. On this fact, Teilhard forewarns both the naïve materialists and extreme fideism that:

On the scientific plane, the quarrel between materialists and the upholders of a spiritual interpretation, between finalists and determinists, still endures. After a century of disputation each side remains in its original position and gives its adversaries solid reasons for remaining there. So far as I understand the struggle, in which I have found myself involved, it seems to me that its prolongation depends less on the difficulty that the human finds in reconciling certain apparent contradictions in nature – such as mechanism and liberty, or death and immortality – as in the difficulty experienced by two schools of thought in finding a common ground. On the one hand the materialists insist on talking about objects as though they only consisted of external actions in transient relationships. On the other hand, the upholders of a spiritual interpretation are obstinately determined not to go outside a kind of solitary introspection in which things are only looked upon as being shut in upon themselves in their ‘immanent’ workings. Both fight on different planes and do not meet; each only sees half the problem.⁶⁹

Now, if both camps, the materialists represented today by extreme (tyrannical) anthropocentrism of materialists and rationalists and the spiritual interpreters represented today by fundamentalists and Biblicists and that each side may be seeing half of the problem; it is in the synthesis of Pope Francis’ encyclical *Laudato Si’* (*Praise be to You!*), on the care of our common home that we can clearly see how Teilhard’s prophetic warnings about the future of humanity in relation to the question of building the earth – human development can be reconciled; as Francis ably demonstrates how we humans are bodily and spiritually connected with the non-human world, and above all, with God.⁷⁰ This tyrannical anthropocentrism emanating from both scientific knowledge and naïve fundamentalism calls us now to re-examine in Part Two of this article, our Catholicism in light of the emergent global ecological awareness.

⁶⁹ *The Phenomenon of Man*, 58.

⁷⁰ Cf. “The Mystery of the Universe,” in *Laudato Si’*, nos. 76-83.

4.0 Catholicism and Ecological Consciousness in the 21st Century and Beyond

It is not false that humanity's day to day, decade to decade, century to century and millennium to millennium debates and disputations on what is real; coupled with utter tyrannical anthropocentrism embedded in obstinate denial of our human interconnectedness with everything else in the universe and more so with our earth's ecosystems, from geosphere to biosphere, and from the noosphere to the christosphere, lies at the root of our present-day ecological crisis. Allerd Sticker says "If we are to solve the problems facing us today, we must analyze in greater depth what is happening during the evolutionary process and what we can learn from it."⁷¹ There are many theologians today who argue that Teilhard's theory of evolution or rather his cosmic vision as expressed in his various works⁷² undoubtedly has much to offer not only to believers but also to the world of science.⁷³ This is evidenced in Teilhard's writings like *The Divine Milieu*, *Building the Earth*, *The Prayer of the Universe*, *Hymn of the Universe* and *The Mass on the World*. In fact, his cosmological views are gradually gaining grounds and are becoming a source of inspiration for a new theology for the third millennium.⁷⁴ That is why I absolutely agree with Jane Goodall, when she says in her book, *Reason for Hope: A Spiritual Journey* that:

There are really only two ways, it seems to me, in which we can think about our existence here on Earth. We either agree with Macbeth that life is nothing more than a 'tale told by an idiot; a purposeless emergence of life-forms including the

⁷¹ Allerd Sticker, (Ph.D.) is a Netherland chemical engineer, Catholic Christian and Environmental Conservationist and passionate Teilhardian by thought. See Teilhard, *Evolution and Ecology in Teilhard Studies*, No. 73, (Fall 2016,1-15), 5. Teilhard Studies is a monograph series concerned with the future of the human race in the light of the writings of Teilhard de Chardin. Two issues each year are printed and sent to members of the Teilhard Association. Below are the links to the first page of every past Study in adobe acrobat format and to a short biography for each author as well: (<http://teiharddechardin.org/inde.php/teilhard-studies>) & (http://teiharddechardin.org/mm_uploads/73-Teilhard_Evolution_and_Ecology.pdf). Accessed on Sunday, 20 June 2022.

⁷² See "A Bibliography of Teilhard's Published Works in English," in Arthur Fabel & Donald St. John, *Teilhard in the 21st Century: The Emerging Spirit of Earth*, New York: Maryknoll, Orbis Books, 2003, 246-247.

⁷³ See Cardinal Avery Dulles, Cardinal Robert De Lubac, Cardinal Christoph Schönborn, Pope John Paul II, Pope Benedict XVI, Pope Francis. Other theologians include Karl Rahner, Bernard Lonergan, Henry Newman, Jürgen Moltmann, Denis Edwards, etc. Cf. also *Laudato Si'*, on *The Mystery of the Universe*, nos. 76-83, especially footnote no. 53. See also *American Teilhard Association* (www.teiharddechardin.org); *French Teilhard Association*, *British Teilhard Association*.

⁷⁴ See David Wilkinson, *Christian Eschatology and the Physical Universe*, New York: T&T Clark, 2010. See also the contemporary works of Thomas Berry, Denis Edwards, Ilia Delio, John Haught, Zachary Hayes, Gerald O'Collins, etc.

clever, greedy, selfish, and unfortunate species that we call homo-sapiens – the evolutionary goof’. Or we believe that, as Pierre Teilhard de Chardin put it, ‘There is something afoot in the universe, something that looks like gestation and birth! In other words, a plan, a purpose to it all’.⁷⁵

Teilhard postulates that this created world as we know it now scientifically and religiously, has been and is still evolving onwards, outwards, and upwards to the Omega Point – the Cosmic Christ – the *Alpha* and the *Omega*, who was, who is and who is to come (Rev 1:18). For Teilhard, this *Omega Point* is the eternal Christ of divine revelation *in whom* and *to whom* all material complexities tend. This is the ultimate meaning for Teilhard as to why evolution, as to why things change, as to why dynamism in the universe; a meaning that the absolute materialists and science cannot easily embrace.⁷⁶ Cosmic evolution for Teilhard is not a blind or mindless process as claim materialists and secular rationalists of today. Rather it is a divinely guided process moving towards its completion and perfection, (cf. *The Catechism of the Catholic Church*, 1994, nos. 290-295; 301-327; 337-361). Indeed, Teilhard’s wider and deeper vision of the cosmos from the scientific and religious points of view reflects the universal Christology of St. Paul, especially St. Paul’s letter to the Church of Colossae (*Col 1:15-20*). The Christological hymn found here describes Christ as the summit of all Creation in such a cosmic language:

He is the image of the invisible God, the firstborn of all creation. For in him were created all things in heaven and on earth, the visible and the invisible, whether thrones or dominions or principalities or powers; all things were created through him and for him. He is before all things, and in him all things hold together. He is the head of the body, the church. He is the beginning, the firstborn from the dead, that in all things, he himself might be preeminent. For in him all the fullness was pleased to dwell, and through him to reconcile all things for him, making peace by the blood of his cross (through him), whether those on earth or those in heaven, (*Col 1:15-20*).

⁷⁵ Jane Goodall, *Reason for Hope: A Spiritual Journey*, New York: Warner Books, 1999, xi-xii.

⁷⁶ See Teilhard, “Catholicism and Science,” and “Degrees of Scientific Certainty in the Idea of Evolution,” in *Science and Christ*, 187-191 & 192-196 respectively.

In this hymn, Christ is presented as the image of God, the firstborn of all creation, and his cross as the reconciling agent of all creation. That is, the divine acts of creation, preservation and redemption are clearly shown which underline the superiority of Christ over the created order and the redeemed order; and his *pleroma* “fullness” of God was pleased to dwell. Hence, by divine election, God in all fullness dwells in Christ, that is why through Christ all things are reconciled to God.⁷⁷ This Christological hymn also reflects St. John’s eternal pre-existence of Jesus Christ, (Jn 1:1-18). Long before Teilhard came to embrace the insight that evolution is holy⁷⁸ we can see that St. Paul himself already had understood creation as something not perfect, not static and not completed but as groaning in ‘labour pains’ (cf. Rom 8:22) as it slowly journeys (evolves) to maturity/perfection. Further than that, St. Paul understood the resurrection of Jesus Christ as an event that brings about the eventual resurrection of all humanity and creation at large in Christ-Jesus, who is the fullness of him who fills the whole creation (cf. Eph 1:23; 1 Cor 15:21).

These scriptural foundations must have helped Teilhard and must help us today in the 21st century and beyond, to come to an integral understanding and awareness of our Catholicism and the *divine milieu*⁷⁹ in this world, that is, God’s presence and self-communication within all humanity and non-human creatures; creating a divine union between the creator (divine) and the created reality (non-divine - secular). In Teilhard’s Catholicism, one cannot fail to see how he develops his scientific evolutionary argumentations in relation to the Omega Point theory: cosmogenesis-biogenesis-noogenesis-christogenesis as he employs his most important law of *Complexity-Consciousness*.⁸⁰ In fact, Teilhard perceived matter, life and consciousness as realities forming but a one single history of cosmic evolution. From energy came matter, from

⁷⁷ Raymond, E. Brown, *An Introduction to the New Testament*, Bangalore: Theological Publications India, 2014, 603-604. See also (*Wisdom 7:26; Prov 3:19, 8:22*).

⁷⁸ Cf. Pierre Teilhard de Chardin, “The Holiness of Evolution,” in *The Prayer of the Universe: Selected Writings in Time of War*, trans, René Hague, Great Britain: Collins, Fontana Books, 1968, 92-105.

⁷⁹ Teilhard de Chardin, *The Divine Milieu, An Essay on the Interior Life*, London: Collins, St. James Place, 1960: see Part 3: *The Divine Milieu*, 100-143. Cf. also Teilhard de Chardin, *Building the Earth*, London: Geoffrey Chapman, 1965, see “The Spirit of Earth,”; “The Personal Universe,”; “Love as Energy,”; “The Personalizing Universe,”; The Essence of the Phenomenon of Man, in *The Phenomenon of Man*, 245-253, 260-264, 264-268, 300-313 respectively.

⁸⁰ See Robert O. Wafula, *Licentiate Thesis: The Cosmic Christ in Teilhard de Chardin’s Theory of Evolution and Its Relevancy for the New Evangelization: A Case Study in Contemporary Theological Focus on Creation and Redemption*, Nairobi: The Catholic University of Eastern Africa, 2015, 115-119; 211-219. See also *The Phenomenon of Man*, 47, 53, 53n, 70, 72, 95-6, 197-8, 329-30, 397-8.

matter there emerges life, from life emerges consciousness, and out of consciousness emerges a self-reflective- 'conscious' being.⁸¹ Indeed, Chopra argues that:

Evolution is purpose-driven through each species as it experiments with its environment and gets feedback. A feedback loop is set up that creatively meets every challenge from the environment, sometimes successfully, sometimes not. Evolution is a never-ending process because it is rooted in an inherent property of consciousness, the impulse to create. Although evolution is synonymous with growth, the actual process includes the preservation of new creations and absorbing them into the entire system, whether that system is the human body, a niche in the environment, or the entire cosmos.⁸²

According to Teilhard therefore, in the christogenesis phase, there occurs in the history of this cosmos, the mysteries of the incarnation of God but more so of his resurrection – Jesus Christ, (cf. Jn 1:18) who unites the divine and the none-divine dimensions of the universe in his *Hypostatic Union* – the union between the full divinity and the full humanity in the one (divine) person of Jesus Christ, (cf. Jn 1:14; DH 252-63, 301-2; ND 606/1-12, 614-15).⁸³ In this union for Teilhard, Jesus of Nazareth, the eternal logos, the second person of the Triune God assumes an irreversible evolutive cosmic role of saving and directing the universe to its ultimate goal, i.e., the eternal communion with the Creator - God. On this very question of Jesus Christ's glorification and exaltation into the heavens and his kingdom that shall not be destroyed, *The Catechism of the Catholic Church* (nos. 659; 663-664) admirably teaches us that:

... during the forty days when he eats and drinks familiarly with his disciples and teaches them about the kingdom, his glory remains veiled under the appearance of ordinary humanity. Jesus' final apparition ends with the irreversible entry of his humanity into divine glory, symbolized by the cloud and by heaven, where he

⁸¹ Cf. Chopra "Qualia Principles: The Foundations for a Science of Consciousness," in *The Future of God*, 248-257.

⁸² Ibid., 256.

⁸³ **DH** – It is a handbook of Creeds and Definitions commonly referred to simply as "Denzinger" (**DH**) - **Enchiridion Symbolorum, definitionum et declarationum de rebus fidei et morum**. It is a book named after its first editor, a Catholic German theologian Heinrich Joseph Dominicus Denzinger (1819-1883). This book has been in use since 1854 and has been regularly updated since. **ND** - It is a handbook of doctrinal documents of the Catholic Church authored by Josef Neuner S.J., & Jacques Dupuis, S.J., and edited by Jacques Dupuis, (*The Christian Faith in the Doctrinal Documents of the Catholic Church*. It has been revised several times since its first publication in the year 2000. See J. Neuner & J. Dupuis, *The Christian Faith in the Doctrinal Documents of the Catholic Church*, 7th edition revised and enlarged, Bangalore: Theological Publications in India, 2008.

is seated from that time forward at God's right hand. ... 'By 'the Father's right hand' we understand the glory and honour of divinity, where he who exists as Son of God before all ages, indeed as God, of one being with the Father, is seated bodily after he became incarnate and his flesh was glorified.' Being seated at the Father's right hand signifies the inauguration of the Messiah's kingdom, the fulfilment of the prophet Daniel's vision concerning the Son of Man: "To him was given dominion and glory and kingdom, that all peoples, nations, and languages should serve him; his dominion is an everlasting dominion, which shall not pass away, and his kingdom one that shall not be destroyed.' After this event the apostles became witnesses of the "kingdom [that] will have no end.'⁸⁴

In Teilhard's evolutionary perspective, this is the onwards growth, outward growth, and upwards development of this universe to the Omega Point – the Cosmic Christ – the *Alpha* and the *Omega*, who was, who is and who is to come, (Rev 1:18) and for Chopra, this is the actual process which includes the preservation of new creations and absorbing them into the entire system, whether that system is the human body, a certain niche of the environment, or the entire cosmos.⁸⁵ We humans find ourselves in an emergent and upward and irreversible evolutionary development of a universe, now under the phase of the *christophere*, which will bring all humanity and all of creation redeemed, (cf. the *Catholic Roman Missal, Eucharistic Prayer IV*) though painstakingly gradual, to the recognition of that divine presence, love and divine power (*radial energy*⁸⁶) that holds all things together in the universe; despite the *tangential energy*⁸⁷ of the thermodynamic arrow of time where disorder (evil) seems to increase in the universe.⁸⁸ And for me the doctrine of divine providence in the process of evolution should stir our Catholicism more than ever before in this century and beyond in order to deepen our faith and hope in the redemptive acts of God in the incarnate and risen Christ.

⁸⁴ *The Catechism of the Catholic Church*, revised edition, Nairobi: Paulines Publications Africa, 1995.

⁸⁵ Cf. Chopra, *The Future of God*, 256.

⁸⁶ . See Consciousness, Intelligence, Mind, Psyche, Soul, Spirit, as the 'within of things'. Cf. *The Phenomenon of Man*, 64-66, 72, 88-89, 143, 147-149, 168-169, 176, 239, 244, 253, 265, 269, 272.

⁸⁷ See 'Tangential' (external) energy, 'Entropy,' or 'Thermodynamics'. Cf. *The Phenomenon of Man*, 51, 66, 88, 143, 147, 149, 169, 239, 271-272, 290.

⁸⁸ See Stephen Hawking, "The Arrows of Time," in *A Brief History of Time: From the Big Bang to Black Holes*, London: Bantam Books, 2016, 162-173. See also Neil deGrasse Tyson, "Reflections on the Cosmic Perspective," in *Astrophysics for People in a Hurry*, New York: W.W. Norton & Company, 2017, 86ff.

And this presupposes a balanced understanding of what evolution is all about in this Anthropocene age.

4.1 Catholicism and the Anthropocene Ecology

Teilhard, in applying his *law of complexity-Consciousness*⁸⁹ argues that the noosphere, which is the thinking layer on the surface of the earth, is increasing at an unprecedented level towards an ever-greater complexification, greater integration, but above all, to greater but complex unifications. Teilhard was keen to observe in his paleontological investigations not only the *without* of things but more so the *within* of different species; especially the human species. By the *within* of things here, we mean, the invisible realities that cannot be subjected to human calculations and measurements in terms of its breadth, width, and height, i.e., mind/thought/consciousness. The whole argument that Teilhard presents in his concept of the ‘*Noosphere*’ is that the human mind/thought/consciousness is irreversibly *complexifying* to new and higher levels of states in the biosphere and it becomes more complex than in the previous stages of development as observed in the animal kingdom.⁹⁰

Without drifting away into many details of these complexities, we can keenly and quietly observe all the infrastructures surrounding us today, i.e., roads, skyscrapers, communications facilities, i.e., telephones/mobile phones, computers, internet, satellites; economic relations (industries, merchandizes); all these are nothing but an extension of the noosphere that is ushering humanity into an Anthropocene age and more so into the *ecozoic era* as Thomas Berry rightly observes.⁹¹ For Teilhard, the universe gropes forward in fits-and-starts, progressing by trial and error through a multiplicity of attempts and efforts; moving in many directions as it looks for a breakthrough, for a leap forward

⁸⁹ The law of **complexity-consciousness** implies that as matter develops in the universe, right from geogenesis to biogenesis and to noogenesis, it continues to rise and complexify-(become complex) in a continuum of both material level and consciousness level.

⁹⁰ Cf. Teilhard, *The Phenomenon of Man, Book Three: Thought*, “*The Prolongation of the Neolithic Age and the Rise of the West*”, 206-212.

⁹¹ The term “**Ecozoic**” was coined by Thomas Berry (1914-2009) in conversation with Brian Swimme (1950 -) for their book *The Universe Story* (Film), *The Journey of the Universe* in order to describe the geological era that the planet Earth is entering- when humans are not living in a mutually enhancing relationship with the Earth and the Earth Community or rather its ecology. While not intending to directly change the course of evolution or change its chemistry in its large-scale system cycles of the earth, humanity is doing so at a rapid speed that is detrimental to its futurity. See (www.ecozoictimes.com) accessed on Tuesday June 28, 2022.

in evolution and consciousness; but on this earth, in its *ecozoic* era, humanity is paying much attention only to its own needs (anthropocentrism) and irrationally ignoring how and where we came from; how and where we are; and how and where are we going?

Thomas Berry in unison with Teilhard says:

The entire pattern of functioning of Earth is altered in a transition from the Cenozoic to the Ecozoic. The major developments of the Cenozoic took place entirely apart from any human intervention. In the Ecozoic, the human will have a comprehensive influence on almost everything that happens. While the human cannot make a blade of grass, there is likely not to be grass unless it is accepted, protected, and fostered by the human. Our positive power of creating in the natural life system is minimal, while our power of negating is immense.⁹²

Teilhard implicitly prophesying the role of the Church in the noosphere believed strongly that the noosphere can now only function *integrally* by releasing more and more spiritual energy with an ever-higher potential; for from the very first awakening of humans' reflective consciousness, humanity has been possessed by the unrestricted desire to know, even the desire to know the ultimate Truth or rather the *Transcendent Being*- God. These human potentialities and possibilities ahead, signified to Teilhard a curve of consciousness pursuing its course of the law of increasing complexity that now desires a breakthrough the material framework of time and space but without being aware that they cannot make a blade of grass.

4.2 Catholicism, Teilhardism, and Laudato Si' in the Ecozoic Era⁹³

I have always had a remote but a nagging feeling that Teilhard de Chardin's thoughts, vision and prophecies are not justly, realistically and objectively welcomed by many people; whether within or rather among some top hierarchy of the Church leadership or outside the Church, and in that regard, his insights on the future of humanity and of our planetary systems are not studied in the depth they deserve philosophically and

⁹² See The 13 Points of the Ecozoic Times, see (www.DeterminingFeaturesoftheEcozoicEra). Accessed on Tuesday June 28, 2022.

⁹³ **Ecozoic Era**, is a term coined by Thomas Berry (1914-2009) to describe an era in which humans must learn to live in a harmonious relationship with the non-human world or perish with technozoic era.

theologically.⁹⁴ This can be partly explained on one hand by the active suppression of Teilhard's ideas and works by the Church's Magisterium of his time.⁹⁵ On the other hand, maybe due to the extreme fideism of some believers and above all; the cynical suspicion of his ideas as not scientific (mystical) within the scientific community itself due to the extremist culture of rationalism that has made his ideas seem peripheral and unbothering.

Inasmuch as the case may be, mysticism is a human experience so foreign to many seasoned theologians and seasoned scientists. However, it is becoming increasingly clear that Teilhard's ideas on purposeful evolution and its futurity are, in the 21st century, influencing not a few people both individually and collectively, both religious and scientists especially, those who authentically yearn to understanding some abounding scientific facts about the nature of matter in relation to the dynamism and complexification experienced in matter and its ultimate meaning in the universe; that tends to give organic life and above all complexifies itself into consciousness that incessantly yearns to transcend itself; hence today's emergence of the question of *biocentrism*⁹⁶ that Pope Francis decries in his encyclical *Laudato Si'* as "a misguided anthropocentrism".⁹⁷ Presently, Teilhard's ideas still remain marginal due to incessant utilitarian and consumerism worldviews hence perduring strong anthropocentrism in the world of politics and economics. This is exactly the line of thinking that centrally occupies the third Chapter of Pope Francis' encyclical *Laudato Si'* on the human roots of the ecological crisis as the Pope treats technology and its globalization in relation to the effects of modern anthropocentrism. In this case, many Teilhardian followers today believe strongly that his ideas on the cosmic perspective should not be taken lightly.⁹⁸

⁹⁴ See Chabarek, "The Evolutionary Vision of Teilhard de Chardin," & "Looking into the Past: Two Stages in Church Teaching on Evolution," *Catholicism and Evolution*, 197-215 and 301-307 respectively. See also Wolfgang Smith, *Teilhardism and the New Religion: A Thorough Analysis of the Teachings of Pierre Teilhard de Chardin*, North Carolina: Tan Books, 1988.

⁹⁵ See Act of the Sacred Congregation of the Holy Office: *Monitum – Warning Regarding the Writings of Father Teilhard de Chardin*, Notarius, Sebastianus Másala, 30 June 1962, AAS 54 (1962), 526. This warning was reiterated on July 20, 1981, in the English edition of *L'osservatore Romano*, July 20, 1981. See *A Communiqué (Communication of the Press Office of the Holy See)*, by Cardinal Secretary of State, Augustinus Card. Casaroli, to His Excellency Mons. Poupard, on the *Centenary of the Birth of Fr. Teilhard de Chardin*, July 20 1981.

⁹⁶ Biocentrism argues that the phenomenon of life and consciousness are the key to understanding the true nature of the universe. See (www.biocentrims.com), accessed on June 17 2022.

⁹⁷ Cf. *Laudato Si'*, no. 118.

⁹⁸ For example: Anton Čartolovni, "Teilhard de Chardin's Oeuvre Within an Ongoing Discussion of a Gene Drive Release for Public Health Reasons," in *Life Sciences, Society and Policy*, Vol. 13, (2017), 1-15. See also Brendam Lehman & Michael Persinger, "Convergent Quantification and Physical Support for

And to the surprise of some seasoned rationalists and fideists alike, Teilhard's foresight on scientific, social and religious interpolations are knocking at their doors through the current ecological crisis.⁹⁹ Of great importance today is that humanity is entering into a fierce exploration of matter be it on quantum levels or dark matter and dark energy in a cosmic scale. In all these researches, Teilhard argues strongly that the sciences of nature validate the fundamental affirmations of the Christian faith; as he asserts that the only way to save sciences from self-destruction is to place the immanence of God back in the totality of creation; something that biblical anthropocentrism, so to speak, in many ways has emboldened the absolute rationalists.¹⁰⁰

Today, scientists are facing challenging times of recognizing that no clear line of demarcation can be drawn between the observer and the observed in quantum physics. These scientists like theologians too, cannot take a completely objective position that is separate and apart from the phenomenon being studied, i.e., *quantum reality*. The same way the scientist like the theologian too, cannot take a completely objective position separate and apart from the phenomenon being postulated, like *Omega Point*, the *radial energy* or *rather dark matter* and *dark energy* in the universe that Teilhard postulates in his cosmic models like of Omega Point. Therefore, with this militant skepticism abounding in many scientists; the transcendent truth (God) is shut out in sciences, unlike what Teilhard argues for God in science.¹⁰¹ In a markedly painstaking manner, Teilhard argues as follows:

...men's minds are reluctant to recognize that evolution has a precise orientation and a privileged axis. Weakened by this fundamental doubt, the forces of research are scattered and there is no determination to build the earth. ... Leaving aside all anthropocentrism and anthropomorphism, I believe I can see a direction and a line of progress for life, a line and a direction which are in fact so well marked

Teilhard de Chardin's Philosophy Concerning the Human Species and Evolutionary Consciousness," in Open Journal of Philosophy, Vol. 5, (2015), 338-350. Access it on (<http://dx.doi.org/10.4102/hts.v72il.3823>) or (<http://dx.doi.org/10.4236/ojpp.2015.56042>) or (<http://www.scirp.org/journal/ojpp>) or (<http://dx.doi.org/10.4236/ojpp.2015.56042>). Accessed on 30 June, 2022. See also *The American Teilhard Association*, as a non-profit organization whose goals are to explore philosophical, scientific, religious, social and environmental concerns in light of Teilhard's vision and to clarify the role of human phenomenon in this emerging understanding of the cosmos. See (www.teilharddechardin.org), accessed on June 28, 2022.

⁹⁹ See the chronological history of the *International Summits on Climate Change*, e.g., the *United Nations Framework Conventions on Climate Change* on (www.unitednationsframeworkonclimatechange.org). Accessed on June 20, 2022.

¹⁰⁰ Cf. Teilhard, *Human Energy*, 163, 171.

¹⁰¹ See Teilhard's works: *Science and Christ* (1968) and *Christianity and Evolution* (1969) respectively.

that I am convinced their reality will be universally admitted by the science of tomorrow.¹⁰²

Therefore, according to Teilhard, creation is in evolution and this evolution, though sometimes erratically or call it non-linearly and sometimes haltingly, but nonetheless, is groping forwards towards higher forms of states/being or consciousness.¹⁰³ This vision is what prompted Teilhard to argue that the question of science and religion exists and will for a long time exist in a direct but dialectical manner.¹⁰⁴ Given this dialectical existence between science and religion which has a direct bearing on our Catholicism today and on the Anthropocene ecology; for Teilhard, there is little difference than many people think, between *research* and *adoration*¹⁰⁵ because, “Religion and Science are like the two conjugated faces or phases of one and the same act of complete knowledge”¹⁰⁶ and will have to be partners for the future of each other in order for us to make of this complexifying universe.¹⁰⁷ This is the radical call Pope Francis is calling us in *Laudato Si’* in terms of ecological awareness and ecological conversion respectively.

If really, what Teilhard speaks above is true that religion and sciences are nothing but human adoration, then, it is a fact of what Pope Francis is bringing up in the first Chapter of his encyclical *Laudato Si’* as he treats in great details of ‘what is happening to our common home’ – the earth. The Pope rightly observes this:

The continued acceleration of changes affecting humanity and the planet is coupled today with a more intensified pace of life and work which might be called “lapidification”. Although change is part of the working of complex systems, the speed with which human activity has developed contrasts with the naturally slow pace of biological evolution. Moreover, the goals of this rapid and constant change are not necessarily geared to the common good or to integral and sustainable human development. Change is something desirable, yet it becomes

¹⁰² Teilhard, *The Phenomenon of Man*, 141-142.

¹⁰³ Ibid., 220.

¹⁰⁴ Ibid., 283-285.

¹⁰⁵ Ibid., 284ff.

¹⁰⁶ Teilhard, *The Phenomenon of Man*, 285. See also Teilhard, *Christianity and Evolution*, 194 and *The Future of Man*, 269.

¹⁰⁷ Teilhard, *Human Energy*, 180-181.

a source of anxiety when it causes harm to the world and to the quality of life of much of humanity.¹⁰⁸

I believe strongly that serious scientific research for the truth and only for the truth; cannot fail to turn into an authentic ‘religious’ *adoration* of that incomplete knowledge of truth that creation presents us with, (cf. Wis 11:22-26; 13:1-19). It is in the nature of this type of the universe we find ourselves in to invite the noosphere to study itself (philosophy) in relation to entire creation (cosmology) and (theologize) but also adore the ultimate truth behind its existence-value and reality-value. But if absolute rationalism that abounds in sciences today and the absolute fideism and biblicism that abound in many a faith(s) today is going to be the order of the present world, then anthropocentric utilitarianism will not help but devour our common home not in the far distant future of this planet earth. This is exactly what Stephen Hawking as an agnostic scientist warned humanity about climate change in his scientific quest of understanding the black holes. Hawking says:

I didn’t do my scientific work in the hope of winning prizes and medals. I did it because I wanted to understand the universe. There is nothing like the thrill when you discover something no one knew before. I hope I will be remembered for my work on black holes and the origin of the universe; not for things like appearing on ‘The Simpson’. It has been a glorious time to be alive and doing research in theoretical physics. Our picture of the universe has changed the great deal in the last 50 years. And I am happy if I have made a small contribution. The fact that we humans who are ourselves mere collections of fundamental particles of nature have been able to come to this close; to an understanding of the laws governing us in our universe is a great triumph. I want to share my excitement and enthusiasm about this quest. So, remember to look at the stars and not down at your feet. Try to make sense of what you see and wonder about what makes the universe exist. Be Curious. And however difficult life may seem, there is always something you can do and succeed at. It matters that you don’t just give up. There are no limits to the human spirit. I believe what makes us unique is transcending our limits. I lost my voice, but I can still speak thanks to my voice synthesizer. How do we transcend these limits? With our minds and our machines. I think

¹⁰⁸ *Laudato Si’*, no. 18.

global warming is a greater threat than terrorism. Climate change could kill millions. We should have a war on global warming rather than a war on terror. We are here together and we need to live together with **tolerance** and **respect**. We must become global citizens. I have been enormously privileged through my work to be able to contribute to our understanding of the universe but it would be an empty universe indeed if it were not for the people I love and who love me. We are all time travellers, journeying together into the future but let us work together to make that future a place we want to visit. Be Brave, Be Determined, Overcome the Odds! It Can Be Done!¹⁰⁹

Therefore, it is clear from such a scientist that the earth's thinking layer – the noosphere, constitutes a unity that is discontinuous but still co-extensive with the entire eco-systems of life on earth, inclusive of its inorganic and organic support systems. We can affirm without doubt that the present 'technosphere' virtually fulfils Teilhard's prophecy of humanity's *planetization*¹¹⁰ in terms of the global information network – a geo-technology of the internet, satellite and probably future cyborg communications. Besides that, when all geological earth systems are well studied and understood, i.e., the barysphere, lithosphere, asthenosphere, hydrosphere, biosphere, and finally the composition of its atmosphere, (troposphere, stratosphere, mesosphere, thermosphere and exosphere) one realizes that we humans with our incessant intrusive noosphere, live and survive under the entire *mercy* of the earth's ecosystems. This is why the circles/systems of the geosphere and biosphere are a form that requires humanity to interconnect within an *integral understanding* that Pope Francis calls *Integral Ecology, Lines of Approaches and Action* and *Ecological Education and Spirituality* which we shall point out below.

Therefore, as the universe evolves forward to its higher levels of organicities and unicity in complexities, and as the noosphere too complexifies forward to its higher levels of Technosphere, (cybernetics, cyberpunk, cyberspace, and cyborgs and spaceships) we

¹⁰⁹ Stephen Hawking, YouTube Video: (<https://www.youtube.com/watch?v=P17GbICtNSw>). Accessed on August 3, 2022.

¹¹⁰ **Planetization** is the process by which the diverse human races and civilizations are tending to converge into a single planetary civilization or culture (globalization), that is, sharing a rich and unified co-reflective vision of reality, and of life. See Robert Wafula, *Licentiate Thesis, "The Cosmic Christ"*, 232.

must bear in mind that the cosmos of Teilhard is that of two fundamental forces: the *tangential energy* (matter-thermodynamics) and the *radial energy* (spiritual/love) in a universe that is a system by its plurality, a *totum* by its unity and a quantum by its energy, all bound together in a boundless contour.¹¹¹ Now as we the homo sapiens or rather call ourselves the *techno-sapiens* of the 21st century dare as we do, whereby some are seriously asking as to whether we should have to be humans forever, i.e. (the cyborgs and trans-humanists) I believe that creating a super-intelligence without a super-body to maintain it amounts to not only ‘playing God’ but also playing the importance of matter in its boundless contour.

In this case therefore, Teilhard’s futuristic cosmological perspective and Pope Francis’ ecological awareness and conversion succinctly provide humanity of the 21st century with a context of understanding our true place in this universe, a universe that is far larger, huge and more complex than we diminutively (anthropocentrically) imagine. This perspective requires of us now a shift in thinking and in moral commitment as epitomized in Teilhard’s five chief concerns and Pope Francis’ global call for a long-term ecological education and spirituality beyond ‘brother’ Sun.¹¹²

4.5 Teilhard’s Five Catholic Concerns in the Ecozoic Era

It is true as Thomas Berry observes that we humans are “still struggling with our self-identity more than ever, even with the experience of so many centuries and the experience of so many cultures of the world.”¹¹³ Indeed the future of humanity and more specially its ecozoic era will progressively depend on the following collective understanding that:

- 1) The evolutionary origin and development of this universe is real and not hypothetical.
- 2) The human species is the consciousness mode of this observable universe¹¹⁴ and is the fulfilment of all other evolutionary process; notwithstanding the current

¹¹¹ Cf. Teilhard, *The Phenomenon of Man*, 43.

¹¹² Cf. Thomas Berry, “Teilhard in the Ecological Age” in Arthur Fabel & Donald St. John, editors, *Teilhard in the 21st Century*, 57-59. Cf. also Pope Francis, *Laudato Si’* nos. 233-245.

¹¹³ Berry, *Teilhard in the 21st Century*, 63.

¹¹⁴ Cf. Vatican II, *Gaudium et Spes*, no. 14.

scientific programmes of SETI (*Search for the Extraterrestrial Life and Intelligence*).¹¹⁵

- 3) This world and its history (secular and redemptive) has a sacred dimension of which some scientists sneer at or find no trace of human spirit or God's Spirit in their mathematical measurements and conjectures.¹¹⁶
- 4) The use and activation of energy (thermodynamics) in the universe, i.e., *tangential* and *radial* energy is a critical measure of its future existence.
- 5) The role of science and religion in terms of the true dignity of human research and intellectual inquiry is a form of religious adoration in itself.

Now, in our case here of seeking for a collective ecological conversion that is integral, in light of Pope Francis outlook, then, the future of religious ecological conversion will and progressively depend on the following Catholicism of our age:

- 1) How all world religions today and in the future will interpret the cosmic evolutionary processes and more so its human ecology.
- 2) How all world religions today and in the future will interpret the consciousness dimension of the universe from the beginning, that is, from its quantum levels (microworld) to the macro levels, i.e., solar systems and galaxies.
- 3) How all world religions today and in the future will interpret their scriptural cosmologies/thought/divine revelations in order to change from its strong anthropocentric-redemption centredness to a creation (cosmic) redemption centredness, i.e., from anthropological redemption to cosmic redemption.
- 4) How world religions today and in the future will integrally show the way how we humans can harness and use tangential energies in the universe at this new level of development of atomic and nuclear forces. Activation of energy: physical (atomic and nucleic), psychic (love, hate), emotional (relationships) and

¹¹⁵ Cf. "The Search for Extraterrestrial Intelligence," in National Research Council, (USA), *Astronomy and Astrophysics in the New Millennium*, Washington D.C.: National Academy Press, 2001, 131-132. See also Olli-Pekka Vainio, "If It's Just Us, It Seems Like an Awful Waste of Space: On Human Uniqueness: Are We Alone?," & "Infinite Space, Infinite Terror: Our Cosmic (In)Significance," in *Cosmology in Theological Perspective: Understanding Our Place in the Universe*, Michigan: Grand Rapids, 2018.

¹¹⁶ Cf. Michael Heller, "Where Physics Meets Metaphysics," in Shahn Majid, editor, *On Space and Time*, New York: Cambridge University Press, 2008, 238-277.

intellectual (truth) cum spiritual (divine truth), a reality that must be rethought carefully with respect and tolerance.

- 5) How all humans, today and in the future will interpret the scientific endeavor – the nurturing role of science in the biosphere and its associated technologies in search and at the service of the Truth.

With all this, Teilhard with a sincere religious and scientific intention, in his works, repeatedly implores the human community to turn from its imperialistic attitude toward nature to a sustaining and an integral earth community in which the ‘human’ community becomes a functional (integral) component and not an oppressive component. That is why in the *Hymn of the Universe*, he rightly laments in this manner:

Humans have every right to be anxious about their fate so long as they feel themselves to be lost and lonely in the midst of the mass of created things. But let them once discover that their fate is bound up with the fate of nature itself and immediately, joyously, they will begin again their forward march. For it will denote in them not a critical sense but a malady of the Spirit if they were doubtful of the value and the hopes of an entire world.¹¹⁷

With his keen perception of a cosmogenic evolution towards biogenic evolution – inorganic to organic life, Teilhard saw clearly the utter dependence of the organic life including us humans, on all previous forms of life. Therefore, it logically follows that any forms of sustained pollutions on the earth’s atmospheres, i.e., air, water, soil, flora, fauna, is a malady of the human spirit. And in this regard, notwithstanding the intricate geo-political, and social-economic differences among peoples and nations; a true and healthy ecological consciousness is that of green education and green technology.¹¹⁸ Allerd Stikker¹¹⁹ (1928-) clearly argues that one of the chief characteristics being

¹¹⁷ Pierre, Teilhard de Chardin, *Hymn of the Universe*, New York: Harper & Row, 1965, 98.

¹¹⁸ See S.S Dara, *Environmental Chemistry and Pollution Control*, New Delhi: S. Chand & Company Ltd, 1993.

¹¹⁹ Allerd Stikker was born in the Netherland, graduated as chemical engineer and worked in the corporate sector for thirty years. Obtained an MA in Religious Studies on “Tao, Teilhard and Western Thoughts”. He spent the next thirty years in the non-governmental organization sector, focusing on alleviating the world’s water problems, proposing a balance between economy and ecology, and incorporating a Daoist worldview. Since 2005, he has been a Trustee Board Member of the Alliance of Religions and Conservation (ARC) in China program. He has authored a number of books on Ecology i.e., *Towards ecological Consciousness* (1986), *The Blood of the Earth*, (2007), *Three Windows on Eternity: Exploring Evolution and Human Destiny* (2013).

observed in the course of cosmic evolution is the limits of complexity.¹²⁰ And with his thirty years of experience as a chemical engineer and studying Teilhard's vision in comparison with Taoism clearly argues that:

... as a system grows and reaches a limit of complexity, eventually, a new system emerges. The new system is completely different from its antecedent though it contains the elements of the previous system(s) of which it is composed. In other words, there is a radical change or transformation of the original system(s) without the destruction of what prevailed before. ... previous systems play a vital role in the construction of the new system – they and their forms remain part of creation in their own right. What takes place is not revolution but evolution – evolution with discontinuities, leaps, creativity, and irreversibility – that at the same time maintains coherence and interrelatedness. This is a basic ecological principle and is inherent to all systems on Earth. ... The atomic system reached its most complex and largest form in nature in the element uranium with atomic number 92. Larger atoms have been identified but are mostly short-lived. Further evolutionary growth proceeded through the emergence of a totally new system, the molecule. In this new system, the binding forces and organizational constitution are radically different from the atomic system. A leap occurred. At the other end of the spectrum, human society, consisting of individual human beings (themselves the most complex manifestation of the organismic system), has reached a critical level of complexity and size. It seems evident that we are once again approaching a threshold and perhaps will witness a new evolutionary leap. Ecologically speaking, it is useful to recall that all systems that have evolved since the origin of the universe are still present today as part of the systems which make up our world. Everything in the living world is interdependent in a global symbiosis and is made up of atoms that are used over and over again.¹²¹

In the light of the foregoing observations of Stikker, it is true that in the process of evolution, it is observed chemically, biologically and even geographically that there are two essential processes of growth that has always manifested a certain coherence and

¹²⁰ Cf. Allerd Stikker, *Teilhard, Evolution and Ecology*, in *Teilhard Studies*, No. 73, Fall (2016), 6. See (<http://teilharddechardin.org/index.php/teilhard-studies>). And (http://teilharddechardin.org/mm_upload/73-Teilhard Evolution and Ecology.pdf). Accessed on June 30 2022.

¹²¹ Stikker, *Teilhard, Evolution and Ecology*, 6-7.

dynamic balance: *organic growth* and *organized growth*. Organic growth is spontaneous, unpredictable and unique – arising from the *within* of things while *organized growth* is structural, predictable and even repetitive – arising from the *without* of things. We can posit some examples below:

- i. The emergence of the first atom on our periodic table ‘hydrogen’ is an *organic event* but the emergence of other 91 new atoms neatly arranged in a structure as posited by Mendeleev called the *Periodic Table of Elements* is an *organized system*.
- ii. The emergence of a certain species can be seen as an *organic event* and the classification of subsequent derivations discovered by Linnaeus and described in his *Systema Naturae* is an *organized system*.
- iii. The emergence of organic cells (‘life’)¹²² can be considered as an *organic event* and the subsequent development of organisms manifest an *organized structure* designed to keep life going.
- iv. The sudden appearance of self-reflective consciousness in the human species can be seen as an *organic event* while the subsequent development of agrarian and Technosphere manifests an *organized system* – geographically.
- v. Historical development of a human community (culture) can be seen as *organic event* while the subsequent development of municipalities, provinces, nation states, and international unions like United Nations, etc. manifests a human-made *organized system*.

Given all these organic events and organized growth for Stikker, and in line with Teilhard’s new ecology, one can rightly contest that the natural evolutionary processes (evolution) have kept *organic* and *organized* structures (growth) in a natural balance; but in the present ecological crisis; it seems that human activity in the world and especially on the planet Earth is destabilizing this balance at a high rate which Pope Francis refers to as ‘*rapidification*’.¹²³ In his paleontological bent, Teilhard saw a permanent complementary relationship between matter and spirit throughout the whole process of evolution. In this, he clearly saw a direct relationship between the increasing level of

¹²² ‘*Life*’ biologically speaking can be defined as anything possessing cells and has the ability to reproduce sexually or asexually. In other words, it is a self-sustaining chemical system capable of Darwinian evolution – by natural selection, (RNA). However, there are other forms of life like extremophiles and synthetic life, and other mysterious forms of life that defy carbon-based forms of life.

¹²³ Cf. Pope Francis, *Laudato Si’*, no. 18. See also Stikker, *Teilhard, Evolution and Ecology*, 8.

organic complexity and the level of *consciousness complexity*; a relationship he dubbed the *Law of Complexity-Consciousness* that is parallel not only to the physical and chemical processes, but also the spiritual transformations such as the emergence of *life*, of *consciousness* and of the *self-reflective consciousness* in the two energies of the universe – *tangential* and *radial*.

Now, turning squarely on Teilhard's ecological awareness we can say with certainty that this human self-awareness or rather self-consciousness with the capacity to think time: the past, the present and the future¹²⁴ is exactly what is presently calling to question our true ecological awareness and in order to understand what is truly happening on with our home Earth and see the ecological crisis that humanity is encompassed with today. That is, with human society on Earth growing as an *organized system* in a more and more complex way of information technology, human awareness of the real need to maintain ecological balance (*organic event*) is also simultaneously growing and now is reached a global level – epitomized in the *global summits on climate change* and sustainable economic development programmes. Teilhard calls this level of awareness *planetary consciousness*¹²⁵ as the need to balance between individual behaviour and action in relation to collective behaviour and action.¹²⁶ That is, between the *organic event* and the *organized system*. And for me, this insight of Teilhard is in tandem with the whole ecological vision encapsulated in the Papal encyclical *Laudato Si'*¹²⁷ in which the Pope critically and theologically examines the human root causes of ecological crisis as he proposes an integral ecology, and offers us some lines of approach and action or major paths of global dialogues and ecological education and spirituality. Therefore, in solidarity with Richard N. Rwiza¹²⁸ we argue in the affirmative that “the irrational

¹²⁴ See *The Phenomenon of Man*, 229-234.

¹²⁵ See Teilhard, “The Confluence of Thought,” and “The Spirit of the Earth,” in *The Phenomenon of Man*, 237-253.

¹²⁶ See what Ferdinand Nwaigbo calls *personal* and *institutional* dimensions of ecological spirituality, in “Pope Francis and the Programme of Ecology in a Time of Change”, in *African Ecclesial Review*, (AFER) Vol. 58, Nos. 3 & 4 (Sep/Dec 2016), 217. African Ecclesial Review is a Journal of The Catholic University of Eastern Africa, published by AMECEA – Gaba Publications Eldoret Kenya.

¹²⁷ See *Laudato Si'* Chapters 3-6: *The Human roots of the Ecological Crisis*; *Integral Ecology*; *Lines of Approach and Action and Ecological Education and Spirituality* respectively.

¹²⁸ Reverend Dr. Professor Richard N. Rwiza is a long-time lecturer in the *Department of Moral Theology* at the Catholic University of Eastern Africa, Nairobi, Kenya.

destruction of the natural environment is not receiving the attention it deserves”¹²⁹ locally and globally.

And some of the reasons as to why this irrational destruction of the natural environment is not receiving adequate attention it deserves locally and globally as Rwiza points out, is what Pope Francis painstakingly points out in *Laudato Si'* in Chapter One, especially on the *Decline in the Quality of Human Life and the Breakdown of Society*, and what he terms as the *Weak Responses* due to global inequality of the poor and the rich; economic interests of the multinationals and international political interests.¹³⁰ In fact, on the very point of *weak responses* as Pope Francis argues, Ferdinand Nwaigbo¹³¹ on the same skein of thought challenges and exhorts our Catholicism that “It is no longer useful to engage in agnostic theology that derides and ignores the world and confines God’s purposes only to heaven in the eschatological future.”¹³² In other words, Nwaigbo contends in line with Teilhard that the genesis of all environmental problems lies in the humanity’s failure to ‘see’ the environment from the spiritual dimension; a thought that Teilhard expresses fully in his book *The Divine Milieu*. For Nwaigbo, he observes rightly that theologically, “God relates with, preserves, transforms and advances creation within a framework of an open-ended history of salvation” and if this is so, then there is no division between creation and redemption for creation “slides into the wider region of Christology from above and Christology from below.”¹³³

Indeed, on this very point, Nwaigbo clarifies categorically that “without the spirituality of ecology, the ecological doctrine of creation would be rendered a mere intellectual theory of the origin of things”¹³⁴ and therefore, he advocates for a revisit of the theology of the transcendence and immanence of God in the Abrahamic religions, (cf. *Second Vatican Council, Nostra Aetate, No.3*). That is why, Rob Clobus in the same line of thought is of the view that:

¹²⁹ Richard N. Rwiza, “Towards an Environmental Theological Ethics: Inspirations from the Social Teaching of the Church, in *African Christian Studies*, Vol. 28, No. 1, March 2012, 37-57, 41. *African Christian Studies* is a Journal publication of The Catholic University of Eastern Africa - CUEA Press).

¹³⁰ See *Laudato Si'*, nos. 43-61.

¹³¹ Rev. Dr. Ferdinand Nwaigbo is a lecturer in the *Department of Dogmatic Theology* in the Catholic Institute of West Africa.

¹³² Nwaigbo, “*Pope Francis and the Programme of Ecology in a Time of Change*”, 215.

¹³³ Nwaigbo, “*Pope Francis and the Programme of Ecology in a Time of Change*,” 219.

¹³⁴ Nwaigbo, “*Pope Francis*,” 220. The spiritual ecology for him, must highlight the spiritual quality of nature, that is, our human attitudes and behaviour towards the living and the non-living world, (animate and inanimate).

Environmental care will remain the exclusive concern of Conservation minded group and individuals as long as religious bodies and the Christian churches, in particular, do not affirm the active presence of God in his creation and re-interpret the meaning of our earthly existence. The being of the world is within the Being of God; that the energy, resources and graces of the world are the energy, resources and graces of God.¹³⁵

Indeed, God's action is completely hidden within the ordinary structures and processes of the universe (evolution) by giving the impulse and sustenance that drives evolution along complexities and the growth that transforms it, and a completely naturalistic understanding of the universe is not sufficient enough for scientific explanation of God's presence/immanence or transcendence.¹³⁶ Clobus, rightly observes that the earth has a homeostasis¹³⁷ and this homeostasis must *not* be told but be *known*. And I agree completely with him that when the human mind *knows*, and moves away from *being told* (hearsays from different sources of media, or senses) it will psychologically, socially, culturally, economically, politically and religiously change (convert) its worldview from a mere homocentric to a cosmocentric perspectives; from a mere anthropocentric to an integral eco-centric perspective.¹³⁸ In this regard, we can say that as the human species came to know that *it knows* through development and growth in terms of families, villages, tribal groupings, civilizations, and now into regions, nations, continents and above all religions and hopefully in the not far distant-future, into one integrated earth-community in which all are able to assume a global responsibility of caring *integrally* what cares for us most – earth's ecosystems. That is why Pope Francis avers very convincingly that:

A good part of our genetic code is shared by many living beings. It follows that the fragmentation of knowledge and the isolation of bits of information can actually become a form of ignorance, unless they are integrated into a broader vision of reality. ... Although we are often not aware of it, we depend on these

¹³⁵ Rob, Clobus, *Environmental Care: A Possible Way to Restore God's Image to the Earth*, in *Spearhead*, No. 122, (1992), 54.

¹³⁶ See Teilhard, "The Holiness of Evolution," in *The Prayer of the Universe*, 93. Cf. also Thomas E. Hosinski, "Why Science Finds No Acts of God," in *The Image of the Unseen God: Catholicity, Science, and Our Evolving Understanding of God*, New York: Mary Knoll, Orbis Books, 2018, 140ff.

¹³⁷ Clobus, *Environmental Care*, 11.

¹³⁸ *Laudato Si'*, nos. 163-246.

larger systems for our existence. ... Once they become conscious of this, many people realize that we live and act on the basis of a reality which has previously been given to us, which precedes our existence and our abilities. ... We urgently need a humanism capable of bringing together the different fields of knowledge, including economics, in the service of a more integral and integrating vision. ... A good number of countries have a relatively low level of institutional effectiveness, which results in greater problems for their people while benefiting those who profit from this situation.¹³⁹

And for us here in Africa, we are the continent that bears the brunt of these forms of isolated bits of information on nature unless our institutional effectiveness is integrally strengthened.

5.0 African Catholicism in the Light of Teilhard and Pope Francis' Ecological Consciousness

Teilhard de Chardin and Pope Francis being both of the same *Society of Jesus* (*Jesuits*) in the Catholic Church, had solid philosophical and theological training with a shared *Spirituality of St. Ignatius of Loyola*.¹⁴⁰ Teilhard being raised in the emergent culture of *fideism* and absolute *scientific rationalism* and Francis raised in the culture of *Marxism* and *Liberation theology*; these two divergent contexts would have not failed to impact each of them on their worldviews of cosmic evolution and care for the poor, marginalized and the environment respectively. We see clearly Teilhard stressing on the divine milieu in creation and Francis stressing on the concern for the poor and the marginalized, God's mercy and care for our environment especially in his papal encyclicals and post-synodal apostolic exhortations.¹⁴¹ Francis, in his encyclical letter

¹³⁹ Cf. *Laudato Si'*, nos. 138-142.

¹⁴⁰ Ignatius Spirituality draws most specifically from St. Ignatius of Loyola's (1491-1556) *Spiritual Exercises* of 30 days where its purpose is to conquer oneself and to regulate one's life in a such a way that no decision is made under the influence of any inordinate attachments. The exercises are intended to give the one undertaking them a greater degree of freedom from his or her own wants (likes and dislikes), so that one may choose based on what she/he discerns God's will in his/her life. See Luis Gonçalves Da Camara transcriber, & Parmananda R. Divarkar, translator into English, *Testament and Testimony: The Memoirs of Ignatius of Loyola*, Gujarat: India, Sahitya Prakash, 2009.

¹⁴¹ Cf. See Pope Francis, *Speech to Participants in 38th Conference of the Food and Agriculture Organization of the United Nations* [FAO], 20 June 2013; *Message to the Executive Chairman of the World Economic Forum on the occasion of Annual Meeting* at Davos-Klosters, Switzerland, 17 January 2014 and of 30 December 2015 respectively; *Speech to Participants in the Meeting sponsored by the Science and*

Laudato Si' forcefully and unrelentingly strikes a global call for all people to have a paradigm shift towards ecological consciousness from a tyrannical anthropocentric worldview to ecocentric worldview of stewardship.¹⁴² And as Teilhard de Chardin on one hand advocates for a mystical character in scientific researches, Pope Francis calls for an authentic human development that has a moral character of integral ecology and spirituality of respecting the human person and the concern for the world around us.¹⁴³

Indeed, the Pope decries decisively the *rapidification* of human progress by expressing that there is unprecedented speed with which our human activity around the world is in total contrast to the natural slow pace of biological evolution of both inorganic and organic elements. Given his training in industrial chemical technology, the Pope says:

Industrial waste and chemical products utilized in cities and agricultural areas can lead to bioaccumulation in the organisms of the local population, even when levels of toxins in those places are low. Frequently no measures are taken until after people's health has been irreversibly affected.¹⁴⁴

It is in the conviction of Pope Francis that just in the last two hundred years of human industrialization that the Earth's ecosystems have experienced unprecedented mistreatment by the human species. Francis' observations are markedly barbed this way:

It is remarkable how weak international political responses have been. The failure of global summits on the environment makes it plain that our policies are subject to technology and finance. There are too many special interests, and economic interests easily end up trumping the common good and manipulating information so that their own plans will not be affected. Consequently, the most one can expect is superficial rhetoric, sporadic acts of philanthropy and perfunctory expressions of concern for the environment, whereas any genuine attempt by

Life Association, 30 May 2015; *Message of the Holy Father to the President for the Celebration of the World Day of Prayer for the Care of Creation*, 1 September 2016; *Message of the Holy Father to the President of the Conference of the Parties to the United Nations Framework Convention on Climate Change [COP22]* Marrakech, 7-18 November 2016 (10 November 2016). See also Pope Francis' three Encyclicals and five Apostolic Exhortations: (<https://www.vatican.va/content/francesco/en/encyclicals.index.html> and https://www.vatican.va/content/francesco/en/apost_exhortations.index.html). Accessed on June 22, 2022.

¹⁴² See *Laudato Si'* no. 11.

¹⁴³ Cf. *Laudato Si'*, no. 5.

¹⁴⁴ *Laudato Si'*, nos. 21 & 32 respectively.

groups within society to introduce change is viewed as a nuisance based on romantic illusions or an obstacle to be circumvented.¹⁴⁵

That is why, in the light of the *Gospel of Creation*, Francis reminds all citizens of the Earth-community that the “responsibility for God’s earth means that human beings, endowed with intelligence and freedom, must respect the laws of nature and the delicate equilibria existing between the creatures of this world ...”.¹⁴⁶ This is exactly what Teilhard all along in his works persistently points out that the noosphere (human consciousness) being the highest expression of the evolutionary processes; has to serve the other processes (geonesis and biogenesis) in producing the *christosphere* – the form of Christ to which we can gradually abandon our myopic ‘tyrannical’ anthropocentric redemption to cosmic redemption, in harnessing the *tangential* and *radial* energies in this universe.¹⁴⁷ It is to the surprise of many today that the Abrahamic religions are more often accused as the major source and cause of the embedded anthropocentric mind-set in the contemporary human society due to the *Biblical*, (cf. *Gen 1:28*), *Quranic* and even Jewish (*Tanakh*) creation theologies; something that Christian theology and specifically Catholicism today is re-appropriating itself towards the *human-stewardship*¹⁴⁸ perspectives; a position that Pope Francis attempts to strike coherently in this encyclical as he goes further than that, by giving this *stewardship* not only a fresh approach and impetus, but even challenges it by affirming strongly that we need “a new dialogue about how we are shaping the future of our planet”.¹⁴⁹

In this new approach of *stewardship*, Francis presents us with “*The Gospel of Creation*” as he takes the argument further in interpreting the *wisdom* of the biblical accounts of creation¹⁵⁰ in which he argues that:

The creation accounts in the book of Genesis contain, in their own symbolic and narrative language, profound teachings about human existence and its historical reality. They suggest that human life is grounded in three fundamental and closely

¹⁴⁵ *Laudato Si'*, no. 54.

¹⁴⁶ *Laudato Si'*, no. 68.

¹⁴⁷ See Teilhard, “Total Human Energy: The Noosphere,” and “Love, a Higher Form of Human Energy,” in *Human Energy*, 113-162.

¹⁴⁸ See The International Theological Commission on: Communion and Stewardship: Human Persons Created in the Image of God, 2004. Site: (https://www.vatican.va/roman_curia/congregations/cfaith/cti_documents/rc_con_cfaith_doc_20040723_communion-stewardship_en.html). Accessed on August 6, 2022.

¹⁴⁹ *Laudato Si'*, no. 14.

¹⁵⁰ *Laudato Si'*, nos. 65-75.

intertwined relationships: with God, with our neighbour and with the earth itself. ... these three vital relationships have been broken... This rupture is sin. The harmony between the Creator, humanity and creation as a whole was disrupted by our presuming to take the place of God and refusing to acknowledge our creaturely limitations. This in turn distorted our mandate to ‘have dominion’ over the earth (cf. Gen 1:28), to ‘till it and keep’ (Gen 2:15). As a result, the originally harmonious relationship between human beings and nature became conflictual (cf. Gen 3:17-19). It is significant that the harmony which Saint Francis experienced with all creatures was seen as a healing of that rupture. ... The biblical texts are to be read in their context, with an appropriate hermeneutic, recognizing that they tell us to ‘till and keep’ the garden of the world (cf. Gen 2:15). ‘Tilling’ refers to cultivating, ploughing or working, while ‘keeping’ means caring, protecting, overseeing and preserving. This implies a relationship of mutual responsibility between human beings and nature.¹⁵¹

This is the line of thought of Teilhard de Chardin in his masterclass peace of work ‘Man’s Place in Nature’ (1966) and as each considers the mystery of the universe, the mystery of life and the mystery of human consciousness in the universe, they all emphasize on message of each creature in the harmony of creation. But in all this, they all unwaveringly affirm in the very own words of Pope Francis that “Clearly, the Bible has no place for a tyrannical anthropocentrism unconcerned for other creatures.”¹⁵² Indeed, Vincent Brümmer arguing in the same line of thought as Pope Francis above posits this:

Salvation history has been treated as the story of God and humanity alone and the rest of creation has been relegated to the backdrop stage against which the drama of humanity has been acted out. God’s world has lost its divinity and we have elevated human needs and human interests to be the central point, and purpose of creation. In so doing we have dislodged both the rest of creation and now God.¹⁵³

Now, as we outlined above Teilhard’s five Catholicism concerns in the new ecology, and more so the third concern, i.e., that is, how today we humans can interpret

¹⁵¹ *Laudato Si’*, nos. 66-67.

¹⁵² *Laudato Si’* no. 68.

¹⁵³ Vincent, Brümmer, *Interpreting the Universe as Creation: A Dialogue of Science and Religion*, Kampen: The Netherlands, KOK Pharos Publishing House, 1991, 137.

the Western religious thought in order to change from its anthropocentric redemption orientation to a creation- redemption orientation – (cosmic redemption) is a daunting task to many, and I hypothesize here that it is a timely call and task for our Catholicism in Africa today and in the future. This is truly verified in the succinct proposals that Samson K. Gitau¹⁵⁴ invites the African Church to re-think in this line of Teilhard and especially what the Pope affirms in his encyclical on the meaning of each creature. Gitau advocates for a comprehensive *Liturgico-ecology* and *eco-centrism literature* that is badly needed in our liturgical rites and homilies as firmly expressed in the two prayers that Pope Francis offers at the end of this encyclical, i.e. *A Prayer for Our Earth* and *A Christian Prayer in Union with Creation* respectively. Gitau rightly points out that:

The Church in Africa has a responsibility to create awareness among the people by disseminating ecological knowledge to all and sundry. The clergy are better placed to influence millions of people in various platforms such as Sunday Masses, seminars, synodal meetings, and plenary assemblies. ... People have to be informed that practices that destroy the environment are ecological sins just like hatred, envy and jealousy.¹⁵⁵

The ecological sin of greed, I believe, that Gitau cites in his article is the very one that has destroyed the *Mau Forest Complex*¹⁵⁶ in Kenya. And it is of such reality that Pope Francis is repeatedly highlighting in his encyclical that “to see no other meaning in their natural environment than what serves for immediate use and consumption” and “where we ourselves have the final word, where everything is simply our property and we use it for ourselves alone. The misuse of creation begins, when we see nothing else but ourselves”.¹⁵⁷

It is ecologically and more so spirituality disturbing how helpless the religious sector in many of our countries in African is when such important ecosystems (i.e. *Mau Forest Complex*, *Mt. Kenya ecosystem*, *Aberdare Ranges*, *Cherangani Hills* and *Mt. Elgon* in Kenya; *Mt. Kilimanjaro ecosystem* in Tanzania; the Congo Basin in the Democratic Republic of Congo, the River Nile traversing four countries: Uganda, South

¹⁵⁴ Dr. Samson K. Gitau is a lecturer in the *Department of Philosophy and Religious Studies* at the University of Nairobi, Kenya.

¹⁵⁵ Samson, K. Gitau, “*Environmental Crisis: A Challenge to the Church in Africa*”, in *African Ecclesial Review (AFER)*, Vol. 53, No. (2 June 2011), 308-332, 329.

¹⁵⁶ Gitau, “*Environmental Crisis*”, 324.

¹⁵⁷ *Laudato Si'*, nos. 5-6.

Sudan, Ethiopia and Egypt) are literally at the mercy of the political class whose economic greed (corruption) is personal and not for the common good as highlights the Pope in *Laudato Si'*, (cf. nos. 175-198). The First African Synod of Bishops (1994) in its Proposition (no. 55) states clearly the problems of industrial revolution and deforestation in Africa; while the Second African Synod of Bishops in its *Instrumentum Laboris*, on the question of ecological consciousness states that:

Multinational organizations continue systematically to invade the continent in search of natural resources. In complicity with African leaders, they oppress local companies, buy thousands of hectares of land and expropriate populations from their lands. Their adverse effect on the environment and creation affects the peace and well-being of the African people and, thus, the prospects of their living in harmony.¹⁵⁸

In relation to these two *African Synods of Bishops* (1994) and (2009) respectively; it is clearly interesting to see how African Catholicism like that of Ferdinand Nwaigbo in his four articles on environment: *Jesus, Justice and Ecology: An African Perspective* (2011); *Trinity and Ecology*, (2011) and *Cosmic Christology and Eco-Theology in Africa*, (2011) and *Pope Francis and the Programme of Ecology in a Time of Change* (2016), bring out the malady that is beleaguering our beloved continent today in terms of its natural biodiversity that is at the mercy of political and multinational corporations; whose sole purpose is to reap off the continent's future sustainability. In one of these articles, Nwaigbo writes and in solidarity with Teilhard's five concerns of the new ecology states as such:

The approach of cosmic Christology is a new way of responding to ecological crisis theologically. The theology emphasized is the relationship between the human race and the entire creation based on the relationship between Christ and creation. There are two types of relationships – vertical and horizontal relationship. The vertical relationship establishes a relationship between Christ and creation – the unity of creation in Christ. It strives to heal the disruption between Christ and creation generated by science, secularism and growing

¹⁵⁸ Synod of Bishops, *Instrumentum Laboris, II Special Assembly for Africa, The Church in Africa in service to Reconciliation, Justice and Peace*, Vatican City: March 19, 2009, no. 28. See also *Its Final List of Proposition*, October 23, 2009, no. 22 on *Environmental Protection and Reconciliation with Creation*. see (https://www.vatican.va/roman_curia/synod/documents/rc_synod_doc_20091023_elenco-prop-finali_en.html). Accessed on 30 June, 2022.

theories of evolution of nature. The intrinsic relationship of creation to Christ creates a feeling of love, reverence, awe and respect for creation. Creation is no longer exposed to exploitation because of its intrinsic relationship to Christ – it has dignity and respect. The horizontal relationship establishes a relationship between the human species and physical creation. Creation is not divided between the world of human beings and the world of the physical nature – there is inter-relationship between physical world and human beings. There is again the feeling of interdependence bound by the ordinances of creation, which expresses themselves in the need of human species for shelter, warmth, clothing, food and energy supply.¹⁵⁹

In Teilhard's perspective as pointed out already, it is in such a convulsion and complexity of the ramifying effect of the noosphere on the planet Earth that Africa as a continent is neither spared. And it will soon be the most endangered continent in terms of its future sustainability; because of its young rising human population in relation to the weak responses of international politics that African encounters and, Nwaigbo rightly observes that there is a larking danger of a contextual absence of God in the African society and the consequences are dire – sins of corruption, extinctions of species, exploitations and worse of all economic slavery.¹⁶⁰ In light of all this, and as Teilhard rightly saw, how can the religious sector in Africa fail to see and not rightfully be worried about the impact of the noosphere on the natural/physical creation, especially for its future generation? Especially, in the activation of human energies – *tangential* and *radial*. I invite you to take a good look around yourself and see the extensional effect of your mind (*noosphere*) and make a clear distinction between what is natural (organic) around you and what is the extensional effect of your *noosphere* around you – the inorganic. Therefore, the question of care for God's creation is more than a theoretical issue; it is more than mere intellection, it is more than mere spiritualization, it is more than momentous prayers and the rest left for God. It is a practical endeavour as Nwaigbo presents in his statements above, that clearly reveals to us the African Church today and in the future, a future that is so complex in terms of its evangelization responsibilities.

¹⁵⁹ Ferdinand, Nwaigbo, "Cosmic Christology and Eco-Theology in Africa", in *African Ecclesial Review*, (AFER), Vol. 53, No. 2, June (2011), 437-461, 354.

¹⁶⁰ See Nwaigbo, "Cosmic Christology", 359; "Pope Francis and the Programme of Ecology", 223.

This responsibility requires a long-term educational approach, long-term evangelical approach (ecumenical/inter-religious), long-term societal conscientization and long-term theological expositions that demonstrate that God's creation requires a balanced, integrated human approach in terms of relationality and utility. This has to be cosmic because the home we live in now, is the only 'one' 'common' 'home' among all many other planetary systems ever searched to have possible habitable zones; even though to some, (climate change agnostics) this reality has become so common that they see no more its impending reality because of the greed and self-interests fueled by the materialistic/rationalistic anthropocentrism. African Catholicism without presuming to settle scientific questions; now needs educators both in science and religion that are capable of developing and imparting an ethics of ecology; for according to Pope Francis, even "Time and space are not independent of one another, and not even atoms or subatomic particles can be considered in isolation."¹⁶¹ This knowledge is badly needed to all of us and not just to a few elites in our African education centres and institutions.

5.1 Relevance of Teilhard de Chardin and Pope Francis' Ecological Consciousness in the Anthropocene Age

In this last section, we attempt to critically decipher what does Teilhard's and Pope Francis' ecological consciousness mean and offer for the future of humanity that is dynamic and evolving. The question to grapple with here is whether we the Anthropocene are ready for what it means ecological consciousness and conversion?

Obviously, the human worldview is changing at a pace beyond measure and new and unforeseen challenges are becoming real that need new thinking, new solutions, new innovative developments scientifically, technologically, economically, politically, socially, religiously and above theologically. A case in point is what the USA *National Research Council on Astronomy and Astrophysics in the New Millennium* points out:

In the year 1000 AD there were astronomers in only a few places on earth – Asia, particularly in China, in the Middle East and in Mesoamerica. These astronomers were aware of only six of the nine planets that orbit the Sun. Although they studied the stars, they did not know that the stars were like the Sun, nor did they have any concept of their distances from Earth. By the year 2000 AD, humanity's horizons

¹⁶¹ *Laudato Si'*, no. 138. See also *Laudato Si'*, nos. 188 and 210.

had expanded to include the entire universe. We now know that our Sun is but one of 100 billion stars in the Milky Way Galaxy, which is but one of about 100 billion galaxies in the visible universe. More remarkably, our telescopes have been able to peer billions of years into the past to see the universe when it was young – in one case, when it was only a few hundred thousand years old. All these observations can be interpreted in terms of the inflationary Big Bang theory, which describes how the universe has evolved since the first 10^{-36} seconds of cosmic time.

It is impossible to predict where astronomy will be in the year 3000 AD. But it is clear that for the foreseeable future, the defining questions for astronomy and astrophysics will be these:

- 1) How did the universe begin, how did it evolve from the soup of elementary particles into the structures seen today, and what is its destiny?
- 2) How do galaxies form and evolve?
- 3) How do planets form and evolve?
- 4) Is there life elsewhere in the universe?

Researchers now have at least the beginnings of observational data that are relevant to all of these questions. However, a relatively complete answer exists for only one of them – how stars evolve. The development and observational validation of the theory of stellar evolution was one of the great triumphs of 20th -century astrophysics. For the 21st century, the long-term goal is to *develop a comprehensive understanding of the formation, evolution, and destiny of the universe and its constituent galaxies, stars, and planets – including the Milk Way, the Sun, and Earth*. In order to do this, the committee believes that astronomers must do the following:

- a) Map the galaxies, gas, and dark matter in the universe, and survey the stars and planets in the Galaxy.
- b) Search for life beyond Earth, and, if it is found, determine its nature and its distribution in the Galaxy.
- c) Use the universe as a unique laboratory to test the known laws of physics in regimes that are not accessible on Earth and to search for new Physics.

- d) Develop a conceptual framework that accounts for all that astronomers have observed.¹⁶²

Reflecting deeply on what the *NRC* aspires above; it becomes clear that the Church has a monumental complex responsibility in its divine mandate, (cf. *Mt 28:18-20*) to evangelizing the whole world, and more so, its changing cosmic perspective of *stewardship* by conscientizing the believers and non-believers alike on the true place of humans in this world. Teilhard de Chardin himself long before Pope Francis had argued strongly that the ability of humanity to reflect on itself and its future survival will be an important evolutionary factor to influence whatever happens in the noosphere and its future.¹⁶³

Now, whatever is happening in this noosphere is the ecological imbalance and there is a sustained awareness emerging from both believers and non-believers that the anthropocentric understanding of the universe is a major cause of this ecological imbalance; whereby the human detachment from other creatures has helped humans (believers and non-believers alike) to see the non-human world only from a utilitarian point of view; caring less whatever happens to the ecosystems that our own lives and survival depends on entirely. The ecological concerns that Teilhard offers us today, calls us in this century and beyond to think through our Christianity, to think through our Islam, to think through our Hinduism, our Buddhism, our Africanism, etc, within the framework of our present understanding (knowledge) of the universe both inorganically and organically and decipher for ourselves how interrelated things are from the beginning of creation. If we think and believe in Christianity, in Islam, in Hinduism, in Buddhism, in African Traditional Religions, etc, within this framework, then, we will see without belabouring the point how the divine milieu (universal Christ), through the mysteries of creation, incarnation and resurrection is continually guiding, directing and transforming creation; not only the human world but the entire creation as it's *alpha*, to its completion as its *Omega* (cf. Rev. 1:8).¹⁶⁴ This perspective presupposes a *mysticism of science* and

¹⁶² National Research Council, (USA), *Astronomy and Astrophysics in the New Millennium*, Washington, D.C.: National Academy Press, 2001, 52-53.

¹⁶³ See Teilhard, "Some Reflections on Human Progress," "Life and the Planets," "Some Reflections on the Spiritual Repercussions of the Atomic Bomb," "Faith in Peace," "The Formation of the Noosphere," "The Directions and Conditions of the Future," "The Essence of the Democratic Idea," "On the Probable Coming of an 'Ultra-Humanity'," and lastly "From the Pre-Human to the Ultra-Human: the Phases of a Living Planet," & "The End of the Species," in *The Future of Man*, 61-81; 97-123; 140-148; 155-184; 227-237; 238-243; 270-280; 289-297 & 298-312.

¹⁶⁴ Cf. Pope Francis, *Laudato Si'* nos. 81, 83, 138-142, and 202 respectively.

not scientific rationalism or rather religion in science to understand the mystery of the universe.¹⁶⁵

Teilhard gladly observes that:

Today an important fraction of civilized humanity devotes its life to investigating the mysteries and possibilities of the universe, while the other fraction, crowded round the arena, follows the vicissitudes of the struggle with anxious interests. ... The far distant past, the depths of space, the secrets of matter, the springs of life, all these fields, scarcely glanced at yesterday, are at this moment scrutinized with a persistence and learning and a wealth of instruments, which seem destined before long to deflect and absorb the streams of gold and energy which are still lost in the abyss of armaments and war. ... in physics, science found an impasse or, to be more exact, encountered a void in the direction of matter. ... Science, it had been hoped and proclaimed, would make man moral by making him happy.¹⁶⁶

In this perspective, the Mystical Body of Christ represented physically by the pilgrim church on Earth; which is a mystery in itself; whose end purpose is not temporal or earthly but heavenly and eternal; it is sacramental, as it communicates the invisible realities (graces) to the whole world; rightly becomes a catalyst as the true presence of the divine milieu in the universe; transforming not only the noosphere but the secular and the christosphere together as *a living host*.¹⁶⁷ That is why for Teilhard and for us today, to worship God does not only mean placing God before all things, or simply attending church services (liturgical worship) but more to this; is to seeking God in and through all things; whereby authentic scientific investigations and researches should become for us a true form of worship and adoration in seeking the ultimate transcendent truth – God.¹⁶⁸

Teilhard was keen to observe in his paleontological investigations, not only the *without* (outside appearance) of things but more so to decipher the *within* (interiority) of different things. He clearly saw that in the human thought, the aspect of *consciousness* complexifies to new and higher levels, and for him, it will continue to become more and more complex than the previous stages of its developments hence serving as a line of

¹⁶⁵ Cf. Teilhard, *Human Energy*, 163ff. see also Pope Francis, “The Mystery of the Universe,” in *Laudato Si’*, no. 76-83.

¹⁶⁶ Teilhard, *Human Energy*, 163, 175.

¹⁶⁷ See St. John Paul II, encyclical letter, *The Eucharist: Life of the Church*, no. 8. Cf. also

¹⁶⁸ See Teilhard, *The Phenomenon of Man*, 284ff; *Christianity and Evolution*, 64; Neville, *Pilgrim of the Future*, 114 & 120.

greater human integration and greater communication; a reality that human species are coming to terms with after the invention of the Internet, cyborg, and deep space communication – radio telescopes. One thing that is clear in the 21st century is the emergence of transhumanism. But if only the Anthropocene understood clearly that the noosphere can now only function integrally by releasing more and more radial energy (love) with an ever higher potential – the human quest for self-transcendence, i.e., manifested today by the unrestricted human desire to break through the physical universe (planetary and galactic colonization) with its limited cosmic perspective of time and space; albeit being aware that we cannot make the very ecosystem that so much cares for us – a blade of grass.

To be more specific, we can with less difficulties now, point out what Teilhard's and Pope Francis' ecological consciousness and conversion mean and offer the Anthropocene age, both scientifically and religiously. Teilhard de Chardin's ecological concerns and Pope Francis' call for ecological awareness and conversion bring to our attention the following realities:

- 1) Makes us think critically the evolutionary origin and development of the universe as already pointed out by the Second Vatican Council.¹⁶⁹
- 2) Teilhard's and Pope Francis' ecological consciousness and conversion places the human species back to where it rightly belongs as the conscious mode of the universe in terms of reflecting on itself and as a fulfilment of all other evolutionary processes.¹⁷⁰
- 3) Teilhard's and Francis' ecological awareness and conversion reclaim the sacred dimension of the non-human creation that is detrimentally endangered by our tyrannical anthropocentrism partly caused by our Biblical, Quranic and Jewish anthropocentric understanding of the universe and the extreme scientific and materialistic rationalism of the West.
- 4) Teilhard's and Francis's ecological awareness challenges us and the future human race on the use and activation of human and cosmic energies, i.e., *tangential*-thermodynamics and *radial*-spiritual (love or

¹⁶⁹ See *Gaudium et Spes*, on the *Church in the Modern World*, nos. 1-10, 14-20, 23-32, 33-40, & 40-45.

¹⁷⁰ Cf. *Gaudium et Spes*, no. 14.

hatred) energies in the universe. This is a challenge both to the scientific community and the religious communities globally in terms of human relationality in terms of family ties, cultural developments, economic and social-political life.¹⁷¹

- 5) Lastly, Teilhard's and Francis' ecological awareness allows us to critically question with a suspicious eye, the true role and dignity of the future of science, i.e., the meaning and value of human research (i.e., CRISPR¹⁷² – *Clustered Regularly Interspaced Short Palindromic Repeats*) and intellectual inquiry into the very nature of our unrestricted desire to understand the not yet known phenomena ahead of us i.e., the arrow of time, deep space, dark matter, dark energy, black holes, etc., (cf. *Laudato Si'* nos. 81-83).

Today, we clearly see that humanity is entering into a fierce ecozoic era where the exploration of space and application of tangential energy could turn out to be detrimental to our only home – Earth.¹⁷³ In all these, Teilhard argued strongly and challenges us today that through our natural sciences if well investigated and applied, do validate the fundamental affirmations of the Christian faith of a transcendent-Being, and for Teilhard, the only way to save scientific research from self-destruction (scientific materialism and rationalism) is to place back the immanence of God in the totality of all creation, i.e., Jesus Christ “as the centre of the universe and of history.”¹⁷⁴ And by so doing, men and women of this century and of the future, will recognize that God's creation is continuous and has a precise orientation towards higher goals of being more and more. This cosmic understanding helps us to appreciate intelligently and integrally the ecological challenges before our eyes in terms of science and religion as two partners (*wings*) in a direct but sometimes in a dialectical relationship¹⁷⁵ leading humanity

¹⁷¹ Cf. *Gaudium et Spes*, nos. 46-92.

¹⁷² **CRISPR** – *Clustered Regularly Interspaced Short Palindromic Repeats*. Is a genetic engineering tool used to edit the base pairs of a gene. It is risk and dangerous on genetic embryos of prokaryotic organisms. It is very dialectical and controversial in the community of scientists for it can alter forever the genome of a species.

¹⁷³ The Earth's atmosphere has layers of gases which protect the planet Earth from the harmful radiations and cosmic rays coming from the outer space. This atmosphere of gaseous layers acts a blanket by keeping the average temperature of the Earth nearly constant. These layers of the atmosphere are divided into five main ones: Troposphere, Stratosphere, Mesosphere, Thermosphere and the Exosphere.

¹⁷⁴ See Pope John Paul II, Encyclical Letter, *Redemptor Hominis*, 1979, no.1.

¹⁷⁵ See John Paul II, “The Relationship between Faith and Reason”, in *Fides et Ratio*, Chapter IV, nos. 36-48.

tangentially and radially to the same One Truth – God as the immanent and transcendent Being within creation.

When one reads intently Pope Francis' encyclical *Laudato Si'*, it is palpable that the Pope is calling all of us humans for a major shakeup of paradigm shift from the current human centred attitudes and behaviour directed towards nature that are tyrannical. This paradigm shift is a movement from the deep-seated anthropocentric utilitarianism to an ecocentric relatedness. In other words, to develop an *integral ecology* where the principle of the *common good* becomes the common denominator of justice not only today but intergenerational, to our environment that without its ecosystems, our human existence on this planet Earth is utterly unthinkable.¹⁷⁶ On the end of the species, Teilhard is famously known to have argued that “The days (or the millennia) of every living form are by statistical reckoning ineluctably numbered; so much so that, using the scale of time furnished by the study of certain isotopes, it is beginning to be possible to calculate in millions of years the average life of a species” and even of our star the sun. He even adds: “Even if we suppose that, by prolonging its existence on a large scale of planetary longevity, the human species will eventually find itself with a chemically exhausted Earth beneath its feet, is not Man even now in process of developing astronautical means which will enable him go elsewhere and continue his destiny in some other corner of the universe?”¹⁷⁷

Besides that, Pope Francis is calling all humans of good will, (believers and non-believers alike) and more so, his own church, or rather our Catholicism, in affirming that the divine mission to evangelize the whole world (*Mt 28: 18-20*) is ever taking on new dimensions; as humanity progress into complex levels of awareness. And this mission is still fresh as ever for the Church today to co-exist side by side with the secularly and scientifically driven society – democratic ideals. The current mission for the Church we could here say, is to re-examine and reflect afresh the theological and scientific question of creation and redemption in the 21st century and beyond. And both Teilhard de Chardin and Pope Francis, have demonstrated on diverse but also on equal measures that human

¹⁷⁶ See Teilhard, “End of the Species,” in *The Future of Man*, 298-3012.

¹⁷⁷ Teilhard, *The Future of Man*, 299-300. For Teilhard, the end of a ‘thinking species’ is not disintegration and death, but a new break-through and a re-birth, this time outside Time and Space, through the very excess of unification and conreflexion – an increase of the ‘person’ at the Omega Point. It is not well-being but more-being of consciousness. See Teilhard, *The Future of Man*, 302ff.

progress does not preclude the redemptive work of Christ in its history past, present and future.

By their ecological acumen that comes across in their writings and more so, Francis' timely encyclical *Laudato Si'*, it is a prophetic call for all humanity to re-think and re-examine critically, wisely, and intelligently, our current anthropocentric utilitarian attitudes towards non-human world, and especially our environment and its ecosystems; where we find our only common good – Earth, as our true home we humans – a home that humanity can return to after exploring the high energy universe and all other planets and all types of matter out there – dark matter and dark energy. Therefore, if Anthropocene age is to solve the ecological challenges facing it today; humanity collectively, must analyse in greater depth what is happening during the evolutionary processes that usually and normally escape our sense perception and what lessons to be drawn and learned from natural changes, evolution, (cf. *Laudato Si' no. 202*). For both Teilhard and Francis, we humans obstinately lack an awareness of our common origin, of our mutual belonging, and of a future to be shared with everyone. And the lack of such basic awareness in many people is not only tearing apart the human society on this planet Earth but also devouring selfishly the very ecosystems that we utterly depend on for survival, (*Laudato Si' no. 202*).

Therefore, in the 21st century and beyond, there is need for the Anthropocene age and more so the Ecozoic attitudes, to develop an ethics for economics. Such an ethics will not be so simple to develop as Francis has pointed out in Chapter Three of his encyclical – *human roots for ecological crisis*. But what we should be wisely aware of is that the primary judgement of all human institutions, professions, programs and activities will be determined by the extent to which we either inhibit and ignore or foster and embrace a mutually enhancing human-earth relationship. Clearly, human economics is constituted by energy and material flow, nothing more. Continued findings from evolutionary biology, cognitive science, quantum physics are suggesting different answers to the question of who we humans are and, what we can aspire to, hence the human mind and spirit are integral parts of this vast systems of the created universe and we can experience this in terms of the beauty and the majesty we behold of the universe and we can only glimpse it with a simple reverential awe!

Thus, there is need anthropologically and theologically speaking, of re-interpreting the Western religious thought of redemption centred on human souls only in

order to discard our narrow and tyrannical anthropocentric redemption centredness to a creation-redemption centredness. This was critical not only for Teilhard but is equally critical for the Anthropocene age, (cf. *The Gospel of Creation*). This new awareness and paradigm shift will enable us at individual level, social level, national level, regional level, and above all global level, to be willing to be educated in the cosmic reality; and this education will result into a new spiritual anthropology of new convictions and new attitudes towards nature (environment), in order to restore the various levels of ecological equilibrium that has been lost; in order to establish a new authentic harmony within and among ourselves as humans and with other living ecosystems and above all in order to re-establish a true redemptive outlook God's might works i.e., creation, redemption and sanctification.¹⁷⁸

For all these to be of any relevancy to men and women of the 21st century and beyond; we posit that the human society (scientific and religious) develop not only an ethics of ecology but also a spirituality of ecology; an ethics and spirituality that can be borrowed from that of St. Francis of Assisi as Pope Francis has pointed out and this ethics and spirituality towards nature calls us to authentically re-interpret our theological doctrines of creation and redemption cautiously or else the ecological challenges that face humanity today and in the distant future will remain a mere intellection or spiritualization about the origin, development and the destiny of the universe; hence treating the history of salvation as the story of God and humanity alone and then relegating the rest of creation to the backdrop stage which human drama of salvation (activity) is acted out. This will be getting it all wrong again in the third millennium.

This ethical-ecology and spiritual ecology ought to permeate and penetrate not only our consciousness but more so our Catholicism in terms of our liturgical books and worship. This ethical-ecology and spiritual ecology ought to be inculcated and taught systematically right from our family homes (surroundings) to our education centres – both in secular and religious centres – primary, secondary and higher learning institutions (universities and seminaries). How to go about this is the conundrum that faces our divided world religions in terms of interreligious dialogues (politics) – dogmatically and ecclesial. For Teilhard and Francis, this is a global responsibility that requires a long-term education approach; long-term evangelical approach, long-term societal

¹⁷⁸ Cf. Teilhard, *The Hymn of the Universe*, 109.

conscientization and above all long-term theological expositions that demonstrate that the human world, the natural world and divine world need be approached *integrally* balanced in terms of relationality, utility and destiny in order to hand over to men and women beyond this century a culture of care, a civic love and a political love, i.e. a civilization of love that is *radial and not tangential* that Teilhard de Chardin says is the axial of evolution which moves the process of cosmogenesis toward ever more complex, centred arrangements, and ever more interiorized spiritual synthesis.¹⁷⁹

It is this inner energy (radial) which causes centrism and increasing complexity in the universe. It is this energy that draws in tangential energy for greater outer complexity and its centricity or forwards to a complexity-consciousness of itself and that which is beyond it¹⁸⁰ and, for St. Paul, it is this energy that “in him all things hold together” (*Col 1:17*) in the universe and “await for the redemption of our bodies”, (*Rom 8:23*) that is why for St. John Paul II, He is the Centre of the universe and of history.

Conclusion

Teilhard de Chardin and Pope Francis, though each lived and/or rather lives in different cultural milieu, but in unison are calling the human race to a radically new awareness of *what they are* in this vast universe, and to be critically *conscious* on how we humans depend on Earth as a given reality (sacrament) and use its ecosystems integrally. Indeed, our theological reflections on Teilhard de Chardin’s and Pope Francis’ ecological consciousness was never inspired because of their commonalities of being both Jesuits, trained in the world of sciences; but more importantly, their unique perception and appropriation of the cosmic realities as seen in their respective works and writings. The Catholicism and the ecological awareness/consciousness espoused by these two men; one from a scientific milieu of the 19th century and the other from a liberation theology milieu in Latin America, are ideas not to be left only to the experts but should be in the hands and minds of all us humans. This awareness can be achieved through development of our educational programmes and/or syllabuses on *cultural ecology*; *ecology of daily living*; *human ecology*; *ecology of humans*; and *ecology of non-humans* in the spirit of the common good – that is, the sum total of those conditions of social life

¹⁷⁹ Cf. Teilhard, “Love a Higher Form of Human Energy,” in *Human Energy*, 113-162.

¹⁸⁰ Cf. Teilhard, *The Phenomenon of Man*, 69.

that allow individuals humans and groups access their own fulfilment responsibly in the Anthropocene age, i.e., ecozoic era.

Pope Francis prophetically says “The twenty-first century, while maintaining systems of governance inherited from the past, is witnessing a weakening of the power of nation states, chiefly because the economic and financial sectors, being transnational, tends to prevail over the political”.¹⁸¹ In this regard, the way forward is nothing but authentic selfless dialogue for new policies that demand transparency in decision-making locally, nationally, regionally and internationally; regardless of the creed, colour, region, etc. For nature does not choose to care or annihilate a creed nor a colour, nor a region but a species. And we are all in this as one species among millions and millions of species: black, white, coloured, creedal, non-creedal, educated, non-educated, schooled and non-schooled. To put it in the basic theological terms of our Catholicism, one would say that the world order now needs a new *ecological education* and *spirituality* that is balanced, integral and, above all sacramental in character in order to meet the intellectual and spiritual quest of the men and women of the 21st century and beyond.

In our reflections as shown above therefore, we have tried to show how Teilhard de Chardin’s ecological consciousness in relation to his cosmic vision is of great importance for our 21st century and beyond; seen in the light of Pope Francis’ encyclical letter *Laudato Si’* on the care of our common home – planet Earth. In doing so, we have argued for an ethical and spiritual self-consciousness dimension that is being witnessed today; emerging from both believers and non-believers alike, though still on a very small scale of individuals and group movements. We have also shown that the general ability of humanity today to reflect on itself and its future survival is an important factor that will influence and foster this future ecological awareness, its integrity, and balanced sustainability that is so needed in this century and beyond.

¹⁸¹ *Laudato Si’*, no. 175.

Ecological Crisis in Africa: The Catholic Church as A Voice of Reason

Okafor Charles Ifeanyi, SDB

Introduction

It does not go unnoticed that the flags and coat of arms of most countries of Africa use the colours green and black, emblematic of the green vegetation, rich mineral resources, abundant natural reserves, rich fertile soil and the like¹ obtainable in the continent. This underlines the reality that the African ecological system is rich and thus must be carefully treasured and identified with pride. Unfortunately, the African continent has been caught up in different and overwhelming ecological crises, the result of both natural and human-induced causes. This situation begs for an *aggiornamento*, and possible ways of ameliorating the ecological situation.

It is against this background that in this essay we will seek to chart a way forward for the continent of Africa rather than merely romanticise the problem. Put differently, we will seek to go beyond problem and provide solutions to the lingering ecological problems. Charting the way forward we will need to *conscientize* the people of Africa on our inalienable interconnectedness with nature using the teaching of the Catholic Church as the voice of reason. Undoubtedly, a host of concerned persons and groups are committed to this cause but our preference for the role of the Catholic Church is based on its huge force for good, well-thought-out doctrines, its rich traditions and practices. Africans are notoriously religious² and this too aids the Catholic Church in its role as an ecological protector.

The *terminus a quo* of this essay will be to gain an understanding of ecology in relation to man's³ interconnectedness to the natural world. Subsequently, we shall explore some cases of ecological crises in Africa, their causes and effects. Later, we shall examine the Catholic Church's teachings and concerns on ecology, and identify the ecological danger anchored on African values.

¹ John Litherland, "African Flag Origins" in *The Best of Africa*, May 26, 2020, accessed November 18, 2022, <https://thebestofafrica.org/content/african-flag-origins>.

² Mbiti John S., *African Religions and Philosophy*, London: Heinemann, 1999, 1.

³ Kindly permit a male generic use here advisedly.

1.0 Understanding our Ecological Interconnectedness

Ecology is generally and commonly construed to be the scientific study of the interaction and relationship of organisms with their environment.⁴ The relationship here could be taken to include interactions with the physical world, members of other species and individuals of the same species. The environment contains both the physical and biological conditions in which an organism exists.⁵ Human ecology is generally concerned with human interactions with their environment.

The notions of interaction and relationship are more encompassing than they appear *prima facie* since they include all that human beings are and do in their abundance and their geographical distribution that affect their environment.⁶ As such, they have an intrinsic interconnectedness, ties and a relationship with nature. By not acknowledging our existence as part of this basic relationship we are alienating ourselves from the natural world. Along this line of thought, Pope Francis has written that nature should not be regarded as something separate from ourselves or as a mere setting in which we live. We are part of, and exist in nature, and thus are in constant interaction with it⁷. Corroborating this idea, the 2004 Nobel Peace Prize winner, Wangari Maathai argued that: “Nature is not something set apart, with or against which we react. It is not a place to fear as something within which we might lose our humanity or, conversely, a place where we might gain perspective and simplicity away from the corruption and treachery of the court or the city. It is instead something within which human beings are unfolded.”⁸

There is now a burgeoning interdisciplinary collaboration in the study of the impact of human interaction with the environment. This will seek to establish with scientific certainty the fact that human activities in the natural world if unconstrained, will destroy the ecological status of the natural world to such an extent that life for future generations of human beings and a host of other species, will become impossible⁹. It is already a fact

⁴National Geographic Society, *Ecology*, November 2022, accessed December 27 2022, <https://education.nationalgeographic.org/resource/ecology>.

⁵ Dieter Steiner, Markus Nauser, *Human Ecology: Fragments of Anti-Fragmentary View of the World*, London: Tailor & Francis Inc., 1993, 2.

⁶ Steiner, Nauser, *Human Ecology: Fragments of Anti-Fragmentary View of the World*, 2.

⁷ Pope Francis, *Laudato Si: On Care of our Common Home*, September 2015, No. 139.

⁸ Wangari Maathai, *Replenishing the Earth: Spiritual Values for Healing Ourselves and the World*, New York: Doubleday, 2010, 93.

⁹ Steiner and Nauser, *Human Ecology: Fragments of Anti-Fragmentary View of the World*, 6-7.

that there is an ecological problem and that human beings are largely the cause of the problem.

In recent times, human ecology has caught the world's attention in a negative sense due to a growing awareness of the ecological crisis facing the human community today, and the fact that Africa has not been not left out as we shall see in our enquiry.

2.0 Ecological Crisis in Africa: A Statement of a Problem

It is a statement of fact there is an ecological crisis in Africa today, as can be shown by the facts and figures given in below.

2.1.1 Flooding

Many countries in the continent of Africa have witnessed and are suffering from the devastating effects of floods of which destruction of properties, and displacement of population and livestock top the list. There are many examples of this, but to give a few: the country of Malawi in 2015 had 600,000 people affected and 64,000 hectares of land flooded. This was followed by outbreaks of cholera and other diseases¹⁰. In May 2016, the towns neighbouring Kigali, the capital city of Rwanda, became inaccessible because of floods¹¹. Most recently, this year 2022, Nigeria witnessed serious flooding that killed over 603 persons, displaced 1,302,589 people and destroyed over 108,393 hectares of farmlands across the country¹².

These few statistics reflect the many others not given here. Regrettably, some of these situations could have been avoided as, for example, in the case of Nigeria where the absence of a dam that had been earmarked for construction decades ago but had not been built till this day amplified the flood catastrophe. Unfortunately, the majority of those who bear the brunt of the effects of flooding and other ecological problems are the most vulnerable citizens of our poorer nations.

¹⁰ J. Yong Kim, "Plan for the Planet: Confronting Climate Change", in *Public Lecture at Georgetown University*, Washington (D.C.), March 19 2015, accessed 28 December 2022, <https://www.georgetown.edu/news/world-bank-group-president-returns-to-speak-on-climate-change/>.

¹¹ Marcel Uwineza, "Ecological and Spiritual Crisis Ecological and Spiritual Crisis: The African Contribution", in *La Civiltà Cattolica*, October 2020, Hekima Institute of Peace Studies and International Relations, 15-27, 18.

¹² Clifford Ndujihe, "Year of Killings, Deaths, Floods, Pains, Politics", in *Vanguard Nigeria*, December 31 2022, accessed December 31 2022, <https://www.vanguardngr.com/2022/12/2022-year-of-killings-deaths-floods-pains-politics/>.

2.1.2 Deforestation

A large proportion of Africa's population depends on forests for their livelihood. In fact, statistics record that over 70 percent of the population in Sub-Saharan Africa relies on forests and woodlands for its livelihood; the daily needs of one-fifth of rural families are met from the forests. Woodlands and forests supply around 60 percent of all energy. Forest-related activities account for a large part of the GDP of most countries in Africa.¹³ More than this, forest products are used every day. Many people cut down trees to expand their farming land to feed their growing families. Some collect firewood to make charcoal, or timber to build their shelters and storage bins and to make utensils. Others use herbs and trees for herbal medicines. It goes without saying that this exploitation of the forests, when not properly controlled, depletes the resources upon which both human beings and other species in the ecological system depend. Similarly, the rippling effects of deforestation causes flooding, desertification, erosion and a host of others.

2.1.3 Urbanisation

Africa, a continent that is remarkably rich in biodiversity, is rapidly urbanizing. Interestingly, this urbanisation trend is interpreted differently. On one hand, it is interpreted as development and modernisation. On the other hand, it is seen as the depletion of biodiversity and other constituent natural resources. This is why there is an ardent need for ecological conservation, planning and governance in urban areas, especially major cities, in Africa¹⁴.

It is often argued that migration from rural to urban areas and the resulting concentration of populations in cities would reduce the burden on natural habitats. Regrettably, migration and the subsequent concentration of people in urban areas have greatly concentrated rural populations and led to reduced rates of deforestation¹⁵. Nonetheless, land speculation by wealthy urban residents—assisted by a lack of land-use planning and control—has led to the loss and fragmentation of rangelands close to cities and towns

¹³Bromhead, Marjory-Anne, *Forests, Trees, and Woodlands in Africa: An Action for World Bank Engagement (English)*, June 14, 2012, Washington, D.C. : World Bank Group, accessed December 29 2022, <https://documents.worldbank.org/en/publication/documentsreports/documentdetail/616631468004826427/forest-trees-and-woodlands-in-africa-an-action-plan-for-world-bank-engagement>.

¹⁴ Burak Gungalp, Shuaib Lwasa, Hillary Masundire, Susan Parnell and Karen C Seto, "Urbanization in Africa: Challenges and Opportunities for Conservation," in *Environmental Research Letters*, 13 (2018) 015002, IOP Publishing Ltd., 1-8, 5.

¹⁵ Rudel T K, The National Determinants of Deforestation in Sub-Saharan Africa Phil. Trans. R. Soc. B 368 20120405.

like Ethiopia, Kenya, and Uganda¹⁶. Efforts have been made to reclaim land from the sea for the creation of harbours and artificial islands for human habitation in some African countries like Ghana and Nigeria. This spatial encroachment could have serious consequences in the not-so-distant future. In Western Africa, the increased demand for food in the cities has incentivized farmers to convert forests to agricultural fields to meet this demand¹⁷. Similarly, the growth of urbanization and the striving for economic development have led to the expansion of the transportation network, which in turn often leads to the fragmentation of natural habitats. Of particular concern in the context of biodiversity conservation is the road and railroad infrastructure.

2.1.4 Exploitation and Misuse of Natural Resources

The abundance of riches and natural resources has become a curse for African nations as these resources are harnessed without proper regulations and methods, thus leading to the destruction and pollution of the environment. Some of the rippling effects of this act are the loss of aquatic animals, polluted water bodies, destruction of agricultural land and a host of others.

The case of oil spillage in the Niger Delta area of Nigeria is a typical example in most regions of Africa that have some natural resources. Lamentably, the Niger Delta in southern Nigeria is one of the most contaminated and polluted places on earth. Many years of oil spillages from oil production continue to erode local communities' health, well-being, and livelihoods. Despite several clean-up efforts, the region is continually held back by spillages from pipeline disruption, theft, artisanal refineries and pipeline corrosion¹⁸. For this reason, the countries in Africa need to check this trend by acting swiftly and enacting stringent exploration laws and ecological acts for the safeguarding of the environment and other living beings.

¹⁶ Flintan F., Broken Lands: Broken lives, Causes, Processes and Impacts of Land Fragmentation in the Rangelands of Ethiopia, Kenya and Uganda in *Research Report* (Nairobi: Regional Learning and Advocacy Programme (REGLAP), 2011, 159.

¹⁷ Anderson P L, Okereke C, Rudd A and Parnell S., *Urbanization, Biodiversity and Ecosystem Services: Challenges and Opportunities* ed T Elmqvist *et al.* (Dordrecht: Springer) Regional assessment of Africa, 2013, 453–9. As cited in Burak Guneralp, Shuaib Lwasa, Hillary Masundire, Susan Parnell and Karen C Seto, “Urbanization in Africa: Challenges and Opportunities for Conservation,” in *Environmental Research Letters*, 13 (2018) 015002, IOP Publishing Ltd., 1-8.

¹⁸ Oluwole Ojewale, and Alize Le Roux, “Endless Oil Spills Blacken Ogoni Land Prospects,” in *Institute for Security Studies*, March 24 2022, accessed December 29 2022, <https://issafrica.org/iss-today/endless-oil-spills-blacken-ogonilands-prospects>.

3.1 The Catholic Church as a Voice of Reason

Confronted with a plethora of problems stemming from the reckless abuse and exploitation of the natural world for economic gain and material development, the Catholic Church, one of the international communities with a strong influence in the world, has refused to be silent or remain indifferent. Over the years, the Church has spoken out in clear and uncompromising terms on many issues that concern human existence, excesses, and the consequences of these for human relationships with the rest of the natural world. The Church has been calling on humanity to exercise moderation and check those excesses that are destructive of both human existence and the natural world at large. In Africa, the two synods which led to the documents *Ecclesiae in Africa* and *Africae Munus*, showed this same concern with the Catholic Church providing a moral compass for the way ahead.

Regarding the existential threat that confronts humanity and the other creatures that share the natural world, the Papal Encyclical *Laudato Si* speaks out strongly against human activities that adversely affect nature and calls for ecological conversion. But even before the publication of *Laudato Si*, there have been other interventions by the Catholic Church on this matter through the Apostolic Letter *Octogesima Adveniens*, and the Encyclical Letters *Sollicitudo Rei Socialis* and *Centesimus Annus*, all of which speak about the theme under discussion.

Among these magisterial teachings, *Laudato Si*, which is a presentation of the Church's concern for the ecological crisis menacing the world, stands out uniquely. It tackles head-on the issue of ecological crisis, its origins, its impact on creation, the challenges the world is facing, and the way forward. Its approach is not merely to be intellectually appealing, but to be existentially relevant.

3.1.1 Loss of Biodiversity and the Resultant Effects

The encyclical that “the earth’s resources are being plundered because of short-sighted approaches to the economy, commerce, and production.¹⁹” This could lead one to wonder why the earth’s resources are being plundered and for how long has this been going on? Well, the answer has been given before now and it is ostensibly for economic, urbanisation, commercial and production reasons. Put differently, the destruction of the

¹⁹ Pope Francis, *Laudato Si*, No. 32.

ecosystem has a utilitarian end. Africa records many instances of the abuse and misuse of natural resources which include land, water, gas, animals and forests because of excessive greed, intensive farming, overgrazing and deforestation²⁰.

The Church in her teachings warns that the loss of forests and woodlands necessarily entails the loss of species that may hold the key to solving some of nature's future problems. It argues that even the smallest and most insignificant of the species has a gargantuan part to play in the ecosystem²¹.

3.1.2 Understanding Ecology as a Common Good

On the point of changes in climatic conditions, the encyclical holds that the climate is a common good, essentially linked to the well-being of all beings in the natural world²². However, there are serious indications that the climate of the earth is getting warmer and the consequence of this is an existential threat to all life.

The notion of the common good, understood as those goods that serve all members of a given community and its institutions, including the generations unborn, has been a point of philosophical interest right from the ancient epoch. In Africa, this concept of the common good is identified with the sense of solidarity and communion. The African scholar and theologian, Laurenti Magesa rightly remarks, "the basic needs of the majority must temper the insatiable wants of some."²³ This assertion has both ethical and ecological consequences. It urges respect for the dignity and rights of the poor and protection of the limited resources of our universe. The Catholic Church through her social teachings continues to champion the idea and ideals of the common good as a way to cater for the needs and well-being of all beings.

3.1.3 Impact of Pollution and Waste on People and the Planet

Pollution understood as the presence in or introduction into the environment of substances or things that have harmful or poisonous effects is considered to pose an existential threat to the natural world. While acknowledging that some pollution is

²⁰Marcel Uwineza, "Ecological and Spiritual Crisis Ecological and Spiritual Crisis: The African Contribution", 19.

²¹ Pope Francis, *Laudato Si*, No. 32-34

²² Pope Francis, *Laudato Si*, No. 23.

²³ Laurent Magesa, *What Is Not Sacred? African Spirituality*, Maryknoll (NY): Orbis Books, 2013, 155.

inevitable, the encyclical observes that the introduction into the atmosphere of some pollutants from industrial wastes and the use of fossil fuel produce a broad spectrum of health hazards that cause premature death with most of the victims being the poorest of the poor²⁴.

Besides the impact of pollution on human life and health, especially in growing urban areas in Africa, there are equally adverse impacts on the aesthetic value of the environment. The encyclical frowns at the regular disposal and dumping of non-biodegradable waste which not only poses an existential threat but also constitutes an aesthetic nuisance to such an extent that “the earth, our home, is beginning to look more and more like an immense pile of filth. In many parts of the planet, the elderly lament that the once beautiful landscapes are now covered with rubbish.”²⁵

4.0 Laudato Si: Panacea and Charting a Way Forward

The encyclical, *Laudato Si*, would have been incomplete if it had only noted the environmental problems facing the world without proposing ways forward. As a head-on, it offers some hints on ways and paths by which the ecological crisis can be surmounted. In the first place, it holds that since most of the challenges in the natural world are human-driven, there should be human-driven solutions to them. That would be proof of a genuine concern, and will and commitment from all stakeholders to do what is right for the restoration of the original natural order on planet earth before the devastation that has already started becomes unstoppable. There are several remedial proposals that the Catholic Church has made over the years that are included in *Laudato Si* and which are under consideration. Herein we shall discuss but a few.

4.1.1 Correct Interpretation of the Gospel of Creation

In most quarters, it is argued and claimed that the Judeo-Christian tradition carries the bulk of the blame for the aggressive exploitation and destruction of the natural world. It is argued that the injunction contained in Genesis 1:28 “And God blessed them, and God said to them, ‘Be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and the birds of the air and over every living thing that moves upon earth’,” is largely responsible for the human exploitation and destruction of the

²⁴ Pope Francis, *Laudato Si*, No. 20

²⁵ Pope Francis, *Laudato Si*, No. 192.

natural world. The scholar, Lynn White affirms that “the ideological source of the environmental problems of the modern West is the orthodox Christian arrogance towards nature.²⁶” Though this view is debatable since the Book of Genesis predates Christianity; nevertheless, it gives a hint of the informative and formative obligation that Christianity owes to humanity over the centuries.

In answer to this criticism, Pope John Paul II in his encyclical *Sollicitudo Rei Socialis* clarified that the dominion over creation granted to humanity by the Creator is not an absolute power or freedom to use and misuse or dispose of things at will. He also pointed out that there is the prohibition and proscription of ‘to not eat of the fruit of the tree’²⁷.

In *Laudato Si*, the Catholic Church does not excuse herself but affirms her position regarding humanity’s relationship with creation and it argues that the scripture should be read in the right context with a proper hermeneutic interpretation in mind. The idea of dominion is not pursued; instead, the emphasis is placed on the task to ‘till’ and ‘keep.’ (cf. Gen. 2:15). “Tilling” refers to cultivating, ploughing or working the soil, while “keeping” means caring, protecting, overseeing and persevering. This implies a relationship of mutual responsibility between humans and nature.²⁸ In this mutual responsibility, nature responds to the human need for sustenance while humanity cares for nature by cultivating and protecting the earth.

Besides, as the psalmist says, ‘the earth belongs to the Lord (Psalm 24:1-2). In this psalm, God is at the centre of planetary affairs and not human beings. This is what is implied when *Laudato Si* affirms that: “Clearly, the bible has no place for a tyrannical anthropocentrism unconcerned for other creatures²⁹”. Rather it calls for the human recognition that other beings have their value in the eyes of God and that their mere existence blesses and glorifies God³⁰. Based on this principle, the encyclical calls for ecological conversion.

²⁶ Lynn White, *Historical Roots of Our Ecological Crisis*, Science, New Science Series, (March 10, 1967), Vol. 155, No.3767. 1203-1207, 1207.

²⁷ Pope John Paul II, *On Social Concerns Sollicitudo Rei Socialis*, 30 December 1987, No. 34.

²⁸ Pope Francis, *Laudato Si*, No. 67.

²⁹ Pope Francis, *Laudato Si*, No. 68.

³⁰ Pope Francis, *Laudato Si*, No. 69.

4.1.2 Ecological Conversion

Conversion is generally considered a religious term which reflects an attitude or disposition of repentance from one's sinful ways. Etymologically, the meaning of conversion comes from its Greek root *metanoia*³¹ and implies a transformation of one's mind. Conversion necessitates novel ways of thinking and acting. It requires the discarding of the wrong ways of doing something so as to adopt the correct way of doing something. Ecological conversion therefore implies changing humanity's way of living and relating to the earth and every species living on it. *Laudato Si* recognizes a triangular symmetry of human relationships, firstly to God, then to the neighbour and finally to the earth. It notes that this triangular symmetrical relationship has been ruptured by sin and human arrogance. Conversion then is an effort to repair the broken relationship between human beings and God, on one hand, the neighbour and the earth on the other.

Ecological conversion begins with an acknowledgement of the various ways in which individuals have harmed creation either through their actions or inactions. The good relationship believers have with God ought to be reflected in the manner in which they relate to the natural world. Humanity is said to need to be reconciled with the natural world to heal the growing alienation between humanity and the natural world. This reconciliation begins with humanity's recognition of and acceptance that they have harmed the natural world³².

4.1.3 Right Use of Technology

While the encyclical lauds technology as an ontic good which emanates from God's generous gift of intelligence and creativity to humanity and which has benefited the world and human beings in diverse ways, it also observes that technology, though capable of solving many human problems, has given some people who have the knowledge and economic resources to acquire them tremendous dominance and power over the rest of humanity. However, the encyclical wonders if this power will not be

³¹ A Greek term which means, 'after-thought or beyond thought, with meta meaning "after" or "beyond" and nous meaning "mind". It is commonly understood as "a transformative change of heart; especially, a spiritual conversion." The term suggests repudiation, change of mind, repentance, and atonement; but "conversion" and "reformation" may best approximate its connotation.

³² Pope Francis, *Laudato Si*, No. 218.

misused given the appalling misuse of it in the past³³, especially the use of bombs and other arsenals during the wars that have been fought in Africa.

Technology considered as an ontic good when used by good people, has the potential to solve many human problems, but when it is in the hands of evil and wicked people, it can be used a weapon of mass destruction. While *Laudato Si* applauds human ingenuity in technology, it cautions against too much reliance on technology and its correct use for the transformation and improvement of human conditions and the rest of the natural world³⁴.

4.1.4 Need for Dialogue

Every dialogue must seek to engage all the stakeholders so as to chart a way forward in facing common challenges and problems. The engagement of stakeholders at local, national and inter-continental levels is one of the ways to reach a consensus that will be binding on every country since the ecological problem is a shared reality. It is a dialogue that should not be discriminatory on the basis of ethnicity and religion.

Hence, *Laudato Si* proposes that dialogue should aim at reaching a conviction that this planet is our homeland, and that humanity must be considered as one people living in a common home shared by all species. This sincere dialogue seeks to explore and uphold a common and germane lifestyle and models of production and consumption which will not harm the environment. This awareness will ultimately lead to the desire to seek solutions that will have an African relevance.

Remarkably, a third synod of the Church in Africa on this theme of ecological crisis would not be out of place as it would provide a grand pedestal to engage everyone and allow every relevant stakeholder constructively to be involved in charting a way forward in mitigating the ecological crisis plaguing Africa as a continent.

Conclusion

Above, we have discussed and brought to the fore the components of ecological crisis in Africa; although not exhaustively as we have handpicked the salient ones. Generally, they pose serious threats and thus need responses and action. It is to this end that we have

³³ Pope Francis, *Laudato Si*, No. 102-104.

³⁴ Pope Francis, *Laudato Si*, No. 105.

encouraged the Catholic Church through her magisterial teachings to be the voice of reason and moral compass.

Using the Church's teachings, especially the papal encyclical *Laudato Si* which is relevant to our own age in its language and contemporary problems, we have spelt out and underlined our intrinsic interconnectedness with the order of creation.

The call to return to nature is not a return to the jungle or primitive life. It is rather a call to reconciliation with nature so that human beings are no longer a threat to the natural world. It is an invitation to redefine, rediscover and reclaim the pride of Africa. Moreover, it is a call for human beings to recognize their creatureliness and the close-knit relationship they share with the other species in the natural world. Returning to nature is also an invitation to heal humanity's alienation from other beings in the natural world. This alienation is self-imposed. It is rooted in a human attitude of superiority over the rest of creation and in utilitarianism and a consumeristic lifestyle.

African Contribution to Her Ongoing Continental Ecological Crisis

Otieno Isaiah Mwango SDB

0.1 Introduction

There is a Rwandese wise saying, “No one throws a stone where he or she has placed a container of milk.” This wise saying has never been needed as much as it is today, particularly with regard to the depletion of the environment; we continue to throw stones that destroy our “common home” Never before has the future of life on our planet been a matter of such a great concern as it is today. For instance, in the late 1970s, desertification dominated the environmental agenda of the African continent.¹ Since then, several other environmental issues have surfaced on the continent.

Surprisingly, as with so many major problems facing our society today, the precise extent and nature of the environmental crisis is not entirely clear. Lynn White, in his article, *The historical roots of our ecological crisis*, states that the history of ecological change is still so rudimentary that we know little about what has really happened, or what the results have been. However, it is becoming increasingly apparent that all is not well with mother earth, our common home, mother earth on which all life depends. The situation is so grave that we can talk of an ecological crisis facing our mother continent Africa.

African societies today are faced with a situation which needs a particular remedy, care and response. It is a reality that the environment has been damaged beyond recognition, thus provoking the decline or disappearance of different species in a dramatic and drastic, an unexpected and irreversible way that threatens their continuing survival. There is an unprecedented and massive destruction of living ecosystems affecting land, forests, plants, air and water. As a result, several environmental problems are affecting millions of people living in Africa. These include the risk of desertification due to little rain, a prolonged dry season and the extinction of animals.

This paper will provide an overview of some of the significant environmental problems that have led to the ecological crisis in African region and give a Christian approach to ecological crisis in Africa.

¹ Darkoh, M.B.K. *Man and Desertification in Tropical Africa*. University of Dar es Salaam Press, Dar es Salaam (1979) 11

1.0 The Structure of Africa

Africa as a continent encompasses of 54 countries or sovereign states that are fully recognized by the UN. In addition, there are 8 territories and 2 de facto independent states with limited or no recognitions. We shall see in depth how these counties are contributors to the on-going ecological crisis in this continent.

1.1 Climate change in Africa and variability

Climatic change and global warming are now scientifically established facts. Climatic change poses a massive threat to human development, and in some places, it is already undermining the achievement of the (MDGs) and the international community's efforts to reduce extreme poverty and hunger in most of the counties in Africa.² Climatic change is now a reality across the globe and yet the precise extent and nature of the environmental crisis is not entirely clear. Surprisingly, most studies on climate change and the environmental crisis have been generated and produced in the West, and yet the crises continue to emerge causing so many major problems for our society today. Lynn White, in his article states

“The history of ecological change is still so rudimentary that we know little about what really happened, or what the results were, however it is becoming increasingly apparent that all is not well with mother earth our common home, mother earth on which all life depends. The situation is so grave as to talk of environmental crisis.”³

The debate on the seriousness of the environmental crisis therefore, has two dimensions namely, the view of Thomas Malthus regarding the earth's capacity to hold its population growth and David Ricardo's views about man's potential to adapt.⁴ On the one hand there are those who prophesy that with what is happening to our environment, humankind is facing a global disaster in the near future. Our civilization as we know it will die, or be damaged beyond recognition unless we drastically change our ways. On the other hand, there are those who do have faith in the future. They argue that

² Osman-Elasha, B. (2007) Africa's vulnerability. *Tiempo* 63, 3–9. SADC (2005) Country Analysis Briefs. Available at: <http://www.eia.doe.gov/emeu/cabs/sadc.html> (accessed on 19th December 19, 2022)

³Lynn White, *The historical roots of our ecological crisis* (1967),123

⁴ David Ricardo, *Principles of Political Economy and Taxation*, (Ibn Khaldun Publishing Company 1815) 121

the human species has been too great a biological success to end abruptly. Human beings are a species that can learn from the experiences of their predecessors, and in so doing can fashion for themselves a world unlike any experienced before, can continue to gain new knowledge and thereby secure their future. Which view is correct, whether environmental crisis is of catastrophic nature or rather a challenge, cannot be determined with certainty, at least not for now.

Regardless of one's own views, many of us today are deeply distressed with the condition of both the social and natural environment. Large numbers of people have become apprehensive to the point of feeling threatened in a fundamental way. There is mounting evidence to support a growing consensus not only about the basic facts of the crisis, but also about human responsibility for creating or at least exacerbating the crisis. The global nature of the crisis is important in the sense that what happens in one particular nation impacts not only on that nation, but also on the mother continent as a whole.

What is clear is that with the rapid industrial development and increasing consumption of energy in most of the African region, carbon emissions are bound to escalate. The continent is already under pressure from climatic stresses. With further climatic changes, climate in the region is predicted to become more variable, and extreme weather events such as droughts and floods are predicted to be more frequent and severe in the future. Kenya, for instance, is particularly vulnerable to climatic changes and variability because the majority of the population makes their living from the land as cultivators and pastoralists. For the past two years, for example, Kenya experience both semi-arid and arid trends leading to reduced rainfall which has led to the deaths of both animals and human beings caused by drought related starvation.⁵

Global warming therefore has the potential to weaken the region's adaptive capacity and undermine development efforts in key sectors of the region's economy, reducing livelihood security and thereby increasing poverty and delaying or preventing the realization of the MDGs.

⁵ United Nations, *World Population Monitoring*, (United Nations, New York, 2001)

1.1.1 Biodiversity

This refers to the variety of plant and animal life in the world or in a particular habitat, a high level of which is usually considered to be important and desirable. In Africa, many species are under threat from natural and human pressures, and extinction rates in the region are high by global standards.⁶ There are various factors threatening biodiversity in Africa such as: climatic change, pollution, the introduction and invasion of alien species (e.g. Australian acacias and black wattle; waterweeds such as water hyacinth and Kariba weed); poaching, hunting and illegal trade in particular species (such as elephant tusks, rhino horns and leopard skins). Additional factors are government policies that encourage agriculture (cash crops for export), forestry and human settlement (including sedentarization of nomads and villagization) in previously natural habitats; the appropriation or nationalization of land by the State, and the planting of tobacco and even larger areas for fuels with which to cure the tobacco. In several countries in African region, deforestation has reduced the prevalence of wild plants used for food. Studies from Tanzania show that as villagers' access forest and woodlands, they eat fewer wild plants.⁷

Africa remains one of the most biodiverse regions on the earth, hosting a quarter of the world's global biodiversity. However, biodiversity rates on the continent are declining and this could accelerate as Africa continues to invest in infrastructure in pursuit of economic development. Africa's well-documented vulnerabilities to climate change, in the form of desertification, wildfires, and severe storms, also increase the risk of biodiversity loss.⁸ For organizations investing and operating in Africa, biodiversity is increasingly viewed as a key impact opportunity but, if miscalculated or not properly considered, it can be a critical risk to the success of an investment and a company's reputation.

Biodiversity loss in Africa is a factor that has heavily affected the operations and risk profiles of businesses and investors. For instance, organizations that accelerate the pace of biodiversity loss or take insufficient steps to address it, face reputational, legal

⁶ De Beer, J.D., Dryer, J. & Loubser, C. Environmental issues and risks. *In Environmental Education, Some South African Perspectives* (Ed. C. P. Loubser. Van Schaik Publishers, Pretoria 2005) 90

⁷ Kaimowitz, Not by bread alone. *Forests and Rural Livelihoods* (Sub-Saharan Africa. CIFOR, Bogor, Indonesia 2001) 76

⁸ Clara Bonnor, *Biodiversity Loss in Africa: A Critical Risk and Opportunity for Impact* (UN Publishing Company 2016) 18

and financial challenges. These in the past have been triggered by media shaming, regulatory action, boycotts from consumers, increased stakeholder scrutiny, and sanctions from governments.⁹

Against this backdrop, biodiversity is joining the integrity risk checklist, alongside corruption and political exposure in pre-investment, relationships, and environmental, social and governance. It is also a consideration in impact planning and ongoing risk management. Businesses that embrace biodiversity protection and embed it in their investment and corporate strategies will facilitate access to sources of funding, protect their social license, and positively impact the environment and communities in which they operate.

In Africa, there are high-profile examples of organizations affected by biodiversity concerns. The situation of West Africa palm oil planters, who have endured near relentless scrutiny by local media over the past five years for their links to biodiversity loss, reflects this reputational impact. The case of Tanzanian infrastructure developers, who lost a legal suit in 2014 in the East African Court of Justice to stop the construction of a paved highway through the Serengeti, is a reminder of the potential legal implications. Pre-investment ESG due diligence could have highlighted the risks biodiversity loss would have posed for these projects, saving businesses and organizations time, money, and social capital.¹⁰

Mozambique, for instance, took a bold step by declaring a ‘no touching zone’ which designated ‘Mozambique’s Conservation Areas’ with an aim of protecting the country’s diverse habitats which include a coastline with spectacular coral reefs and over 6,000 plant, bird and mammal species. The first phase of MozBio (2015-2019) involved over 60,000 beneficiaries (almost half of whom were women) in 10 protected areas, including the Chimanimani, Maputo Special Reserve, Gilé and Quirimbas National Parks; and leveraged over US\$500 million in private investment pledges.¹¹

⁹ https://www.controlrisks.com/our-thinking/insights/biodiversity-loss-in-africa-a-critical-risk-and-opportunity-for-impact?utm_referrer=https://www.bing.com viewed on 29th December 29, 2022

¹⁰ https://www.controlrisks.com/our-thinking/insights/biodiversity-loss-in-africa-a-critical-risk-and-opportunity-for-impact?utm_referrer=https://www.bing.com viewed on 29th December 29, 2022

¹¹ [https://www.bing.com/search?q=Mozambique Conservation Areas](https://www.bing.com/search?q=Mozambique+Conservation+Areas) viewed on 29th December.

1.1.2 Desertification-Land Degradation

Unsustainable land use practices, which result in habitat and land degradation in the dry land areas of Africa, can be classified under a number of broad categories, including expansion of rain fed cultivation onto unsuitable lands; soil mining and the shortening of fallow periods; overgrazing, and uncontrolled harvesting of bio-mass. These land-use practices are at least partly a response to the prevailing influence of household decision-making, which include environmental constraints, pressure factors and institutional and social factors in Africa.¹²

Pressure factors that directly affect the supply and demand for resources in Africa include rapid population growth, migration and natural disasters such as drought and floods. Institutional and social factors are those that determine how pressure factors are managed, which can be both enabling and disabling. They are triggered by international and national environment policies, institutional capacities and factors such as poverty and political conflict. Disabling institutional and social factors include lack of capital assets, ill-defined property rights, limited access to financial services and markets, inadequate safety nets in times of stress and lack of participatory mechanisms for resource management. Through desertification, soil in Africa has lost 25% or more of its fertility and the process is still going on.¹³ Large scale erosion and desertification have led to food insecurity in several area in Africa and its root cause in its entirety is land degradation.

1.1.3 Waste and littering

The African region is fast becoming a throw-away society and one of the principal problems municipalities face is the disposal of solid waste produced by modern lifestyles that by nature are non-decomposable. The African lifestyle has been such that waste, hitherto an alien material, is no longer alien, but becomes, it seems, part of the environment. The ever-growing throw-away culture does a great harm to the mother continent through the disposal of plastic bags, empty cans and bottles that are littering city streets, the peri-urban fringes, and the stop- and rest-places on roadways or highways.

¹² Darkoh, M.B.K. *Regional perspectives on agriculture and biodiversity in the dry lands of Africa.*(J. Arid Environ 2003) 54

¹³ Ibid

A good example to learn from is that of former Tanzanian President John Pombe Magufuli who was photographed picking up rubbish on the streets outside State House in the public cleaning programme he thought up to replace the usual Independence Day celebrations. The president was joined by the hundreds of the residents on the streets of Dar es Salaam and helped out at a public clean-up operation that he spearheaded in collaboration with other senior Tanzanian Government officials. “Let us work together to keep our country, cities, homes and workplaces clean, safe and healthy,” Mr. Magufuli told a crowd of surprised onlookers as he picked up rubbish off the street.¹⁴ Mr. Magufuli wanted a new Tanzania that was free from waste and litter and he longed to see a country that was ‘ecological crisis free.’ He therefore set an example that all Africans are supposed to follow if Africans are to curb this waste and litter tragedy

Many cities in Africa are generating solid waste equal in volume to that generated in the cities of the highly developed countries. More than 90% of all waste produced in the countries of Southern Africa, for instance, is dumped on land. In South Africa, for example, more than 200,000 tons of litter is discarded on the land each year and picking up this litter costs more than R 100 million a year.¹⁵ Throughout the region, it has been reported that industries, seeking to keep their costs down, dump their wastes in vacant lots and roadways and often get away with it. Where legislation is available, enforcement is lacking. The standards of rubbish disposal throughout the region are poor, because of high disposal costs.¹⁶

1.1.4 Population

The population of Africa has grown rapidly over the past century and there is a large youth bulge, further reinforced by a low life expectancy of below 50 years in some African countries. The total population in 2020 was estimated at more than 1.3 billion, with a growth rate of more than 2.5% p.a. The total fertility rate (births per woman) for Sub-Saharan Africa is 4.7 as of 2018, the highest in the world according to the World Bank. The most populous African country is Nigeria with over 206 million

¹⁴ Gerhard Jacobs, *The Tanzanian Citizen Newspapers: President Magufuli Helps Clean Streets*, (In News Printing Press, 10-12-2015) 2,3&4

¹⁵ De Beer, J.D., Dryer, J. & Loubser, C. Environmental issues and risks. *Environmental Education, Some South African Perspectives* (Ed. C. P. Loubser. Van Schaik Publishers, Pretoria, 2005) 32

¹⁶ SARDC/IUCN/SADC Environment in Southern Africa. SARDC, Harare, Zimbabwe(1994)

inhabitants in 2020 and a growth rate of 2.6% p.a.¹⁷ This rapid population increase requires an increase in production and in the provision of necessities such as water, food, clothing, shelter and energy, which influence ecosystems directly or indirectly. Population growth causes environmental stress and, as already indicated, many areas are undergoing large-scale destruction of their biodiversity and the natural environment. Poor rural populations are being increasingly forced to degrade the environment in Africa. The biggest challenge is eradicating poverty in the African region. Unemployment is high in many countries in the African region. Also evident are wide disparities in the employability of different groups in the labor force in the most of the countries in Africa.

1.1.5 Urbanization

Because of mass rural - urban migration in most parts of African cities, unemployment levels in African cities are now at peak. The perception of life in urban centers and the slow rate of development in the rural areas are not the only reasons for urbanization; declining agricultural opportunities in the countryside are another push factor while the end of apartheid has brought with it new opportunities to move to cities as the case in South Africa. These factors have exacerbated problems because the migrants tend to settle in an over-crowded, unsanitary and unhealthy areas with waste almost impossible to manage and dispose of.

In Kenya, its capital Nairobi is the country's largest city by population. The last official population census as taken in 2009 and at that time was 3,138,369 in the city proper. That number has since grown to approximately 3.5 million. The surrounding area has over 6.5 million residents. This "Green City in the Sun" has a history dating back to 1899 and continues to grow as rural residents make their way to this big city for employment opportunities.¹⁸ Nairobi is surrounded by several slums.

Among them, Kibera is one of the largest slums in Africa and its population exceeds one million. Dwellings in the slums are mostly made of corrugated metal or clay and sticks. The huts are squeezed together, with sewers filled with rubbish flowing through them.¹⁹

¹⁷ Population of Africa (2019) – World meters". www.worldometers.info. Archived from the original on 8 March 2018. Retrieved 17 April 2019 viewed on 28th December 2022

¹⁸ <https://worldpopulationreview.com/world-cities/nairobi-population>. Viewed on 31st December 2022

¹⁹ Ibid

In Mozambique, for instance, at least half the urban population lives in squalor along river banks in some of the most unsanitary housing conditions. Some official policy approaches have soft-pedalled environmental education and incentives and have put stress on physical improvements through such schemes as slum clearance and expensive high rise apartment complexes, sometimes without any particular thought for the displaced inhabitants. Many such '*place prosperity schemes*' tend to overlook the social costs and the futility of uprooting slums from one area only to sow them in another. Probably a complementary policy known as '*people prosperity*' approach that focuses attention on human resource development and empowerment stands a better chance to address this problem.²⁰

1.1.6 Pollution

Africa is blessed with natural and mineral resources, but exploitation of these resources has led to extreme pollution of the environment. Population growth and urbanization have also contributed greatly to the current pollution in Africa. Traffic emissions, transported dust and open burning are all significant contributors to air pollution in Africa. The Sahara Desert is a major source of transported dust, especially during the harmattan season in West Africa. Mercury emissions are very high in South Africa due to coal combustion and gold mining. Air pollutants may also contaminate water and soil through atmospheric deposition.²¹

The major pollution sources for surface water resources are the urban and industrial discharges of untreated effluents into the water. A few African countries have standards for effluent discharge into surface waters, but the key question is whether or not these standards are being enforced. Though groundwater sources in wells and boreholes are the major sources of drinking water for the African population, the water quality of these groundwater sources is generally low due to their close proximity to unsanitary facilities.

Identified sources of soil pollution in Africa include agricultural activities, mining, roadside emissions, auto-mechanic workshops, refuse dumps and e-waste. Oil spills are a major problem in the oil-rich African countries such as Nigeria and Angola.

²⁰ Darkoh, M.B.K. Regional perspectives on agriculture and biodiversity in the dry lands of Africa.(J. Arid Environ. 2003)54

²¹ Mabel Ipinmoroti, *Social Economic and Environment Impact in Africa* (Ogun Publishing Company, July 7th 2014) 14

Agricultural activities are the lowest impacting soil quality in Africa, while e-waste recycling is the highest with Pb, Cu and Zn at extremely high concentrations ([1%]). There is a need for proper regulation of environmental pollutants in Africa.²²

All these forms of environmental pollutions remain a major threat to Africa because of the environmental risks associated with them. Several deaths every year across the continent are linked with these invisible killers. Unless Africa goes back to properly regulating her environmental pollutants, the continent must expect a disaster in the decades to come. This is because at present, there are localized pollution problems throughout the region and this issue need not be elaborated further.

1.1.7 Poverty

Poverty cannot be considered a static situation; it occurs as a result of various crises and uncontrolled events that affect people's livelihoods and it leads go racial and gender discrimination, environmental degradation and macro-economic upsets.²³ Vulnerability to poverty is characterized by the inability to devise an appropriate coping or management strategy in times of crisis.

In tackling human hardship and lack of economic opportunities, experience shows that too much reliance on the 'trickle down' benefits of economic growth for the poor has not been effective especially where the underlying institutional contexts have remained the same.²⁴ Although it can help in some ways to reduce poverty, economic growth cannot actually reduce inequalities. The experience of South East Asia shows that policies that focus on equitable human resource development can make a difference in poverty alleviation. Decentralization in planning, provision of social safety nets, promotion of social equity through redistributive policies and development of good governance and administrative capacity can foster the reduction of poverty and equitable development process. These can greatly lower the environmental degradation in Africa.

2.0 A Christian Approach to the Ecological Crisis in Africa

This is a call for an ecological consciousness, a consciousness of the delicate web of life and a respect for the existence and value of other creatures, the inter-connectedness of

²² Ibid

²³ De Beer, J.D., Dryer, J. & Loubser, C. (2005) Environmental issue sand risks. In: Environmental Education, Some South African Perspectives (Ed. C. P. Loubser). Van Schaik Publishers, Pretoria.

²⁴ Ibid

all reality. When non-human forms of life are thoughtlessly destroyed in the name of human progress, the failure to respect and honor other beings is clear. Respect for other non-human forms of life does not require that we attribute personhood to them. Rather the question is whether other forms of life have a value in and of themselves, not entirely dependent on human purposes. The assumption that natural resources [clean air, pure water, fertile fields] are unlimited, or at least always renewable, underlies much of the exploitation of the earth for human purposes. It is supposed that we will never run out of the resources that are necessary to all life because they are supplied in inexhaustible abundance by the earth.

Moreover, it is presumed that even if our natural environment should run out of these necessary resources, modern science and technology will always be there to provide alternative sources. Such notions have partially destroyed the harmony and the relationship between humanity and nature. Nature is no longer seen as a partner of humanity but as an object to be exploited in order to satisfy human desire.

2.1 Proposed Response to Ecological Crisis

Magisterial teaching and scriptures present the basis for responding to the challenges of the ecological crises and propose recommendations to alleviate the present ecological crisis.

2.1.1 Traditional African spirituality

Traditional African spirituality promotes the inseparable harmony and respect between humanity and nature, and considers God as the Creator of the entire universe. In traditional African societies, people lived in a religious universe where human beings and nature were partners. For Africans, the environment implies totality of life. In other word, neither the sacred nor secular exist as a separate entity. According to John Mbiti, “religion was interlaced in the fabric of every institution and aspect of life”. Africa’s religious heritage linked Africans with creation of the world whether visible or invisible, above or below. The entire universe was therefore viewed religiously.²⁵

Nature in the broadest sense of the word was not an empty impersonal, objective phenomenon. It was filled with religious significance. Africans believe that they are

²⁵ Abenea Mtea, *Which Direction and which Methodologies?* (African Christian Studies, 1985) 3-7

entirely dependent on the earth for their existence. Respect for the environment was manifested in the way Africans related with animals, trees and other created reality.²⁶ The harmonious relationship promoted by Traditional African spirituality should be observed in our society as remedy for the ecological crisis.

2.1.3 Encyclical “*Laudato Si*”

Pope Francis in *Laudato Si* pinpoints the Christian response to the ecological crisis in Africa and what is required for the earth’s healing. He states that the church’s response to any social problem is the key to her identity as well as the identity of the people of God. This response originated in the prophets, who were the ‘mouth-pieces’ of God. It has continued until today.²⁷ Now that ‘Our Common Home’, Africa, is gravely threatened, the Church, through the Pope Francis, speaks about this ecological crisis which is described as an ultimate life issue in *Laudato Si*. This is the first social encyclical that integrates the call for social justice with the environmental, ecological crisis. The uniqueness of *Laudato Si* is its strong advocacy for active engagement to better take care of our common home.

In the encyclical Pope Francis gives guidelines or a blueprint for action to be taken by the stakeholders, that is, virtually every human being. He rightly believes that when a global consensus is arrived at thru dialogue it “could lead, for example, to planning a sustainable and diversified agriculture, developing renewable and less polluting forms of energy, encouraging a more efficient use of energy, promoting a better management of marine and forest resources, and ensuring universal access to drinking water.”

3.0 Conclusion

Although the environmental problems facing Africa are already being tackled at the national, regional and international levels, there is more that can be done. At the national level, the different agencies and players, both within and outside government need to collaboratively strengthen coordination of key interventions in different sectors as we have seen in both rural and urban areas.

²⁶ ‘African Sense Of God’s Motherhood’ in Spearhead 112-114, AMECEA (Gaba Publications, Eldorata, Kenya 1990) 98

²⁷ Holy Father Pope Francis, The Encyclical *Laudato Si* Mi Signore: *On the Care of our Common Home*. (Signature date 24th May 2015)

Public awareness and concern for the environment are becoming increasingly important factors for decision makers in Africa as the continent seeks to expand the development of its economies. This concern needs to be translated into coordinated, tangible and long-term solutions that consist of research, programme development and implementation, with a high level of political commitment. A number of relevant policies and the institutional framework exist in the region but the challenge is to use them effectively to deliver sustainable solutions in different countries. At the African regional and international levels, there is a need to address geopolitical forces and issues that contribute to the un-DE development of the African region. Although these issues have been raised over and over again, not much has been done to find viable and long-term solutions.

Among the major issues are poor terms of international trade, political instability, poverty, declining economic performance and international debt. These issues have complex historical and contemporary underlying causes that require to be urgently addressed. They are matters of global justice. A plan of action must be drawn up to fight this common and ‘cancerous’ ecological crisis.

We are therefore called as Africans to collectively cultivate a spirituality of justice-seeking, to spend some time each day reading scriptures and Catholic social teaching with ‘new eyes. We start in a small way by living simply, practicing responsible simplicity of life, avoiding materialism and consumerism, and by not following the ‘throwaway culture,’ and by educating ourselves about the state of our mother land continent. Hence there is a need for a true and deep change, a “metanoia” based on Mk 1:15. Such a spiritual change goes beyond mere arithmetic, and political proposals. It calls for a rediscovery of the internal spiritual values and attitudes of living in harmony with the rest of creation. It calls for a true and lived eco-spirituality first in Africa and then in the rest of the world.

By so doing, Africans will become ethically conscious consumers. They do this by boycotting certain products that create an environmental risk, by using renewable energy so that the demand for such nonrenewable products as firewood will decrease and in effect lessen deforestation and desertification. There is need for the re-discovery of Christian and African ethical principles and criteria to ensure eco-integrity and the protection and sustainability of all life forms.

Renewing the Face of the Earth: A Pastoral Perspective of Deforestation Today

Rev. Sr. Dr. Mary Wambua Nzilani, SMMG

Abstract

Our world is threatened by lack of due respect for nature, plundering of natural resources and progressive decline in the quality of life. This article calls for a need to have constant vigilance and active work to prevent or solve the challenges of our environment, as well as helping the people of God on how they can best relate with nature. It looks at the situation at hand, the causes, the insights from the Church teaching and provides a way forward for a better renewal in our common home.

1.0 Introduction

The challenge of environment has been identified and talked over for many past decades. As it is with many researchers, it is affecting the human person even the Government and also the prospects for development in Africa today.¹ Our story as Africans on this crisis is not encouraging, thus, a challenge and an issue which is emerging as a priority.² We don't need to subscribe to annihilating environmental scenarios so to be able to recognize the serious environmental challenges facing us today and as well as for the future.

We may say that, much has been done over the pass decades as cleaning up the environment, but much also needs to be done in line with soil erosion, clean water supplies, forest being destroyed, spreading of deserts, the land, air, and water are being poisoned, our poor people are also affected when it comes to environmental hazards affecting their communities and the future life of their children as well as solving toxic waste problem.³

¹Francois Falloux and Lee Talbot, *Crisis and opportunity: Environment and Development in Africa*, London: Earthscan Publications Ltd, 1993, Vii. Also, Carol Dempsey and Russell Butkus eds, *All Creation is Groaning: An Interdisciplinary Vision for Life in a Sacred Universe*, Collegeville, Minnesota: The Liturgical Press, 1999, 59.

² Ibid., Also Samson Gitau, *The Environmental Crisis: A Challenge for African Christianity*, Nairobi: Action Publishers, 2000, 3.

³ Drew Christiansen and Walter Grazer, "Preface" In Drew Christiansen and Walter Grazer, eds., *And God Saw That It Was Good: Catholic Theology and the Environment*, Washington: United States Catholic Conference, 1996, Vii

As creatures created by God, we depend on food produced from the earth, on the air we breathe, the forest that provides us with medicine, wood, water, food, recreation among many.⁴ It's true that, the world is threatened by a lack of due respect for nature, by the plundering of natural resources and by a progressive decline in the quality of life.⁵ Thus, a need for Constant vigilance and active work to prevent or solve the challenges of our environment,⁶ as well as helping the people of God on how they can best relate with nature. Therefore, knowing that, there are many areas that we need to look at as what affects us in our environment, this work will be based on Deforestation. It will look at the situation at hand, the causes, the insights from the Church teaching and lastly, a way forward for a better renewal in our common home.

1.0 Understanding Deforestation

Deforestation can be described as the permanent destruction of indigenous forests and woodlands as well as the cutting down of trees to make way for more homes and industries.⁷ It means cutting or clearing trees and forests covering a large area, and not replanting them. As well it is the process of cutting down forests after which the land is used for non-forest purposes.⁸ It again refers to the decrease in forest areas across the world that are lost for other uses such as agricultural croplands, urbanization, or mining activities.⁹

Deforestation is when forests are destroyed so that the land can be used for other purposes.¹⁰ Looking at the world today, it is beleaguered by rapid encroachment on forests and complete deforestations than it has ever experienced before. Its long-term effects are devastating on people's lives.¹¹ As per the researchers, each year about 18

⁴ Samson Gitau, *The Environmental Crisis*. 9.

⁵ Carol Dempsey and Russell Butkus eds, *All Creation is Groaning*, 59.

⁶ Drew Christiansen and Walter Grazer, "Preface", Vii.

⁷ Rinkesh, "Causes, Effects and Solutions to Environmental Degradation" in <https://www.conserve-energy-future.com/causes-and-effects-of-environmental-degradation.php>, accessed on 8/5/2023.

⁸ "What is Deforestation?" In https://justdiggit.org/deforestation/?gclid=EAIaIQobChMIxNP-2LXO_QIVhgiLCh2tsgu0EAAAYAiAAEgIFN_D_BwE, accessed on 11/6/2023.

⁹ "What Is Deforestation? Definition, Causes, Consequences, Solutions" in <https://youmatter.world/en/definition/definitions-what-is-definition-deforestation-causes-effects/> accessed on 9/3/2023.

¹⁰ Jaime Simmons, *Deforestation and Habitat Loss: Earths Environment in Danger*, New York: The Rosen Publishing Group, Inc., 2018, 3.

¹¹ Solon Barradough and Krishna Ghimire, *Agriculture Expansion and Tropical Deforestation: Poverty, International Trade and Land use*, London: Earthscan Publications Ltd, 1986, 1, 3.

million acres (7.3 million ha) of forests are destroyed.¹² What all may know is that, without forests, many species or kinds of plants and animals will lose their habitats or natural homes for forests are very important for life on earth.¹³ Thus, a need to renew the earth.

1.1 What Causes Deforestation?

The litany of the causes of environmental damage is becoming increasingly.¹⁴ This has made the relationship of humans to the rest of creation to change dramatically.¹⁵ Thus, we may say that, the cause of deforestation are multiple, and vary from place to place.¹⁶

However, there seems to be a general agreement among the scientific community, policy makers and international agencies devoted to assessing the status of global forests.¹⁷ Deforestation and tree loss are mainly caused by human activities.¹⁸ Trees are cut down to make space for agriculture or livestock grazing, the mining and drilling industries or are lost due to other forestry practices. The loss of trees can also be caused by natural processes such as wildfires. Due to global warming this natural way of deforestation increased rapidly over the past years. While in most areas environmental degradation has yet to reach a crisis level where entire systems are collapsing, it is important to examine some of the effects of existing environmental impoverishment and to forecast some of the potential repercussions of forest loss.¹⁹ Continuing loss of natural systems could make human activities increasingly vulnerable to ecological surprises in the future.

The following list can help us to understand this better. It includes commercial logging, increased worldwide consummation of industrial wood, clearing of forests for human settlement and agriculture, overpopulation, globalization of trade in wood products, economic development including road construction, poor harvesting practices, over grazing, insect pests and diseases pressure combined with poverty and landlessness, demand for fuelwood, poor enforcement of existing laws by corrupt

¹²Ibid.

¹³Ibid.

¹⁴ Carol Dempsey and Russell Butkus eds, *All Creation is Groaning*, 59.

¹⁵ Ibid.

¹⁶ Dhirendra Vajpeyi, ed., *Deforestation, Environment, and Sustainable Development: A Comparative Analysis*, United States of America: Praeger Publisher, 2001, 2.

¹⁷ Ibid.

¹⁸ Richard Rwiza, *Environmental Ethics in the African Context*, Nairobi: CUEA Press, 2021, 29.

¹⁹ Ibid.

politicians and bureaucrats, air pollution and uttermost climatic events such as wildfires, ice storms and floods among others.²⁰ Several of these factors are related with each other, for example, increased demand for timber with globalization of trade, and poverty, landlessness and existence agriculture with indiscriminating cutting of the forest.²¹ We look at some of these causes as below;

1.1.1 Technology and the Environmental Crisis

Technology means applied science and it includes the means used to make things happen. The word technology here captures the ability of human being to utilize advances in scientific knowledge to develop new tools, devices and also the processes to work our will on the world we live in, for example, the printing press among many.²² The power of technology to significantly alter planetary life systems is the highlighted especially today with the changes we have.²³ Looking at the explosion of both human population and consumption, we find that, technology has sufficient power to destroy the material conditions of human as well as other life.²⁴ It is outstripping the earth's power to restore.²⁵ This is rising a large and complicated ethical and pastoral issue due to its effects which calls for our attention for as Christians, we may need to examine our lifestyle, behaviours and even our attitudes so to be able to be in a position of participating in resolving the environmental crisis.²⁶

Thus, technology has the potential to reinforce certain attitudes and values especially a particular view of creation and a dangerous technological pride, thus, contributing to the environmental problems we are facing today.²⁷ You find that, technology has vastly magnified our various abilities to manipulated nature far beyond the extent to which it has thusly far magnified our abilities to conserve as well as to protect nature, but our ability to protect the earth against unintended negative consequences is still underdeveloped.²⁸ That is why, its destructive impact on creation is

²⁰ Ibid., 3.

²¹ Ibid.

²² Carol Dempsey and Russell Butkus eds, *All Creation is Groaning*, 60.

²³ Ibid., 59.

²⁴ Richard Rwiza, *Environmental Ethics in the African Context*, 178.

²⁵ Ibid.

²⁶ Ibid. Richard Rwiza, *Environmental Ethics in the African Context*, 178.

²⁷ Ibid., 61.

²⁸ Carol Dempsey and Russell Butkus eds, *All Creation is Groaning*, 62.

often accompanied by denial: of negative consequences, of the limits of technology, of our estrangement from the rest of creation.²⁹ This leads us to talk of ecological sin as:

The arrogant denial of the creaturely limitations imposed on human ingenuity and technology, a defiant disrespect or a deficient respect for the interdependent relationships of all creatures and their environments established in the covenant of creation, and an anthropocentric abuse of what God has made for frugal use.³⁰

Technology has also strengthened a kind of technological pride. This makes our confidence in our ability to develop technology to counteract bad environmental effects, and so, tempting us to lose sight of our place in the natural order and also the believe that we can achieve whatever we want which is pride rooted in the belief that our power may be unlimited.³¹ We can give an example of logging which provides raw material - wood - for the paper and lumber industries.³² Therefore, this affects our earth raising a need to renew it.

1.1.2 Use of Forest Land for Agriculture

One of the biggest causes of deforestation is agriculture.³³ Agribusiness in which huge areas of forest are burned or cleared to make space for crops and livestock is the number one driver of deforestation worldwide.³⁴ Farmers destroy a patch of forest to grow crops or raise their livestock. Some farmers create this space by cutting down the trees to burning them.³⁵ This process is called slash - and - burn agriculture.³⁶ Mostly we rely on industrial agricultural commodities such as palm, soy, and industrial produced meat and dairy. As we do this, we are losing forests and accelerating a climate and ecological emergency.³⁷ As per researchers, some 80% of global deforestation is a result of

²⁹ Ibid.

³⁰ Ibid.

³¹ Ibid., 63.

³² Jaime Simmons, *Deforestation and Habitat Loss*, 6.

³³ Ibid. Richard Rwiza, *Environmental Ethics in the African Context*, 170.

³⁴ Natalie Behring, "Agribusiness & Deforestation" in <https://www.greenpeace.org/usa/forests/issues/agribusiness/8/5/2023>. Also, Grace Hussain, "How Does Agriculture Affect Deforestation?" in <https://sentientmedia.org/author/gracehussain/Published> on July 13, 2022, accessed on 8/5/2023.

³⁵ Ibid.

³⁶ Ibid. Solon Barradough and Krishna Ghimire, *Agriculture Expansion and Tropical Deforestation*, 3.

³⁷ Natalie Behring, "Agribusiness & Deforestation" in <https://www.greenpeace.org/usa/forests/issues/agribusiness/8/5/2023>. Also, Grace Hussain, "How Does Agriculture Affect Deforestation?" in <https://sentientmedia.org/author/gracehussain/Published> on July 13, 2022, accessed on 8/5/2023.

agricultural production, which is also the leading cause of habitat destruction.³⁸ Animal agriculture livestock and animal feed is a significant driver of deforestation which is also responsible for roughly 60% of direct global greenhouse gas (GHG) emissions.³⁹

Here, we talk of animal grazing, harvest for fuelwood and logging as some of the other causes of deforestation which contributes to global warming as decreased forest size puts carbon back into the environment.⁴⁰ More and more, the world's agriculture system is expounding its terrestrial footprint to produce livestock feed that meets the growing demand for meat and dairy products or crop-based biofuels.⁴¹ This type of growth is only putting more pressure on forests and enhancing the destruction of critical ecosystems.⁴² This cannot lead to a better place for all creatures to live, thus, leading us to talk of renewal of our earth.

1.1.3 Expansion of Infrastructure

The expansion of infrastructure, especially through methods such as slash and burn proficiencies, is also driving deforestation.⁴³ It occurs across a number of industries and populations, including individuals fleeing urban areas, cities entrenching on forested land, farmland expansion, mining and other logging activities.⁴⁴ An example of this is building of roads which has exacerbated the rate of deforestation. They are in many parts of our countries opened up forest areas to markets and have also increased the profitability of deforestation. This violates the existing environmental and land laws.⁴⁵ The destruction of forest poses a great threat to the environment and the general well-being of the affected regions' long-range economic prospect.⁴⁶ This can also be because of self-centeredness and self-indulgence which have created in many of us a habit of consuming larger and larger quantities of the earth resources. As Carol and Russel reiterates, "we consume 4.5 billion metric tons of material annually to produce the goods

³⁸ Ibid.

³⁹ Ibid.

⁴⁰ Ibid.

⁴¹ Ibid.

⁴² Ibid. Solon Barradough and Krishna Ghimire, *Agriculture Expansion and Tropical Deforestation*, 1,3.

⁴³ Solon Barradough and Krishna Ghimire, *Agriculture Expansion and Tropical Deforestation*, 3.

⁴⁴ Ibid.

⁴⁵ Dhirendra Vajpeyi, ed., *Deforestation, Environment, and Sustainable Development*, 4.

⁴⁶ Ibid., 5.

we feel we need or want”. This has led to an overindulgence leading to serious environment damage.⁴⁷ Thus, a call for renewal of the earth.

2.0 Consequences of Deforestation

The impact of deforestation is manifold and destructive to the global environment.⁴⁸ Forests are major ‘carbon sink’ and absorb large quantities of CO₂ from the atmosphere.⁴⁹ Tropical deforestation reduces their absorption capacity and instead adds 10-25 percent to the carbon flow in the atmosphere.⁵⁰ We may say that, the most immediate impact of deforestation occurs at the local level with the loss of ecological services provided by tropical rainforests and related ecosystems.⁵¹ Such habitats afford humans valuable services such as erosion prevention, flood control, water filtration, fisheries protection, and pollination - functions that are particularly important to the world’s poorest people, who rely on natural resources for their everyday survival. Forest loss also reduces the availability of renewable resources like timber, medicinal plants, nuts and fruit, and game.⁵² Among the many destructive effects of deforestation, some of them are as below:

2.1 Soil Erosion

Soil erosion the wearing - draining of fertile soil or topsoil caused by overgrazing, wind and water is the removal of the upper layer of the soil and it takes place when there is removing of trees that bind the soil.⁵³ As a consequence, wind and water carries away the top layer of the soil and in addition, tragedies like landslides take place because of this.⁵⁴ Moreover, soil erosion is responsible for various floods. As trees are not present to stop the waters from heavy rainfall’s gush directly to the plains. This results in damaging of settlements where people are living.⁵⁵ The major cause of this includes deforestation, lack of crop rotation, changing of courses of water bodies, mechanical

⁴⁷ Carol Dempsey and Russell Butkus eds, *All Creation is Groaning*, 62.

⁴⁸ Dhirendra Vajpeyi, ed., *Deforestation, Environment, and Sustainable Development*, 6.

⁴⁹ Ibid.

⁵⁰ Ibid.

⁵¹ Rhett Butler, “Consequences of Deforestation” in <https://rainforests.mongabay.com/09-consequences-of-deforestation.html>, accessed on 9/3/2023.

⁵² Rhett Butler, “Consequences of Deforestation” in <https://rainforests.mongabay.com/09-consequences-of-deforestation.html>, accessed on 9/3/2023.

⁵³ “Essay on Deforestation for Students and Children” in <https://www.toppr.com/guides/essays/essay-on-deforestation/> accessed on 29/5/2023.

⁵⁴ Ibid.

⁵⁵ Ibid.

development such as construction, overgrazing, treading and siltation.⁵⁶ Therefore, there is a call to control all these for a better earth for all creature to be able to enjoy what God has created.

2.2 Global Warming

Deforestation causes disruption of water recycling through vaporization of water from the forest canopy and thus, contributes to regional and global warming of the climate.⁵⁷ On one hand, deforestation influences hydrology, leading to decreases flow in rivers and recession of glaciers and hence more uneven flows throughout the year.⁵⁸ On the other hand, it leads to excessive flooding and soil erosion as we have just mentioned above.⁵⁹

Global warming is the main cause of the change in our environment.⁶⁰ Rivers are drying up, crops fail, livestock and wildlife die, hydro power systems stop, people go hungry and some even die and this is a bitter iron for people in Africa today.⁶¹ These seasons are now getting delayed. Moreover, there is an instability in their ratios with temperatures reaching its extreme points. This year it was 50 degrees in the plains, which is most of all. Furthermore, the glaciers in the Himalayan ranges are melting. As a result, floods are affecting the hilly regions of our country and also the people living there. In addition, the ratio of water suitable for drinking is also decreasing. This affects the life of God's creatures and so, an urgency to do something for a better environment.

2.3 Encroachment on the Water Cycle

The Earth's water cycle depends heavily on trees as trees absorb water and release it through their leaves.⁶² Any diminution of trees in a particular area drastically affects the humidness levels in the atmosphere, thereby affecting the set process of the water cycle.⁶³ Forests act as a giant reservoir of water, which they slowly release into the environment, that keeps the water cycle going ceaselessly. Since through transpiration, trees release

⁵⁶ Centre for Social Justice and Ethics (CSJE) and Alliance of Religions and Conservation (ARC), *Stewardship of God's Creation: A Catholic Environmental Toolkit for Catechists and Seminarians*, Nairobi: CUEA Press, 2014, 24-25.

⁵⁷ Dhirendra Vajpeyi, ed., *Deforestation, Environment, and Sustainable Development*, 6.

⁵⁸ Ibid.

⁵⁹ Ibid.

⁶⁰ Richard Rwiza, *Environmental Ethics in the African Context*, 165.

⁶¹ Ibid.

⁶² "How Deforestation Affects the Water Cycle?" In <https://www.earthreminder.com/how-does-deforestation-affect-the-water-cycle/> accessed on 10/6/2023.

⁶³ Ibid.

soil water into the environment. Thus, cutting of them is decreasing the rate of water in the atmosphere.⁶⁴ So, clouds are not getting formed and as a result, the agricultural grounds are not receiving proper rainfall, therefore, it is indirectly affecting humans only.⁶⁵ This affirms to us that, there is a great need to renew the earth for humans to be liberated.

2.4 Threat to Wildlife and Human Health

Deforestation is affecting wildlife as well for many animals like Dodo, Sabre-toothed Cat, Tasmanian Tiger are already extinct.⁶⁶ In addition, some animals are on the threshold of extinction.⁶⁷ That's because they have lost habitat or their place of living which is one of the major issues for wildlife protectors. At the same time, deforestation also adversely impacts human health by robbing the habitat of thousands of endangered species and destroying precious medicinal plants.⁶⁸ It also eliminates predators, leaving a large number of diseases, carrying preys to flourish.⁶⁹ God's creation needs total care, thus, a need to renew the earth for a better survival.

In a nutshell, we may say that, the above challenges to our common home are affecting our survival. Not only to us as humans, but to all creatures created by God. thus, a need to take care of each other and encourage each other so to be able to defend, care and stand for our environment in its renewal.

3.0 Church's Understanding of the Care of our Environment

To understand the mind of the Church on the care of the environment, we base ourselves on a biblical and a theological perspective as follows;

⁶⁴ Bani Dhaliwal, "How Deforestation Affects the Water Cycle" in <https://www.earthday.org/how-deforestation-affects-the-water-cycle/accessed> on 10/6/2023.

⁶⁵ Ibid.

⁶⁶ Mill Valley "Death in the Forest: Deforestation Effects on Animals and What You Can Do" in <https://standfortrees.org/blog/deforestation-effects-on-animals/10/6/2023>.

⁶⁷ Ibid.

⁶⁸ Dhirendra Vajpeyi, ed., *Deforestation, Environment, and Sustainable Development*, 7.

⁶⁹ Ibid.

3.1 Biblical Perceptivities

The art of creation and especially thinking about it is deeply rooted in traditional Jewish thinking as we can gather it from several books in the Old Testament.⁷⁰ As per the Jewish world view, all creatures belong together and this is inclusive of the human beings.

The theme of creation as an independent doctrine was formulated during the time of King David through the covenant Yahweh made with him.⁷¹ This Doctrine is clearly elaborated by Prophet Jeremiah who declared that, Yahweh is the creator (Jer. 27: 5; 32: 7). It is a theme that finds its full expression in Second Isaiah. In it, creation came to be seen as the prologue to history and as the first act in the unfolding of the human drama with the world as stage and the chosen ones of God as the principal actors.⁷² Thus, creation is a dialogue between God and His creatures. In the book of Genesis, we find two accounts of creation but on separate traditions as Priestly (P) covering Chapters 1: 1-2: 4a and the second which is Yahwist (J) begins from 2: 4b to the third chapter. They help us to understand more of creation and how to care for it. We narrate them as follows:

a). The Priestly Story of Creation

The Priestly creation story (Gen. 1: 1-2; 4a) is young than Yahwist edition. In this account of creation - episode, human beings appear last on the scene of life after all other creatures are created. As human beings, they were created with a different significant. God created the human beings in His own image and likeness. Male and female He created them (Gen. 1: 27). This is what sets the human beings apart as compared to the rest of the living creatures for they are the only creatures who are molded in the image of God as its manifestation.⁷³ Thus, they are charged to act as co-creators with God. As created in the image of God, man/woman has a special purpose in God. This creation story helps us to understand of the relationship the Jewish nation had among themselves, their God and also their surroundings. Thus, they considered themselves as responsible and accountable to their creator as per taking care and managing the earth over which they

⁷⁰ Rob Clobus, *Environmental Care: A Possible Way to Restore God's Image to the Earth*, Eldoret: AMECEA Gaba Publications Spearhead 122, 1992, 32-33.

⁷¹ Ibid.

⁷² Ibid.

⁷³ Ibid., 31, 36; Also, Samson Gitau, *The Environmental Crisis*, 59 - 60.

were in control.⁷⁴ Their spirit of caring for the earth cautions all other creatures to do the same for we are stewards.⁷⁵

b). The Yahwistic Story of Creation

This account as Gen. 2: 4b – 3: 24 dates from about the ninth century B.C. and is the oldest story. In this account, God molds a human being from the substance of the earth and places him in the garden. Humans are dominant beings over the rest of God's creation.⁷⁶ They are also charged to till the garden and keep it (Gen. 2: 15). We find that, according to the two accounts, there is a special relationship that exists between God, human beings and nature. It helps us to understand about God and His creation and the call to care for what God has created which is not the case as it is today. After creation, God pronounce everything He created as 'very good' (Gen. 1: 26 -31). Thus, Gods work is characterized by order and harmony where total earth is said to resemble one fertile entity, producing as per Gods command.⁷⁷

c). More on Caring for God's Creation in the Old Testament

The word of God brings to our attention that, we are not the owners of creation; rather: "The earth is the Lord's, and everything in it, the world, and all who live in it" (Ps. 24:1). "For every wild animal of the forest is mine, the cattle on a thousand hills. I know all the birds of the air, and all that moves in the field is mine" (Ps. 50:10-11). "The Son is the image of the invisible God, the firstborn over all creation. For in him all things were created: things in heaven and on earth... all things have been created through him and for him" (Col. 1:15 -16). As Christians we need to acknowledge creation care as an act of discipleship and that we are stewards of the earth, summoned by God to "work it and take care of it" (Genesis 2:15). Thus, our uses of the earth must be designed to conserve and renew it rather than to deplete or destroy it.

Again, the word of God describes the good, sustainable earth, full of feedback mechanisms and cycles that are created to provide abundant physical life; but through our sin we have polluted and defiled it (Isaiah 24:4 - 6). We have exhausted and devastated many of creation's resources instead of working to preserve and live in

⁷⁴ *Ibid.*, 61.

⁷⁵ *Ibid.*

⁷⁶ Gilbert Ogutu, ed., *God, Humanity and Nature*, Nairobi: Masaki Publishers, 1992. 37;

⁷⁷ *Ibid.*

balance within the created order. As well we have polluted the air, water and soil with thousands of deleterious chemicals. This has led to a great loss of bio-diversity, which threatens quality of life now and even more for future generations. What we need to know is that, our love for God must be reflected in accomplishing the role he gave to humanity. God appointed us to bear his image (Gen 1:27) and entrusted this world to our care (Gen. 2:15). In the law given to Israel through Moses, God made provision for renewal of the land (Exodus 23:10-12) as well as for the poor (Leviticus 23:22) and for other creatures (Deuteronomy 25:4). Following the law was costly for the Israelites. Creation care may be costly for us in similar ways, today. So, caring for God's creation is one of the most central things we are called to do. Thus, we are called as followers of Jesus to embrace and act in a responsible way to care for God's earth while we reaffirm the important truth that we worship only the Creator and not the creation for creation proclaims the glory of God (Daniel 3:56-82). The book of Deuteronomy affirms the above what it states: "When you besiege a city a long time, to make war against it in order to capture it, you shall not destroy its trees by swinging an axe against them; you may eat from them but you shall not cut them down. For is the tree of the field a man that it should be besieged by you?" (Deut. 20:19). Thus, a need for total commitment in caring for our common home in all circumstances of life.

d). New Testament and Caring for God's Creation

The realisms of land tenure and creature - care are not as visible in the New Testament as they are in the Old, but the following can help us to understand what the word of God says on the care for creation. From the Gospel of Matthew, we understand that, God loves and cares for all of creation (Matthew 6:25-34) and that, creation witnessed the majesty and presence of God (Romans 1:20). God gave the care of his earth and its species to our first parents. That responsibility has passed into our hands. We affirm that God-given territory is a sacred responsibility to steward the earth and not a license to abuse the creation of which we are a part.

Although there are natural factors that are beyond our control, the ecosystem is not so vast and complex as to be impervious to human activities. It is good to know that, creation and all created things are inherently good because they are of the Lord (1 Corinthians 10:26). Again, St. Paul's letter to Colossians continues to affirm this as it asserts; "For by Him all things were created, both in the heavens and on earth, visible

and invisible, whether thrones or dominions or rulers or authorities-all things have been created by Him and for Him” (Col 1:16).

Through the word of God, we discover that Christ not only restores and reconciles our relationship to God; He also restores our right relationship to the creation of which we are a part. As a continuation of the letter of St. Paul to Colossians we read: “through [Christ] God was pleased to reconcile to himself all things, whether on earth or in heaven, by making peace through the blood of his cross” (Colossians 1:20). Again, in the letter to the Romans, Paul writes: “For the creation waits with eager longing for the revealing of the children of God; for the creation was subjected to futility ... in hope that the creation itself will be set free from its bondage to decay and will obtain the freedom of the glory of the children of God” (Romans 8:19-21). Thus, a call for all of us to restored our relationship to both God and creation.

3.2 Theological Perspectives on the Care of Creation

Our Catholic faith continues to affirm the goodness of the natural world. For example, the sacramental life of the Church depends on created goods: water, oil, bread, and wine. Christian theology also affirms the limits of all God’s creatures. God, the Source of all that is, is actively present in all creation, but God also surpasses all created things. We can and must care for the earth without mistaking it for the ultimate object of our devotion. A Christian love of the natural world can restrain grasping and wanton human behavior and help mightily to preserve and nurture all that God has made.⁷⁸ We believe that faith in a good and loving God is a compelling source of passionate and enduring care for all creation.

3.2.1 Different Popes and their Teachings on the Care of Creation

Different Popes have written on the care of creation. In many of his statements, Pope John Paul II has recognized the need for the care of creation. For example, in *The Ecological Crisis: A Common Responsibility*, his 1990 World Day of Peace Message, he wrote,

⁷⁸ Gerard Manley, “Renewing the Earth” in <https://www.usccb.org/resources/renewing-earth>, London” Oxford University Press, 1991, accessed on 13/6/2023.

Today the ecological crisis has assumed such proportions as to be the responsibility of everyone. . . [I]ts various aspects demonstrate the need for concerted efforts aimed at establishing the duties and obligations that belong to individuals, peoples, States and the international community⁷⁹

Pope is calling us all to take a responsibility of caring for our common home. To affirm this, he also insists in *Centesimus Annus*, that the state has the task of providing “for the defense and preservation of common good such as the natural and human environments, which cannot be safeguarded simply by market forces”.⁸⁰ Pope continues and brings the idea of solidarity in caring for creation and says; “a firm and persevering determination to commit oneself to the common good,” a willingness “to ‘lose oneself’ for the sake of the other[s] instead of exploiting [them]”⁸¹

Pope Benedict XVI, in his social encyclical *Caritas in Veritate* asked to “recognize that the natural environment has been greatly damaged by our irresponsible behaviour and that the social environment has also suffered damage”.⁸² What we need to know is that, the environment is God’s gift to everyone, and in our use of it we have a duty towards the poor, future generations and humanity as a whole. These duties towards the environment are linked to our duties towards the human person, considered in him/herself and in relation to others. Therefore, it would be wrong to uphold one set of duties while trampling on the other.⁸³

Equally worrying is the ecological question which accompanies the problem of consumerism and which is closely connected to it. In his desire to have and to enjoy rather than to be and to grow, man/woman consumes the resources of the earth and his/her own life in an excessive and disordered way. Man/woman, who discovers his capacity to transform and in a certain sense create the world through his own work, forgets that this is always grounded on God’s prior and original gift of the things that are.⁸⁴ Man/woman thinks that he can make

⁷⁹ John Paul II, Peace with God the Creator, Peace with all of Creation, For the Celebration of the World Day of Peace, on *The Ecological Crisis: A Common Responsibility*, 1 January 1990, no. 15.

⁸⁰ John Paul II, Encyclical Letter on the Hundredth Year (*Centesimus Annus*), 1 May, 1991, no. 40.

⁸¹ John Paul II, The social concern of the Church (*Sollicitudo Rei Socialis*), December 30, 1987, no. 38

⁸² Benedict XVI, Encyclical Letter on Charity in Truth (*Caritas in Veritate*), 29 June, 2009, no. 6.

⁸³ Ibid., nos. 48, 51.

⁸⁴ John Paul II, *Centesimus Annus*, no. 37.

discretionary use of the earth, subjugating it without constraint to his will, as though it did not have its own requisites and a prior God-given purpose, which man can indeed develop but must not betray. Instead of carrying out his role as a partner with God in the work of creation, man/woman sets him/herself up in place of God and thus ends up arousing a revolt on the part of nature, which is more domineered than ruled by him/her.⁸⁵

The dominion granted to man by the Creator is not an absolute power, nor can one speak of a freedom to 'use and misuse,' or to dispose of things as one pleases.⁸⁶ The limitation imposed from the beginning by the Creator himself and expressed in a symbolic manner by the inhibition not to 'eat of the fruit of the tree' (cf. Gen 2:16-17) shows clearly enough that, when it comes to the natural world, we are subjugate not only to biological laws but also to moral ones, which cannot be outraged with exemption.⁸⁷ Thus, a true concept of development cannot ignore the use of the elements of nature, the renewability of resources and the effects of slipshod industrialization as three considerations which alert our consciences to the moral dimension of development.⁸⁸

Pope Francis has a passion for caring for the earth. This is witnessed in his different Church documents he has written. In *Amoris Laetitia*, he tells us;

When nature is viewed solely as a source of profit and gain, this has serious consequences for society. This vision of "might is right" has engendered immense inequality, injustice and acts of violence against the majority of humanity, since resources end up in the hands of the first comer or the most powerful: the winner takes all. Completely at odds with this model are the ideals of harmony, justice, fraternity and peace as proposed by Jesus."⁸⁹

This helps us to understand that, a true ecological approach always becomes a social approach; it must incorporate questions of justice in debates on the environment, so as to hear both the cry of the earth and the cry of the poor for

⁸⁵ Ibid.

⁸⁶ John Paul II, *Sollicitudo Rei Socialis*, no. 34.

⁸⁷ Ibid.

⁸⁸ Ibid.

⁸⁹ Francis 1, Post-Synodal Apostolic Exhortation on The Joy of Love, (*Amoris Laetitia*) 19 March 2016, nos. 82.

everything is connected.⁹⁰ For us to show true concern for the environment we need to be joined to a sincere love for our fellow human beings and have an unwavering commitment to resolving the problems of society.⁹¹

Pope Francis continues to bring to our awareness that, the notion of the common good also stretches to future generations and that, the global economic crises have made distressingly obvious the damaging effects of ignoring our common destiny and this cannot exclude those who come after us.⁹² We can no longer speak of sustainable development apart from involving or across different generations solidarity. Once we start to think about the kind of world we are leaving to future generations, we have to look at things in different way thus, we are able to realize that the world is a gift which we have freely received and must share with others.⁹³

Therefore, since the world has been given to us, we can no longer view reality in a purely utilitarian way, in which efficiency and productivity are entirely geared to our individual benefit. Thus, involvement or cross different generations solidarity is not nonmandatory, but rather a basic question of justice, since the world we have received also belongs to those who will follow us.⁹⁴

Pope again asserts;

We human beings are not only the beneficiaries but also the stewards of other creatures. Thanks to our bodies, God has joined us so closely to the world around us that we can feel the desertification of the soil almost as a physical ailment, and the extinction of a species as a painful disfigurement. Let us not leave in our wake a swath of destruction and death which will affect our own lives and those of future generations.⁹⁵

⁹⁰ Francis 1, Encyclical Letter on Care for Our Common Home (*Laudato Si*), 24 My 2015, no. 49.

⁹¹ Ibid., no. 91.

⁹² Ibid., no. 159.

⁹³ Ibid.

⁹⁴ Ibid.

⁹⁵ Francis 1, Apostolic Exhortation on The Joy of the Gospel (*Evangelii Gaudium*), 4 November, 2013, no. 215.

Pope Francis speaks out against the destruction of the rainforest and he calls deforestation a “sin” He asks us Catholics to respect God’s Creation.⁹⁶ He says; “if we destroy Creation, Creation will destroy us,”.⁹⁷

3.2.2 Catholic Social Teaching and Environmental Care

The tradition of Catholic social teaching offers a developing and classifiable perspective on environmental issues. We believe that the following elements drawn from this tradition are integral dimensions of ecological responsibility and are highly needed as first, a God-centered and sacramental view of the universe, which grounds human accountability for the fate of the earth is needed; second, a consistent respect for human life, which extends to respect for all creation; third, a worldview affirming the ethical significance of global interdependence and the common good; fourth, an ethics of solidarity promoting cooperation and a just structure of sharing in the world community; fifth, an understanding of the universal purpose of created things, which requires equitable use of the earth's resources; sixth, an option for the poor, which gives passion to the quest for an equitable and sustainable world; and lastly, a conception of authentic development, which offers a direction for progress that respects human dignity and the limits of material growth.⁹⁸

Although Catholic social teaching does not offer a complete environmental ethic, we are confident that this developing tradition can serve as the basis for Catholic engagement and dialogue with science, the environmental movement, and other communities of faith and good will.⁹⁹

⁹⁶ Jack Jenkins, “Pope Francis: Destroying The Rainforest Is A Sin” in <https://archive.thinkprogress.org/pope-francis-destroying-the-rainforest-is-a-sin-d7c89d8ebb24/> accessed on 7/6/2023.

⁹⁷ Ibid.

⁹⁸ Pontifical Council for Justice and Peace, *Compendium of the Social Doctrine of the Church*, Nairobi: Paulines Publications Africa, 2005, nos. 160 -208. See also Gerard Manley, “Renewing the Earth” in <https://www.usccb.org/resources/renewing-earth>, London” Oxford University Press, 1991, accessed on 13/6/2023.

⁹⁹ Gerard Manley, “Renewing the Earth” in <https://www.usccb.org/resources/renewing-earth>, London” Oxford University Press, 1991, accessed on 13/6/2023.

3.2.3 Theologian/s on the Care of Creation

Many theologians have written on the care for creation. Among these, we look at what Richard Rwiza in his book, *Environmental Ethics*...says above taking care of our common home. Rwiza says, “we are part of the environment. We are made and influence by it. The natural world surrounds us and is also within us. Environment is affected by human activities.”¹⁰⁰ Thus, environment is the totality of what we live in...¹⁰¹ Rwiza continues and tells us that, the rampant destruction of forest is an ecological crisis.¹⁰² Clearing natural forests for agriculture inclines to destroy biodiversity as it cuts down the capacity of these forests to be effective water towers.¹⁰³ Through deforestation, many animal habitants are destroyed and different species risk becoming extinct.¹⁰⁴ Rwiza calls us as a need to have a deeper analysis into the reasons for such destructions of forests for they are useful in enhancing human life, thus, an obligation to preserve them.¹⁰⁵

To sum up this Biblical and theological reflection, we get insights that, we are called to care for the earth for it has its benefits not only to the human person, but also to all the creatures God has created. Therefore, we have a call to take a responsibility to care and renew the face of the earth for a better survival in it.

4.0 Way Forward on Renewing the Earth

After our insertion to what is happening today in our common home, analyzing the situation, and as well, looking at it in the light of faith, we say that, there is need for an action to be able to renew the face of the earth. To do so, various countermeasures are need. This we suggest and recommend as follows:

4.1 Church and Environmental Education

Environmental education is very vital for us to be able to renew the earth.¹⁰⁶ Thus, there is a need for the agents of evangelization to preach on environmental care. This can be through advocacy with T-shirts with environmental messages like of people planting

¹⁰⁰Richard Rwiza, *Environmental Ethics in the African Context*, 31.

¹⁰¹ Ibid.

¹⁰² Ibid., 43.

¹⁰³ Ibid.

¹⁰⁴ Ibid.

¹⁰⁵ Ibid., 44.

¹⁰⁶ Ibid., 188.

trees; broadcasting of environmental awareness programs through print and electronic media; publishing journals, books and pamphlets with suggestions that are practical on how to relate with nature as well as planting trees and conserving soils around Church compounds.¹⁰⁷ Environmental education will prepare people to limit environmental damages caused by their way of life without examining that way of life. It is also to encourage profound behaviour changes to achieve better harmony between society and its environment.¹⁰⁸ This should target different groups like in schools, political decision-makers and media among others.¹⁰⁹ There is a need for a strategy to introduce environmental education to help in implementing the task. This needs to identify the specialists, analyzing the problem and social behaviours that impact on the environment, modifying the teaching techniques for educating the different groups, implementing these techniques through operations and lastly, evaluating the operations to improve the methods.¹¹⁰

4.2 Christian Values and the Environment

In understanding deforestation and its causes, we found that technology is one of them. Thus, Christian values are worthy of if we want to renew the earth, helping to resolve the challenges that are affecting of Environment.¹¹¹ We may ask ourselves, what values are to be emphasized? This defines who we are, who we ought to be and what we ought to do beginning with our character.

Every culture or way of life requires a certain kind of person - character which has fitting attitudes, skills and motivation to sustain and advance the good life as that culture knows it.¹¹² As per the way of life we wish to follow, we must strive to become a particular kind of person, a person with certain values, attitudes and intentions. For example, if our goal is to live as one with the earth, we have to form a character consistent with that goal. But this requires the development of certain moral values and the rejection of other values promoted by our technological culture.

¹⁰⁷ Samson Gitau, *The Environmental Crisis*. 87.

¹⁰⁸ Francois Falloux and Lee Talbot, *Crisis and Opportunity: Environmental and Development in Africa*, London: Earthscan Publications Limited, 1993, 158.

¹⁰⁹ Ibid., 160-164.

¹¹⁰ Ibid., 170.

¹¹¹ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 65. See also Francois Falloux and Lee Talbot, *Crisis and Opportunity*, 166.

¹¹² Ibid., 64.

There is also a need to remain faithful to the person and work of Jesus. It's not easy to discern which action best embodies the value of Jesus, but we need to know that, we are called to apply our values to the ethical issues that are related to our environment.¹¹³ We are after some of the core Christian values that can guide our character formation and our decision – making especially on what relates to technology and that which affects the environment.¹¹⁴ Example of this values are moderation, justice and concern for the future and humility.¹¹⁵

4.3 Moderation

Moderation is necessary for without it our lives would become an endless search for new material pleasures without any consideration given to the damage they cause. Through moderation we learn that not everything we want is necessity. This is important especially for a society that suffers from what is termed as expectation syndrome. Thus, it is helpful to always consider what is luxury in on generation to be a necessary to the next generation. An example of these are the computers, microwaves among others.¹¹⁶ If we practice moderation, can help us learn what is truly essential and what really is an item for convenience or comfort.

4.4 Justice and Concern for the Future

Environmental justice affirms the sacredness of Mother Earth, ecological unity and the interdependence of all species, and the right to be free from ecological destruction.¹¹⁷ Again, it requires that we, as individuals, make personal and consumer choices to consume as little of Mother Earth's resources and to produce as little waste as possible; and make the conscious decisiveness to challenge and reprioritize our lifestyles to insure the health of the natural world for present and future generations.¹¹⁸ Here we are talking about the values that are associated with the character of consumer and are self-

¹¹³ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 64.

¹¹⁴ Ibid.

¹¹⁵ Ibid.

¹¹⁶ Ibid., 65. Also Hendrik Visser, *Justice to Future Generation and the Environment*, U.S.A: Springer-Science + Business Media, B.V, 1999. 52- 54.

¹¹⁷ Mónica Ramirez-Andreotta, "Environmental Justice" in <https://www.sciencedirect.com/topics/earth-and-planetary-sciences/environmental-justice> written in 2019, accessed on 11/6/2023.

¹¹⁸ Ibid.

centeredness and self-indulgence.¹¹⁹ This is because, we as consumers, we are schooled to think first of ourselves and our needs.¹²⁰ These meeting of our needs is strengthened through an explosion of new products, new conveniences as well as new experiences which are all now available to us as result of technological advancements.¹²¹ This leads us to see ourselves as free, left to choose among many options for our happiness.¹²² It is because, sometimes we fail to question if our choices are significant and if it is the way of life we wish to choose.

Our self-centeredness and self-indulgence have created in many of us a habit of consuming larger and larger qualities of earth's resources.¹²³ This needs a reexamination of our values for the value of justice and a concern for future generations must become a part of everyday life. It is only with such a focus in life can the human community go beyond self-interest to a genuine concern for the common good of all.¹²⁴ We are for justice for when is not achieved, it leads not only to the major portion of environmental degradation, but also to greater burdens being placed upon the poor.¹²⁵ This thus, calls for an awareness for it does not pertain to humans only, but also non-humans alike for animals, plants, trees, water as well as those in poverty among others, are basic units with the right to survive and flourish.¹²⁶

Thus, a responsibility to investigate and give consideration to how our actions as consumers and our nation's technological innovations affect anyone or anything in our common home.¹²⁷ If all can have concern for the future, it will lead to a way of life that seeks to preserve and restore creation.¹²⁸ Therefore, a need to cut down our consumption and production of goods that rely on non-renewable resources.¹²⁹ For this to work, there

¹¹⁹ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 65.

¹²⁰ Ibid. See also Rob Clobus, *Environmental Care: A Possible Way to Restore God's Image to the Earth*, Eldoret: AMECEA Gaba Publications Spearhead 122, 1992, 44.

¹²¹ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 65.

¹²² Ibid.

¹²³ Ibid., 67. Also Hendrik Visser, *Justice to Future Generation and the Environment*, 52.

¹²⁴ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 67. See also Rob Clobus, *Environmental Care*, 64.

¹²⁵ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 67.

¹²⁶ Ibid. Also David Schlosberg, *Defining Environmental Justice: Theories, Movement and nature*, New York: Oxford University Press, 2009, 115.

¹²⁷ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 68.

¹²⁸ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 69. Also Andrew Dobson, "Ecological Citizenship and Global Justice: Two Paths Converging?" in Anne Haugstad and J.D. Walfhorst eds., *Future as Fairness: Ecological Justice and Global Citizenship*, New York: Rodopi, B.V, 2004, x, 2.

¹²⁹ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 69. Also Adrian Armstrong, *Ethics and Justice for the Environment*, U.S.A: Routledge, 2012, 73.

is a call for a lifestyle of simplicity, prudence and gratitude. Moreso, we need to protect creation by developing our abilities to safeguard the natural world from unintentional effects of our actions.¹³⁰ Thus, instead of concentrating of our abilities that manipulate creation, we need to intensify our efforts to learn how to identify potential environmental damage resulting from our technological endeavours.¹³¹

4.5 Humility

Humility is a virtue.¹³² Pride always becomes part of our character in a technological culture. This stems from an over confidence in our ability to use our technological prowess not only to fulfil our needs but also to counteract bad environmental effects by developing new technology.¹³³ Pride also manifests itself in the unwillingness to acknowledge the fallibility of our knowledge and our judgment as well as in our belief that we are superior to creation whereby, we look at it as a raw material to be manipulated.¹³⁴ As Christians, humility is essential as an antidote especially to the kind of hubris found in a technological culture and this call also for prudence which must be cultivated.¹³⁵ This will work if only all can with honesty admit our limitations and failings for humility reminds us that, human power and knowledge are limited and subject to misuse.¹³⁶ Humility calls us to get an accurate measure of our strength, for when we perceive our weakness, we will be less prone to place our trust in our power and devices to resolve the environmental crisis on our own.¹³⁷ We also learn from humility that, we need to correct our perception that we are above the rest of creation for humility entails a willingness to give up the center.¹³⁸ Humility will help us to recognize not only our dependency on creation but also the interdependence of all creation.¹³⁹

¹³⁰ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 69. Also Adrian Armstrong, *Ethics and Justice for the Environment*, 73.

¹³¹ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 69.

¹³² Jennifer Cole, *Humility*, New York: Oxford University Press, 2019, 1.

¹³³ Ibid.

¹³⁴ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 70. Also Louke Van Wensveen eds., "The emergence of Ecological Virtue Language" in Ronald Sandler and Philip Cafaro, *Environmental Virtue Ethics*, U.S.A: Rowman & Littlefield Publishers, Inc., 2005, 16.

¹³⁵ Richard Rwiza, *Environmental Ethics in the African Context*, 178.

¹³⁶ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 70.

¹³⁷ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 70. Adrian Armstrong, *Ethics and Justice for the Environment*, 73.

¹³⁸ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 70.

¹³⁹ Ibid.

4.6 Afforestation

Afforestation which is growing of trees in the forest helps to resolve the loss of the trees cut down. Planting of trees will help the environment to regain its ability. And so, all people should take strict actions on those who are illegally cutting down trees. Trees help to fight global warming by absorbing carbon dioxide, getting rid of and storing carbon while releasing oxygen back into the air.¹⁴⁰ They also cut down wind speeds and cool the air as they lose moisture and reflect heat upwards from their leaves. It's estimated that trees can reduce the temperature in a city by up to 7°C.¹⁴¹ Trees provide a canopy and a habitat for many species of wildlife, but they don't just act as a home for wildlife for the fruits from trees provide food for them too.¹⁴² They also help to improve air quality by tapping and trapping dust and other pollutants from the air as well as preventing flooding and soil erosion.¹⁴³

Wangari Maathai encourages us to plant trees. She says; "When we plant trees, we plant the seeds of peace and seeds of hope. We secure the future for our children".¹⁴⁴ So, as you can see, humans, animals and the environment count upon trees for survival, therefore, as deforestation continues, we must put back what we're taking away.¹⁴⁵ This will work through planting more trees, which will contribute to global reforestation efforts, restoring lost forests, repairing damaged ecosystems and mitigating climate changes.¹⁴⁶

¹⁴⁰ "More trees please; the importance of planting trees" in <https://host-students.com/the-importance-of-planting-trees/> accessed on 11/6/2023. See also Helen Lock "Why Tree Planting Is So Important in the Fight Against Climate Change" <https://www.globalcitizen.org/en/content/why-planting-trees-helps-fight-climate-change/> written on July 23, 2021, accessed on 11/6/2023.

¹⁴¹ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 70. Also Mattea Jacobs, "10 Environmental Benefits of Planting a Tree" in <https://greenpop.org/10-environmental-benefits-planting-tree/> written on May, 2018, accessed on 11/6/2023.

¹⁴² Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 70.

¹⁴³ Ibid. Also Helen Lock "Why Tree Planting Is So Important in the Fight Against Climate Change" <https://www.globalcitizen.org/en/content/why-planting-trees-helps-fight-climate-change/> written on July 23, 2021, accessed on 11/6/2023.

¹⁴⁴ Wangari Maathai, *The Green Belt Movement: Sharing the approach and the Experience*, New York: Lantern books, 2003, xii.

¹⁴⁵ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 70. Also Mattea Jacobs, "10 Environmental Benefits of Planting a Tree" in <https://greenpop.org/10-environmental-benefits-planting-tree/> written on May, 2018, accessed on 11/6/2023.

¹⁴⁶ Carol Dempsey and Russell Butkus, eds., *All Creation is Groaning*, 70.

4.7 Active Participation in Resolving Environmental Crisis

This active participation is highly needed. For this to happen, we must undertake a three -prolonged strategy: first, we must be willing to examine critically and to transform the values, attitudes, and intentions that form the core of our own character.¹⁴⁷ This means that, we need a change of heart so to be able to save the planet for our children and generations to come. It's not something easy to do, but there is a need to strip ourselves of the values associated with human acquisitiveness and power and put in place the values that are associated with our Christian tradition.¹⁴⁸ Thus, a kind of character is needed for a good life for a worthy goal towards been one with the earth. Second, total commitment is needed so to make ethical choices consistent with our values especially of our daily actions. Thus, a need to celebrate our commitment to restore and maintain the integrity of creation which will work if we are able to promote and defend our emerging ecological values in the midst of difficult and complex environmental issues.¹⁴⁹ The third strategy is that, we must break our addiction to every new technology advance. With each new advance there exists the potential danger of profound, unintended environmental damage. Therefore, instead of focusing on our capacity to manipulate the natural world we are called in humility to intensify our efforts to identify the consequences of our proposed technological innovations, but all this takes practice.¹⁵⁰

The above suggestions if looked upon will help us to renew the face of the earth amidst deforestation. Thus, we recommend them to be looked upon at all levels for a better common home for all.

Conclusion

After looking at what is happening, why is it happening, in light of faith and the way forward, we say that, the economic and environmental consequences of deforestation are devastating. While it is impossible to totally stop deforestation, there are many ways of controlling and minimizing its negative impact on life. For example, managing and conserving of the remaining forests; social - economic development in rural areas and policy institutional reforms can help. When forest cover is lost, runoff rapidly flows into streams, elevating river levels and subjecting downstream villages,

¹⁴⁷ Rob Clobus, *Environmental Care*, 64.

¹⁴⁸ Ibid.

¹⁴⁹ Ibid.,70.

¹⁵⁰ Ibid., 71.

cities, and agricultural fields to flooding, especially during the rainy season. During the dry season, such areas downstream of deforestation can be prone to months-long droughts which interrupt river navigation, wreak havoc on crops, and disrupt industrial operations. Therefore, there is a need for all to respond to the above suggestions and recommendations so to be able to renew the earth for a better future. Through our observations and analysis, we have found that, environmental care in Africa is not only one of the urgent social questions of today but also one which contains deep ethical and pastoral challenges as Richard Rwiza puts it.¹⁵¹ This affects the human person with its consequences leading to environmental crisis, thus, we have not exhausted this topic; and therefore, we recommend further study on the same as a way to help with more awareness on how to care for creation thus, serve as a way to renew the earth.

¹⁵¹ Richard Rwiza, *Environmental Ethics in the African Context*, 29.

Ecological Significance of Stewardship: A Shift from Instrumentalization of Creation

Pascal Nkandu SDB

1.0 Introduction

Before delving into the main topic, allow me to pose a question: why should we constantly talk about ecology? This is because ecology is one of the major issues that is trending in our modern world and as such, restoration of the world's natural resources can only happen through shared concern for the environment.¹ Since the problems related to the destruction of our environment emanate from human activities, the ecological crisis needs to be discussed as a community issue. Echoing the teaching of Pope Francis in *Laudato Si*, the "instrumentalist ideology" that modern man has developed for his own benefits, has led to the degradation of the environment. This has caused the ecological crisis.

Although the ecological crisis is a frequently discussed issue, many people are lacking in concern for environmental issues, others dismiss it through their attitude of indifference. Sometimes, this is due to a lack of knowledge about the significance of ecology. Other people just do not want to be involved, whereas others display the human tendency of self-centeredness which leads to a culture of instrumentalizing the natural world without a concern for its preservation.² In this article, the aim is to explore and discuss the significance of ecological stewardship as a way of making ecological preservation a personal responsibility. This discussion will help us shift from viewing the natural world as a resource to selfishly satisfy our human needs.

I will begin with defining the meaning of stewardship in connection with environment. Then, I will turn to explore the place of human beings in the ecological system. Later I will clarify the way we can shift from the instrumentalization of creation towards environmental stewardship. The article will end with a conclusion on the significance of ecological stewardship.

¹ Jenkins, Willis. "After Lynn White: Religious ethics and environmental problems." *Journal of Religious Ethics* 37, no. 2 (2009): 283-309.

² Pope Francis, Encyclical on *Laudato Si'*: On Care for Our Common Home, May, 24, 2015, nos. 62 (Nairobi: Paulines Publications Africa, 2015). (=LS. 1)

1.1 Meaning of Stewardship

Stewardship is a broad term, and one can define it as a work given to someone to supervise or take care of something. Stewardship can also be defined as the careful and responsible management of something entrusted to one's care. In this definition, the term signifies a careful and responsible administration of something. Therefore, being a steward of creation implies the responsibility of managing it carefully with the sense of accountability for the environment.

Theologically, stewardship implies a belief that human beings are responsible for the world, and as such, they should take care of and look after the earth and everything within it. According to the Jewish tradition, stewardship denotes the way, talents, time, material possessions, or wealth are used to give the service of God. For Christians, stewardship implies the duty that someone has to maintain and use wisely the gifts given by God.³ This is because they believe that out of his love, God wishes human beings to be his collaborators in the work of creation, sanctification and redemption. This broader concept of stewardship is illustrated in Jesus' *parable of the talents* in Matthew 25.14-30.

The talents in this parable signify the ability that someone has to manage a particular task. The master entrusts his possessions to his servants according to their abilities to manage. When their master returns, he rewards them in accordance with the use of their talents and their faithfulness. The unfaithful servant, loses his position and he is separated from his master. This parable demonstrates the real meaning of stewardship. To be a steward does not mean that you are the owner of something, rather it means that the owner entrusts you with his possessions because he sees in you the capability to carry out the responsibility. Being an unfaithful steward leads to the loss of one's possessions, loss of position and consequently brings suffering.

There is a close link between stewardship and environmentalism. We can ask ourselves what it means to be an environmental steward. "The discourse on the extension of the stewardship to a global environmental focus, is expressed in the bible right at the beginning of creation particularly, in Genesis 2:15 which presents *God putting man into*

³ Peter Wenz, "What does Stewardship Mean in Christianity," in *Environmental Virtue Ethics*, ed. Ronald L. Sandler and Philip Cafaro (Lanham: Archdiocese of Buja Press, 2017), 200-2.

the garden in order to dress it and keep it."⁴ Based on this scripture passage, the bible implicitly describes environmental-stewardship as utilizing, taking care, and managing the resources that God provides for his glory and betterment of his creation.

This description stresses the belief that human beings are custodians of the environment, and that they are commissioned with a special task of looking after the Earth in such a way that God's dominion becomes the responsibility of human stewardship. This view is explicitly expressed in Genesis 1: 28-30. After creating both male and female in his image and likeness, God blessed them, and commanded them to 'be fruitful and multiply, and fill the earth and subdue it; and he gave them dominion over every kind of creature that lives and moves upon the face of all the earth, including every plant and every tree.

Based on Genesis 1:28-30, the theological understanding of stewardship is that human beings have been entrusted with the responsibility to take care of the earth and all that belongs in it. The Scriptures use the phrase: '*subduing the earth and having dominion over*' to signify not only the gift that God gave to humanity but also the accountability that human beings have over for their use of the whole of creation. God gave to humanity every *plant, and every tree including their seeds of all the earth*. This shows that *stewardship* is basically the management of what God has given us for his glory and the edification of others and ourselves. We can affirm that the central core of biblical view of stewardship is managing everything God provides in a manner that honors and impacts eternity. The stewardship does not remove the reality that '*the Earth is the Lord's and all that is in it, the world, and those who live in it*' (Psalm 24:1). Conclusively, stewardship starts and ends with the understanding of God's ownership of all of creation.

Consequently, stewardship is rooted in the belief that God is the creator of the universe and all that exists within it, and that we, although being part of God's creatures, have been granted the special gift and responsibility of taking care of other creatures as well as our fellow human beings. It is in fulfilling this responsibility that we reflect the image and likeness of God (cf Gen1:27). Ecological-stewardship is primarily an obligation entrusted to humankind to take care for all that has been given to us out of

⁴ Dominic Wilkins, "Catholic clerical responses to climate change and Pope Francis's *Laudato Si*," in *Environment and Planning E: Nature and Space* 5. (2022), 146.

love. At the same time, it is a duty that aims at caring for the gift out of respect for the Creator who gave it, and out of love and respect for those with whom it is to be shared. Every human being is certainly, in a very tangible and obvious sense, a steward of the natural world. This is the view of *Laudato Si'* presents, namely, a more expansive call to show responsibility for everything with which we have been entrusted. According to Pope Francis every person has a serious responsibility to love and protect the non-human world (*LS*. 14). Pope Francis does this primarily by advocating for an “integral ecology” which is attuned to the links between environmental and social degradation and oppression. Human being, therefore, have a duty toward creation and are obliged to foster an environmental friendliness with creation.

1.2 The Place of Human Being in the Ecological System

The place of human beings in the ecological system can be fully understood in the light of the relationship between human being and the rest of creation. Nonetheless, before discussing the position of the human being in the universe, it is appropriate to consider first, a right understanding of how humanity is related to and connected with nature before delving into what differentiate humanity from other creatures. Before we answer the question of how special are we in the creation, we should first ask how similar are we to other creatures. It is finding out the similarities and the differences that will help us understand the place of humanity in the ecological system. This understanding should lead us to shift from instrumentalization of creation to ecological stewardship.

Before going any further, it is important to note that creation reflects our awareness of the fact that we are not separated from the ecosystem that sustains us. There are so many things that connect us with nature so that we should admit and acknowledge the context within which we exist. “The creation accounts of Genesis are the important biblical foundation of this understanding.”⁵ These scriptural accounts highlight what precisely creation is in terms of the human-environmental relationship.

Based on the same teaching, Michael and Kenneth Himes noted that “companionship is the image most prominent in the Genesis creation accounts. Deepened awareness of this relationality, of our embeddedness, will help us to revitalize the

⁵ Nancy M. Rourke, “Shaping a Catholic Environmental Virtual Ethics,” in *God, Grace and Creation*, College Theology Society Annual Volume 55, 2009, ed. Philip J. Rossi, (New York: Orbis Books, 2010), 229.

companionship theme of Genesis. This revitalization will in turn bring into balance any excessive emphasis on the stewardship message of these texts.”⁶

According to the theological understanding of creation, the entire universe and everything in it including human beings, is a creation of God. Thus, because they are created by the same creator, this necessitates some connections between humanity and other creatures. The theological understanding of creation teaches us that God created human being out of the slime of the earth, it was through God’s breath of life that ‘Man’ became a living soul (*Gen. 2:7*).

Apart from this fact, theological anthropology also teaches that when God created human beings in His own image, they were given the lordship over the earth as stewards of creation. Other creatures were also to men and women as their food (*Gen. 1:27-30*). It is indisputable that we are embedded in creation in such a way that men and women are not separate from the ecosystems in which they live. By definition, because of this “we are residents of this creation; we are because of our ecosystem.”⁷ In other words, though the gift of reason and its use are an essential part of humanity’s role in creation makes us unique, this is also true that the plants, animals, birds, insects, and other different living and non-living beings play a significant role in humanity’s survival. As such, humanity is utterly dependent upon these non-reasoning creatures just as they are also dependent on us. This leads us to the acknowledge the ecological mutuality that exists in the ecosystem.

The overemphasis on absolute dominion of humanity through environmental instrumentalization hinders our ability to recognize the mutual relationship we have with nature. The erroneous interpretation of the statement, “*man’s dominion over the earth*”, [Genesis 1:28] has been often wrongly understood to mean that the rest of creation is there solely for the benefit of humanity. To some people, this statement encourages the kind of domineering exploitation which ultimately leads to environmental abuse. Indeed, the American historian Lynn White Jr., has gone so far as to describe ‘Western Christianity as the most anthropocentric religion the world has ever seen,’ and he blames

⁶ Michael J. Himes and Kenneth R. Himes, “the Sacrament of Creation: Towards an Environment Theology”, in *Commonweal* 117, no. 2 (26 January 1990), 46.

⁷ Philip J. Rossi, ed., *God, Grace and Creation: Shaping a Catholic Environmental Virtual Ethics*, (New York : Orbis Books, 2010), 229.

the medieval Church's teaching on mankind's dominion for the horrors of modern pollution.⁸

Responding to this erroneous misinterpretation, Pope Francis asserts that "although it is true that we Christians have at times incorrectly interpreted the Scriptures, nowadays we must forcefully reject the notion that our being created in God's image and given dominion over the earth, justifies absolute domination over other creatures."⁹ As we have already stated in the previous section, Holy Scripture in Genesis 2:15 tells us that God put the man in the garden and gave him the work of tilling and keeping it. In this context, "tilling" refers to cultivating, ploughing, or working, whereas "keeping" refers to caring, protecting, overseeing, and preserving (*LS*. 67). This reminds us that as we take from the bounty of the earth whatever we need for subsistence, we are also called to remember that it is our duty to protect the earth and ensure its fruitfulness for coming generations, since separated from the natural world our life cannot be as it is.

Although humans are unique within creation, nevertheless, all life on this earth either flourishes or fails together.¹⁰ This truth emphasizes the mutual relationship of responsibility between human beings and nature. In other words, we are created to be in communion with nature. God's provision of food in Genesis 1:29-30, is another reminder of the interdependence of creation. "We are participators in the creation, which we need for life, just as the rest of creation needs us to cultivate and preserve it."¹¹ According to the order of creation, in the different ecosystems, the life-cycles of all creatures are set in such a way that the survival of one creature depends on another. As an example, the natural world around us requires us to take care of it and what it contains, and in return it helps us satisfy different needs, such as that for food, medicine, oxygen, etc. This also applies to non-human beings, for example, animals feed on each other and plants feed on the waste of animals. From these illustrations, we can observe that the mutual needs and interdependence that exists among the creatures should be respected thereby enabling us to enjoy the gift of life.

Above and beyond of what has been articulated above, we cannot deny the truth that a human being stands in a special relationship with the creator and the rest of creation.

⁸ David Atkinson, *The Message of Genesis 1-11* (Nottingham: Inter-Varsity Press, 2009), 34.

⁹ Pope Francis, Encyclical on *Laudato Si'*, 67

¹⁰ Philip J. Rossi, ed., *God, Grace and Creation*, 229.

¹¹ David Atkinson, *The Message of Genesis 1-11: Majesty and Mystery* (Nottingham: Inter-Varsity Press, 2009), 42.

According to *Laudato Si*, a human being “cannot be seen as a *being among others*, a product of chance or physical determinism. Man’s openness to others, each of whom is a “thou” capable of knowing, loving and entering into dialogue, remains the source of our nobility as human persons.”¹² However, every human person must also realise that he or she must respect not only the order in creation, but also recognize that he or she is a creature of God.

1.3 A Shift from Instrumentalization of Creation to Stewardship

The right understanding of the place of human being in the ecological system lays the foundation for a shift from instrumentalization of creation to stewardship. As we have discussed above, theological anthropology stresses that the creation of human beings is accompanied by the command *to have dominion over the earth and everything within it*. As the world has been created in the image of God, “dominion cannot be exploitation, but must be seen in the sort of facilitating servanthood which maintains an environment in which persons who reflect something of the nature of God’s love and creativity can be at home.”¹³ Being aware that we are created with a responsibility for taking care of and maintaining the earth and all that belongs within it makes us avoid an attitude that promotes the instrumentalization of creation at the expense of the extinction of natural world.

Anthropocentric interpretation of the place of human beings in the ecosystem, views human person as the center of the entire creation. It is for this reason that it leads to an exaggerated emphasis of instrumentalizing the natural world. However, an understanding of the place of the human person in the ecological system, shows that we should avoid this view. Furthermore, the human self-centered attitude to ecology tends to see the natural world as a mere object to be used. This should be changed into an attitude of seeing the world as the place where we manage and maintain everything for the betterment of our life, the lives of others, and the lives of our future generations. In other words, we must avoid all human activities that tends to promote our self-centeredness. In his book *The Turning Point*, Fritjof Capra puts it well:

Excessive technological growth has created an environment in which life has become physically and mentally unhealthy. Polluted air, irritating noise, traffic congestion,

¹² Pope Francis, Encyclical on *Laudato Si*, 199.

¹³ David Atkinsonson, *The Message of Genesis 1-11*, 41.

chemical contaminants, radiation hazards, and many other sources of physical and psychological stress have become part of everyday life for most of us. These manifold health hazards are not just incidental by products of technological progress; they are integral features of an economic system obsessed with growth and expansion, continuing to intensify in high technology to increase productivity.¹⁴

In addition to these health hazards, today, as Pope Francis points out in his encyclical *Laudato Si*, our cultural attitudes and activities are possibly far more dangerous, because they upset the ecological process to the extent of resulting in a shorter-term life span of other creatures and also our very existence. In the name of productivity, efficiency, or competitiveness, our modern world places short-term economic gains before long-term concern for the well-being of the planet which the future generation are to inhabit. In the words of Pope Francis: “a sober look at our world shows that the degree of human intervention, often in the service of business interests and consumerism, is actually making our earth less rich and beautiful, ever more limited and greyer, even as technological advances and consumer goods continue to abound limitlessly.”¹⁵ All these activities Pope Francis to the fact that something has gone wrong in the anthropological understanding of human life. Now what is the way forward?

The way forward is a shift from the instrumentalization of creation to stewardship. This shift can only happen when we all realize that the whole of creation is groaning towards a future consummation in God (Rom 8:19-23).¹⁶ Since, according to this scripture text, the whole creation is waiting for the glory of God in whom hope and meaning to be revealed, then, we are not the centre of creation but only its stewards. As stewards, we have to fully embrace a theocentric view of creation which sees God as the centre, the meaning and the purpose of the whole of creation. By putting God at the centre of creation, we realize that although we are endowed with special faculties, and a special place in the creation, nevertheless, we only participate in God’s creation as stewards. When we embrace this theocentric view of creation, we consequently overcome the old anthropocentric view of creation. By overcoming anthropocentrism, we come to realize that just as *Laudato Si*’ urges, every person is called to adjust his/her personal life style

¹⁴ Fritjof Capra, *The Turning Point: Science, Society, and the Rising Culture* (New York: Bantam Book Publisher, 1982), 249.

¹⁵ Pope Francis, Encyclical on *Laudato Si*’, 34.

¹⁶ Jürgen Moltmann, *God in Creation: A New Theology of Creation and the Spirit of God* (Minneapolis: Fortress Press, 1993), 105.

by dismantling the ideologies of consumerism, absolute dominion, and technocratic economics etc. The theocentric view of creation will also make us consider what St. Ignatius described to be the end of every human person, someone created to praise, revere and serve God¹⁷ which is fulfilled in the duty of stewardship. Pope Francis quoting St John Chrysostom in paragraph eight of *Laudato Si'*, asserts that since as stewards we serve God in taking care for His creation, then:

We sin against God's creation especially in times when we disfigure or destruct the ecological system, because to destroy the biological diversity of God's creation, to degrade the integrity of the earth causing it change in its climate, stripping the earth of its natural forests or destroying its wetlands; to contaminate the earth's waters, its land, its air, and its life, all these should be considered as sins, because to commit a crime against the natural world is a sin against ourselves and a sin against God.¹⁸

Generally speaking, to be an environmental steward does not necessarily imply to returning to the Stone Age as some might think; rather, it simply signifies a need to stand back and look at reality through different lenses. Doing this will support the positive and sustainable progress which has been made, and it will also to recover the values and the great goals that have been swept away by our uncontrolled misunderstandings of nature. As a stewards, "humanity is called to recognize the need for change in lifestyle, production and consumption, in order to combat this ecological crisis or at least the human causes which produce or aggravate it."¹⁹ This means that citizen of the world as a steward, will recognize that he or she has a role to play in the society namely; protecting the environment for the future generation but also for healthy ecosystem which promotes the prevention of animal and, extinctions in the natural world.

Conclusion

What has been discussed in this article, shows that environmental stewardship is a call addressed to every human being. The process of moving forward from a mere instrumentalism of the natural world can only be achieved when we all come to recognize our responsibility as stewards. Since we as creatures are essentially embedded in the

¹⁷ The spiritual exercise of St Ignatius, trans. David L. Fleming (St. Louis: Institute of Jesuit Sources, 1978), 22.

¹⁸ John Chrysostom, *On Earth as in Heaven: Ecological Vision and Initiatives of Ecumenical Patriarch Bartholomew*, Bronx, New York, 2012.

¹⁹ Pope Francis, *Encyclical on Laudato Si'*, 23.

ecological system, harming that system is harming the life of human person. Our discussion as shown that being an environmental steward implies being involved in diverse actions that promote, conserve, protect and create a more sustainable environment. In other words, it is all about our becoming more responsible and more caring for the natural environment in the best way possible. Environmental stewardship activity is driven by viewing creation in a theocentric way. Since a theocentric view holds that God is the center, the meaning and the purpose of the whole of creation, I come to realize that the world and everything in it, is a God given gift. As such, I am held responsible for taking care of it as a faithful steward. As such, I do not need to be told what I must do; rather as steward, I use the environment responsibly either as an individual, or as a member of a group.

The movement from instrumentalization of the ecological system can be fostered by focusing on the common goal of every environmental steward, namely, to enhance environmental resilience in a constant changing world. We can become environmental stewards by promoting and advocating those activities that prevent or help to diminish the impact of an ecological crisis such as reduction in carbon emissions, recycling, choose reusable bottle in place of plastic bottles, zero waste challenge, use energy-efficiency appliances, use local food produced, avoiding any kind of pollution, avoid throwaway culture such as avoiding throwing anywhere the wastes, usable tins, plastics etc.

Finally, environmental stewardship is typically viewed as reducing the impact of human impact on the natural world. Moreover, shifting from the instrumentalization of the creation will entail using the earth's resources responsibly, being active in encouraging a deliberate ecological consciousness, promoting the conservation of the other life-forms in creation, paying attention to the natural world in which we live, active participation in preserving natural resources, acknowledging that the earth should be protected and shared by all as a single family sharing a common home, and above all recognising that caring for mother earth is every human person's responsibility according to their capacity. It is in recognizing the nature of our stewardship that we will nurture and grow our ecosphere into a world of beauty, and enable the quality of human life to improve.

Major Issues on the Ecological Crisis Affecting Africa and A Way Forward

Christopher Nonde SDB

1.0 Introduction

Weather patterns have changed in many parts of the world. There are extremes of heat and cold, dryness and flooding, environmental and air pollution, reduced average age and quality of life, etc. All these point to the reality that something is happening and changing everything in the world. In this paper, we shall focus on the ecological crisis as the main factor behind these dramatic changes, especially in Africa, under the following subtitles: definition of ecological crisis, major issues on the ecological crisis affecting Africa, ecological spirituality, and way forward to eradicate ecological crisis in Africa.¹

1.1 Definition of Terminologies

According to the Oxford Dictionary, Ecology is the branch of biology that deals with the relations of organisms to one another and their physical surroundings. And a crisis is either any event or period that will lead to an unstable and dangerous situation affecting an individual, group, or all of society.² Deepening our understanding of the ecological crisis in Africa, we, human beings, need to know that we and all species on earth rely on the sun, soil, water, and air space for our existence in this earthly life. God has given us human being different gifts especially the gift of his creation such as air, soil, water, fire, and earth. It is through God's creation that human beings and other animals share in order to remain alive.

All God's creatures are created to depend on each other for their survival and sustenance. But in today's world, there is growing awareness that the world peace is threatened not only by the arms race, regional conflicts, and continued injustices among peoples and nations but also by a lack of due respect for nature. This is manifested by the plundering of natural resources that is leading to a progressive decline in the quality

¹ Passmore, J, *Man's Responsibility for Nature: Ecological Problems and Western Traditions*, (New York: Charles's Sons, 1974), p185.

² <https://www.oxfordlearnersdictionaries.com/definition/english/the-oxford-english-dictionary>, accessed on 13/12/2022.

of life. This is what constitutes an ecological crisis, i.e., human being's imbalanced exploitation and abuse of his fellow creatures and natural resources.

The sense of precariousness and insecurity that such a situation engenders is a seedbed for collective selfishness, disregard for other creatures and dishonesty, especially on the part of human beings. Faced with the widespread destruction of the environment, human beings are beginning to understand that they cannot continue using the goods of the earth as in the past because the harm we are doing to other creatures turns out to be humanity's harm as well. People are now concerned with this crisis, and experts from a wide range of disciplines are studying better ways to address it. A new ecological awareness is beginning to emerge which, rather than being downplayed, ought to be encouraged to develop into concrete programs and initiatives.³

Environmental issues are defined as the harmful effects of any human activity on the environment. African environmental issues are caused by anthropogenic effects on the African natural environment and have major impact not only on humans but also on all forms of endemic life. The major environmental issues include deforestation, soil degradation, air pollution, water pollution, garbage pollution, climate change, and water scarcity.

Nearly all of Africa's environmental problems are geographically variable and human induced. On the African Continent, large-scale felling of trees has resulted in the decrease in forest areas because people are converting land for agriculture, settlement, and fuel needs. Around ninety percent of Africa's population relies on wood for heating and cooking. As a result, forested areas are decreasing daily as it is witnessed in the region of equatorial evergreen forests.⁴

2.0 Major Issues on the Ecological Crisis Affecting Africa

The subsequent section will focus on some of the major issues that are affecting ecological crisis in Africa.

2.1 Deforestation

Deforestation refers to a large-scale cutting down of trees for different purposes, especially commercial ones without replacement. Forests have played very important

³ Passmore, J, *Man's Responsibility for Nature: Ecological Problems and Western Traditions*, p117.

⁴ Passmore, J, *Man's Responsibility for Nature: Ecological Problems and Western Traditions*, p118.

roles in sustaining humanity, especially in Africa where many people rely heavily on them for their basic needs like food, shelter, clothing, agriculture, medicine, etc. Wood is also crucial for economic gains in Africa, especially in developing countries. Forests have proved helpful for environment conservation and provision of a home to a host of other species on the planet. It is estimated that the green belt of Africa contains over 1.5 million species.

Therefore, without forests, a host of these species, including human beings, are at risk of extinction due to lack of shelter, food and security. Therefore, deforestation is negatively affecting the livelihoods of millions of people and species on planet earth. The act is a 'domino effect' that affects multiple aspects of a community, ecosystem, and economy. Seeing how important forests are and how deforestation is negatively affecting human lives, many of African nations have begun restoration projects to reverse the effects of deforestation. These projects have been shown to improve the environment in many ways and the livelihood of the people living near them. This is because "Reforestation and agroforestry schemes can help, for instance, to sequester carbon, prevent flooding, enhance biodiversity, rehabilitate degraded lands, provide a local energy supply for the rural poor and improve land use and watershed management."⁵

2.2 Soil Degradation

It refers to soil's loss of fertility that emerges when people do farming as a source of income but do not take measures to protect the soil due to low income or pursuing of profits only. This puts too much pressure on other environmental aspects, such as forests, and are not sustainable. The result is that there is poor soil quality that cannot sustain crops essential for consumption. Other factors affecting the soil include erosion, desertification, and deforestation.

Another source of soil degradation is the improper management of waste. Lack of facilities and techniques to handle waste lead to the dumping of waste in the soil, causing soil degradation by processes such as leaching.⁶ The erosion caused by rains, rivers, and winds as well as the over-use of soils for agriculture and low use of manures are making soils infertile. A perfect example is in the plains of the Nile and the Orange

⁵ Ofoegbu, Chidiebere, Chirwa, P. W. (19 May 2019). "Analysis of Rural People's Attitude Towards the Management of Tribal Forests in South Africa". *Journal of Sustainable Forestry*. 38 (4): 396–411.

⁶ V, Ferkiss, *Nature, Technology and Society: Cultural Roots of the Current Environmental Crisis*, (New York and London: New York University Press, 1993), p. 42.

River. The main cause of soil degradation is the lack of manufactured fertilizers being used since African soil lacks organic sources of nutrients. Degradation of African soil causes decreased food production, damaging ecological effects, and an overall decrease in the quality of life in Africa. This issue would lessen if fertilizers and other cropping supplies were more affordable. The United Nations has commissioned a Global Assessment of Human-Induced Soil Degradation (GLASOD) to further investigate the causes and state of the soil. Access to information collected is freely available, and it is hoped that awareness will be raised among politicians in threatened areas.⁷

2.3 Air Pollution

Air pollution refers to the poor quality of air that makes it harmful for human consumption. There are several factors that are leading to air pollution in Africa, among which are burning of fossil fuels to run big machines in industries, vehicles, aeroplanes, etc. Added to this is the burning of used car tires that cannot be recycled. The primitive method of farming in Africa are also a leading factor in air pollution. The United Nations Food and Agriculture Organization (FAO) estimates that 11.3 million hectares of land are being lost annually to agriculture, grazing, uncontrolled burning, and fuelwood consumption. Combustion of wood and charcoal is used for cooking and this results in a release of carbon dioxide into the atmosphere, which is a toxic pollutant in the atmosphere.

Additionally, due to the poor supply of power, most African homes rely on fuel and diesel generators to keep their electricity running. Air pollution in Africa is coming to the forefront and must not be ignored. For example, in South Africa, mercury levels are severe due to coal combustion and gold mining. Mercury is absorbed from the air into the soil and water. The soil allows the crops to absorb the mercury, which humans ingest. Animals eat the grass which has absorbed the mercury and again humans may ingest these animals. Fish absorb the mercury from the water, and humans also ingest the fish and drink the water that has absorbed the mercury. This increases mercury levels in humans and is causing serious health risks.⁸

⁷ V, Ferkiss, *Nature, Technology and Society: Cultural Roots of the Current Environmental Crisis*, p. 42-50.

⁸ Francis, *Laudato Si: Encyclical Letter On Care for Our Common Home*, (Nairobi: Pauline's Publications Africa, 2015), no. 13.

2.4 Climate Change

Climate change refers to extreme changes in weather patterns that are making daily livelihood be affected negatively. It is an increasingly serious threat in Africa which is among the most vulnerable continents to the effects of climate change. Some sources even classify Africa as “the most vulnerable continent on Earth”. This vulnerability is driven by a range of factors that include weak adaptive capacity, high dependence on ecosystem goods for livelihoods, and less developed agricultural production systems. Climate change is putting even more pressure on the resources the African continent depends on. A profound change in the global food and agriculture system is needed if we are to nourish today’s 925 million hungry and the additional 2 billion people expected by 2050.⁹

The risks of climate change on agricultural production, food security, water resources, and ecosystem services will likely have increasingly severe consequences on lives and sustainable development prospects in Africa. With high confidence, it was projected by the IPCC in 2007 that in many African countries and regions, agricultural production and food security would probably be severely compromised by climate change and climate variability. Managing this risk requires the integration of mitigation and adaptation strategies in the management of ecosystem goods and services, and the agriculture production systems in Africa¹⁰. This problem of climate change is well linked to a throwaway culture which affects the excluded just as it quickly reduces things to rubbish. In his Encyclical Letter on care for our common home, Pope Francis reminds us that as creatures of the same God, there is an interconnectedness and interdependence among creatures so that that what affects one affects all. Due to the consumeristic culture, it is hard for us to accept and understand how the way natural ecosystems work but it is a fact that plants synthesize nutrients that feed herbivores; these in turn become food for carnivores, which produce significant quantities 18 of organic waste which gives rise to new generations of plants.¹¹

⁹ <https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=316&menu=124>, accessed on 13/12/2022.

¹⁰ Schneider, S.H, *Assessing Key Vulnerabilities and the Risk from Climate Change*, (UK: Cambridge University Press (CUP), 2007), p 790-791.

¹¹ Francis, *Laudato Si: Encyclical Letter On Care for Our Common Home*, no. 13-15.

2.5 Water Scarcity

It refers to the reduction of portable water for human consumption and for other agricultural and industrial purposes. It has been noted that access to clean water for all is an essential part of the world we live in. But this cannot be achieved if there is no sufficient fresh water on the planet.

Therefore, due to bad economics or poor infrastructure, every year millions of people, most of them children, die from diseases associated with inadequate water supply, sanitation, and hygiene. Water scarcity, poor water quality, and inadequate sanitation negatively impact food security, livelihood choices, and educational opportunities for poor families across the world. Water scarcity in Africa is predicted to reach dangerously high levels by 2025. This is because of an estimation that about two-thirds of the world's population may suffer from freshwater shortage by 2025. The main causes of water scarcity in Africa are physical and economic scarcity, rapid population growth, and climate change.

As the population continues to climb and contributors like urbanization affect bodies of water throughout the continent, water scarcity and pollution continue to get worse.¹² Since water scarcity is the lack of freshwater resources to meet the standard water demand, it leads to a variety of waterborne tropical diseases, such as typhoid fever, cholera, dysentery, and diarrheal illnesses. Other conditions, such as plague, typhus, and trachoma (eye infections that can result in blindness), are also common.

In some countries, the mindless cutting down of trees to make charcoal, without a program for replanting them, will turn many countries into a barren wasteland. Although Sub-Saharan Africa has a plentiful supply of rainwater, it is seasonal and unevenly distributed, leading to frequent floods and droughts. Additionally, prevalent economic development and poverty issues, compounded with rapid population growth and rural-urban migration have rendered Sub-Saharan Africa the world's poorest and least developed region.¹³

¹²<https://www.globalcitizen.org/en/content/water-scarcity-in-africa-explainer-what-to-know/#:~:text=1%20in%203%20African%20citizens,average%20daily%20to%20access%20water>, accessed on 13/12/2022.

¹³<https://www.globalcitizen.org/en/content/water-scarcity-in-africa-explainer-what-to-know/#:~:text=1%20in%203%20African%20citizens,average%20daily%20to%20access%20water>, accessed on 13/12/2022.

However, it is high time to rethink how we grow, share and consume food in Africa. If done right, agriculture, forestry, and fisheries can provide nutritious food for all and generate decent incomes while supporting people-centered rural development and protecting the environment. But right now, our soils, freshwater, forests, and biodiversity are being rapidly degraded. A lack of clean water is further affecting many people in African people in that many families have to travel far to gain access to clean drinking water. Women and girls in the family often take on the responsibility of having to carry heavy buckets of water to their homes. This makes younger girls to drop out of school or simply miss out completely on getting education to help their families. These journeys to collect water are also dangerous and sometimes result in physical or sexual abuse of girls and women.

2.6 Plastic Pollution

Plastic pollution refers to the littering in abundance non-degradable plastics that are used for different purposes, especially commercial purposes. Plastic pollution is causing widespread problems such as contamination of waterways, disruption of stormwater management, and increases in disease due to mosquitos and pests breeding and living in plastics. Plastic mismanagement is both a combination of cheap supply by all kinds of manufacturers, for example by providing much-needed access to water through bottled water and water sachets, and poor management of the waste after use. Some locations in Africa have also been sourcing or dumping plastic waste from the Global North. Some governments are responding, and the continent leads the rest of the world in plastic bans which reduced the allowed use and manufacture of single-use plastics such as plastic bags and food serving tools.¹⁴

3.0 Ecological Spirituality

Ecological Spirituality is a call that seeks to integrate human beings with harmony and unity in order to care for creation with openness and love to transcendence. A spiritual person must be ecologically sensitive because it is through nature/creation that God is revealed, i.e., through his work of creation (Romans 1:20). Every spiritual person must respect the rest of creation as God's property and not abuse it. Ecological spirituality

¹⁴ Francis, *Laudato Si: Encyclical Letter On Care for Our Common Home*, no. 13.

must begin by authenticating the moral practice in the world about human beings and mother Earth. No human being can claim to be holy if he/she is not first good. True followers of Christ who are spiritually alive must actively seek first to discern God's will and act as trustworthy collaborators with God in creation. In the modern world today, this collaboration must include a rethink and reassessment of what is written in the book of Genesis especially when it tells humankind to subdue the earth and have dominion over all living things on it (Gen. 1:26-28).

Human beings therefore cannot be collaborators with God the Creator if their activities are insensitive to nature when they pollute the air, pile up atomic waste, denude forests, and pollute rivers and lakes. To be co-creators with God, a radical ecological spirituality must begin with a deep metanoia of mind and heart from the callous tearing of whatever human beings want from the earth. Humanity needs to enter into a caring relationship with nature and so adopt their rightful responsibility of stewardship over creation and not abusers of the same.

In the times past, human technocratic ability and the availability of environmentally friendly tools allowed human beings to make our common home more fruitful and a safe place to live for everyone. There was no capacity to impose lasting damage to the balance of nature. Our common home's spirituality was we expressed by St. Francis of Assisi who valued delight in God's creation, of which human beings are part and parcel in an intimate way along with brother sun and sister moon. St. Benedict summed up in his dictum the spiritual experience of God's creation when he said "to work is to pray. All people needed was a good intention to serve and praise God, and that attitude turned work into spirituality. Many men and women found God while working in everyday life: plowing, weaving, baking, and working wood".¹⁵

Therefore, our ecological spirituality must sharply transform our understanding of creation and our behavior toward our common home. We are of this common home and we must treat this common home God has given us as we do to our homes. True obedience to this moral mandate is rooted in true ecological spirituality. Our spirituality goes beyond moral action and transmutes it. The genesis of our ecological spirituality begins in the acknowledgment, thankfulness, gratitude, and joy, that we owe our existence to God the Creator, we and the rest of creation. We exist with each other and

¹⁵ S. Ignacimuthu, *Environmental Spirituality*, (India: The Bombay Saint Paul Society, 2010), p35.

for each other as God willed that none exists without the other. He created all of us creatures to be together in harmony so that each creature is to ensure that no fellow creature goes to extinction due to the carelessness of another creature.

Therefore, human beings are not separate from the rest of creation. They are intimately united and moved in the direction God willed his creatures to be. They must therefore share life joyfully and intimately with other creatures and acknowledge God as their common Creator and life giver. This ecological spirituality grows from a change in the way human beings think about God's creative work. For centuries, Christians viewed God's actions in the world in terms of sin and redemption. First, we sinned, and then God redeemed us. The pattern was holy and helpful. A new awareness of the whole of creation expands this view, and we now tend to think of God's action in the world this way: God creates and, when we reject grace, he saves us from our sin. By understanding creation as part of God's plan for our salvation, we more readily understand that God remains first, Creator and Lord at every moment of history.¹⁶

However, we can say that Christian ecological spirituality must be rooted in the contemplative lifestyle that frees the person from the obsession with the world of consumption. This contemplative aspect moves to the conviction that "*less is more*" and proposes an authentic growth marked by human moderation and capacity to be ultimately happy with little they have for daily survival than accumulate abundant things of the many years in which they will not be alive. Human beings need to understand that happiness means knowing how to do away with some needs that can diminish the human person and be open to the reality of different possibilities which life offers.

This can only happen when we include God the Creator in daily living and not replace him with our self-centeredness. Our inner peace of mind and heart give a proper balance to our style of life and capacity for wonder, which takes us to a deeper level of understanding the gift of life God has given us. Care for nature is part and parcel of our style of life which makes us live together in communion by the fact that we need one another. This calls us human beings to bear in mind that God has given us a responsibility to love and care for one another and our common home. This is what the Catholic Church promotes in her teaching on the civilization of love because she believes that social love

¹⁶ Joseph A. Tetlow, *Peace with God the Creator, Peace with All Creation*, (Washington: United States Conference of Catholic Bishops, 1995), p. 3-5.

is the key to human authentic development. By doing this, humanity will break out from the area of indifference that has been induced by modernization consumerism.¹⁷

4.0 Way Forward to Eradicate Ecological Crisis in Africa.

Addressing the ecological crisis is a common responsibility today because this crisis has assumed such proportions as to be the responsibility of everyone. The various aspects of this crisis demonstrate the need for concerted efforts aimed at establishing the duties and obligations that belong to individuals, peoples, nations, and the international community. This not only goes hand in hand with efforts to build true peace but also confirms and reinforces those efforts concretely.

When the ecological crisis is set within the broader context of the search for peace within society, we can understand better the importance of giving attention to what the earth and its atmosphere are telling us that there is an order in the universe which must be respected, and that the human person, endowed with the capability of choosing freely, has a grave responsibility to preserve this order for the well-being of future generations.¹⁸ Even men and women, without any particular religious conviction, but with an acute sense of their responsibilities for the common good, recognize their obligation to contribute to the restoration of a healthy environment. All the more should men and women who believe in God the Creator, and who are thus convinced that there is a well-defined unity and order in the world, feel called to address the problem. Christians, in particular, realize that their responsibility within creation and their duty towards nature and the Creator are an essential part of their faith. As a result, they are conscious of the vast field of ecumenical and inter-religious cooperation opening up before them.¹⁹ This is with regard to ecological issues because all exist in the same common home though professing different faith beliefs. Signs of the times at its core and the environmental crisis is a moral challenge. It calls us to examine how we use and share the goods of the earth, what we pass on to future generations, and how we live in harmony with the rest of God's creation.

¹⁷ Thomas Kochalumchuvattil, *The Place of Human Being in The Universe*, (Tanzania: Inter-Philosophicum Publication Northern Zone, 2021), p71-72.

¹⁸ John Paul II, *The Ecological Crisis: A Common Responsibility*, (Rome: Vatican City, 1989), no. 1-7.

¹⁹ John Paul II, *The Ecological Crisis: A Common Responsibility*, no. 8-15.

The effects of environmental degradation surround us in our cities, chemicals are in our water and on our food, eroded topsoil blowing in the wind, the loss of valuable wetlands, radioactive and toxic waste lacking adequate disposal sites, threats to the health of industrial and farm workers. The problems, however, reach far beyond our neighborhoods and workplaces. Our problems are the world's problems and burdens for generations to come. Poisoned water crosses borders freely, acidic rain pours in countries that do not create it. Greenhouse gases and chlorofluorocarbons affect the earth's atmosphere for many decades, regardless of where they are produced or used. Water is an essential resource for good health and well-being. Unfortunately, there are countless communities throughout Africa that do not have access to safe, clean water for drinking, cooking, and hygiene. Moreover, viruses, bacteria, parasites, and pollution contaminate freshwater sources resulting in waterborne diseases and deaths.

Following the thoughts of Pope Francis, we can say that it is our main priority challenge to protect our common home. This is a concern and effort aimed at bringing forward our human family together to seek sustainable and authentic development that is friendly to all God's creatures. God, our Creator, does not abandon us and he will never abandon us; he will never forsake his loving plan or repent of having created us in his own image and likeness. We still have that ability to cooperate and work together in building and transforming our common home for the better. Pope Francis therefore invites and encourages us to thank all those people of goodwill who, day and night, strive in countless ways to give priority to guarantee the protection of our common home which we share together as one. We need to uplift our brethren who tirelessly seek and find ways to resolve the tragic effects of environmental degradation on the lives of the world's poorest. Our young people always demand the metanoia which gives the paradigm shift which can help us to build an authentic and better future for our world but this can only happen if we think of how our common home suffers from environmental crisis and degradation.²⁰ In the same line with the mind of Pope Francis, my wish is that the continent of Africa should have a common understanding of how we are to shape the future of our continent by initiating new dialogue with our environment. This new dialogue will bring an authentic conversation that will include everyone in conserving and restoring mother earth whose mourning voice is being heard by everyone every day.

²⁰ Francis, *Laudato Si: Encyclical Letter On Care for Our Common Home*, no. 13-15.

The cry of Mother Earth is louder enough that humanity need not to ignore it as such attitude may lead to humanity's self-extinction or self-annihilation. As human beings are striving for daily survival, so is every creature on earth and therefore creatures must support one another to ensure that each has continued existence in this our beautiful common home.

The Connection Between Ecological Crisis in Africa in Relation to *Laudato Si*

Anonymous Student of Don Bosco Utume Theology

1.0 Introduction

The word ecology comes from the Greek *oikos* meaning “house” and *logos* meaning “study”. Ecology is the study concerning the “house” which is the cosmos. The whole cosmos is a house or habitat so it is a study of the way how different species are related to each other and how they interact with each other in the “house” often understood as a “home”. In this journal I would like to connect the topic “Ecological Crisis in Africa” with “Laudato Si”.

1.1 The Wonder of Ecosystems

Ecosystem = a system, or a group of interconnected elements, formed by the interaction of a community of organisms with their environment. We take these systems into account not only to determine how best to use them, but also because they have an intrinsic value independent of their usefulness. Although we are often not aware of it, we depend on these larger systems for our own existence.

Ecosystems interact in dispersing carbon dioxide, purifying water, controlling illnesses and epidemics, forming soil, breaking down waste. Once they become conscious of this, many people realize that we live and act on the basis of a reality which has previously been given to us, which precedes our existence and our abilities. So, when we speak of “sustainable use”, consideration must always be given to each ecosystem’s regenerative ability in its different areas and aspects.¹

1.2 Laudato Si

The encyclical letter “Laudato Si” is written by Pope Francis on 18 June 2015. “*Laudato si’, mi’ Signore*” – “Praise be to you, my Lord”. In the words of this beautiful canticle, Saint Francis of Assisi reminds us that our common home is like a sister with whom we share our life and a beautiful mother who opens her arms to embrace us. “Praise be to

¹ Gerard Majella Nnamunga, “Creation and Ecology.” (Lecture note in *Fundamental Theology* at Don Bosco Utume, 2022).

you, my Lord, through our sister, Mother Earth, who sustains and governs us, and who produces various fruit with coloured flowers and herbs”.² “On care for our common home” – This is the subtitle – The cosmos is conceived as a home where different species interrelate with each other.

1.2.1 Symptoms Lead to Ecological Crisis

There are mainly 5 symptoms that lead to ecological crisis, these are: Pollution, Waste, Throwaway Culture, Industrial System and Plastic.

Pollution: Some forms of pollution are part of people’s daily experience. Exposure to atmospheric pollutants produces a broad spectrum of health hazards, especially for the poor, and causes millions of premature deaths. People take sick, for example, from breathing high levels of smoke from fuels used in cooking or heating. There is also pollution that affects everyone, caused by transport, industrial fumes, substances which contribute to the acidification of soil and water, fertilizers, insecticides, fungicides, herbicides and agro-toxins in general.³

Waste: Account must also be taken of the pollution produced by residue, including dangerous waste present in different areas. Each year hundreds of millions of tons of waste are generated, much of it is non-biodegradable, highly toxic and radioactive, from homes and businesses, from construction and demolition sites, from clinical, electronic and industrial sources. The earth, our home, is beginning to look more and more like an immense pile of filth. In many parts of the planet, the elderly lament that once beautiful landscapes are now covered with rubbish. Industrial waste and chemical products utilized in cities and agricultural areas can lead to bioaccumulation in the organisms of the local population, even when levels of toxins in those places are low. Frequently no measures are taken until after people’s health has been irreversibly affected.⁴

Throwaway Culture: These problems are closely linked to a throwaway culture which affects the excluded just as it quickly reduces things to rubbish. To cite one example, most of the paper we produce is thrown away and not recycled.⁵

² Pope Francis, *Laudato Si*, 2015, no.1.

³ LS, 20.

⁴ LS, 21.

⁵ LS, 22.

Industrial System: Another important ecological symptom is Industrial system. Our industrial system, at the end of its cycle of production and consumption, has not developed the capacity to absorb and reuse waste and by-products. Industries were emitting polluted air without any care. They utilize all the resources without looking future generation. We have not yet managed to adopt a circular model of production capable of preserving resources for present and future generations, while limiting as much as possible the use of non-renewable resources, moderating their consumption, maximizing their efficient use, reusing and recycling them. A serious consideration of this issue would be one way of counteracting the throwaway culture which affects the entire planet, but it must be said that only limited progress has been made in this regard.⁶

Plastics: Plastics are littered everywhere especially in cities. Different kinds of plastic can degrade at different times, but the average time for a plastic bottle to completely degrade is at least 450 years. It can even take some bottles 1000 years to biodegrade! This is a serious danger to our environment.

1.2.2 Effects of Ecological Problems in Africa

Mount Kilimanjaro

East Africa is blessed with awesome natural beauties which in the traditional East African world-view was considered to be dwelling places of divine spirits (animism). Mount Kilimanjaro, the highest mountain in Africa and second in the world. It is losing its ice cap and, in a few years, there will be no snow on the mountain. The reduction of snow and glaciers on the top of Mount Kilimanjaro due to deforestation and climate change has devastating effects on the people who live on this mountain because they depend on the water which melts from the snow and glaciers. This water formed streams and rivers which flow as far as the Indian Ocean. The same is happening to Mounts Kenya and Ruwenzori are second and third highest in Africa respectively.

Lake Victoria

The largest lake in Africa and second in the world after the Great Lakes in US and Canada. Lake Victoria is polluted at an alarming rate by discharge of raw sewage, dumping industrial waste including fertilizers and chemicals from farms, which has led to contamination of fish and oxygen depletion at the bottom of a lake supporting the

⁶ LS, 22.

densest and poorest rural population in the world. Lake Victoria is a major reservoir of River Nile which supports about 80% of Egypt's population. The same is happening to Lake Tanganyika, the deepest lake in Africa and second deepest in the world.⁷

1.2.3 Causes of Ecocide

Anthropocentrism:

Human beings are the center of the cosmos at the exclusion of other creatures. Our interpretation of the Bible – hierarchical rather than concentric. Sometimes the Bible is used to justify the supremacy of human beings at the exclusion of non-human creatures. Negative attitudes and neglect of non-creatures. Justice and Peace, salvation ... for human beings at the exclusion of other creatures. Only recently do we hear of “integrity of creation”.⁸

Leonardo Boff: Cry of the Earth, Cry of the Poor

Leonardo Boff known for the theology of liberation, tries in this book to extend the cry of the poor to include the cry of the Earth. In doing so, Boff also tries to address the criticism against liberation theology that the poor are restricted to people. He argues that the same logic used to exploit the poor people is the same logic used to plunder and exploit the Earth. He says that humans have not only committed homicide and ethnocide, but biocide and genocide as well. He proposes a new paradigm of connectedness of the species and elements of the Earth which has been broken. He gives the Amazon as an example of the loss of connectedness not only with the indigenous people who are becoming extinct but also the many species which are extinct as well.⁹

Christianity

Lynn White – “The Historical Roots of Our Ecological Crisis.” The mandate “to fill the earth and subdue it” (Gen 1:28) and to “till it and keep it” (Gen 2:15) led to the exploitation of non-human creation. White says that Western Christianity's attack on pagan animism effectively stripped the natural world of any spiritual meaning by replacing the belief that the sacred is in rivers and trees with the doctrine that God is a disembodied Spirit residing in heaven not on earth. “By destroying pagan animism,

⁷ Gerard, “Creation and Ecology.”

⁸ LS, 115.

⁹ Leonardo Boff, *Cry of the Earth, Cry of the Poor* (Maryknoll: Orbis Books, 1997), 46.

Christianity made it possible to exploit nature in a mood of indifference to the feelings of natural objects.” The turning point, however, was the industrial revolution when science was married with technology as our ability to exploit the environment increased. Our attitude towards nonhuman creation is exploitive adding that “Christianity is the most anthropocentric religion the world has ever seen.”¹⁰

1.2.4 Solutions for Ecological Crisis

It is essential to seek comprehensive solutions which consider the interactions within natural systems themselves and with social systems. We are faced not with two separate crises, one environmental and the other social, but rather with one complex crisis which is both social and environmental. Strategies for a solution demand an integrated approach to combating poverty, restoring dignity to the excluded, and at the same time protecting nature. These are:

Economic Ecology: Protection of the Environment The primary aim of economic growth is to maximize profits and reduce costs. Reducing costs must take into consideration the environment factor. Merger of Economics and Ecology - John Cobb insists that economics should be merged with ecology. Economic development policies which degrade the earth must be discarded. Any economic growth policies aimed at addressing the challenges of poverty must take into consideration the price paid by ecological damage. Ecological Friendly Habits - He suggests the use of wireless telephones instead of landline that use telephone poles, use of solar energy, stimulation of sustainable forms of producing food, better use of land, and willingness to make personal sacrifices.¹¹

Ecological Integration: Social Ecology – If everything is related, then the health of a society’s institutions has consequences for the environment and the quality of human life. “Every violation of solidarity and civic friendship harms the environment”. Social ecology is necessarily institutional, and gradually extends to the whole of society, from the primary social group, the family, to the wider local, national and international communities. Within each social stratum, and between them, institutions develop to

¹⁰ LS, 66.

¹¹ John. B. Cobb. *Christianity, Economics and Ecology* (Cambridge, Harvard University Press, 2000),

regulate human relationships. Abuses of human rights have an effect on the environment.¹²

Cultural Ecology: Ecology, also involves protecting the cultural treasures of humanity in the broadest sense. More specifically, it calls for greater attention to local cultures when studying environmental problems, favouring a dialogue between scientific-technical language and the language of the people. Culture is dynamic – It is more than what we have inherited from the past; it is also, and above all, a living, dynamic and participatory present reality, which cannot be excluded as we rethink the relationship between human beings and the environment.¹²

Conclusion

The foundation of Christian ecological ethics is love because it is the integrating center of the whole of Christian faith and ethics. Jesus' call for love of neighbor (Lk 10:37) should be extended to include all creation. God is love and nature is a gift and product of love. Love is also a charism of the Holy Spirit. So, when we are destroying nature, we are destroying God's creation and when we protecting nature, we protecting God's creation. We are not the masters of this world rather we are the stewards of this world.

According to Christianity, the world was created for us and then entrusted to us as stewards. This is evident in the most historical and reliable resource available to us - the Bible. In Genesis 1:26, the creator of this beautiful world, God, told the first man and woman, Adam and Eve, to ". Rule over the fish of the sea and the birds of the air, over the livestock, over all the earth and over all living creatures that move along the ground." Therefore, surely as the human race of today, the descendants of Adam and Eve, we are obligated to obey the scriptures. We are created to preserve the nature for the next generation. So, protect the nature for the next generation. Love nature as yourself.

¹² Gerard, "Creation and Ecology."

A Christian Approach to the Ecological Crisis in Africa

Rev. Prof. Richard Rwiza

Introduction

This work is structured in three parts. The first section analysis the major current environmental problems such as: endangered species, deforestation, pollution and waste disposal. The second section outlines the basic issues that are crucial in searching for a credible response to ecological issues and the third provides a Christian response to the crisis. The focus of this response is on integral ecology in view of '*Laudato Si*'.

The Major Current Environmental Problems

1. Christian Ecology

Ecology is the study of the relationship between living organism, including human beings and their physical environment (vital connections). It is a study of ecosystem, environmental ecosphere. Christian Ecology is basically 'care for creation.' There is a tension that exists between humanity's obligation (responsibility) and human tendency to revote against God (sin). Let us review our conscience, reconsider lifestyles. The question arises then on whether the climate change is an act of nature or a human act?" UN, FCCC describe climate change as "a change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparative time periods." E.g., experience of drought in many African countries, desertification and rising above sea levels.

The first phenomenon, is of endangered species which refers to any species of organism that faces a high risk of extinction within its geographical range. The rain forests are still being destroyed at a very high rate. In Africa, some plant species have disappeared while other birds, fish and animal species are now categorized as endangered. For instance, Wangari Maathai observed that "when I visit many parts of Kenya, for example, I see land that has been abused and soil degraded. Few indigenous trees and crops remain instead ..."

The second phenomenon, is the deforestation. It means clearing of green cover and make the land available for residential, industrial or commercial purpose. “The forest is our skin and if one removes the skin of the human being the end result is death.” E.g., deforestation in the Maasai Mara has resulted into soil erosion and increase in flooding. Kenya has lost more than 8% of its forest cover since 1963 (the cover was 10%). “Then the trees of the forest will sing for joy before the Lord, for He is coming to judge the earth” (1 Chronicles 16:33).

The third phenomenon, is the pollution. Pollution is any action rendering the environment impure. It is the process of introduction of contaminants into the environment and causes radical changes. Causes of water pollution in Africa are deforestation, urbanization, industrial processes, mining and agriculture. Kofi Annan noted: “Instead of being exploited for the benefit of people, African mineral resources have been so mismanaged and plundered that they are now the source of our misery.”

The fourth phenomenon is the waste disposal. There is no ‘Planet B’ in this whole universe.” The earth is just one planet. What the coming generation will inherit from us? The overconsumption of resources and creation of plastics are creating a global crisis of waste disposal. Chemicals need to be properly orderly, stored, used and disposed. The problem is about the wrong chemicals being in the wrong places.

2. A Credible Response

As the African proverb goes: “When there is something wrong in the forest, there is something wrong in society.” The natural environment is not just a thing to be manipulated, exploited, but a work of the Creator (God). “Treat the earth well” Africans say, “It was not given to you by your parents. It was loaned to you by your children.”

Concept of Nature

What is happening to nature is crucial. Cosmology is the science of the origin, nature and development of the universe. St. Augustine – we are ‘cosmopolitans’ – citizens of the world.

Pope Francis in *Laudato Si'*: “Theological and philosophical reflections on the situation of humanity and the world can sound tiresome and abstract unless they are grounded in

a fresh analysis of our present situation, which is in many ways unprecedented in the history of humanity.”

Nature is God’s project that has been realized. Psalm 33:9: “For He spoke and it came to be, commanded, and it stood in place.”

Anthropological Foundations

Lynn White - “what people do about their ecology depends on what they think about themselves in relation to things around them.” John S. Mbiti - “I am because we are, and since we are, therefore I am.” The Akan people say: “One tree does not constitute a forest.” In African ethics a person (the living, the dead and the not-yet-born). In Christian anthropology a human person is a creature, made to the image of God, fallen but recreated to the likeness of Christ as an active agent in the history of salvation.

Value of Human Action

Is climate change an act of nature or a human action? They need to be checked for the good of the current and future generations. We need to be accountable for our actions. Niger Delta is one area in Africa that has been terribly affected by land degradation, water and air pollution. Ken Saro-Wiwa (1941-1995) remains a distinctive campaigner, even in death, of human rights and a promoter of non-violence in a violence ridden environment.

Procedures for Evaluation

Humanity has obligation to hand on the earth to future generations. Develop “that covenant between human beings and the environment which should mirror the love of God” (2008 World Day of Peace, n.7). What is possible is not always necessarily reasonable and ethical. Precautionary principle: Prevention is better than cure, do not harm, and take care. This implies moral formation, conservation ethics as alternatives in promoting efforts to care for our common home.

3. A Christian Response: *Laudato Si*

a) Pope Francis' Encyclical Letter

Laudato Si - "On care for our Common Home." It was issued on 24th May 2015 on the solemnity of Pentecost.

b) Spirituality

On the spirituality of St. Francis of Assis (1181-1226). Patron Saint of ecology. He promoted harmonious relationship between human beings and other creatures. In the "Canticles of the Sun". This is praise for creature as some of the wonders of the created world.

Approach: See, Judge, Act, Celebrate

Contents of *Laudato Si*, what is happening to our Common Home? The Gospel of Creation, The Human Roots of the Ecological Crisis, Integral Ecology, Lines of Approach, Action, Ecological Education & Spirituality

1. Biblical Foundations

Gen. 1:27 "God created man in his image; in the divine image he created them."

Gen. 1:28 God blessed them saying "Be fertile and multiply, fill the earth and subdue it. Have dominion over ..." Human beings are co-creatures - God's stewards (Ps 8:6-8). let creatures co-exist in harmonious relationship. Critique of dominion and stewardship: Human beings' dominion over the earth does not justify absolute dominion over other creatures. Pope Francis - "human life is grounded in... intertwined relationships: with God, with neighbor and with the earth itself ... the rupture is sin" (LS, 66).

2. Green Fingers: Key Influences

Inspirations for thinking and caring for our common home.

a). Fr. Sean McDonagh, SSC

He articulated the need for the church to be involved in ecology. This is an Irish Columbian missionary working among indigenous people in Philippine. Book: "To care for the Earth: A Call to a New Theology, 1986.

b). Patriarch Bartholomew and Orthodox priest John Zizioulus

First among equals in the world's orthodox Christians. He was nicknamed the "Green Patriarch" due to his environmental activism. He called for conversion in view of adopting a change in lifestyle.

c). Leonard Boff

He is a Brazilian liberation theologian. He clarified the link between concern for the poor and ecology: all are oppressed and devastated (eco theology of liberation, green theology).

d). Cardinal Peter Turkson

The Ghanaian head for the Pontifical Council for Justice and Peace (then). He proposed the establishment of international financial system to combat poverty and inequality.

e). The Brazilian Bishops Conference

The bishops note in Aparecida in 2007 about the destruction of the environment, especially, the rain forest of the Amazon. (Graham Gordon, *The Tablet*, 20 June 2015, pg. 7).

Liberation Theology

There is a connection between the cry of the poor and the cry of the earth. According to Leonardo Boff, Liberation theology and ecological discourse have something in common. They start from two bleeding wounds. The wound of poverty breaks the social fabric. There is a distinction made between option for the poor and preferential option for the poor (LS, 95). Gutierrez's three integral liberation levels: 1) Socio-political 2) Cultural and psychological and 3) Theological levels.

Ethics Recommendations

. *Profound question*: "What kind of world do we want to leave to those who come after us, to children who are now growing up?" (LS, 160).

. *Search for solutions*: There is a shift from identifying problems towards generation some solutions by handling the questions of personal values (LS, 2).

. *Distinctive Sin*: There is a link between the problems of environmental destruction with the violence present in our hearts, wounded by sin (LS, 8). For “to commit a crime against the natural world is a sin against ourselves and a sin against God.”

. *Cultivation of ecological Virtues*: Intellectual conversion helps to support moral conversion. This is an invitation to be involved, for self – restraint in the use of earthly limited resources (LS, 88). A virtue is a habitual and determination tending toward the good which disposes a person to do the right thing (CCC, 1803).

. *Ecological Education*: Integral ecology appeals for holistic approach in dealing with ecological crisis.

. *Ecological Spirituality*: A search for deep transformation in order to deal with the roots and not merely the symptoms.

. *Invitation for Dialogue*: It is dialogue between the Church and society (LS, 199). It can also be interreligious alliance motivated by the virtue of faith.

. *Ecological Conversion*: It is a call for conversion founded in limiting the use on non-renewable resources (re-use, recycling to preserve resources for present and future generations). Conversion – a transformation of the subject and his or her world view.

Conclusion

As Christians we have an obligation to care for creation. The earth is already at the point of destruction. This calls for care for our common home. We have pointed out an approach to ecology which respects our distinctive roles as human beings in this world and our relationship to our surroundings.

A Christian Approach to the Ecological Crisis

Rev. Dr. David MBUGUA

1.0 Introduction

With so many challenges in our society today, the precise extent and nature of the environmental crisis is not entirely clear. Lynn White, in his article: *The Historical Roots of Our Ecological Crisis*, states that the history of ecological change is still so rudimentary that we know little about what really happened, or what the results were. It is becoming increasingly apparent that all is not well with the mother earth, our common home; as Pope Francis calls it, **mother earth** on which all life depends. The situation is so grave as to talk of environmental crisis.

The debate on the seriousness environmental crises goes in two ways. On the one hand are (prophesy of doom) those who prophesy that with what is happening to our environment humankind is facing global disaster in the near future. Our civilization as we know it will die or be disfigured beyond recognition unless we drastically change our ways. On the other hand, are those who do have faith in the future. They submit that the human species is too great a biological success to end so abruptly and so soon. Human being as species that can learn from the experiences of its predecessors, and in so doing fashion for itself a world unlike any experienced before, can continue to build new knowledge, achieving thereby still higher levels of attainment. Which view is correct cannot be determined with certainty, at least not now.

Regardless of one's view many of us today are deeply distressed with the condition of both social and natural environments. A large number of individuals have become apprehensive to the point of feeling threatened in a fundamental way. There is mounting evidence to support a growing consensus not only about the basic facts of the crisis, but also about human responsibility in creating or at least exacerbating the crisis. The global nature of the crisis is important in the sense that what happens in one particular nation impacts not only on that nation, but also on the earth as a whole. In his recent book entitled *Environmental Ethics in an African Context*, Professor Rwiza is categorical in his approach.

1.1 The Environmental Crisis: A Need for a Christian Response

Any critical observation to what is happening to our environment affirms the presence of an ecological crisis. It reveals a situation which needs a particular care and response. It is a reality beyond any doubt that climatical change can be witnessed everywhere, environment has been damaged, thus provoking the decrease or disappearance of different species in a dramatic, unexpected and irreversible way that destabilize their continuous survival. It is a reality of unprecedented massive destruction of life's ecosystems or natural world such as land, forests, plants, air and water. As result, several environmental problems are affecting millions of people in the world. This includes risk of desertification due to little rain, a prolonged dry season and extinction of animals. According to professor Rwiza, the present environmental crisis reflects our failure to develop a consistent and adequate view of a human nature relationship. Until more progress is made than is now observed in the attainment of this goal, any attempt at proper response of the crisis will be like the shuffling of the pieces of a puzzle here and there while none of them seem to fit.

On the nature of human relationship, three attitudes of human nature relationship can be identified: First, is *man apart from nature*: This is an anthropocentric attitude that view nature as something to be conquered. Human species has the right to use and manipulate nature for its own sake. In this view nature has no inherent value. Human can use and shape the world in any way deemed desirable to him. Nature is at the service of man. Knowledge (science) of how nature functions give power to control it. Therefore, discovery and acquisition of knowledge to manipulate the nature for human desire become celebrated. Any ethical problem raising from technology gotten from such knowledge is measured against the end sought so all those ethical systems of consequentialism, utilitarianism, make sense in. Second, "Man is the measure of all things", said the ancient Greek philosopher Protagoras. This doctrine has become the motto of secular anthropology leading to an attitude towards nature with devastating ecological consequences. To be fair modern science and technology have acquired enormous power over the forces of nature and are able to use this power for good or for ill. Of course, a radical rejection of modern science and technology would be foolish and unrealistic. Yet it is true that the modern scientific project has frequently succumbed to the intoxication of power.

Third, *Man in Nature or Man a part of Nature*: This attitude feels that human species is not unique rather they are one creature among many kinds created by the Creator. The view agrees that human species is different from other creature not by special privilege but in degree only. This attitude has two forms a religious and a secular one. In the religious form nature is seen as part of God's Creation to be heeded and cared for by human as good steward. Human are not masters of nature but nature has been entrusted to them in trust. Seraphic father St. Francis of Assis held this view hence regarded all creatures as brothers and sisters. The secular view of the same is that which submit the nature and human are one. Just as human are worthy of respect and possess intrinsic value, so too is the nature. Under whatever aspect this view, points interconnectedness and interdependence of all forms of life.

The *teleological view of Nature*: From Greek word *telos*, meaning end or final form, this view hold that there is purpose and logic to be found in nature. Every created being is created in its own nature and has a purpose. Although nature is neither sacred nor object of manipulation proper study of nature can provide ethical insight for human conduct. Rwiza argues for an ecological consciousness. This is a consciousness of the delicate web of life and a respect for the existence and value of other creatures; the interconnectedness of all reality. When non-human forms of life are thoughtlessly destroyed in the name of human progress, the failure to respect and honour other beings is clear. Respect for other non-human forms of life does not require that we attribute personhood to them. Rather the question is whether other forms of life have a value in and of themselves, not entirely dependent on human purposes. Besides, people like Mr. Kanjama hold the assumption that natural resources; clean air, pure water, fertile fields are unlimited, or at least always renewable, underlies much of the exploitation of the earth for human purposes. It is supposed that we will never run out of the resources that are necessary to all life because they are supplied in inexhaustible abundance by the earth. Moreover, it is presumed that even if our natural environment should run out of these necessary resources, modern science and technology will always be there to provide alternative sources. Such attitudes have destroyed the harmony and the relationship between humanity and nature. Nature is no longer seen as a Partner of the humanity but as an object to be exploited in order to satisfy human desire.

1.2. Proposed Response to Ecological Crisis

Rwiza identifies three unique and needed responses to the ecological crisis namely, the African spirituality, Magisterial teaching and Scriptures. For Rwiza, the three responses are the basis in responding to the challenges of the ecological crises. He also proposes some practical recommendations to alleviate the present ecological crisis. The **Traditional African Spirituality** views and promotes inseparable harmony and respect between humanity and nature, considering that God as the Creator of the entire universe. In the traditional African societies, people live in a religious universe where human beings and nature are partners. For Africans, environment implies totality of life. In other word, neither the sacred nor secular existed as a separate entity. According to John Mbiti, “religion was interlaced in the fabric of every institution and aspect of life”. African religious heritage linked Africans with creation of the world whether visible, invisible, above or below. The entire universe was viewed religiously. Nature in the broadest sense of the word was not an empty impersonal objector phenomenon. It was filled with religious significance. Africans believed that they are entirely dependent on the earth for their existence. Respect for the environment was manifested in the way Africans related with animals, trees and other created reality. The harmonious relationship promoted by traditional African spirituality should be observed in our society as remedy to the ecological crisis in order to deal with nature in a mutual custody.

Encyclical “Laudato Si,”: Rwiza elaborated the Christian main response to earth’s healing, focusing on *Laudato Si*. The responsive character of the Church to any social problem is a key to her identity as well as the identity of the people of God. This character originated from the Prophets, who were then the ‘mouth-pieces’ of God. It is thus passed on until today. Now that ‘Our Common Home’ is gravely threatened, the Church, through the Supreme Pontiff Pope Francis speaks about this ecological crisis which is being considered as an ultimate life issue through the encyclical *Laudato Si*. This is the first social encyclical that came out from Rome that integrates social justice with the environmental / ecological crisis. The uniqueness of *Laudato Si* is its strong advocacy for our active engagement on how we can better take care of our common home. In the encyclical Pope Francis gives guidelines or a blueprint for action by the stakeholders which are virtually every human being. He rightly believes that when a global consensus is arrived at through dialogue it “could lead, for example, to planning a sustainable and diversified agriculture, developing renewable and less polluting forms

of energy, encouraging a more efficient use of energy, promoting a better management of marine and forest resources, and ensuring universal access to drinking water.

Conclusion

We can authoritatively say that after decades of climatological documentation diplomatic negotiation and intense lobbying by Civil Society organizations, deterioration of the natural ecological equilibrium on Planet Earth continues unabated. Therefore, a call is made for a radical renewal. In this case, new orientations are to be followed. New our individual, communal, ecclesial and global quest for credible and sustainable solutions to the present-day ecological crisis remains a critical imperative. This can neither be neglected nor over exaggerated. From all that has been presented so far on the ecological crisis, the following take aways are needed: First, spiritual approach: We are called to cultivate a spirituality of justice-seeking; Spend some time each day reading scriptures and Catholic social thought with ‘new eyes. Start in a small way of doing something. Living simply, practicing responsible simplicity of life, avoiding materialism and consumerism, not following the ‘throwaway culture,’ and educating oneself about the state of the planet. There is a need for true and deep change “metanoia” based on Mk 1:15. Such a spiritual change, goes beyond mere arithmetic, geometric as well as political landscapes. It calls for a rediscovery of the internal spiritual values and attitudes of living in harmony with the rest of creation. It calls for a true and lived eco-spirituality in Africa in particular and the world in general.

Second, moral theological approach: We are called to become an ethically conscious consumer: Boycott certain products that has environmental risk. Making use renewable energy. Need for a true discovery of Christian and African ethical principles criteria traditions, teachings, benchmarks, life views taboos for eco-integrity and for the protection and sustainability of all life forms. This demands a new human heart and vision which changes “*homo consumerismus*” to “*homo integralis*” from “*homo secularist*” to “*homo sapiens*” and “*Homo Deus*” (Proverbs 8: 1, 22-32, 19-20, 1Kor. 8:6, Rom. 11:36).

Third, pastoral approach: We are called to develop a concern for the environment again: have an ‘ecological conversion’ and cultivate environmental virtues to protect the environment. Join cause-oriented groups or organizations that protect the environment: The problems of injustice in the world cannot be solved by one person. There is need to

search for pastoral inclusivity, social and common welfare and wellbeing for all creation. Hence, fundamental option for and with the marginalized ecological resources, heritage etc. (Mk. 5:22-73, Luke 13:10-17). Need for all key stake holders: academia, theologians, ethicists, priests religious, churches, etc. to develop a new pastoral eco-model and strategy of spearheading eco-values and virtues in the life and activities of believers for protection and care of all creation.

Fourth, African eco-values approach: Need to reinstate the African Spirituality view of holistic existence and interdependency of all life forms commonly known as “Ubuntu” eco-view. This is transformative underscores human dignity and eliminates greed in all its forms and ramifications. These practical recommendations could certainly alleviate and help us better take care of our common home better.