

## A THEOLOGICAL APPRAISAL OF ANTHROPOGENIC ENVIRONMENTAL DEGRADATION

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### Abstract

*The situation of a threatened earth has become a major cause of worry today. Worsening is the awareness of anthropogenic factors and humankind's inability to abate these major causes of environmental blight that afflict the earth, the abode of human life, with murderous wounds. This paper supposes that the problem of environmental degradation can be sustainably resolved if one can arrive at an underlying principle upon which to base an ecological ethic that can guide and direct human use of the environment and its resources. This paper locates this in the Christian doctrine of creation. Juxtaposing the purposefulness of creation and mankind's vocation of caring and nurturing the earth, the challenges of anthropogenic environmental degradation raise new questions regarding humankind's diligence in the exercise of this office. Theological hermeneutic is employed in addressing the threatening ecological question that has left the present time perplexed. The paper hypothesizes that degradation is a consequence of mankind's derailment from his original vocation. It concludes that a viable solution lies in returning to this original vocation as entrusted to humankind by the Creator. It uses deforestation for illustrative purposes.*

**Key concepts:** anthropogenic factors, environmental degradation, environmental sin, imago Dei, stewardship, priest of creation.

### Introduction

In traditional Igbo society, there existed a practice of burying a child's umbilical cord near an economic tree. The particular tree

is always associated with that child. Ownership of such tree is never contested as the individual would inherit it later on in life. A bond is therefore established between this individual and that tree. This act is covenantal and informs a lot about the Igbo attachment to their land. In that Igbo world, therefore, as among many other traditional societies, man and his environment are inseparably bound in a very intimate and dynamic bond of relationship. Today, as in days long past, in Africa, as it is elsewhere in the world, human life depends for the most part on the earth and its resources to such an extent that humans are inextricably linked to continued availability of natural means of support and this implies that any threat to the security of these resources constitutes a direct threat to human survival and development (Ademola Tokumboh Salau 1993). And whereas mankind affects the quality of the environment, so also does the environment affect the quality of human life. Importantly, the earth houses us as "our common home" (Francis, Laudato si, 2015). When mankind therefore destroys the earth, he is breaching the bonds of that covenant and thus endangering himself. So it is with deforestation and any other form of human activity and use of the environment and its resources that leads to the destruction of the earth.

Today, there is a resounding universal outcry over the deplorable condition of the earth that has drawn the attention of both scientists, and religionists, and indeed all fields of enquiry in the recent times. Much of the outcome of these enquiries as well as lived experience from all corners of the globe reveal a poor picture of a threatened earth, the abode of human life, at the verge of collapse as a result of environmental

degradation. Many illustrate how human activities have impacted negatively on the earth and its environments in the manner of human use of the earth and its resources and therefore conclude that mankind is responsible for the present precarious condition of the earth and its environmental crises. These abuses have resulted to the distortion and degradation of the environment and its natural habitats, resulting thus in the loss of biodiversities, disappearance of many life forms and whole species, etc. Global warming and climate change, flooding, for instance, are indicators of a rather threatened earth and a pointer to a creation at the verge of extinction. Deforestation, a local problem with a global consequence, is used here as reference of the many human activities causing the possible extinction of the web of life called earth.

The reality of degraded environment is the focus of this paper. The disappearance of forestlands and their natural habitats and biodiversities, for instance, in Enugu State, Nigeria, and their obvious hazardous impacts on the environment have been underscored by innumerable scholarly researches. The paper, while recognizing the findings of these researches, goes ahead to ask three different but interrelated questions: Why has happened to the earth? Why have the various scientific approaches not been able to abate the spate of those anthropogenic activities found to have depleting impacts on the environment? How can one arrive at a sustainable solution to this problem and save the earth from collapsing? While the gambles of politicians, the assumptions of scientists and the regrets of economists (cf. Stephen, 2006) have, so far, not moved a sizeable number of human populations and societies to environmentally sensitive and compliant

actions in order to abate the rate of harm and damage to the earth by human exploitative use of the environment and its resources, the present condition of a bleeding earth requires a new approach. A confession by James Gustave Speth, the U.S. Advisor on climate change, justifies the reasonableness and timeliness of this new direction. In the Huffington Post of 22 August 2014, he gave a brief on climate change which reads:

*I used to think that top environmental problems were biodiversity loss, ecosystem collapse and climate change. I thought that thirty years of good science could address these problems. I was wrong. The top environmental problems are selfishness, greed and apathy, and to deal with these we need a cultural and spiritual transformation (Huffington Post, 22 August, 2014).*

Speth is evidently calling for a new orientation and direction after many years of “good science.” This throws open the call for a look into such fields as theology and religion for insight. The theological perspective adopted in this paper casts a look at the human-environment interaction in the perspective of the ultimate destiny of all things.

The paper attempts to propose a theological response to the menace of environmental crises as required by the deadly threat to the life of humans and the entire global environment witnessed today. It interprets the results of recent scientific research on environmental crises in this new hermeneutic. That things have fallen apart with our earth because humans have lost sight of their identity and vocation as caretakers in creation is the assumption of

this paper. Based on that, anthropogenic environmental crisis is interpreted as an indicator of the wider irresponsibility and spiritual/moral decadence characteristic of contemporary man. Finding this a big contrast to mankind's original vocation of nurturing and caring for the earth (Gen 1:28), this paper opines that a return to mankind's original vocation through conversion of heart would go a long way in aiding mankind to rediscover the intrinsic value of every creature and thus place the wounded earth and its environments on the path of healing and recovery. This is the excursus undertaken in this paper.

### 2.1 The Reality of Environmental Crisis Today

The truest picture of the earth and its environment today can best be described as one in great peril. The present day human/nature interface reflects a fearful picture of a prolonged tradition of rupture and asymmetric relationship in which humans perceive the earth as a reservoir with a stockpile of goods. Out of the rupture emerges an exploitative culture that has mounted untoward pressure on the environment, the web of life, and its resources. Consequently, the human world is presently facing a serious environmental crisis with potentially catastrophic results. It is facing an environmental crisis on a scale and rate that is unprecedented in history. If this continues unchecked, human life on the planet, animals and plants of the earth risk extinction (Environment: an introduction, 2013). The crisis, as some scholars say, is already responsible for high level human sufferings as it threatens the future of the earth. Assuming the cause to be human activities, Puja Modal writes: "Whereas scientific and technological progress has improved the quality of human life, it is also responsible for the depletion

of resources" (Puja Mondal, no date.; cf. Sara. 2008). By so doing, the earth and its environments are being run down progressively by humankind.

Pope Paul VI, of blessed memory, had cautioned humankind on the new wave of environmental destruction way back in 1971. In the Encyclical, *Octogesima Adveniens (1971)*, he pointed out to the world that all life forms on earth (human and non-human alike) are at risk since the environment which has supported them is under destructive attack:

*Man is suddenly becoming aware that by an ill-considered exploitation of nature he risks destroying it and becoming in his turn the victim of this degradation. Not only is the material environment becoming a permanent menace - pollution and refuse, new illness and absolute destructive capacity - but the human framework is no longer under man's control, thus creating an environment for tomorrow which may well be intolerable. This is a wide-ranging social problem which concerns the entire human family (No. 21).*

Less than 50 years after that publication, the ceaseless information flow on climate change, global warming, hunger, inequalities and sickness, show that the situation has worsened tremendously. There exists already a widespread awareness on the reality and consequences of present day environmental challenges that are threatening the earth. Stephen (2006) hits the nail on the head in his article,

“A summary and examination of the environmental crisis and its causes, and how we think that the problems can be solved”, asserts that

The Earth is facing an environmental crisis on a scale unprecedented in human history. This environmental crisis is already responsible for high levels of human suffering. If the crisis continues to develop at its current rate, the ultimate result will be the extinction of human life on the planet” (Stephen, 2006; see also IWW, 2014).

The impacts of this crisis is witnessed already in the steadily widening cracks on the Ozone layer, acid rain, global warming that lead to the melting of the polar ice (which is to a large extent responsible for large scale flooding), and climate change (Sara, 2008), among many others. This affects the water, food and energy needs of a sizeable percentage of the earth's human populations, especially the poor, thereby creating hunger and widening the poverty margin. It equally induces losses of ecosystems and their biodiversities, loss and near loss of certain animal and plant species. Some authors even show how much of the world's present violent social conflicts are related to environmental depletion.

Nearly all these reports point to the fact that much harm has been done to our earth and its environments already, and warn that, if this is not abated, the earth will soon be subjected to a tragic halt. In a seeming unison, these studies have preoccupied themselves with the possible causes of the crises and possible ways to abate them. While many point at mankind as the architect of this bad news, they blame mankind's developmental, political, military, economic and agricultural

activities and pursuits as the root causes: “From the melting polar ice caps to catastrophic weather and threatened ecosystems, not only is climate change real, scientists agree that humans are influencing climate change with our production of greenhouse gases (mainly stemming from carbon dioxide and methane)” (Sara, 2008). The IPCC, Report “Agriculture, Forestry and Other Land Use (AFOLU)” establishes this fact that humans are responsible for the said crisis (Pete Smith, Mercedes Bustamante, eds.). Lynn White, in his celebrated seminal work, “The Historical Roots of Our Ecological Crises,” theorized that the earth is being exploited as a result of the poor interpretation of the command to “conquer” and “dominate” the earth given in Gen 1:28 (White, Lynn. 1974). Enrique Dussell, on the other hand opines that the truest explanation for the degraded earth and its environments is human greed. These all sing one tone: mankind is destroying the environment entrusted to his care. He calls this environmental sin, a language that would resonate in the works of Popes John Paul II and Benedict XVI. By this sin, he has subjected to annihilation the locus of human history, of humanity, of the incarnation (Dussell, 1988).

The logic leads to the conclusion that humankind has lost control of the earth because, he has lost vision of what he is, who he is, where he is and his vocation here on earth. Or like the United States Conference of Catholic Bishops put it:

*Our mistreatment of the natural world diminishes our own dignity and sacredness, not only because we are destroying resources that future generations of humans need, but because we are engaging in actions that contradict what it means to be human (USCCB, 1991).*

As a result of this, as Enrique remarks, there is an

... impending “gigantic cosmic vengeance” threatening to “exterminate the species homo”, loss of environmental friendliness where Terra Mater ceases to be “Sister Earth”, the sun ceases to be “Brother Sun” as they were for St Francis of Assisi. This is environmental sin is thus a consequence of bad workmanship (Enrique, 1988).

This is the fuller meaning of the fall of Adam. In brief, nature is inflicted with mortal wounds, wounds that have sparked off global outcry today. The persistence of this situation forces the question: How do we bring healing to the wounded earth? to be asked anew. The question is necessitated by the persistence of threats of environmental crises despite the volume of information from scientific studies and the various efforts of governmental and nongovernmental bodies to address this menace at both global and local levels.

#### Deforestation and Environmental Degradation

Deforestation is one of such troughs by which humans are dragging the earth and its environments to a gradual but tragic halt. Forests are among the natural resources entrusted to humankind by God (Adewoye, 2010). They are among the top 5 natural resources on earth and figure prominently among the world's most important ecosystems as a biological community, where various life forms (biotic factors) and their environment (non-living things or abiotic factors) are in constant complex interaction as a functional unit. Thus, forests mean more than just a collection of

trees. Each is a complex interaction of the biotic (flora [trees/vegetation] and fauna [animals] and algae) with their abiotic environment such as water, air, soil and rock type existing in them (Enviropol.com) and a home to countless biodiversities.

Current geographical net of forests covers about 6% of the planet (World Bank) and provide the right habitat for a myriad of living organisms that are useful in agricultural and medical sciences and serve many purposes. This is approximately 30% of the planet's land (Eschooltoday.com, 2010; Shafqat, 2016), about 3,952 million hectares, an unevenly distributed average of 0.62 ha per capita in 2005 (GreenFacts). One-quarter of the total forest area (21%) is in Europe (GreenFacts, 2017), followed by North to South America with 18%.

Nigeria's total forest cover in 2000 was estimated at 13.5 million hectares (Nzeh et al.).

The world's forest ecosystems house about 80% of the world's terrestrial biodiversity in which swim complex webs of organisms. The most biologically diverse and complex of these forests are tropical rainforests. Their abundant rainfall and warm temperatures provides a combination of constant warmth and abundant moisture that make their environments suitable for many plants and animals to thrive (GreenFacts, 2017). Hence tropical rainforests contain the greatest biodiversities in the world with over 15 million species of plants and animals

([TropicalRainforest, www.cotf.edu/ete/modules/mse/earthsys/flr/rforest.html](http://TropicalRainforest, www.cotf.edu/ete/modules/mse/earthsys/flr/rforest.html)).

Forest trees have unquantifiable socioeconomic and ecological values. Forest Europe, UNECE and FAO 2011 in

Laiou (2013) emphasize the Non-Wood Goods (NWGs) of forest trees while the World Bank, GreenFacts (2017), Andreas Fischlin, Guy F. Midgley, et al.; see also (Reid et al., 2005) highlight their importance in sustaining biodiversity and habitat stability. Their ecological importance and roles are amazing. Humans derive their oxygen needs from them, while these trees regulate water quality, keep forest soil moist, block the sun, recycle nutrients, prevent erosion and washing of topsoil, serve in the water cycle by returning water vapour back into the atmosphere and provide timber (World Wildlife Fund, 2017). They keep forest soil moist, serve in the food chain and in water cycle by returning water vapour back into the atmosphere, block the sun and mitigate climate change by serving as natural sinks (Salau, 1993) that soak up greenhouse gases (GHGs) – those gases (**such as carbon dioxide**) in the atmosphere that are capable of absorbing infrared radiation or heat that fuel global warming as a result of its particular molecular structure (**Odoh, S.I., and Chilaka Francis Chigozie, 2012; GreenFacts, 2017**). These greenhouse gases (GHGs) fuel global warming.

Presently, a total of 46% of terrestrial carbonstores are in forests (World Bank, 2017). Approximately, 44% of this is stored in living biomass (44%) and soil (46%), while dead wood stores 6% and litter 4%. In the mid-1990s alone, the IPCC (2000) and GreenFacts, (2017) estimate this at an average carbon stock of 86 tonnes per hectare in the vegetation of the world's forests. For the year 2005, it rose to about 638 Gt (638 billion tonnes) of carbon, much more than the carbon in the entire atmosphere. Large scale mowing down of these trees (deforestation) has resulted to an annual loss of about 13 million hectares of

forest land since the new millennium up to 2014. And carbon emitted into the atmosphere from mowing down of forest trees “accounts for approximately 12 percent of global carbon dioxide emissions” (Climate and Land Use Alliance's report, 2014). This confirms the Report of the Third Working Group of the IPCC, Climate Change 2007 Mitigation, which shows how an uninterrupted incremental Global greenhouse gas (GHG) emissions rose up to 70% between 1970 and 2004 (Bert Metz, Ogunlade Davidson et al., eds. 2007). Confirmed too are affirmations made in the eleventh chapter of the assessment report of the IPCC in which such anthropogenic factors as forest degradation, biomass burning and annual GHG flux from land use and land-use change activities are responsible for approximately 4.3–5.5 GtCO<sub>2</sub>eq/yr (Pete Smith, Mercedes Bustamante. 2014). This affects the ecological balance in nature and spells doom as:

... release of carbon dioxide and other so-called greenhouse gases into the atmosphere are responsible for a significant proportion of the rise in global earth temperatures since the eighteenth century. There is little dispute about the fact that carbon dioxide levels in the earth's atmosphere have gone up from pre-industrial levels of 280 parts per million (ppm) to 379 ppm by 2005, and to 387 by 2010, and 389 in 2011, representing a current rise of about 2ppm a year (Celia DeaneDrummond, 2012).

#### [A Theological Interpretation of Environmental Degradation](#)

The inability of the research findings and policies to keep the various forms of environmental crisis in check, according to

Nwachukwu (2016), calls for a new orientation in the search for sustainable solution to those crises. This takes us to the Christian doctrine of creation, a foundational basis for discussing the manature/environment interaction. This doctrine, shared in common with Islam and Judaism, expresses belief in a common source for all things to whom everything would return at the end of time and in whom, beyond the grasp of science, lies the ultimate reason behind all things, including trees and the natural environments.

The first articles of the Christian doctrine of faith, itself an expression of Old Testament Biblical faith, expresses belief in God, the maker of heaven and earth (Apostles Creed, Niceno-Constantinopolitan Creed, and CCC). This doctrine

...emphasizes first of all, that God is the source of all life. God is the source from which all reality flows and on which everything depends. This is what Christians confess in the Apostle's Creed when they say that God is the 'maker of heaven and earth' (Marcia, 1994).

The first two chapters of the Book of Genesis (the Book of the Beginnings) feed us with ample information on the origin of the created world (creature) and its relationship with God (Creator). They provide the basis for ecological spirituality and anthropology within the Abrahamic religions. Within this corpus, heaven breaks forth and earth emerges. Theology meets with anthropology. The all good God who dwells in an unapproachable light, whose name, "YWH", has no fitting vocalization, the ineffable God, assumes a name – Active Presence (I Am. cf. Exodus 3:14, 15). Creator condescends to meet creature in a dialogue of being and mission.

Hence, the International Theological Commission (2002) confesses that "The mystery of man cannot be grasped apart from the mystery of God".

Three theological highpoints emerge out of this encounter:

- a. The all good God creates a wholesome world
- b. Man receives a special status as "imago Dei"
- c. To mankind is entrusted the care of this good earth

These points have assumed central places in Christian ecological discourses.

Beginning with Genesis 1: 31, Scripture is full of affirmations of the goodness (wholesomeness) of creation and its purposefulness. This attests that the wholesome creation gives God delight (Gen 1: 31). According to Martino, "The author of Genesis tells us that God viewed each aspect of the created world, each aspect of his work, the heavens, the sea, the earth and all that is and lives upon it, as 'good'..." (Cardinal Renato Raffaele Martino, 2008). This "signature" embraces the whole spheres of creation, – the land, the air, underground and waters as well as the starry heavens – and everything in them. A closer look at the ecosystem's interdependence reveals the beauty of this "signature" in which the relishes of "Maker's" delight is expressed.

Drawing from the pages of Scripture, Christianity teaches therefore that the world belongs to God, glorifies God (Dan: 3; Ps 19: 1-4; 65:9-13; 96:10-13) and reveals him to creatures (Rom 1: 20; Ps 104; Exodus 20:4-5, Romans 1:19-20, Mark

12:29–31, John 3:16, John 6:38, John 17:20–23), and all will, at the end, at the eschaton, be consummated in Christ (Eph 1: 10; Col 1: 15-20). Job 12:7-10 is spectacular in affirming that one can experience God through creation (so do Ps 19:1-4, 148:1-6, 7-10, Is 55:12 and Rom 1:2). St Paul called this the hidden design which has been revealed in Christ Jesus. In quite a distinct manner, the Prophet Daniel shows that the goal of creation, which consists in the praise of its Lord, is constituted within each creature (the inherent goodness). Since it is therefore behoving on every creature, Daniel invites each creature to perform this duty (cf. Dan 3).

The opening statement of Pope Francis' encyclical, *Laudato Si* (LS), is in tandem with this call. He culled the words “Be praised oh God, through my brother sun” from that hymn of nature in which St Francis of Assisi (Roman Catholic) sang the praise of God through nature (*Laudato si*, no. 87). In this song, the Saint re-echoes Daniel's cosmic choir in which each creature acknowledges its maker in a cosmic song of divine praise. In like manner, Gregory Palamas (Orthodox) and Luther and Calvin (Protestant Reformers), all bore witness to the pervasiveness of this invitation across the various divides in Christendom and therefore understood creation as a symphony of things which have been called into being from nothingness to sing the glory of the Maker and make Him manifest. For Gregory Palamas and Luther alike, creation reflects God's glory and existence: “The power of God is present at all places even in the thinnest leaf”, while Calvin's *Institutes*, Book 1 Chapter 5, Section 1, reads: *We cannot open our eyes without being compelled to behold God ... on each of*

*God's works God's glory is engraved in characters so bright,*

*so distinct, and so illustrious, that none, however dull and illiterate, can plead ignorance as their excuse.*

The earth is thus more than “landscape”; it is the theatre of life and field of mankind's work, “where we eat, dress, and dwell”. Whether as boundless horizon, nature rustic, wild, and chaotic – the earth is the nature that touches our skin, the place where we make our dwelling, our ecology” and serves us as source of wealth and health. Right from the earliest agricultural societies, the earth has been identified as “mother”, hence the appellations, Mother Earth and Terra Mater. It has never been unfriendly but served human and other needs. From its resources, humankind gains food and drink and obtains the objects of worship, hence Catholic liturgy defines “bread” and “wine” as “fruit of the earth” and “fruit of the vine” for divine worship (Enrique Dussell, 1988). These are examples of Christian affirmation of the purposefulness of nature and the sacredness which saturates it since it is imbued with and filled with the presence of God. This theology of creation therefore sees all of nature as parts of God's creation. Included are the earth and all its environments and resources. In their numerous pages are clear letters of God's glory.

**Mankind's Vocation in the World** In that choir of creation, mankind is a member. He was so highly placed in that choir that God entrusted everything he had made to his care and governance before signing out at the completion of his work on the sixth day. This signature, “indeed very good”, and commission to govern, “fill and dominate”

are indicative of humankind's special hiatus in the order of creation (cf. Martino, 2008). Whereas mankind is the only creature that bears the image of God (Gen 1: 26-27), the subsequent command notes, to “subdue” (1:28) and to “name” (2:19), are of real anthropological and ecological relevance. Lynn White, for instance, remarks that the root cause of present day ecological crises is to be found in interpretations given to these texts.

The Igbo of Nigeria say in one adage, “*Chi nyere nwata ji awom na enye ya mbazu o ji egwu ya*” (the God that gives yam to a child in the forest will equally give him the tool for harvesting it). The mandates to “subdue” and to “name” are missionary. They presuppose empowerment by way of necessary tools with which this creature, mankind, would carry out the divine mission. These tools distinguish mankind from the rest of creation and set him on a higher pedestal from the rest of creation. A further clarification of this mission is illustrated below with the help of models. Three explanatory models would be employed in this context to illumine our understanding of mankind's presence and role in creation for relevant discussions in ecology. The first, as an implication of mankind as “*imago Dei*,” is “missionary,” the second is steward/caretaker, while the third is “priest” (drawn from the language of liturgy and worship).

**Mankind as *Homo Missionarius*** One definition of humankind that has ever found wide acceptance in Christendom is *imago Dei* (image of God). The Old Testament early accounts in Genesis chapters one and two provide the scriptural basis for this concept of humankind. These chapters define mankind as a creature made in the “image of God” (Gen 1:26-27) to image

God before the world. The two commands (subdue the earth, 1: 28 and “name” everything God had made, Gen 2:19, 20) are illustrative of humankind's mission and duties as “image of God” in the world. Thus, the “*imago Dei*” is called and sent to serve as “hand” and “eye” and “feet”, etc., and viceroy of God. Through him, all creatures receive their names. Among the many implications of this biblical teaching is that, made in the divine image, mankind (the *imago dei*), is called to “reflect”, “copy” after his Prototype (God), whom he “makes present” in creation. The “Image” (Latin: *imago*, likeness), among many other things, is a reproduction or imitation of the form of a person or thing, especially: an imitation in solid form; an exact likeness or a tangible or visible representation (Merriam- Dictionary, 2017; cf. also, **Microsoft Encarta, 2009**) of some hidden reality. At the instance of the “breath” he received from God (Gen 2: 7) the “re-presentation” of God (*Imago Dei*), he became a “living” being. Receiving this breath equips him with a spiritual substance that transformed him from mere vegetative and animal life into a deified creature (he received the divine breath). Thus, equipped, **mankind assumes a new significance**. The mere “image” (dust and sand/matter) is ennobled into a missionary “Image” (embodied spirit). He is now distinct in nature from other creatures (matter) having been thus equipped to stand out among the rest of created beings, without losing his fellowship with them. In his distinctness as “embodied spirit”, he “re-presents” God in the assembly of creatures where, by “tilling” and “naming”, he plays the role of enhancing the good inherent in the nature of things. In so doing, he exercises his mission of making creation feel as ever the presence and goodness of their Creator and

Maker. The eschatological highpoint of this mission is accomplished when, at the parousia, man, the embodied spirit, leads the entire creation to the praise of God in glory.

The model *Homo missionarius* therefore underlines a specific character of the human being. Being one with the rest of creation (dust of the earth/corporeality), he is at the same time distinguished from the rest by a spiritual substance (divine breath/living breath) unlike others. This opens in him the natural capability (*capax*) that makes him the go-between in the God-creation relationship. In him, creation beholds its maker (as in an image) while he holds brief for the Creator in creation as God's representation. By virtue of this vocation, mankind is set on a pedestal where he can play in creation the roles that are proper to God as king and caretaker. His inability to see himself as an agent on mission is perhaps one of the underlying factors fanning environmental crises in the present time. His missionary presence (*homo missionarius*), itself derived from his biblical description as “imago Dei”, clarifies his special place and presence in the world. This definition of mankind and his ministry is further elaborated with the use of the other two models, “caretaker/steward” and “priest of creation”.

**Mankind, the Steward of Creation** To describe mankind as “Steward of creation” is metaphoric, and points to work he is called to do in creation. Other related concepts, caretaker, conservator, curator, and its synonyms, custodian and keeper, are illustrative of his roles. A steward governs, administers, and manages the master's goods. He acts on behalf of the master. He manages another person's property on trust

and renders account of his stewardship since his actions will be judged by the master. The International Theological Commission (2002) illustrates this election with the help of two imageries. The royal imagery suggests that mankind is called to rule in the sense of holding an ascendancy over the whole of visible creation in the manner of a king, the other suggests that mankind is like the master of a household to whom God has confided the care of all his goods (cf. Mt 24:45). As steward (cf. Mt 25:14 ff), he has the freedom to develop the gifts which have been confided to him and to do so with a certain bold inventiveness. But he only exercises this sovereignty over visible creation in virtue of the privilege conferred upon him by God.

God the creator made mankind His viceroy and administrator of His creation. The word, “viceroy”, reminds of that “showy North American nymphalid butterfly (*Limenitis archippus*) that closely mimics the monarch in coloration” (MerriamWebster Dictionary) but it best clarifies mankind's calling. Humans are therefore neither replacements for God nor His rival. The commands, to “till” and “conquer” and “subdue” are invitations towards these three subordinate ends:

- i. to enhance the inherent good in every creature through culture and cultivation
- ii. to make creation glow (reproduce and blossom), a manifestation of God's glory on earth
- iii. to raise creation to the standard of God's delight (praise of the maker), the same way creation delighted God

at the close of His creative work. This is exemplified in worship and liturgy where the priest raises the bread and wine in praise of God.

The stewardship office is not strange to the Biblical tradition. God, the overall Lord of all creation, has the habit of appointing viceroys to serve in various capacities as judges, kings, prophets and priests. As it was the common understanding in the Old Testament times, these were His chosen instruments for the governance of his people, Israel. As shepherds are entrusted with the care of their flocks, so is mankind chosen to govern creation. Genesis 1:28 puts the picture clearly. Adam appeared in the picture with charges to administer the earth and its goods for God, as governor. The New Testament describes Jesus as one sent by God (2:22; 3:20) as Servant (Acts 3:13). Christ used 'good shepherd' as a metaphor to illustrate His governing style in contrast to the bad ones He described as mercenaries (John 10:1-16).

Stewardship agrees with the theological truths that:

- i. God is the owner of the world
- ii. He is the overall, ultimate governor of creation, and
- iii. He has entrusted mankind with special responsibility over it (Gen 1:28).

The implications are two-fold:

- a. Humans are not the authors of this stewardship, neither do they have any mandate to exploit creation and squander it. They are sent to manage it for God (Bartz).

- b. Stewards do not work for themselves. Mankind's stewardship goes beyond self-interest.

As Lee Balzer points out:

*... humans also have responsibilities to creation, as indicated by God's instructions that they cultivate and "take care" of it (Gen. 2:15). There is no authorization to plunder the garden, or to exploit it for selfish purposes, or to destroy it in recreation. God did not authorize Adam to gorge himself with garden products while starving Eve. The directives were to take care of nature, God's creation (Balzer, 1992).*

Teachings on human stewardship of the earth are widespread among the major religions in the world. It is a common feature among the Abrahamic religions in particular. The laws of bal taschis, for instance, forbids any wanton destruction or unnecessary waste of resources. This Jewish ecological perspective is based upon the Bible and Torah. Contemporary Muslim religious ecology is inspired by Qur'anic themes, such as mankind being khalifa, or trustee of God on earth (2:30). Christian environmentalists emphasize the ecological responsibilities of all Christians as stewards of God's earth. Besides these religions, engaged Buddhism applies Buddhist principles and teachings to social and environmental issues (Wikipedia, "spiritual ecology"). The manner of man's stewardship is highlighted in African Traditional Religion (ATR) as interactional. In this religious tradition, the universe is understood as a web of interactions in which the inanimate, animate and spiritual beings are locked up in a web of relationship. It is not illogical

therefore for Africans to tell stories connecting animals, human beings and spirits all acting together in community, with mankind as caretaker (cf. Nwachukwu 2007, 2011; Ogbonnaya 1998 and Onwubiko 1999).

Far from being the measure of governance himself, the steward must give account of stewardship and governance, hence his need to tread with caution, act with justice, love tenderly and walk humbly before God (Micah 6:8). Domination or exploitation and violent use of the earth and its resources are therefore estrangements from the vocation of mankind and meaning of stewardship.

Despite the inadequacies of this metaphor, it is still expedient for understanding the identity and proper role of men and women in the world, especially from this perspective of Job. Julien C.H. Smith, for instance, responds to the problems of anthropocentric undertone of this metaphor and its projection of mankind in a vertical and hierarchical lordship distanced from the rest of creation. Smith remarks that God quizzed Job on issues pertaining to all aspects of nature (Job, 38 & 39) in order to deconstruct this anthropocentrism and correct wrong grasps of human's mission. By a torrent of questions Job is gripped with "cosmic humility" and brought to a better understanding of the marvellous order in the cosmos, which moreover functions quite independently of him (Smith, 2012).

While humans remain members of the community of creation, they are by God to serve as stewards in creation:

The idea of stewardship is a useful one mainly from the point of view of what it intends to exclude,

namely that the human being is the lord and proprietor of creation. Such an understanding of the human being as a proprietor of creation found support in modern times mainly in two areas: the anthropology of the Enlightenment, and Western, particularly Protestant, theology (Metropolitan John of Pergamon, 2003).

#### Mankind, Priest of Creation

Mankind, the "steward of creation", is also "priest of creation". This model complements stewardship. This image is also a derivative of the same biblical concept of the human being as "*imago Dei*" (Gen 1:28), as that being who is at the same time "dust of the earth" and "breath of life" (Gen 2:7). Besides making up for the inadequacies associated with the use of "steward" as metaphor for mankind's presence in the midst of creation, and beyond a reconfirmation of his kingly roles as delegated administrator of the universe, this metaphor acknowledges and stresses mankind's inner qualities as an "embodied spirit" (Wolfhart Pannenberg, Systematic Theology) by virtue of which he, of all other earthly creatures, can transcend the delimitations of corporeality and while remaining part of that material creation. This metaphor opens our understanding towards grasping the final compliment of mankind's vocation to lead creation to its final destiny and reconciliation with God. No other creature, neither the angels in their purely spiritual nature nor others with solely material nature, has the capability (*capax naturalis*) to fulfil this mission aside from mankind.

The usage of this metaphor dates back to Orthodox and Patristic theology which had conceived mankind as the 'prince of

creation' and microcosm of the whole of creation. Its clearest expression is found in the thought of St Maximus the Confessor, for whom the human person is the connecting link between all the parts of creation and God (Saint Maximus, *Ad Thalassium* 51; *Ambigua* 41; CristianSebastian Sonea, 2012; Metropolitan John of Pergamon, 2013). This has spread beyond Christianity to Islam.

God created the human being for a purpose. He endowed him with a unifying character as centre of creation with the ultimate goal of bringing everything to God (Saint Maximus, *Ambigua* in PSB, note 8). Thus mankind is made the organic link between all parts of creation and God. The "Embodied Son" of God even made Himself human because he is the mediating link between God and creation. The process of unification has a structure: world-man-God, and chastically, God-man-world. After achieving the unification with the created, mankind would go ahead to unify the created with the Uncreated. This is what makes the human being a priest of the creation and a missionary of Christ (Cristian-Sebastian Sonea, 2012).

For Maximus, "all creation belongs to God and must be offered back to God as a gift". Again, "The one who offers creation back to God is precisely the human person" (*Ad Thalassium* 51), the priest. Priests' duties consist largely on representing the people in matters related to God and offering gifts and sacrifices (cf. Heb 5: 1- 4). So John of Pergamon writes:

A priest is the one who freely and, as himself an organic part of it, takes the world in his hands to refer it to God, and who, in return, brings

God's blessing to what he refers to God. Through this act, creation is brought into communion with God himself. This is the essence of priesthood, and it is only the human being who can do it, namely, unite the world in his hands in order to refer it to God, so that it can be united with God and thus saved and fulfilled.

As the idea of priesthood imports a habitual consciousness of the presence of God as the author and source of the mission and ministry, so also is mankind the gobetween, the intermediary, the link, between God and creation, a channel of communicating grace. For Maximus, mankind freely turns into a vehicle of communion with God and fellow human beings. Lossky commends this when he almost recapitulates this view of St. Maximus that man unites within himself the whole of creation, so that through uniting himself to God, mankind unites the whole of creation to God and deifies it (Lossky, *Mystical Theology*, 109).

Its relevance for this discussion is clear in John Zizioulas and Tsirpanlis. According to Zizioulas,

This means that material creation is not treated as means of obtaining pleasure and happiness for the individual, but as a sacred gift from God which is meant to foster and promote communion with God and with others. Such a 'liturgical' use of nature by human beings leads to forms of culture which are deeply respectful of material world while keeping the human person at the center (Zizioulas, 'Ecological

Asceticism: A Cultural Revolution', in Bordeianu).

While for Tsirpanlis, creation is saved through mankind: "To the universe, man is the hope of receiving grace and uniting with God, and also the danger of failure and fallenness" (Tsirpanlis, Introduction). Without this reference of creation to God the whole created universe will die because it is finite. The only way to protect the world from its finitude is to bring it into relation with God, the infinite, immortal being. This underlines the significance of man as the priest of creation, who would unite the world and relate it to God so that it may live forever. This is integral ecology at its best. It defines properly speaking the mission of humans in the world.

#### [Environmental Sin Versus Responsible Presence](#)

The universe can be compared with the home in which the person plays a principal role. According to Benedict XVI,

... for the human family, this home is the earth, the environment that God the Creator has given us to inhabit with creativity and responsibility... it has been entrusted to men and women to be protected and cultivated with responsible freedom, with, the good of all as a constant guiding criterion" (n. 7, *L'Osservatore Romano*, English Edition, 19/26 December 2007, p. 8).

In obedience to the commands, "till" and "name" (Gen 1:28 and Gen 2: 19), mankind has occupied the office of God on earth as His viceroy, "re-presenter", and caretaker. Springing from this, the Roman Catholic Church has devoted much energy in developing an ecological theology in which

this responsibility has been highlighted, and ever insisted that whatever undermines it is reprobated. The nature of this responsibility is highlighted in the Catechism of the Catholic Church (CCC) which says:

Creation has its own goodness and proper perfection, but it did not spring forth complete from the hands of the Creator. The universe was created "in a state of journeying" (in *statu viae*) toward an ultimate perfection yet to be attained, to which God has destined it (CCC, 302).

In this creaturely dimension of nature, the world presents itself before mankind's eyes as evidence of God, the place where his creative, providential and redemptive power unfolds" (Pontifical Council for Justice and Peace, 2005).

Nature (creation, environment and everything they contain) is therefore placed at mankind's disposal for a purpose (Benedict XVI, 2009. *Caritas in Veritate*, no. 48):

Nature expresses a design of love and truth. It is prior to us, and it has been given to us by God as the setting for our life. Nature speaks to us of the Creator (cf. Rom 1:20) and his love for humanity. It is destined to be 'recapitulated' in Christ at the end of time (cf. Eph 1:9-10; Col 1:19-20). Thus it too is a 'vocation'. Nature is at our disposal not as 'a heap of scattered refuse', but as a gift of the Creator who has given it an inbuilt order, enabling man to draw from it the principles needed in order 'to till it and keep it' (Gen 2:15).

All these fit in into the overall picture and scope of the responsibility entrusted to mankind's care. This covers the created earth and its environments. He is called to cultivate it and, according to St Maximus the Confessor and to lead it back to God in worship.

The dominion granted by the Creator over the mineral, vegetable, and animal resources of the universe cannot be separated from respect for moral obligations, including those toward generations to come.

Animals are entrusted to man's stewardship; he must show them kindness (CCC, 2456, 2457)

He is entrusted with the “duty to exercise responsible stewardship over creation, to care for it and to cultivate it” (Benedict XVI, 2010, Message for World Day of Peace, No. 6).

The measure in which mankind is able to administer and enhance the good in the nature of things, then, and the measure in which he is able to guide this creation to the glory and praise of God constitute mankind's responsible presence in the world. Any form of deviation from this mission, either through exploitative use or abusive interference, smacks of irresponsibility. Scientific findings, as indicated in many of the studies mentioned earlier show how mankind, the architect of many environmental crises, has deviated from his God-given mission and drifted from being the caretaker of creation into a predator of creation in the way he has treated the earth and its resources. In neglecting or arbitrarily violating any or certain aspects of creation and the environment, he has not only ceases to be God's “co-worker”, he rebels against God.

He turns his back on the Creator's plan, and provokes rebellion on the part of nature.

This disorder has inevitable repercussions on the rest of the created order, for, in the depleting nature, human dignity diminishes, sacredness is lost and future generations are subjected to intractable need.

When man turns his back on the Creator's plan, he provokes a disorder which has inevitable repercussions on the rest of the created order: 'Therefore the land mourns and all who dwell in it languish, and also the beasts of the field and the birds of the air and even the fish of the sea are taken away' (Hos. 4:3) (John Paul II, **1990, no 5**).

This deviation by way of exploitative use and interference constitutes environmental sin. If mankind is not at peace with God, then the earth itself cannot be at peace. This explains why in the Genesis account of the Fall and the consequent judgment, the earth was cursed all because of the sin of Adam (Gen 3:17; Rom 5).

John Paul II (1990) points out its ethical implications in his speech on environmental justice and warns against environmental sin: “we cannot interfere in one area of the ecosystem without paying due attention both to the consequences of such interference in other areas and to the well-being of future generations” (John Paul XII, 1990. no. 6). St Paul affirms that the sin of Adam has effects on the whole of creation. It left the earth in a deplorable condition, like one suspended in the act of giving birth: “...the whole creation has been groaning as in the pains of childbirth right up to the present time” and awaits eagerly

“...for the sons of God to be revealed . . . that the creation itself will be liberated from its bondage to decay and brought into the glorious freedom of the children of God...” (Rom. 8:19, 21-22). *The Anglican senior cleric, Most Revd Dr Philip Freier, writes:*

*Because of human sin, the created order we experience is one which has been 'subjected to decay' (Rom 8:21). The created order continues to suffer because of our sin, as our greed leads us to excessive consumption and the exploitation of the environment. We pervert our God-given dominion over nature into a domination of it.*

An African adage says that “when the lion feeds, something dies”. The lion is a predator that grows fat at the expense of other animals. Like a lion, mankind has become a predator and a dreaded foe to other creatures. He has thus upset the original plan of God and rather put human preferences and plans as replacements (cf. Gen 3: 1 – 11). Humanity is lost and the steward turns into a beast. As a despot unleashes his vendetta on his subjects, so has mankind the environment. The result is the present day persisting conflictual tension with God, with fellow humans and even with nature.

It is not only nature that suffers the consequences of human sin (cf. Rom 8:23). “The whole human race suffers as a result of environmental blight, and generations yet unborn will bear the price for our failure to act today” (Renato, 2008). The cry of the earth re-echoes with renewed vigour in our own time. It cries for hearing and for mercy.

It bleeds with wounds of human exploitation, degradation and abusive use.

[Deforestation, an Indicator of](#)

### **Environmental Sin and Irresponsibility**

It is deducible from the various scientific and theological studies that the negative application of mankind's talents and abusive use of forest and other God-given resources cannot but be described as an act of environmental irresponsibility and sin. Since trees absorb those greenhouse gases that are responsible for much of present day environmental crises and play such inalienable roles as the maintenance of ecological balance, such massive deforestation as taking place in Nigeria and elsewhere in the world today is obviously deviational and predatory. It has turned out to be one of the greatest causes of present day global ecological crises. In traditional African societies, destruction of forests is an unwholesome practice which breaches the unity and communion among the various “populations” of her numerous ecosystems (uwa). In the Christian tradition, deforestation exhibits the human tendency to create rivalry with the Maker (Gen 11:4), to exploit and not to care (Ezk. 34:7, 8). This is a vitiation of humankind's call to responsible stewardship over creation (Benedict XVI, World Day of Peace, 2010. no.6).

*The way humanity treats the environment influences the way it treats itself, and vice versa.* This invites contemporary society to a serious review of its life-style, which, in many parts of the world, is *prone to hedonism and consumerism*, regardless of their harmful consequences. . . . Every violation of solidarity and civic friendship harms the environment, just as environmental deterioration in turn upsets relations in society. Nature, especially in our time, is so

integrated into the dynamics of society and culture that by now it hardly constitutes an independent variable (Benedict XVI, *Caritas in Veritate*, No. 51).

As John Paul II states in his Message for the World Day of Peace (1990): "... the seriousness of the ecological issue", and especially deforestation, "lays bare the depth of man's moral crisis". By so doing, mankind creates its own autonomy from God, as he matches in the footsteps of the old Adam:

When man turns his back on the Creator's plan, he provokes a disorder which has inevitable repercussions on the rest of the created order. If man is not at peace with God, then earth itself cannot be at peace: 'Therefore the land mourns and all who dwell in it languish, and also the beasts of the field and the birds of the air and even the fish of the sea are taken away' (Hos 4:3). (John Paul II, 1990. no. 5).

Once mankind, instead of acting as God's co-worker, sets himself up in place of God, he ends up provoking a rebellion on the part of nature, 'which is more tyrannized than governed by him'. This is sin against humanity today and against environment and the future generations.

Environmental degradation is an outcome of abuse and a sign of irresponsible presence. This contradicts what it means to be human (USCCB, 1991). It occurs when mankind denies the earth of the providential care he is entrusted to dispense as God's agent and viceroy. Deforestation and the use of the earth's resources to the

point of degrading it show an abuse of responsibility. In so doing, mankind shoves aside that responsibility in preference for his own autonomy and pleasure and makes himself no longer the Creator's "steward" but "an autonomous despot" (John Paul II, General Audience, 17 Jan, 2001). It calls men and women to conversion of heart.

#### [A Call for Ecological Conversion and the Invitation Of Christ](#)

Environmental irresponsibility, as environmental sin, and as any other type of sin, indicates the overall moral and spiritual atrophy and apathy in today's societies. This all manifests mankind's rejection of the Creator's sovereignty over him and his activities. It is directly opposed to the true understanding of the God-man relationship on the one hand, and between humans and creation on the other. Deriving from this, as Pope Paul VI pointed out, is a world that is plunged in a permanent menace, saddled with pollution, and refuse, new illness and with an absolute destructive capacity because creation has now rebelled against human control (Octogesima Adveniens, 1971 no. 21). This situation compels an urgent need for conversion (ecoconversion) of heart. This need requires all humans to look inward and turn on a new look at creation in order to take on responsibility for our common destiny.

The question of conversion bothers, according to Celia Deane-Drummond (2012), on "what might help to realign human societies with God and other creatures in a way that will promote a proper recognition of the earth as gift?" This presupposes an acknowledgement of the harm to which the earth has been subjected and the honest effort to undo that harm. Pope St John Paul II had proposed ecological conversion as the only viable

step toward a sustainable ecology and environmental health. This step “is less about the turn to nature and more about a responsible and loving attitude towards it, inspired by an appropriate appreciation of the particular role of human beings” (Deane-Drummond, 2012).

Sallie McFague's commentary on Matt 6:22 emphasizes the urgency of this conversion with the imagery of the “eye and body”. “The eye is the lamp of the body”, she says. “So if the eye is healthy, your whole body will be full of light; but if your eye is unhealthy, your whole body will be full of darkness” (Matt 6:22-23). She distinguishes the “arrogant eye” from the “loving eye”. Whereas the arrogant eye refers to that eye that objectifies, manipulates, uses and exploits, the loving eye requires detachment to see the difference, distinctiveness and the other's uniqueness (Sallie McFague, 2002).

Ecological conversion invites everyone to a new way of *seeing, thinking* and *acting*. Following the proposition of Deane-Drummond, it requires adopting a new vision about the earth and its resources as typified in the Book of Job. This Book is a reference point in this call to ecological conversion. It calls all men to perceive the created world in a manner analogous to the way God does. She invites us all to revisit our theology of creation by rereading Genesis chapters 1 and 2 in the light of the Book of Job, which she describes as a correction to the dominant wisdom in the rest of the Bible. She writes:

The book of Job ... forces humanity away from self-absorption in order to consider the majesty of creation and its goodness, almost as a poetic response to the suffering of Job and

the relative lack of wisdom of his counsellors.

Three relevant points are deduced from this description's of the Book of Job:

- i. it challenges the preconceived ideas about the way God orders the world,
- ii. encourages a deeper sense of interconnection with the created order, and
- iii. enhances a sense of a shared mortality among all creaturely beings (2012).

She supposes therefore that eco-conversion is possible where we are able to see the world the way God does, appreciate the proper role of humans in relation to other creatures, and become moved to a prayerful acknowledgement of the grace of God which alone, is able to transform human hearts. St Basil the Great once professed this profound need for conversion towards the world and its creatures in his time:

O God, enlarge within us the sense of fellowship with all living things, our brothers the animals to whom thou gavest the earth as their home in common with us. We remember with shame that in the past we have exercised the high dominion of [humankind] with ruthless cruelty so that the voice of the earth, which should have gone up in song, has been a groan of travail. May we realise that they live not for us alone but for themselves and for thee, and that they love the sweetness of life (in Deane-Drummond, 2012).

Adam's inability to achieve this harmony and communion created a disjunction

between the Creator and creatures. Christ's redemptive mission re-established the connection. This is the Good News. He commanded His followers to announce the Good News and call all to repentance and conversion, beginning from Judea and Samaria (Acts 1:8). This is indeed the deeper meaning of and genuine conversion in Christ. This is the type that "... enables humanity 'to fulfil its vocation', for human beings are 'called to collaborate with God in watching over creation in holiness and wisdom'" (John Paul II and the Ecumenical Patriarch, *His Holiness, Bartholomew*, 2002). It is therefore a call and an invitation in Christ to return to the original mission of caring for our common home.

A converted soul in Christ matches in the footsteps of Christ – in the way of wisdom – and now sees all things as loved by God and as revelatory of God (with the eye of love). This soul acknowledges Adam's loss of vision, and its own defection in the footsteps of his predecessor, Adam, and gets moved with "shame" over the "high dominion" and "ruthless cruelty" with which humanity has dealt with the earth and becomes poised, like the vinedresser, to listen to the cry of the vine (the earth) as to the cry of a sister or a brother. Pope Francis sees the current situation of the earth today as one of a crying fellow-creature, a "sister Moon" and a "brother Sun":

This sister (the earth) now cries out to us because of the wounds we have inflicted on her by our irresponsible use and abuse of the goods with which God has endowed her ... We have forgotten that we ourselves are dust of the earth (cf. Gen 2: 7); our very bodies are made up of her elements, we breathe her air and receive life and refreshment

from her waters (Francis, *Laudato Si*, no.2).

This is an awareness that leads to a change of heart and obedience to the redeeming Lord. This alone guarantees a return to humankind's original vocation as caretaker of creation.

#### 5. Summary

This paper joins in discussions on the reality and dangers of environmental degradation and ecological crisis in the world today. It agrees with other contributors that mankind's failure to play responsibly its roles in creation is mostly the cause, and that despite the widespread outcry over the problem and its disastrous consequences, this irresponsibility keeps growing by the day. The paper does not just call attention to the dangers of such predatory attitudes, but denigrates them as sinful and, calls attention to mankind's identity as *imago Dei* as an ontological base for redirection and healing. It opines that a genuine understanding of humankind's identity and relevance in creation is at the root of sustainable ecology, hence, it highlights mankind's privileged roles by which his duties as steward and priest of creation serve as metaphors offer one with a more fruitful appreciation of mankind's relationship and attitude towards the environment placed in his charge.

Conversion therefore takes mankind towards a rediscovery of himself in a new ecological compass and in the wider family of creation. This alone is the root of every sustainable eco-friendliness and sensitivity that can fashion responsible human behaviour and make humans to see the environment as home while accepting nonhuman creatures as "neighbours" and "companions" with whom they match

towards their destiny. It is only at this point can mankind's presence in the world become more truly responsible.

The following conclusions are drawn:

- i. Since mankind's uniqueness lies so much in that "missionary" presence, the abusive use of creatures entrusted to its care is a perversion.
- ii. Since such destructive activities as deforestation are in themselves threats to both the quality and future of all life forms in the world, they are predatory.
- iii. Since humans have become predators, their presence is now a threat and their conduct irresponsible and sinful.
- iv. However, there is hope if mankind adopts an "ecological spirituality" which prizes each creature beyond the economy and politics to its roles in the biosphere and its ecosystems, to its destiny, glory of God (Eph 1: 10). This brings mankind to conversion.

Based on the above, the paper makes the following recommendations:

1. Education on ecological responsibility. A reinsertion of Nature Study and religion into school curricula, especially at the basic level, is highly recommended, and
2. Effective town and regional planning policies that anticipate and address population pressures on the environment, especially in urban and peri-urban centres

In the meantime, these short term practical measures can be adopted:

3. Vigilant watch over the use of the environment. Environmental laws, policies and regulations on land use and forestland conservation, especially in developing countries, should not be left in the hands of local communities and governments alone, and
4. Tree planting should be made a policy in local communities, public and private institutions and homes.

Wangari Maathai's example in Kenya can be emulated.

These other recommendations are strongly recommended as the moral and spiritual basis of any authentic and sustainable environmental healing:

5. Prayer and contemplation. Mankind's emptiness and yearnings cannot be satisfied by possession and consumption alone (cf., LS, no. 204). He needs God. Prayer connects mankind to God who enlightens him on his duty to steward and guide creation. Contemplation instils reverence, repentance, discipline and self-sacrifice.
6. Review of *life style*. Solution to prevalent ecological problems demands the replacement of consumerist culture of possession, use and dump with that of conservation and care.
7. A new ethical culture: the culture of life and solidarity. This guarantees

respect for the integrity of creation by inspiring an environmentally ethical behaviour drawn from mankind's relationship with God and oneness with creation. This offers a foundation for solidarity, interdependence and co-responsibility.

8. Ecological conversion. While Ecological crisis is “a summons to profound interior conversion” (LS, no. 217), conversion invites all mankind to recognize the earth as “our common origin...” (LS., no. 202), listen to the cries of the poor and those of the earth and invites mankind to examination of conscience.

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