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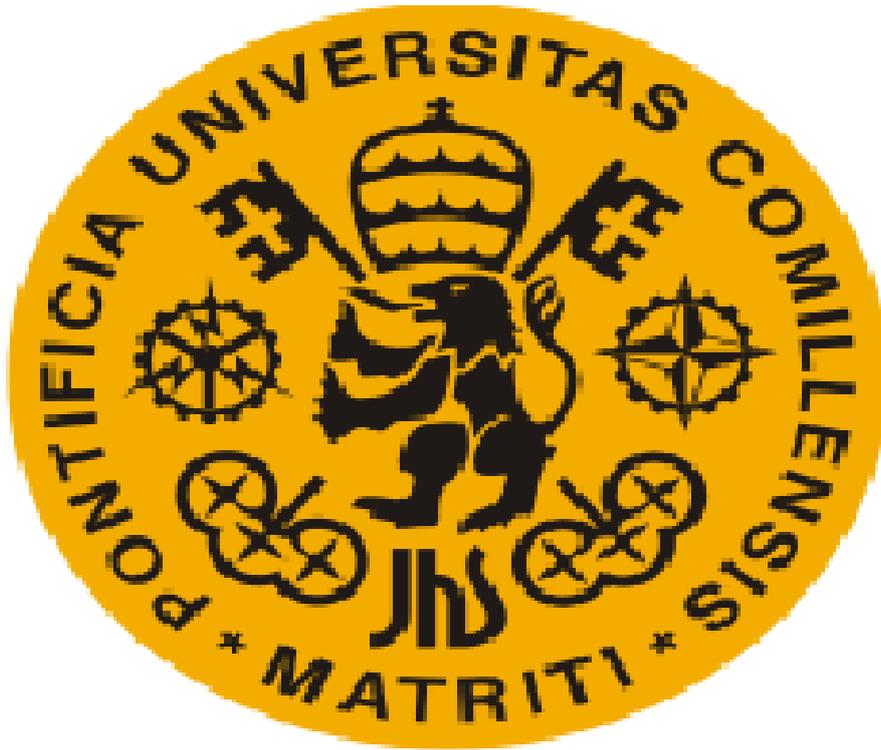
**ECOLOGICAL SOLIDARITY
AS A PARADIGM FOR SUSTAINABLE
DEVELOPMENT IN AFRICA.**

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General Introduction

Having done a semester course on ecology, coupled with my experiences in working for years in some African communities, I have come to realize that part of the elements that worsen the gory situation of poverty and underdevelopment in Africa stems from natural causes. From every indication, most communities in Africa are agrarian. Their livelihood (agriculture) is heavily dependent on natural factors like rain, sun, storm etc. Thus, the issue of climate change is worsening the already dire situation in Africa. Rainfall has become scares and at irregular intervals. The sun has become more scorching to the detriment of crops. The land has become so difficult to till. The rivers and streams are shrinking by the day. These and lots more are the grave problems facing the African continent.

The tragic dilemma is that although Africa is the continent that contributes the least to the earth's environmental change, it is the most vulnerable to its impact. From studies made, the first world countries are major contributors to the ecological crisis experienced in our world today. But because they have advanced technology and a stable economy, they are not directly feeling the consequences of their actions.

It is worthy to note that “all is connected”. This was what Pope Francis emphasised in his encyclical *Laudato Si'*. That we all have the earth as *our common home*, plant, animals and human beings alike. We have been created to survive interdependently with other living organisms. For example the oxygen we need to survive as humans is only made available by plants. Furthermore, our actions or inactions here and now have effects on others who live thousands of miles away as well as our future generation.

I intend in this research to bring to the fore this awareness of interconnectivity that exists in nature. I believe that once we come to terms with this awareness we will be heading towards the right direction to solving the world's problems. Africa is one of the worse hit continent for now, but the domino effect will definitely be global as we see in the case of migration for example.

Therefore, in the context of Ecological Solidarity, which I want to propose as part of the solution to sustainable development in Africa, the developed nations would come to the awareness that they are part of a natural contract with the rest of the living world. In recognising their ecological solidarity, they are not just part of natural systems whose dynamics they greatly influence, but can also evaluate the impact of their activities and examine their contribution to ecosystem integrity by adapted and responsible forms of management.

This work is divided into six chapters. The first two chapters look at the significance, meaning and foundation of solidarity and sustainable

development. In the third and fourth chapter, we will examine the ecological crisis as it affects the world as a whole and Africa in particular. Chapter five will be concerned with the causes of the ecological crisis and the solution will be given in the sixth and final chapter.

Chapter 1. Solidarity: meaning and significance.

The term *solidarity* is not unique to Catholic thought. Numerous social theorists and philosophers have developed this concept. Other religious and cultural traditions also speak of solidarity, or analogous ideas. For example the African concept of ubuntu which would be discussed later. The expression *solidarity* has received a variety of interpretations, which makes it necessary to undertake a more detailed analysis of it in order to achieve better comprehension of its real meaning. Nevertheless, the Catholic social tradition has perhaps most fully developed a theory of solidarity over the last century¹.

Etymologically, the word *solidarity*, whose root relates back to the Latin *solidum*, evokes the idea of creating cohesion or forming a whole. One might therefore infer that this root points towards a composite object where the whole is held firmly together.² Some authors traced the term back to Roman civil law where in this specific legal context, the *obligatio in solidum* - a commitment for an entirety or a whole - establishes a collective of debtors whose members are jointly liable for a common financial obligation. Every participant assumes responsibility not only for her individual share, but for the full common debt.³ Thus, it is plausible to base the systematic moral notion of solidarity on this initial reference to a *solidum*, a binding common point of reference.

Solidarity as conceived in the Catholic Social Teaching provides a robust and useful understanding of the social obligations of individuals, communities, institutions, and nations. While Pius XII was the first pope to use the word in discussing the unity and care of the church in his encyclical *Summi Pontificatus* of 1939, it was Pope John XXIII who in his encyclical *Mater et magistra* in 1961, introduced it into modern Catholic social teaching⁴. For pope Francis, “the word ‘solidarity’ is a little worn and at times poorly understood, but it refers to something more than a few sporadic acts of generosity”. “It presumes the creation of a new mindset which thinks in terms of community and the priority of the life of all over the appropriation of goods by a few”⁵.

This principle goes beyond compassion for each other. It instead requires a deep sense of belonging to and being responsible for one another personally and socially. This means that not only do our personal relationships with one another need to be binding and truly loving, we need to make our social structures and relations this way also.

¹ G. J. Beyer. “The Meaning of Solidarity in Catholic Social Teaching”. *Political Theology* 15 n° 1 (2014): 7.

² T. Boni. “Solidarity and Human Insecurity: Rethinking Solidarity from the Point of View of Africa”. *Diogenes* 2014, Vol. 59(2014): 73.

³ S. Derpmann. “The Solidum in Solidarity”. *on_education* 4, n° 10 (2021): 1.

⁴ M. J. Clark. “Pope Francis and the Christological Dimensions of Solidarity in Catholic Social Teaching”. *Theological Studies* 80, n° 1 (2019): 103.

⁵ C.f. Pope Francis. *Laudato Si'*. 186. *Evangelium Gaudium* 188.

Over the years, the Catholic Social Teaching has proposed *solidarity* as an attitude, a principle, a duty, a virtue, and even as a path to peace and development as the church grapples with globalization. Thus in this chapter we shall look at these various aspects of solidarity as well as the African concept of *ubuntu* which may be useful to the understanding of the term *solidarity*. We shall now look at its biblical and theological foundation.

1.1. Biblical and Theological Foundations of solidarity

The word *solidarity* may not have appeared in the Sacred Scripture. Nonetheless, any historical evaluation of its development in Catholic teaching must acknowledge that “long before becoming a theme of theological reflection, solidarity had been Christian praxis”⁶.

The first pope to have explicitly used the term ‘solidarity’ in his writings was Pope Pius XII. In his 1939 encyclical *Summi Pontificatus*, he argues that the first page of Scripture undergirds the law of human solidarity and charity, revealing our common origin and that all human beings are created in the image of God. According to him, even though humans abandoned God and the friendship God intended for them, God will one day reunite them⁷. For him solidarity “is dictated and imposed by our common origin and by the equality of rational nature in all men, to whatever people they belong”⁸.

In addition, the Magisterium consistently associates man’s personal vocation and social dimension with the doctrine of the *imago Dei*. The recognition of the *imago Dei* in all persons that we find in Genesis 1:27, which connotes equal dignity, enables the apprehension of human solidarity. God, who has fatherly concern for everyone, has willed that all men should constitute one family and treat one another in a spirit of brotherhood⁹. With reference to the Acts 17: 26, the *Catechism of the Catholic Church* puts it succinctly: “Because of its common origin the human race forms a unity, for ‘from one ancestor [God] made all nations to inhabit the whole earth’”¹⁰. Because we have one father, we are all brothers. And that is why any other commandment is summed up in: “You shall love your neighbour as yourself”¹¹.

G. Beyer gave a summary of some contemporary scholars who support and expand this understanding of the biblical and theological basis of solidarity. For example, Reinhard Achenbach sees an “ethic of social solidarity” in Deuteronomy, which stems from the notion of brotherhood¹². This solidarity includes all Israelites and extends to the resident alien. Beginning with the Exodus liberation narrative, Juan Hernandez Pico, locates solidarity throughout the Hebrew Bible. He shows how the Hebrew Bible repeatedly envisions God’s breaking into history as a response to the mighty cry of the oppressed. Just as God takes sides against oppression, humans must also struggle against it, as did the true prophets of Israel. He further analyses

⁶ Jon Sobrino and Juan Hernandez Pico. *Theology of Christian Solidarity*, trans. Philip Berryman . Maryknoll, New York: Orbis Books, 1985, 47.

⁷ G. J. Beyer. “The Meaning of Solidarity in Catholic Social Teaching”, 9.

⁸ Pope Pius XII. *Summi Pontificatus* 1939.

⁹ *Gaudium et spes* 24.

¹⁰ Catechism of the Catholic Church, 360.

¹¹ C.f Rom. 13:9-10; 1 Jn. 4:20.

¹² G. J. Beyer. “The Meaning of Solidarity in Catholic Social Teaching”. *Political Theology* 15 n° 1 (2014): 10-11.

numerous Gospel passages like the foot washing in Jn. 13:1–20, wherein Jesus inaugurates a *new human community*, in which there is no inequality but only mutual service, a co-responsibility of brothers and sisters to one another¹³. For Fr. Jozef Tischner, solidarity essentially means “to carry the burden of another person”, paraphrasing Galatians 6:2¹⁴.

Furthermore, comparative theologian John Sheveland demonstrates that Paul’s letters also provide fertile ground for an ethic of solidarity¹⁵. In particular, Paul’s theology of the body of Christ¹⁶ underscores the unity of distinct members, the reconciliation of difference and the vocation to care for one another. Among Christian theological doctrines like *the communion of saints* and *the resurrection of the dead*, a new and profound understanding is given to the principle of solidarity¹⁷.

Obviously, we may not find the word solidarity in the Bible, but it is replete with numerous texts that provides a foundation for modern Catholic Social Teaching. And the Church has developed its conception of solidarity within a rich biblical and theological framework. The common biblical origin of the human person as a basis for our solidarity is further reinforced by Christ.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ 1 Cor. 12:12–26.

¹⁷ G. J. Beyer. “The Meaning of Solidarity in Catholic Social Teaching”, 11.

1.2. The Christological dimension of solidarity

Gaudium et spes illuminates anthropology with the light of Christology and teaches that only in Jesus Christ, the Son of God made man, “does the mystery of man take on light”. In fact, it tells us that, Jesus Christ is “the image of the invisible God”, he is “the perfect man. For by his Incarnation the Son of God has united himself in some fashion with every man. Consequently, everything about the human subject and his inviolable dignity has in Jesus Christ its “root” and in him attains its “crown”.¹⁸

In emphasizing the Christological, and particularly the incarnational, aspects of solidarity, Pope Francis presents *solidarity* not merely as an ethical principle or virtue but as a way of being Christian, a way of relationship with Jesus.¹⁹ Jesus takes the centre stage of his theological view of solidarity. According to Francis, Jesus who became human “to express brotherly solidarity, a solidarity which comes from his love for the Father and from his love for us” becomes the model of solidarity.²⁰ In his 2016 World Day of Peace Message, he began as follows: “God is not indifferent! God cares about mankind! God does not abandon us!”. In Jesus his son, He came down among us. He took flesh and showed his solidarity with humanity in all things but sin. He identified with us.²¹ So the incarnation shows us that God is in solidarity with humanity and with human history. As Michael Himes incisively notes, “the Incarnation tells us what it means to be human.”²² It is the revelation not only of who we are, but who humanity is called to be.²³ A key statement is found in *Gaudium et spes* 22, as it relates its Christology to the human being with this bold assertion: The truth is that only in the mystery of the Incarnate Word does the mystery of man take on life.

In Jesus, God enters into our reality, into human weakness, fragility, and finitude, by becoming close to us, by showing true solidarity, especially to the poor and needy. Jesus is the model of solidarity. He did this through his teachings, ministry with marginalized peoples and confrontation with structures of injustice. He did not hesitate to humble himself, to the point of dying for each one of us, to express brotherly solidarity. Thus, Pope Francis argues that “our faith in Christ, who became poor, and was always close to the poor and outcast, is the basis for our concern for the integral development of

¹⁸ *Gaudium et spes* 22.

¹⁹ M. J. Clark. “Pope Francis and the Christological Dimensions of Solidarity in Catholic Social Teaching”, 110.

²⁰ Pope Francis. Address on the visit to the people of Bañado Norte, Paraguay. 12 July, 2015. https://www.vatican.va/content/francesco/en/speeches/2015/july/documents/papa-francesco_20150712_paraguay-banado-norte.html

²¹ Pope Francis. “Overcome Indifference and Win Peace”. Message for World Day of Peace, 1 Jan. 2016, 5.

²² Michael Himes. *The Mystery of Faith: An Introduction to Catholicism*. Cincinnati, OH: St. Anthony Messenger, 2004), 1516.

²³ M. J. Clark. “Pope Francis and the Christological Dimensions of Solidarity in Catholic Social Teaching”, 111.

societies most neglected members.”²⁴ He sees solidarity fully realized when encounter with the marginalized and vulnerable is understood and experienced as an encounter with Christ.²⁵ Encounter with the poor and encounter with Christ are thus inextricably connected. The parable of the *last judgement* in the gospel of Matthew 25 exemplifies this fact. In this parable, Jesus does not identify himself with those who offer assistance by feeding the hungry, clothing the naked, and so on; rather, he identifies himself with those who are hungry, homeless, or imprisoned; the vulnerable, marginalized, and excluded.²⁶ As noted by Meghan Clark, “Incarnational solidarity takes Jesus’s identification with those on the peripheries, those who are excluded, and emphasizes a response that is both personal and communal”²⁷. It is also a recognition that in discarding those on the margins, one is also discarding Christ.

The Compendium of the Social Doctrine of the Church, shows that the theological grounding of solidarity as both virtue and social principle is Christological at its core: Jesus of Nazareth is the “living sign of that measureless and transcendent love of God-with-us, who takes on the infirmities of the people, walks with them, saves them and makes them one”. It further emphasizes the incarnational view of the vision of discipleship: one’s neighbour becomes the “living image of God” to be loved with the same love with which the Lord loves us²⁸.

As we have seen, the most compelling example of solidarity in all of history is Christ himself. God becoming human, becoming one of us. And suffering with us is the greatest act of solidarity. God knows what we go through because he became one of us. There is no solidarity greater than this. The solidarity of Christ with mankind is the absolute perfection of this virtue. The fathers of the church teach that “Jesus Christ had to become what we are, in order to make us become what he is; that he became incarnate in order that the deliverance should be accomplished by a man, as the fall had been accomplished by a man; that Christ, as redeemer, comprises and summarises all humanity”²⁹. According to Brendan O’Connor, in the order of redemption, “the role of the virtue of solidarity [...] is to serve as the basis in human nature for the supernatural virtue of fraternal charity, without which the elevated goal of man cannot be attained”³⁰.

²⁴ Pope Francis. *Evangelium Gaudium*, 186.

²⁵ M. J. Clark. “Pope Francis and the Christological Dimensions of Solidarity in Catholic Social Teaching”, 112.

²⁶ *Ibid.*, 112-113.

²⁷ *Ibid.*

²⁸ *Compendium of the Social Doctrine of the Church*, 196.

²⁹ B. O’Connor. Human solidarity A Thomistic Perspective. *Cuadernos Doctorales de la Facultad de Teología* 59 (2012): 398.

³⁰ *Ibid.*

Jesus embodies the way God does things, through his life and work. "Exodus and resurrection, cross and liberation are not disparate entities, but caught up in the same liberation movement, represent the same divine reality effected by the same liberating God"³¹. If we believe that Jesus is God, and this is the way God is working in the world, then the content of Christian ethics must be working *with* God's mission to change inhuman conditions, to be with and for the oppressed in a way which ultimately leads to their liberation³². If God-incarnate is identified with the poor and abandoned, then "our Biblical faith must stop and remind us that the person in front of us is just like Jesus"³³. If we are to be in communion with God and God's body, we must be in communion with these people too. It therefore goes without saying that the incarnation of Jesus is an affirmation that the character of God is one who is for the oppressed and forgotten people, and who works for their liberation.

Jesus not only demonstrates solidarity but demands it of us, his followers. I agree with Uzochukwu J. Njoku³⁴, who opines that the vision of solidarity that is relevant in the face of contemporary challenges ought to involve the Christian commitment to love of neighbour, not only through gifts and appeals to the powerful but also through questioning the structures of society and in establishing such mediating institutions that give expression to the dignity of persons. In fact "faith that does not draw us into solidarity is a faith that is dead and deceitful. A faith without solidarity is a faith without Christ"³⁵. Morally, we are obliged by our faith in Christ to be heralds of his gospel and to be concerned with the plights of others. Let us now see the moral obligation placed on us by the principle of solidarity.

³¹ Allan Boesak, *Farewell to Innocence: A Socio-Ethical Study on Black Theology and Black Power*. Maryknoll, N.Y: Orbis Books, 1977, 122.

³² R. M. Douglas "Solidarity and the incarnation. A dialogue with Denise Ackermann and Allan Boesak". *Stellenbosch Theological Journal* 5, n° 3 (2019), 276.

³³ *Ibid.*, 279.

³⁴ U. J. Njoku. "Re-thinking Solidarity as a Principle of Catholic Social Teaching: Going Beyond *Gaudium et spes* and the Social Encyclicals of John Paul II". *Political Theology* 9, n° 4 (2008): 542.

³⁵ Pope Francis. Address on the visit to the people of Bañado Norte.

1.3. The moral obligation of solidarity

As Pope Paul VI affirmed: “We are the heirs of earlier generations, and we reap benefits from the efforts of our contemporaries; we are under obligation to all men. Therefore we cannot disregard the welfare of those who will come after us to increase the human family. The reality of human solidarity brings us not only benefits but also obligations”³⁶. *Populorum Progressio* offers this baseline ethics about human existence. It opines that if indeed we are morally serious persons, there are human conditions that are morally unacceptable³⁷. It spells out factors that widen the gap between the *haves* and *have-nots*, and the result is an obscene inequality with a small minority enjoying the wealth and products of the whole³⁸. Against this backdrop, Paul VI articulates the Church’s responsibility in the progressive development of the human person in all its ramifications. This sense of responsibility is key for his principal plea that the wealthier nations and persons should be ethically moved by the tears and cries of the “wretched of the earth”. “Genuine progress does not consist in wealth sought for personal comfort or for its own sake; rather it consists in an economic order designed for the welfare of the human person, where the daily bread that each man receives reflects the glow of brotherly love and the helping hand of God”³⁹. He warns of grave dangers if the world does not make haste to reform and restructure both domestic and international economic systems based on Western style capitalist economies⁴⁰.

In *Sollicitudo Rei Socialis*, which commemorates *Populorum Progressio*’s twentieth anniversary, John Paul II shares a similar diagnosis of social disorders as Paul VI. The stronger and more contentious claim of Catholic social thought is that our interdependence imposes a duty on us all. As Pope John Paul II explains, “[T]he conviction is growing of a radical interdependence and consequently of the need for a solidarity which will take interdependence and transfer it to the moral plane”⁴¹. Because nobody is an island, solidarity becomes an obligation arising from the fact of our interdependence. This vision of flourishing together, of radical interdependence, is a positive quality of humanity. And this is why Pope Francis reminds us that as human beings “we come from others, we belong to

³⁶ Pope Paul VI. *Populorum progressio*. Encyclical letter. 26 March, 1967, 17.

https://www.vatican.va/content/paul-vi/en/encyclicals/documents/hf_p-vi_enc_26031967_populorum.html

³⁷ R. Aina. “*Populorum Progressio*’s Vision in an Unequal World: A Theological Ethical Evaluation from the Global South”. *Journal of Moral Theology* 6, n° 1 (2017): 97.

³⁸ *Populorum progressio*, 9.

³⁹ *Ibid.*, 86.

⁴⁰ *Ibid.*, 29-30

⁴¹ Pope John Paul II. *Sollicitudo Rei Socialis* (SRS). Encyclical letter. 30 December, 1987, 26.

https://www.vatican.va/content/john-paul-ii/es/encyclicals/documents/hf_jp-ii_enc_30121987_sollicitudo-rei-socialis.html

others, and our lives are enlarged by our encounter with others”⁴². Thus, the reality of interdependence should have ethical implications for all human interactions in the economic, cultural, political, and religious spheres of social life⁴³. According to Pope John Paul II, interdependence, as a system determines the relationships in our contemporary world, whether in its economic, cultural, political and religious elements. So the correlative response as a moral and social attitude, becomes solidarity⁴⁴. He buttresses further this obligation by maintaining that the “second tablet” of the Decalogue (Exod. 20:12–17; Deut. 5:16–21) moves beyond the mere recognition of human interdependence to reveal that God requires fulfilling our obligations to one another as members of the human family. In addition, Jesus’ injunctions to love one’s neighbour including one’s enemies reveal the true nature of solidarity as morally obligatory⁴⁵.

In 1961, Pope John XXIII in his encyclical, *Mater et Magistra*, said that the kind of solidarity which binds us as members of the human family make it impossible for those who are wealthy to look with indifference upon those who suffer misery, poverty and are unable to enjoy even elementary human rights. The pontifical document links solidarity to justice and points out that justice was a central concern for the issues of poverty and peace. And “justice means aiding entire marginalised nations and allowing them into the circle of economic and human development”⁴⁶. To achieve this, it is necessary to change life-style, ways of production and consumption and the structures of the power that govern the societies. It insists that the rich should do much more than simply give alms⁴⁷. The pope further argues that since the world is becoming more and more interdependent, it goes without saying that to promote peace, economic and social imbalance must be addressed⁴⁸. John XXIII warned that solidarity, which unites all people and makes them members of the same family, imposes an obligation on political communities to help persons and families in difficulty to exercise their fundamental rights⁴⁹.

In *Gaudium et Spes*, the Second Vatican Council, turned its attention to the role of the Church in the world. It speaks of a “special obligation that binds

⁴² Pope Francis. *Lumen Fidei*. Encyclical letter. 29 June, 2013, 38.

https://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20130629_enciclica-lumen-fidei.html

⁴³ G. Beyer, “The Meaning of Solidarity in Catholic Social Teaching,” *Political Theology* 15 (2014): 15.

⁴⁴ SRS 38.

⁴⁵ SRS 36.

⁴⁶ Janusz Salamon (ed). *Solidarity Beyond Borders: Ethics in a Globalising World*. London: Bloomsbury, 2015, 9.

⁴⁷ *Ibid.*, 8.

⁴⁸ Pope John XXIII. *Mater et Magistra*. Encyclical letter. 15 May, 1961, 157.

https://www.vatican.va/content/john-xxiii/en/encyclicals/documents/hf_j-xxiii_enc_15051961_mater.html

⁴⁹ P. Duda. “The Concept of Christian Solidarity as a Path to Peace and Development”. *Wrocław Theological Review* 28, n° 1 (2020): 273.

us and makes us neighbours of absolutely every person and of actively helping each other. Our nature as social beings imposes on us, a moral obligation to work for the welfare of others. The most notable aspect of *Gaudium et Spes* in relation to the place of solidarity in the social tradition is that it provides several explicitly theological and scriptural grounds for solidarity. Drawing on biblical references to the Exodus story and Jesus' presence to his disciples and followers, the document describes how "God did not create man for life in isolation, but for the formation of social unity"⁵⁰. It also offers a communitarian theology of salvation, reminding people of faith that God has always called people not as individuals, but as members of a community where all as members would render mutual services in the measure of the different gifts bestowed on each. And it instructs: "This solidarity must be constantly increased until that day when it will be brought to fulfilment; on that day humanity, saved by grace, will offer perfect glory to God as the family beloved of God and of Christ their brother"⁵¹.

In other words, solidarity is key to the salvation of all Christians - not as individuals, but as members of the people of God. This communitarian character was exemplified in the work of Christ who in his preaching "clearly outlined an obligation on the part of the sons of God to treat each other as brothers" and in his prayer "asked that all his followers should be 'one'"⁵². *Gaudium et spes* makes a marked distinction between the service that the Church must give through solidarity with all the poor and efforts to overcome poverty, misery and hunger in the world. Today more than ever, the Church takes up this challenge.

I will conclude this section by affirming that, to be human means to be in solidarity with others and the implementation of human rights is only possible through the practice of solidarity as a moral obligation⁵³. And this is what we find in the concept *ubuntu* - the African notion of solidarity.

⁵⁰ Ibid., 32.

⁵¹ Ibid.

⁵² Ibid.

⁵³ I. Ludji. "The Ethics of Solidarity and Human Rights". *The Ecumenical Review* 70, n° 3 (2018): 432.

1.4. Ubuntu: The African concept of solidarity

Ubuntu is a concept that dates back to precolonial days and part of a long oral tradition. The first written use of the word dates to 1846⁵⁴. Ubuntu is a cultural concept that tries to capture the essence of what it means to be human. It can best be described as an African philosophy that places emphasis on ‘being self through others’. It encapsulates the idea of a shared humanity which can be expressed in the phrases ‘*I am because we are*’ in Zulu language *ubuntu ngumuntu ngabantu*⁵⁵. So far, it has been successfully applied in philosophy, theology, nursing, psychology, leadership, literary studies and anthropology⁵⁶. One cannot but agree that *ubuntu* has a paradigmatic force that appeals not only to African scholars, but also to scholars across the world.

In history, the Ubuntu spirit, has taken various forms. It has propelled the world towards oneness in the likes of Martin Luther King, Mahatma Gandhi, Mother Theresa of Calcutta, Oscar Romero, Desmond Tutu, and Nelson Mandela. They all embodied the Ubuntu spirit in the different contexts that they lived. No one can doubt the fact that a principle that expresses the interconnectedness, common humanity and the responsibility of individuals to each other is essential for growth and peace. Nelson Mandela once described *ubuntu* as “a philosophy constituting a universal truth, a way of life, which underpins an open society”⁵⁷.

In his work, *No Future Without Forgiveness*, Desmond Tutu states clearly that *ubuntu* speaks of the very essence of being human”. He describes a person with *ubuntu* as one who is generous, hospitable, friendly, caring and compassionate; someone with self-assurance. A self-assurance that comes from the knowledge that one belongs to a greater *whole* and when anyone in that *whole* is treated either rightly or wrongly it is the *whole* that bears the brunt⁵⁸. Martin Luther King Jr clearly captures this in his letter from a Birmingham jail when he says: “We are caught in an inescapable network of mutuality, tied in a single garment of destiny. What affects one directly, affects all indirectly”⁵⁹.

The philosophy of *ubuntu* is very clear: An African is not just an individual. He sees himself as one living within a community. In a hostile environment, it is only through such community solidarity that hunger, isolation, deprivation, poverty and any emerging challenges can be survived,

⁵⁴ C. Gade. “What is Ubuntu? Different interpretations among South Africans of African descent”. *South African Journal of Philosophy*, 31 (2012):488.

⁵⁵ J. Mugumbate & A. Nyanguru. “Exploring African Philosophy: The value of ubuntu in social work”. *African Journal of Social Work*, 3, n° 1, (2013): 82.

⁵⁶ C.f. Adrian van Breda. “Developing the notion of *ubuntu* as African theory for social work practice”. *Social Work/Maatskaplike Werk* 55 n° 4 (2019): 439.

⁵⁷ James Kamwachale Khomba. “Redesigning the Balanced Scorecard Model: An African Perspective”. Doctoral thesis. University of Pretoria, May 2011, 129.

⁵⁸ Desmond Tutu. *No future without forgiveness*. New York: Double day 1999, 32-33.

⁵⁹ Martin Luther King Jr. Letter from a Birmingham jail. April 16, 1963, 2.

http://okra.stanford.edu/transcription/document_images/undecided/630416-019.pdf

because of the community's brotherly and sisterly concern, cooperation, care, and sharing⁶⁰.

The meaning of *ubuntu* has become more nuanced and textured over time. This is clear when one looks at its definition in the New World Encyclopedia: "Ubuntu embodies all those virtues that maintain harmony and the spirit of sharing among the members of a society". It further states that it is "an appreciation of traditional beliefs, and a constant awareness that an individual's actions today are a reflection on the past, and will have far-reaching consequences for the future"⁶¹. And this is the core warning of Pope Francis in his encyclical *Laudato Si*. He says that our selfishness, our indifference and our irresponsible ways is a threat to the present and future generation.

A person with *ubuntu* knows his or her place in the universe and is consequently able to interact gracefully with other individuals. Thus, the African *ubuntu* philosophy can play a significant role in sustainable development especially in Africa. According to Francis Peterson, "it is a word [ubuntu] that embodies sustainability, selflessness and tolerance"⁶². The philosophy of *ubuntu* comes from the realization that each and everyone's life is deeply tied to the other. Therefore, the survival of a human being is dependent on others – the community, environment and society. And the obligation to commit oneself to the common good as opposed to creating isolated individual good. Pope Benedict XVI, quoting poet John Donne, wrote, "No man is an island, entire of itself. Our lives are involved with one another, through innumerable interactions they are linked together. No one lives alone. No one sins alone. No one is saved alone. The lives of others continually spill over into mine: in what I think, say, do and achieve. And conversely, my life spills over into that of others: for better and for worse"⁶³

The principle of Ubuntu is relevant and fundamental to sustainable development because effective solidarity with the poor, whether individuals or entire countries, is indispensable for building peace. Solidarity corrects injustices, re-establishes the fundamental rights of individuals and nations, conquers poverty and thus combats the revolt that injustice incites, removes

⁶⁰ James Kamwachale Khomba. "Redesigning the Balanced Scorecard Model: An African Perspective", 127.

⁶¹ New World Encyclopedia contributors, "Ubuntu (philosophy)," *New World Encyclopedia*, [https://www.newworldencyclopedia.org/p/index.php?title=Ubuntu_\(philosophy\)&oldid=1034676](https://www.newworldencyclopedia.org/p/index.php?title=Ubuntu_(philosophy)&oldid=1034676) (accessed June 12, 2022).

⁶² "African solidarity holds great lessons for the rest of the world". Francis Petersen. 24 May 2021. Consulted 24/05/2022. <https://www.dailymaverick.co.za/opinionista/2021-05-24-african-solidarity-holds-great-lessons-for-the-rest-of-the-world/>

⁶³ Pope Benedict XVI. *Spe Salvi*. Encyclical letter. 30 November 2007, 48. https://www.vatican.va/content/benedict-xvi/en/encyclicals/documents/hf_ben-xvi_enc_20071130_spe-salvi.html

violence that is born from revolt and builds peace⁶⁴. With this in mind we now examine solidarity as a path to peace and development.

⁶⁴ C.Hummes. "Theological and Ecclesiological Foundations of Gaudium et Spes". *Journal of Catholic Social Thought* 3,n° 2 (2006): 240.

1.5. Solidarity as a path to peace and development

As have been stated above, the foundation of solidarity is the recognition of human interdependence. Recent history confirms that global interdependence is a defining feature of our era. Our interdependence has many dimensions: in security, war in any part of the world threatens global peace; in public health, infections leap across borders and continents at jet speed. The COVID 19 is a perfect example. The clearest example of our interdependence is in the area of environment and climate change. No country can solve these problems in isolation. The fact that Africa has least contributed to climate change does not exempt her from its consequences. At a time when global events increasingly affect our daily lives, we need to recognize that we must work together to create a better world where peace and development thrive.

It is a common knowledge that an integral part of the process of achieving peace is the need to promote solidarity. As rightly stated by Tim Murithi: “peace is not just the absence of violence, but the presence of social solidarity”⁶⁵. That is to say the members of the society have to see each other as fellow human beings with equal dignity and begin to share a concern in the common welfare and well-being of each other. He later stated that solidarity makes sense because by ensuring the security, safety and well-being of others, we in turn ensure our own security, safety and well-being⁶⁶.

On his part, John Paul II explains in *Sollicitudo Rei Socialis*, that solidarity is the foundation of social harmony, both in every society and in international relations; “so much so that, just as yesterday we could describe peace as the fruit of justice, so today we can say that peace is the fruit of solidarity”⁶⁷. He further added that peace is inconceivable unless world leaders promote solidarity among individuals and nations⁶⁸. There is no doubt that solidarity among people has become one of the necessary foundations for establishing peace on a universal scale.

Furthermore, the Pope proposes to the modern world the concept of Christian solidarity as a path to integral development. He opines that, in order that development be genuine, it must be achieved within the framework of solidarity⁶⁹. According to the pontifical document, the obstacles to integral development are not only economic but rest on more profound attitudes which define each individual’s relationship with self, with neighbour, with even the remotest human communities, and with nature itself. So the new relationships of interdependence between people and nations, which are in fact forms of solidarity, must be transformed into relationships aimed at true ethical and

⁶⁵ Tim Murithi. “African approaches to building peace and social solidarity”. *African Journal on Conflict Resolution* 6, n° 2, (2006): 13.

⁶⁶ *Ibid.*, 14.

⁶⁷ P. Duda. “The Concept of Christian Solidarity as a Path to Peace and Development”, 269.

⁶⁸ *SRS* 39.

⁶⁹ *SRS* 35-45.

social solidarity, which is a moral requirement inherent in all human relationships⁷⁰.

⁷⁰ *SRS* 38.

Conclusion

In this chapter we have analysed the concept of solidarity from its etymology to its significance in relationship to the human person. We also see that *solidarity* is not just a principle but an attitude that must be cultivated because it is morally binding especially as Christians. For it is biblically founded and theologically established. The incarnation is the clearest example of God's solidarity with humanity.

Solidarity as we see is expanded from just relationships between humans to include the environment since the dignity of the person is highly affected by the quality of the environment he or she lives in. And as we see in the concept of *ubuntu*, solidarity with the environment has been present all along through the ways and culture of indigenous peoples. They live their lives so close with nature that for them it is clear that nature is a co-equal creation that human beings has to learn how to live interdependently with.

In this chapter we have come to realize that the building of peace and order in the world must relate to the fact that we are created one for another. No one live alone nor would be saved alone. So when the solidarity of the human race is actualised in the virtuous lives of its members, it goes a long way to solving most of the world's problems.

The next chapter reviews sustainability issues and how as one family living in a *common home*, could use wisely the natural resources to better the lives of everyone both in the present and future generations.

Chapter 2. Sustainable Development: A Goal and an Obligation

In the words of Pope Francis, “The urgent challenge to protect our common home includes a concern to bring the whole human family together to seek a sustainable and integral development.”⁷¹ It is important to know that in this *common home*, there are now 7.2 billion people. And this is about nine times the 800 million people estimated to have lived in 1750, at the start of the Industrial Revolution. With the increase in the world population by approximately 75 million yearly, it was estimated that by the 2020s, the world population would be reaching 8 billion and 9 billion by the early 2040s.⁷² These billions of people would be looking for economic improvement. The poor will struggle to find food, clothing and shelter. Those above poverty level will search for better life for themselves and family. The high income earners will hope that technological advancement will improve their well-being. And the super-rich will be jostling for the top position in world’s rankings of richest people.⁷³

It is a common knowledge that while a few have attained material abundance, many others are endangered and threatened by resource depletion and environmental degradation. While some have enough to eat and drink, enjoy good health and longevity, others live in such abject poverty that they struggle daily for survival. As concluded by Jeffery Sachs, “Ours is a world of fabulous wealth and extreme poverty”.⁷⁴ Unfortunately, not only is the world economy remarkably unequal, it is also remarkably threatening to the earth itself.⁷⁵

Modernism has made it almost impossible for us to see and address environmental, organisational, and cultural problems. The environmental destruction in the name of development, “if unchecked will definitely undermine the achievements made during the last decades and will lead to the total collapse of our natural environment and the essential ecosystems”.⁷⁶ Therefore, sustainable development is a context where each member of the ecosystem strive to make the world better than we met it rather than *subduing* and *dominating* it to the detriment of both present and future generation.

The pursuit of sustainability imposes at least three inter-related sets of demands.⁷⁷ First, sustainability demands *learning*. This would be about re-

⁷¹ Pope Francis. *Laudato Si*, 13.

⁷² Sustainable Development Solutions Network Thematic Group on Challenges of Social Inclusion. *Achieving Gender Equality, Social Inclusion, and Human Rights for All: Challenges and Priorities for the Sustainable Development Agenda*. New York: Sustainable Development Solutions Network 2013, 2,5.

⁷³ Jeffery D. Sachs. *The age of Sustainable Development*. New York: Columbia University Press, 2015, 1-2.

⁷⁴ *Ibid.*, 2

⁷⁵ *Ibid.*

⁷⁶ J. S. Aguas. “Sustainable Development and Integral Ecology: The Philippine Ecology: The Philippine Ecological Experience”. *Solidarity* 8, n° 1 (2019): 2

⁷⁷ Michael Redclift and Delyse Springett, (eds). *Routledge International Handbook Of sustainable development*. New York: Routledge 2015, 124-125.

designing our institutions to build in ongoing learning, as well as the ability to be flexible in light of new knowledge and understanding as regards solutions to environmental problem. Secondly, sustainability demands *deliberation*; that is, reasoned and truthful communication and discussion about important issues open to all those potentially affected by that issue. And thirdly, sustainability demands *accountability*. It is not enough to implement new programs of action. Our planning and learning towards the future must be evaluated. We must distinguish – both in prospect and retrospect – between appropriate and inappropriate, successful and unsuccessful, good and bad, attempts to solving the problem. Sustainability demands this critical scrutiny, through learning and deliberation.

We shall now study the concept of sustainable development as proposed especially by the United Nations.

2.1. The concept of sustainable development⁷⁸

Sustainable development has become the catchword in almost every discourse on development, since it has been associated with different definitions and interpretations. Structurally, the concept is a phrase that consists of two words, *sustainable* and *development*. And these words have been defined from various perspectives, leading to a plethora of definitions.

Nevertheless, the International union for Conservation of Nature and Natural Resources, defined development as “the modification of the biosphere and the application of human, financial, living and non-living resources to satisfy human needs and improve the quality of human life.”⁷⁹ It added that “for development to be sustainable it must take account of social and ecological factors, as well as economic ones; of the living and non-living resource base; and of the long term as well as the short term advantages and disadvantages of alternative actions.”⁸⁰

In 1984, the United Nations (UN) established an independent group made up of 22 people drawn from various countries (both developed and developing). They were charged with the duty of furnishing the international community with long term environmental strategies. The report of the World Commission on Environment and Development entitled *Our Common Future*, generally known as *Brundtland*,⁸¹ “is widely considered to have been key in putting sustainable development firmly into the political arena of international development thinking”.⁸² According to this report, sustainable development “meets the needs of the present without compromising the ability of future generations to meet their own needs.”⁸³

In 1992, the declaration in Rio de Janeiro on Environment and Development defined sustainable development as a long term continuous development of the society that is aimed at satisfying humanity’s present and future need through “rational usage and replenishment of natural resources, preserving the Earth for future generations”.⁸⁴ According to the National Strategy of Sustainable Development, “sustainable development is the society’s development that creates the possibility for achieving overall wellbeing for the

⁷⁸ This term was firstly mentioned in the Nature Conservation and Natural Resources Strategy of the International Union for Conservation of Nature published in 1980.

⁷⁹ The International union for Conservation of Nature and Natural Resources, *The world conservative strategy*. Section 1, paragraph 3. <https://portals.iucn.org/library/efiles/documents/wcs-004.pdf>

⁸⁰ Ibid.

⁸¹ Brundtland is the name of the then Prime Minister of Norway and chair of the commission

⁸² Jennifer A. Elliot. *An Introduction to Sustainable Development*. New York: Routledge, 2013, 8.

⁸³ World Commission on Environment and Development. *Our Common Future* (New York: Oxford University Press, 1987, 8.

⁸⁴ Report of the United Nations Conference on environment and development. Rio de Janeiro, 3-14 June, 1992.

https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_CONF.151_26_Vol.I_Declaration.pdf

present and the future generations through combining environmental, economic, and social aims of the society without exceeding the allowable limits of the effect on the environment.”⁸⁵ For D. Pearce, sustainable development “is related to the society’s development whose costs are not placed on future generations, or at least efforts are made to compensate for such costs”.⁸⁶

Considering the different definitions that have been given we can say that sustainable development is one that allows the present generation to cultivate and utilize the natural resources for the satisfaction of its present needs as well as conserve the natural resources so that the future generation would be able to satisfy their needs.

We can deduce from the definitions above that the idea of conserving and preserving resources for future generations is a major feature that distinguishes sustainable development from traditional environmental development. It could also be noted that the ultimate goal of sustainable development is the long-term stability of the environment and economy. We can also observe from the definitions above, that sustainable development is mostly seen as a long-term progress towards the well-being and improvement of the quality of life in accordance with environmental scarce resources. Rachel Emas rightly puts it thus: “Contained within the common definition of sustainable development, intergenerational equity recognizes the long-term scale of sustainability in order to address the needs of future generations.”⁸⁷ Another feature that we could find in these different notions of sustainable development as noted by J. Aguas “is the recognition of the interdependence between man and nature”. Since the human person depends on nature for sustenance, he must take care of it so as not to endanger his life as well as future generation.⁸⁸

One remarkable point that stood out in the famous *Brundtland report* is the fact that sustainable development considers development per se to have limitations. According to the report, the “present state of technology and the social organization on environmental resources, together with the limited ability of the biosphere to absorb the effects of human activities impose limitations on sustainable development.”⁸⁹ Therefore, there is a call for an

⁸⁵ R. Ciegis et al. “The Concept of Sustainable Development and its Use for Sustainability Scenarios”. *Engineering Economics* 2 (2009): 30.

⁸⁶ *Ibid.*, 29.

⁸⁷ Rachel Emas. “The Concept of Sustainable Development: Definition and Defining Principles”. Brief for Global sustainable development report 2015. https://sustainabledevelopment.un.org/content/documents/5839GSDR%202015_SD_concept_definiton_rev.pdf

⁸⁸ J. S. Aguas. “Sustainable Development and Integral Ecology: The Philippine Ecology: The Philippine Ecological Experience”. *Solidarity* 8, n° 1 (2019): 3.

⁸⁹ Peter P. Rogers, Kazi F. Jalal, John A. Boyd. *An introduction to sustainable development*. USA: Glen Educational Foundation, Inc., 2008, 42.

integrated decision-making that would balance the social and economic needs of the people with the regenerative capacity of the natural environment.⁹⁰ In the final analysis, sustainable development, “must rest on political will of the governments as critical economic, environmental, and social decisions are made”.⁹¹

Amidst the environmental crisis and the complex social problems that we face in the world today, many have accepted *sustainable development* as “a desirable policy that would foster a development that would not only serve the needs of the present but more importantly safeguard the resources of the earth for future generations”.⁹² Nevertheless, for a progressive development paradigm, sustainable development must emphasize a transformation trajectory that is anchored on social, economic and environmental factors. These are necessary pillars on which the policy on sustainable development must be built on.

⁹⁰ Ibid., 42.

⁹¹ Peter P. Rogers, Kazi F. Jalal, John A. Boyd. *An introduction to sustainable development*. USA: Glen Educational Foundation, Inc., 2008, 42.

⁹² J. S. Aguas. “Sustainable Development and Integral Ecology: The Philippine Ecology: The Philippine Ecological Experience”, 3.

2.2. The three pillars of sustainable development

The tripod stand of economic growth, environmental protection and social equality, is the bedrock of sustainable development.⁹³ So fundamentally, the concept of sustainable development rests on these three conceptual pillars – economic, social and environmental sustainability. The integration of these three is key to achieving sustainable development.

Pitifully, most national and international efforts on development do not integrate these three aspects. They focus on one or the other at a time. For example, the Environmental Protection Agencies (EPA) of many nations, environmental NGOs and even the United Nations Environmental Programme (UNEP), all focus on the environmental aspect. On the other hand, the Organization for Economic Cooperation and Development (OECD) as well as the World Trade Organization (WTO), focus mostly on economic growth. This leaves a void because no international organization is working on the sustainability problem as a whole, that which would include all three aspects. For it is the integration of these three dimension that distinguishes sustainable development from other forms of development policy.⁹⁴

The United Nations attempts to strengthen all three pillars. Indeed, there are countless reports from the various commission of the United Nations that mention sustainable development as encompassing social, economic and environmental dimensions.⁹⁵ For example, a 1997 report on the progress achieved since the United Nations Conference on Environment & Development in Rio de Janeiro in 1992, is structured on the basis of these three “mutually reinforcing components” of sustainable development, “economic growth, social development and environmental sustainability” with the aim of obtaining “balanced achievement of sustained economic development, improved social equity and environmental sustainability.”⁹⁶

According to Remigijus Ciegis et al, the Brundtland’s definition of sustainable development which is the widely influential and most frequently cited, finds “a positive consensus between the environmental, social, and economic dimensions of environment. Thus, sustainable development is not about a choice between environmental protection and social progress, but rather more about striving for economic and social development that would be compatible with environmental protection”.⁹⁷

⁹³ J. Mensah. “Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review”. *Cogent Social Sciences* 5 (2019): 9.

⁹⁴ Rachel Emas. “The Concept of Sustainable Development: Definition and Defining Principles”, 3.

⁹⁵ C.f. B. Purvis, Y. Mao y D. Robinson. “Three pillars of sustainability: in search of conceptual origins”, 685-686.

⁹⁶ Ibid.

⁹⁷ R. Ciegis et al. “The Concept of Sustainable Development and its Use for Sustainability Scenarios”, 30.

Jennifer A. Elliott, outlines three frameworks or typologies in order to simplify the notion of sustainable development.⁹⁸

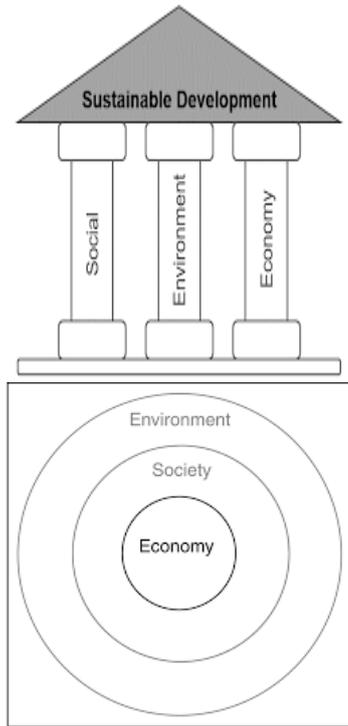


Fig. 1

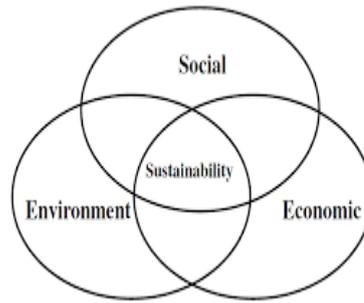


Fig. 3

Fig. 2

Figure 1 presents the three pillars of sustainable development. Such architectural metaphors confirms the need to consider wholistically the social, ecological and economic aspects together and equally if the building is to remain upright. In figure 2, sustainable development is portrayed by interlocking circles with sustainable development as where the circles intersect. Such illustrations draw our attention to the objective of sustainable development in the quest of maximising the goals across the three spheres at a time. In figure 3, sustainable development is depicted by a concentric image. Here the spheres of society and economy are embedded in the wider circle of ecology. This shows an understanding of environmental limits within which a sustainable society and economy must operate. J. Elliott states clearly that “this model presents a better illustration of how all human activities depend fundamentally on nature and portrays more clearly how activities that damage the functioning of natural systems ultimately weaken the basis of human existence itself”.⁹⁹

In one of the resolutions adopted by the United Nations on sustainable development, it avers that every framework for sustainable development must integrate the three aspects of sustainable development “in a balanced manner

⁹⁸ Jennifer A. Elliot. *An Introduction to Sustainable Development*. New York: Routledge, 2013, 20-21.

⁹⁹ *Ibid.*, 21.

and enhance implementation by strengthening coherence and coordination”.¹⁰⁰ The argument as stated by J. Mensah, is that, when these “three dimensions of sustainability are applied well to real world situations, everybody wins because natural resources are preserved, the environment is protected, the economy booms and is resilient, social life is good because there is peace and respect for human rights”.¹⁰¹ He further used an hypothetical case¹⁰² to illustrates the relationship and interconnectedness that exist among these three dimension. Therefore, the solution to the sustainability problem is the integration of these three pillars.

¹⁰⁰ United Nations. Resolution adopted by the General Assembly on 27 July 2012. Sixty-sixth session Agenda item 19. Paragraph 75.
https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_66_288.pdf

¹⁰¹ J. Mensah. “Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review”, 8.

¹⁰² “If a man in a given geographical area lacks a job (economic), he is likely to be poor and disenfranchised (social); if he is poor and disenfranchised, he has an incentive to engage in practices that harm ecology, for example, by cutting down trees for firewood to cook his meals and warm his home (environmental). As his actions are aggregated with those of others in his region cutting down trees, deforestation will cause vital minerals to be lost from the soil (environmental). If vital minerals are lost from the soil, the inhabitants will be deprived of the dietary nutrients required to sustain the intellectual performance needed to learn new technologies, for example, how to operate a computer, and this will cause productivity to reduce or stagnate (economic). If productivity stagnates (economic), poor people will remain poor or poorer (social), and the cycle continues.

2.3. Sustainable Development Goals (SDGs)¹⁰³ 2030

Historically, on 25 September 2015, the 193 member states of the UN approved the 2030 Agenda for Sustainable Development. This agenda sets out to achieve a kind of development that is respectful of the planet and its inhabitants. It is made up of 17 SDGs¹⁰⁴, which is further broken down into 169 targets, to be realized by 2030 with the intention of "leaving no-one behind".

Unlike the *Millennium Development Goals* (MDGs)¹⁰⁵, which applied majorly to developing countries and made reference to the developed ones mainly as donors, the call for SDGs is a more powerful way to move a global agenda that engages everyone, including the governments, private business owners, scientists, leaders of civil society, NGOs, students etc. It was in June 2012, that the United Nations Conference on Sustainable Development in Rio de Janeiro, began a process to develop a new set of SDGs to drive the global developmental framework beyond 2015. The goals were "built on the lessons learned from the MDGs especially, its failure to address the structural causes of poverty, inequality and exclusion, as well as environmental sustainability".¹⁰⁶ The SDGs are universally applicable in the sense that it concerns both the developed and developing countries. It was a call for all to live sustainably.

¹⁰³ The abbreviated form of Sustainable Development Goals. SDGs from now on.

¹⁰⁴ Goal 1. End poverty in all its forms everywhere

2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture

3. Ensure healthy lives and promote well-being for all at all ages

4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

5. Achieve gender equality and empower all women and girls

6. Ensure availability and sustainable management of water and sanitation for all

7. Ensure access to affordable, reliable, sustainable and modern energy for all

8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

10. Reduce inequality within and among countries

11. Make cities and human settlements inclusive, safe, resilient and sustainable

12. Ensure sustainable consumption and production patterns

13. Take urgent action to combat climate change and its impacts

14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

17. Strengthen the means of implementation and revitalize the global partnership for sustainable development.

¹⁰⁵ The Millennium Development Goals are eight goals with measurable targets and clear deadlines for improving the lives of the world's poorest people. To meet these goals and eradicate poverty, leaders of 189 countries signed the historic millennium declaration at the United Nations Millennium Summit in 2000. At that time, eight goals that range from providing universal primary education to avoiding child and maternal mortality were set with a target achievement date of 2015. Abbreviated MDGs from now on.

¹⁰⁶ A. Idowu. "Towards the implementation of sustainable development goals in Nigeria: Maximizing the influence of religious leaders". *Stellenbosch Theological Journal* 4, n° 1 (2018): 40.

The SDGs in its normative outlook, recommend a set of goals to which the world should look up to. This would help in directing the future course of economic, social and environmental development on the planet. They are new universal set of goals that every government is expected to use as a guide in framing it's agendas and political policies from 2016 to 2030. Ethically, the SDGs calls for a world where “economic progress is widespread; extreme poverty is eliminated; social trust is encouraged through policies that strengthen the community; and the environment is protected from human-induced degradation.”¹⁰⁷ More still, the SDGs are crucial in the fight against environment degradation and the preservation of the planet for future generation.

The document further states that these goals and targets is to stimulate developmental actions in areas of critical importance for humanity and the planet based on five dimensions, also known as the 5 “Ps” which span across the 17 SDGs.¹⁰⁸ The five Ps are:

“People: To end poverty and hunger, in all their forms and dimensions, and to ensure that all human beings can fulfil their potential in dignity and equality and in a healthy environment.

Planet: To protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change.

Prosperity: To ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature.

Peace: To foster peaceful, just and inclusive societies which are free from fear and violence.

Partnership: To mobilise the means required to implement the 2030 Agenda through a partnership based on a spirit of solidarity and focused, in particular, on the needs of the most vulnerable.”¹⁰⁹

What needs to be emphasized is that, the SDGs are not stand-alone goals. They are interconnected, which implies that, when one goal is achieved, it leads to achieving another. So “they should be seen as indispensable pieces in a big and complex puzzle”.¹¹⁰ And everyone is called upon to play his or her role in the realisation of these goals. Institutions and persons who could influence the world views and lifestyles of others are implored to use their

¹⁰⁷ Jeffery D. Sachs. *The age of Sustainable Development*, 3.

¹⁰⁸ United Nation General Assembly. “Transforming our world: the 2030 Agenda for Sustainable Development”. 21 October 2015.

https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

¹⁰⁹ Ibid.

¹¹⁰ Ibid.

good office in propelling change for a better society. In this sense, religion has a role to play in the debate on sustainable development.

2.4. Religion and sustainable development

It has become clear with each passing year that enlightened policies and programs set up by the United Nations will not be enough to create a sustainable society. The SDGs needs some form of impetus for its realization. As theologian Jay McDaniel, quoting by G, Gardner writes: “we need a transformation of mind and heart, desire and intention [...] We need a sense of mystery and humility, gratitude and celebration. We need what some might call healthy religious wisdom.”¹¹¹ For it “has become more urgent than ever to promote and disseminate morals, values, behaviours and creative solutions conducive to attaining the 17 SDGs”.¹¹²

In fact, many have frowned at the absence of religious groups in the United Nations General Assembly for the 2030 *Agenda*. Some felt religious presence was not important since religion has no role to play in a technical debate that is unrelated to faith. But it is worthy to note as clearly stated by J. Tatay, that religion has a great influence in the global arena especially “in a world where the great majority of people still depend on a spiritual tradition for their vision of reality, their source of meaning, and their ethical guidance.”¹¹³ He further posits ten motives to justify the fact that religion can’t be side-lined nor despised when it comes to the debate about the sustainability or achieving sustainable development goals proposed by the United Nations. We can’t dispute the role of religion in its prophetic, ascetic, penitential, apocalyptic, sacramental, soteriological, mystical, sapiential, communitarian and eschatological mission in the world. “Indeed, the world’s religions have many assets to lend to the effort to build sustainable progress”.¹¹⁴

In a speech in 2016, the then Secretary General of the World Council of Churches, Rev. Dr Olav Fykse Tveit, emphatically stated that “religion **must** be considered in development and humanitarian response.”¹¹⁵ He recognised the role religion plays in peoples’ lives, attitudes and practices. For him, it is religion that “informs peoples’ understanding of what constitutes a *good life*, their hope, their self-esteem and belief”¹¹⁶. He enumerated how religion has been instrumental to the fight against “economic injustice and rampant inequality, the misuse of political power, the ugly face of racism or of violence against women and children”. He finally notes that the transformations

¹¹¹ Gary T. Gardner. *Inspiring progress: Religions' Contributions to Sustainable Development*. New York: Worldwatch Institute, 2006, 6.

¹¹² Ibid.

¹¹³ Jaime Tatay. *Believing in sustainability: religions facing the environmental challenge*. Barcelona: Cristianisme Justicia, 2019, 4.

¹¹⁴ Ibid., 7-23.

¹¹⁵ Rev. Dr Olav Fykse Tveit. “The role of religion in sustainable development and peace”. 17-18 February 2016, Berlin.

<https://www.oikoumene.org/sites/default/files/Document/TheRoleofReligioninSustainableDevelopmentandPeace.pdf>

¹¹⁶ Ibid.

envisaged in the SDGs “are **possible**, and can be **achieved**” through the engagement of all and “fully inclusive of the religious reality.”¹¹⁷ Any development policy that does not respects people as individuals as well as their world views may have little or no impact in their lives. Fundamentally, religion is viewed as one instrument that shapes the world view of people.

Obviously, it is true that religions typically do not have the conventional sources of powers like a constituted government that can shape or fundamentally direct the course of things in a given state. Nevertheless, its influence, cannot be underestimated. According to Y. Narayanan, religion “is a critical category of analysis in articulating and implementing development solutions”, and coupled with “its massive grassroots presence must, in fact, be invited to assist in enabling sustainable development.”¹¹⁸ This is proven beyond doubt that for centuries, religious institutions have also been making practical contributions to assist people in their basic social needs. Educational and health care systems are inconceivable in many developing countries, without their contributions. Therefore, “we can only truly breathe life into a new global partnership to implement the 2030 Agenda if religions are involved.”¹¹⁹

Furthermore, Y. Narayanan gives three examples to buttress his point on how religious belief can help sustainable development.¹²⁰ Firstly, “the Christian notion of *caritas* is one vital way to fill development’s *blind spot* and he calls for the restoration of the notion as a “non-utopian source of inspiration for the alleviation of human suffering”. Secondly, he speaks of “the Hindu notion of the *purusharthas* which reconceptualizes sustainable consumption by acknowledging the human tendency to *want* and directing ways for material and sensuous consumption to be in accordance with the rules of *dharma* or duty”. And lastly, “the Islamic notion of *interest* that is seen as sin, has revolutionized the system of banking for the poor by significantly inspiring the microfinance institution”. Nevertheless, religious concept and messages could run the risk of becoming wrongly interpreted and adopted, which will cause problems rather than proffering solutions. So many environmental thinkers are of the opinion that a religious or a spiritual view, especially of nature, would need a scientific guidance.¹²¹

G. Gardner, a veteran researcher, maintains that there are five reasons why religions represent a force to be reckoned with as regards sustainable development: 1) providing people with a sense of meaning and purpose; 2)

¹¹⁷ Ibid.

¹¹⁸ Y. Narayanan. “Religion and Sustainable Development: Analysing the Connections”. *Sustainable Development* 21 (2013): 134.

¹¹⁹ Khushwant Singh and Judith Steinau Clark (ed). “Voices from Religions on Sustainable Development”. Germany: Federal Ministry for Economic Cooperation and Development, 2017, 4.

¹²⁰ Y. Narayanan. “Religion and Sustainable Development: Analysing the Connections”, 136.

¹²¹ Ibid., 134.

their ability to inspire and to project moral authority; 3) the great number of followers they have; 4) a substantial physical and financial resources; 5) capacity to generate social capital - the bonds of trust, communication, cooperation, and information dissemination that create strong communities.¹²² So these reasons have made religious groups important target for partnership by various secular organizations, especially environmental ones. Gardner maintains that, “these partnerships tend to work best when religious groups are seen as full partners, and when groups appreciate the unique perspective and unique value that religious groups bring to the table”.¹²³

In the African context, religion forms part of a person’s identity. It influences the core being of an individual as well as the society. So, for the success of *sustainable development*, religious beliefs and practices have to be considered in its planning and implementation if it is to be sustainable. It is argued that “religion determines the shaping of the moral, social, political and economic dimensions of many societies”.¹²⁴ Hence, an agenda for sustainable development should include religion. Let me conclude this section with the text of an Australian political philosopher, Clive Hamilton:

The source for the kind of transformation that is now needed lies beyond the cultural, political and social philosophies that have formed the bedrock of progressive thought. We need to look to religion or metaphysics – ideas about knowing and being that are beyond the psychological and social structures that condition everyday experience to discover what unites us all in our humanity.¹²⁵

¹²² Gary T. Gardner. *Inspiring progress: Religions' Contributions to Sustainable Development*, 2006, 41-53.

¹²³ Ibid., 53.

¹²⁴ Mwawi N. Chilongozi. “The role of religion in sustainable development” in N. Matholeni, G. Boateng & M Manyonganise (eds). *Mother Earth, Mother Africa & African Indigenous Religions*. Stellenbosch: African Sun Media, 2020, 167.

¹²⁵ Hamilton C. *The Freedom Paradox: Towards a Post-Secular Ethics*. New South Wales: Allen and Unwin 2008, xii.

2.5. Sustainable Development in the African context

Okechukwu Ukaga et al¹²⁶ paints a scenario of a typical African society in the precolonial era where communities met regularly. And since these communities were small in size, almost everyone attended any meetings organised by the local chiefs. There are discussions and ideas on how such communities can be developed. People reached a consensus after having discussed freely and solutions are sought. It is instructive to know that development initiatives come from the people and does not follow the *top-down* model where only those in authority proffer solutions.

It is important to search for ways to resolve Africa's development problem. In this light, it would be necessary to critically examine what sustainable development would mean in the African context and how it can what it can improve the lives of the local people. As stated clearly by G. Dei: "if a new wave of theorizing *sustainable development* issues in Africa is to be helpful in addressing human problems, it must be situated in an appropriate social context that provides practical and social meaning to the African actors as subjects of a developing discourse."¹²⁷

Certainly, if the poverty issues relating to environmental abuse are not addressed, then there will be no end to the social problems we are experiencing today. The influx of people from the south to the north, fleeing deteriorating politico-economic and ecological conditions, would have just begun if we continue to rely on the conventional paradigm of development. A paradigm that continually creates dependency, and maximizes the system of control, exploitation, injustice and inequality in the society.¹²⁸ I agree no less with G. Dei, "that many development experts and agencies are yet to attain a full understanding of what it takes to have in place an effective developmental agenda"¹²⁹.

The 2020 African Sustainable Development Report which sought to assess the progress and ongoing challenges faced by African States in meeting the SDGs reveals that most African States are not on track to meet the intended goals and targets of the SDGs¹³⁰. It was reported that an estimate of "97.7 million Africans were facing severe risks of hunger and malnutrition in 2020, compared with 70.5 million in 2019, attributable to not only the pandemic but interlinkages with conflict and weather extremes"¹³¹. From another study by

¹²⁶ Okechukwu Ukaga, Chris Maser, and Mike Reichenbach (eds). *Sustainable Development: Principles, Frameworks, and Case Studies*. New York: CRC Press, 2010, 194-195.

¹²⁷ G. Dei. "Sustainable development in African context: revisiting some theoretical and methodological issues". *African development* 18, n^o 2 (1993): 97.

¹²⁸ *Ibid.*, 99.

¹²⁹ *Ibid.*

¹³⁰ United Nations Economic Commission for Africa. "2020 Africa Sustainable Development Report".

2022. file:///C:/Users/34667/Downloads/Summary-ES-ASDR-2020-V2-22022022-EN_web.pdf

¹³¹ *Ibid.* 6.

the African Development Bank in 2021, it was estimated that 30 million Africans would be forced into extreme poverty in 2020 and 39 million more in 2021.¹³² This situation would probably get worse in 2022.

The failure of Africa to achieve the SDGs will have implications on the planet, since some SDGs possess a transboundary nature, for example climate change. The increasing impact of climate change in Africa is a serious threat to development. And this is affecting all spheres of human life – feeding, shelter, health, infrastructure - with serious consequences on the political and economic stability of the continent. As M. J. Tosam opined, “it may not be possible to achieve sustainable development by sticking to the Western capitalist model because it is arguably one of the principal causes of the current global environmental crisis.”¹³³

An important aspect of the concept of sustainable development that is brought to bare by G Dei, “is the understanding that environmental degradation is not a problem of relationships between people and their habitat, but of relationships among peoples competing for access to productive resources”.¹³⁴ In consonance with this view, B. Bajju opines that “Western technological outlook does not contribute towards making the world more human”.¹³⁵ He concludes that, it is “only when the technological world listens to the symbolic language of nature will it become literate once more and able to promote life instead of death.”¹³⁶

In the traditional Africa setting, development was not only considered in terms of the material transformation of nature. Development was seen as a process that was in harmony with all the forces of nature. For example, there are myths and traditions that attribute quasi-human qualities to the physical environment and the forces of nature that have been upheld by many indigenous African societies for centuries as means of achieving sustainable use of nature’s resources. And also, the belief in the sacredness of the forest had prevented the indiscriminate felling of trees on communal forest.¹³⁷ Moreover, it is believed that “nature is the dwelling place of the gods, spirits, and ancestors, so abusing nature is tantamount to abusing the spiritual realm, and an invitation for disharmony and disaster”.¹³⁸ Such disaster would affect the violator as well as “his/her entire family and community including the

¹³² Ibid.

¹³³ M. J. Tosam. “African Environmental Ethics and Sustainable Development”. *Open Journal of Philosophy* 9 (2019): 184.

¹³⁴ G. Dei. “Sustainable development in African context: revisiting some theoretical and methodological issues”, 100.

¹³⁵ Ibid.

¹³⁶ As quoted by: M. J. Tosam. “African Environmental Ethics and Sustainable Development”, 185.

¹³⁷ G. Dei. “Sustainable development in African context: revisiting some theoretical and methodological issues”, 102.

¹³⁸ M. J. Tosam. “African Environmental Ethics and Sustainable Development”, 182.

present, the living-dead, and the unborn”.¹³⁹ And this is exactly what the world is facing. We have abused nature with our undue exploitation of the earth’s resources, causing disharmony and disaster. Now we are faced with the consequences of our actions.

The traditional African culture has a moral responsibility that was not only limited to the present generations. It was a moral duty for the living to preserve a healthy environment for future generations, which is a fundamental aspect of sustainable development. It is said that of all the duties owed to the ancestors, none is more demanding than that of conserving the resources of the land so as to leave it in good condition for the unborn.¹⁴⁰ Unfortunately, with an emerging capitalist tendencies of unequal access to and control over resources, coupled with state intervention in the local economy to serve the needs of its allies, the poor people find it extremely difficult to observe these traditional belief system and practices that are essential to the realisation of *sustainable development*.¹⁴¹ Therefore, to make the world more humane is to respect nature, and this can only be possible if we respect and emulate other cultures, especially the African culture that perceives “humans and nature as equal and interdependent members of the community”.¹⁴² In this light

The order of creation demands that a priority be given to those human activities that do not cause irreversible damage to nature, but which instead are woven into the social, cultural, and religious fabric of the different communities. In this way, a sober balance is achieved between consumption and the sustainability of resources.¹⁴³

Conclusion

We know that our planet is in a bad situation at the moment. But the good news is that there is also an effort to save it. Sustainable development is one of the frameworks that can definitely save our planet. And that is why sustainable development aims to achieve a balance between environmental, economic and social sustainability.

In this chapter, we have discussed the role that religion can play in the debate about sustainability. So the need for sustainable development policy makers to engage with religious leaders is a focal point. Science and religion may together inspire more strongly sustainability activism and commitment than separately.

¹³⁹ Ibid.

¹⁴⁰ Ibid., 177.

¹⁴¹ G. Dei. “Sustainable development in African context: revisiting some theoretical and methodological issues”, 102.

¹⁴² Ibid.

¹⁴³ Benedict XVI. Message to the Director General of the Food and Agriculture Organization for the Celebration of World Food Day, October 16, 2006. https://www.vatican.va/content/benedict-xvi/en/messages/food/documents/hf_ben-xvi_mes_20061016_world-food-day-2006.pdf

Also in this chapter we have seen that there are some indigenous African eco-philosophical beliefs and practices, that have been ignored. These belief system may contribute immensely to sustainable development. Therefore it is necessary that Africans revisit those traditional conservationist values, despite the challenges they may face. Also, policy makers should allow local people to be directly involved in environmental management and protection.

Chapter 3. Ecological crisis: The global situation

According to Carls Bogg, the most devastating war is not that which is fought between or within nations but the one waged by humans against nature.¹⁴⁴ And this threatens the continuation of life on the planet as it is known for thousands of years. Concerning the severity of the crisis, the World Scientific Consensus points toward a global ecological predicament that is steadily worsening, suggesting that the famous *tipping points* have already been reached or will soon be reached.¹⁴⁵ That is to say that the crisis and its consequences are likely irreversible. They declare:

We the undersigned, senior members of the world's scientific community, hereby warn all humanity of what lies ahead. A great change in our stewardship of the Earth and the life on it is required if vast human misery is to be avoided and our global home on this planet is not to be irretrievably mutilated.¹⁴⁶

Global environmental crises are intensifying to a worrisome degree. Climate change, for example, threatens human security through more frequent and intense extreme weather events like heat waves, droughts, and floods. At the same time, it aggravates problems related to soil degradation, biodiversity loss, disease spreading, and water scarcity, among others. These phenomena affect patterns of economic development, political stability and human mobility. According to Carl Boggs, the world is currently experiencing the biggest and deepest crisis that ecosystems have endured for millennia.¹⁴⁷ And this crisis will be felt mostly in the realm of agriculture and food production, shrinking arable land, threatened by hotter temperatures, long-term droughts, soil erosion, massive flooding etc.

Sadly, this crisis is caused by human activities, mostly through the changes in composition of the atmosphere through burning of fossil fuels for example, driving cars, bush burning, gas flaring, electricity generation, deforestation, etc.

In this chapter, we shall look at the issue of global warming and explain how pollution and deforestation are two major causes. Then its resultant effect which is manifested in the loss of biodiversity and change of climatic condition.

¹⁴⁴ Carl Boggs. *Ecology and Revolution: Global Crisis and the Political Challenge*. New York: Palgrave Macmillan, 2012, 1.

¹⁴⁵ John Bellamy Foster. *Ecology Against Capitalism*. New York Monthly review Press, 2002, 73.

¹⁴⁶ Ibid.

¹⁴⁷ Carl Boggs. *Ecology and Revolution: Global Crisis and the Political Challenge*, 1.

3.1. Global warming

The first intimations that something was awry in Earth's climate originated at the International Geophysical Year conference in 1957/58.¹⁴⁸ These early researchers were among the first to study and collect data to document what came to be known as *global warming*.

Global warming is a term that is used to refer to an increase in Earth's average surface temperature. And this is due mostly to the release of *greenhouse gases (GHGs)*¹⁴⁹ into the atmosphere by human-fuelled activities such as increased fossil fuel consumption leading to the release of carbon dioxide, the increasing use of automobiles, the use of nitrogen-based fertilizers, and rearing and breeding large methane-belching cattle.¹⁵⁰ As Pope Francis asserts: "Scientific studies indicate that most global warming in recent decades is due to the great concentration of greenhouse gases (carbon dioxide, methane, nitrogen oxides and others) released mainly as a result of human activity."¹⁵¹

Major research findings have pointed out that this human-induced warming is affecting the climate temperature, including increase in global average air and ocean temperatures, widespread melting of snow and ice, and rising global mean sea level.¹⁵² As the world gets hotter, many of the world's plants and animals, on land and in the oceans, move up mountainsides, and marine species are moving to deeper depths and higher latitudes as a result of alteration to their natural habitat.¹⁵³ According to Carl Boggs, more than three decades of intensifying global warming has meant declining worldwide yields of corn by 5.5 percent and wheat by 3.8 percent.¹⁵⁴ And this trend is sure to bring more shortages, increased hunger, and higher prices. Obviously, the list of the negative effects of global warming is endless.

However, it was at a global climate conference held in Villach, Austria, in 1985, that scientists reached a consensus on global warming and issued a public statement of their concern:

In the first half of the next century a rise of global mean temperature could occur which is greater than any in man's history [...] While some warming of climate now appears inevitable due to

¹⁴⁸ Natalie Goldstein. *Global Warming*. New York: Infobase Publishing, 2009, 32.

¹⁴⁹ Gases in Earth's atmosphere that persist for some extended period of time and absorb and redirect infrared radiation, from solar energy, back toward Earth's surface. Greenhouse gases may arise naturally, as from volcanoes, or come from human activity, such as fossil fuel combustion. The major greenhouse gases are carbon dioxide, methane, water vapor, and nitrous oxide, though there are many other anthropogenic chemicals that occur in far smaller amounts that are also powerful GHGs.

¹⁵⁰ Nsikak Benson. "Global Warming". In *Encyclopedia of Global Warming and Climate Change*, edited by S. George Philander, 456-460. California: SAGE Publications, Inc 2008.

¹⁵¹ Pope Francis, *Laudato Si'*, 23.

¹⁵² Nsikak Benson. "Global Warming". In *Encyclopedia of Global Warming and Climate Change*, 458.

¹⁵³ *Ibid.*, 459.

¹⁵⁴ Carl Boggs. *Ecology and Revolution: Global Crisis and the Political Challenge*, 3.

past actions, the rate and degree of future warming could be profoundly affected by governmental policies.¹⁵⁵

The members vehemently demanded that governments should take actions to curb it. And in 1988 a new agency known as *Intergovernmental Panel on Climate Change* (IPCC), was created. This agency would be composed of government representatives from national laboratories and scientific agencies, as well as the scientists who work in them. Their duty would be a periodical evaluation of climate research data from scientists all over the world.¹⁵⁶ From its first report in 1990 till April 2022, they have produced series of assessment report. And they have unequivocally spoken on the reality of global warming and its effects on the ecosystem. In a shocking revelation, Tony Blair in his speech on the effects of global warming admits that there was enough evidence to proof that European heat wave in 2003 was influenced by global warming. And it resulted in 26,000 premature deaths and cost \$13.5 billion in a year.¹⁵⁷

Speaking of the urgency of the climate crisis, Gary T. Gardner posits that climate change is the most urgent environmental problem we face, for several reasons: it is global in scope; it has capacity to remake human civilization; it brings a cascade of difficult-to-predict effects; it is occurring faster than predicted and could soon become irreversible.¹⁵⁸ He further reels out a couple of catastrophes¹⁵⁹ the earth has encountered and will continue to, if actions are not taken to halt them.

The first major source of carbon-dioxide which is one of the main sources of global warming is the burning of fossil fuels.¹⁶⁰ However, a significant part of carbon dioxide emissions comes from industrial processes and transport. And since the distribution of industries are unequal around the

¹⁵⁵ Spencer R. Weart. *The Discovery of Global Warming*. Cambridge: Harvard University Press, 2003, 151.

¹⁵⁶ Natalie Goldstein. *Global Warming*, 31.

¹⁵⁷ *Ibid.*, 199.

¹⁵⁸ Gary T. Gardner. *Inspiring progress*, 87-88.

¹⁵⁹ 1) Hurricane Mitch parked itself over Central America in 1998, destroying huge swaths of infrastructure in Honduras and Nicaragua . Some 9,000 people died. 9 Economic losses were equal to 70 percent of GDP in Honduras, 45 percent in Nicaragua.

2) Extreme flooding afflicted China in 1998, displacing 14 million people and affecting some 240 million people, a number approaching the total population of the United States.

3) In the summer of 2004, two-thirds of Bangladesh and much of the Indian states of Assam and Bihar were under water after torrential rains. More than 50 million people were affected.

4) Floods in Mozambique in 2000 were the worst in 150 years, with water standing for months and destroying crops, food stocks, and seed reserves.

5) In the Sahel over the past 30 years, rainfall has decreased by 25 percent. By 1999, international aid agencies were supplying 1. 7 million people in Kenya with emergency food, and by the summer of 2004 the number had climbed to 2.2 million people.

6) Warm weather in Europe in the summer of 2003 killed tens of thousands of people, mostly elderly. Suggesting that while climate extremes may afflict the poor the most, those in the developed world are not immune to climate catastrophes

¹⁶⁰ Mark Maslin. *Global Warming: A Very Short Introduction*. New York: Oxford University Press, 2004, 11.

world, any agreement to reduce its production would affect certain countries' economies more than others.¹⁶¹ At the moment, North America, Europe, and Asia emit over 90% of the global industrially produced carbon-dioxide.¹⁶²

Since the 1970s, the notion that unconstrained emissions of greenhouse gases into the atmosphere generated by human activities will lead to significant changes of climatic conditions was supported by evidence of a broad warming. This notion was finally embraced by the majority of climate scientists.¹⁶³ The series of Assessment Reports by the Intergovernmental Panel on Climate Change (IPCC)¹⁶⁴ are central to this fact and have documented this change. Similarly, in the 1990s, human impact on climate became a dominant topic in climate sciences.¹⁶⁵

According to Dana Desonie, rising temperature or global warming is as a result of increasing levels in the atmosphere of carbon dioxide and other greenhouse gases that are emitted by human activities of fossil fuel and forest burning.¹⁶⁶ Even though carbon dioxide is essential for life on earth, its increasing amount correlates directly with the rise of average global temperature.¹⁶⁷ According to Mark Jacobson, "carbon dioxide is the leading cause of global warming."¹⁶⁸ Correlatively, the second major source of carbon-dioxide emissions is as a result of land-use changes. These emissions come primarily from the cutting down of forests for the purposes of agriculture, urbanization, or roads. "When large areas of rainforests are cut down, the land often turns into less productive grasslands with considerably less capacity for storing carbon-dioxide."¹⁶⁹ Nevertheless, in terms of the amount of carbon dioxide released, industrial processes still significantly outweigh land-use changes.¹⁷⁰ At the moment South America, Asia, and Africa emit over 90% of present-day land-use change emissions.¹⁷¹ The following images explain it better.

¹⁶¹ Ibid.

¹⁶² C.f. first image in figure 1.

¹⁶³ John S. Dryzek, Richard B. Norgaard, and David Schlosberg. *The oxford handbook of climate change and society*. New York: Oxford University Press, 2011, 2 of 13.

¹⁶⁴ The Intergovernmental Panel on Climate Change is the leading body for the assessment of climate change, established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) to provide the world with a clear scientific view on the current state of climate change and its potential environmental and socio-economic consequences. (<http://www.ipcc.ch/index.htm>)

¹⁶⁵ John S. Dryzek, Richard B. Norgaard, and David Schlosberg. *The oxford handbook of climate change and society*, 2 of 13.

¹⁶⁶ Dana Desonie. *Atmosphere: Air pollution and its effects*. New York: Chelsea House Publishers, 2007, 168.

¹⁶⁷ Ibid.

¹⁶⁸ Ibid., 270.

¹⁶⁹ Mark Maslin. *Global Warming: A Very Short Introduction*, 11.

¹⁷⁰ Ibid.

¹⁷¹ C.f. second image in figure 1.

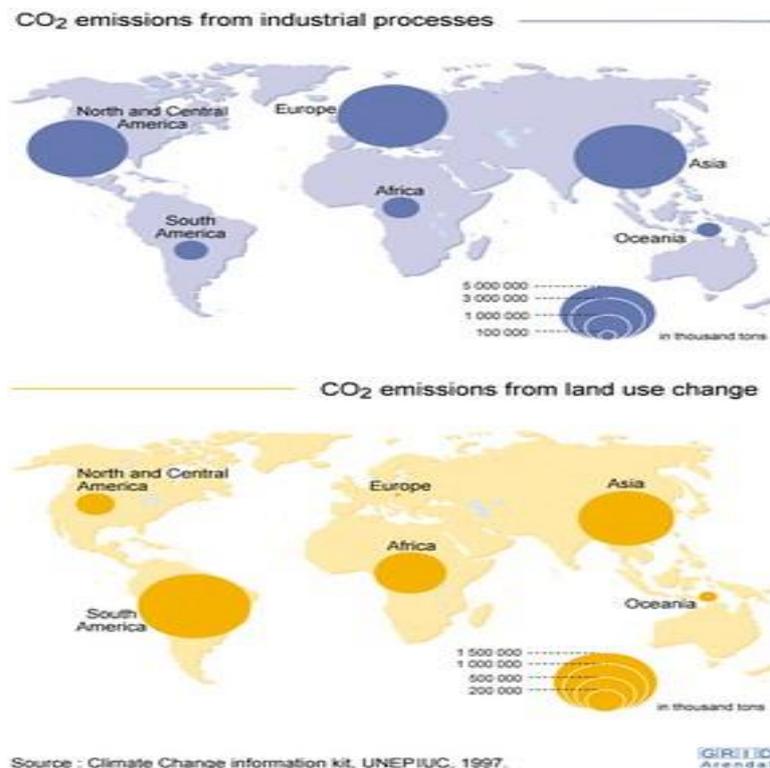


Figure 1

The particular characteristic of global warming, compared with most environmental problems, is that it is global as the term indicates. Although everybody contributes to it to a greater or lesser extent, its adverse impact will not fall uniformly. Many, especially in the developing world, are experiencing already significant damages. This non-uniformity of impact on the society made the *Rio Declaration* of June 1992 enshrine the principle of solidarity in its declarations.¹⁷² For example it states in *principle 6* “The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority.”¹⁷³ There is no doubt that Africa is “the continent most vulnerable to the impacts of projected changes.”¹⁷⁴ The effects of global warming is telling in its experiences in food insecurity, increased levels of droughts, flooding, etc.¹⁷⁵

The *Stern Review*¹⁷⁶ gave three devastating impact of climate change on developing countries: First, it affirms that developing regions are at a

¹⁷² Report of the United Nations conference on environment and development. Rio de Janeiro, 3-14 June 1992.

https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_CONF.151_26_Vol.I_Declaration.pdf

¹⁷³ Ibid., 2.

¹⁷⁴ Robert T. Watson, Marafu C. Zinyowera, and Richard H. Moss, (eds.). *The Regional Impacts of Climate Change: An Assessment of Vulnerability.* (A Special Report of IPCC Working Group II) Cambridge: Cambridge University Press, 1997, 6.

¹⁷⁵ Munamoto Chemhuru. *African Environmental Ethics.* Switzerland: Springer 2019, 94.

¹⁷⁶ The Stern review is an influential report published in 2006. It was written by Sir Nicholas Stern, an expert in economics and development who had previously served as the chief economist at the World Bank, among many other roles. Stern and his team set out to examine the economic impacts of climate change itself.

geographic disadvantage: “they are already warmer, on average, than developed regions, and they also suffer from high rainfall variability”. So, “further warming will bring poor countries high costs and few benefits”.¹⁷⁷ Secondly, it is aware of the fact that “developing countries are heavily dependent on agriculture, the most climate-sensitive of all economic sectors, and suffer from inadequate health provision and low-quality public services”.¹⁷⁸ And thirdly, it admits that the low income rate and vulnerabilities of developing regions “make adaptation to climate change particularly difficult.”¹⁷⁹ And Pope Francis corroborates this fact when he says that the worst impact of climate change will probably be felt by developing countries in coming decades.¹⁸⁰

Like we mentioned above, the emission of carbon-dioxide which is the by-product of pollution is one of the major causes of global warming.

¹⁷⁷ Nicholas Stern. *The Economics of Climate Change: The Stern Review*. United Kingdom: Cambridge University Press, 2007, vii.

¹⁷⁸ Ibid.

¹⁷⁹ Ibid.

¹⁸⁰ Pope Francis. *Laudato Si'*, 25.

3.2. Air Pollution

Air pollution is the “contamination of the air by particulates and toxic gases in concentrations that can endanger human and environmental health.”¹⁸¹ It arises due to the burning of coal, wood, vegetation, natural gas, oil, gasoline, diesel, kerosene, liquid biofuels, waste, and chemicals.¹⁸² Pollution has become part of our daily life. Smoke from fuels used in cooking or heating as well as fumes from vehicles and industries are common sight in our world today. Pollutants created by these burning activities or by the manufacture of chemicals rise into the air space, alter the chemical composition of the environment, and compromise human health.¹⁸³ For example, acid rain is a result of the combination of these pollutants combined with water in the atmosphere.¹⁸⁴

“The major sources of air pollution created by people in the developed world involve transportation.”¹⁸⁵ In the United States, it is estimated that Americans put more than 160 million tons of air pollutants into the air each year: 49% from transportation, 28% from fuel burnt in factories and power plants, 13% from evaporation of volatiles, 3% from solid waste disposal, and 7% from miscellaneous other sources.¹⁸⁶ Marquita Hill notes: “Manufacturing and fuelling of cars is the world’s biggest industry” and a “vehicle can produce as much pollution during its manufacture as over its driving lifetime.”¹⁸⁷ It is instructive to discover that the United States, for example, consume roughly 43% of the world’s gasoline to propel less than 5% of the world’s population.”¹⁸⁸ This is what Pope Francis frowns at when he says that many cars, used by one or more people, circulate in the cities and raising the level of pollution.¹⁸⁹

In many parts of the world especially in Africa, indoor burning of solid fuel for cooking, burning of dung and wood adds hugely to the air pollution burden.¹⁹⁰ There are also problems in the more industrialised areas of Africa too where pollution is produced by companies which operate in ways they could never do in developed countries or the so-called first world.¹⁹¹ For

¹⁸¹ Dana Desonie. *Atmosphere: Air pollution and its effects*. New York: Chelsea House Publishers, 2007, 173.

¹⁸² Mark Z. Jacobson. *Air Pollution and Global Warming History, Science, and Solutions* (Second Edition). New York: Cambridge University Press, 2012, 73.

¹⁸³ Dana Desonie. *Atmosphere: Air pollution and its effects*, xi.

¹⁸⁴ *Ibid.*

¹⁸⁵ *Ibid.*, 135.

¹⁸⁶ *Ibid.*, 83.

¹⁸⁷ Marquita K. Hill. *Understanding Environmental Pollution*, 378.

¹⁸⁸ *Ibid.*

¹⁸⁹ *Laudato Si'*, 153.

¹⁹⁰ Gary Fuller. *The Invisible Killer The Rising Global Threat of Air Pollution – and How We Can Fight Back*. London: Melville House UK, 2018, 97.

¹⁹¹ *Laudato Si'* 51.

example in the Niger Delta of Nigeria, daily flaring from oil and gas production is a common sight.

In this light Pope Francis suggests that the richer countries should in solidarity assist the poorer ones. He states that poorer countries are “bound to develop less polluting forms of energy production, but to do so they require the help of countries which have experienced great growth at the cost of the ongoing pollution of the planet.”¹⁹² Urbanisation and industrialisation, as G. Fuller further states, which are some of the benefits of development, will be counteracted if air pollution strategies are not integrated into global economic development plans.¹⁹³

Air pollution is a huge and growing problem that requires government legislation to combat. If this is unchecked, “air pollutants have a variety of effects, from raising global temperature, to destroying natural atmospheric processes, to simply dirtying the air.”¹⁹⁴

¹⁹² *Laudato Si'*, 172.

¹⁹³ Gary Fuller. *The Invisible Killer The Rising Global Threat of Air Pollution – and How We Can Fight Back*, 107.

¹⁹⁴ Dana Desonie. *Atmosphere: Air pollution and its effects*, 91.

3.3. Deforestation

Deforestation is the clearing of large forested areas or “the removal of the existing natural vegetation cover.”¹⁹⁵ Strong evidence suggests that in the last 50 years, “in the name of progress and profit”, a single generation has wiped out over half of the world’s irreplaceable forests.¹⁹⁶ And globally, every minute, 50 acres of rainforest is destroyed.¹⁹⁷ According to the United Nations Framework Convention on Climate Change (UNFCCC), subsistence farming is responsible for 48% of deforestation; commercial agriculture 32%; logging 14%, and fuel wood removals make up 5% of deforestation.¹⁹⁸

Nathaniel O. Adeoye opines that about one-third of our entire forests have been lost during the past few hundred years.¹⁹⁹ A shocking statistic reveals that between 1850 and 1980 about 15 percent of the earth’s forests and woodlands disappeared as a result of human activities: North Africa and the Middle East, declined by 60 percent; those of South Asia by 43 percent, that of tropical Africa declined by 20 percent; and of Latin America by 19 percent.²⁰⁰ Similarly, an estimated 420 million hectares of forest has been lost through deforestation since 1990.²⁰¹ From these analyses, it is clear that there are less forests now across the world than at any time in the past several thousand years. The world’s original forest area, estimated at about 6 billion hectares, has been declining steadily.

The rate of deforestation between 2015-2020, was estimated at about 10 million hectares per year. And Africa had the highest net loss of forest area in 2010–2020, with a loss of 3.94 million hectares per year.²⁰² Since 1990, Africa has reported an increase in the rate of net loss, while South America’s losses have decreased substantially, more than half since 2010 in relation to the previous decade. Asia showed the highest net gain in forest area in the period 2010–2020, followed by Oceania and Europe. Both Europe and Asia reported a net forest gain for each ten-year period since 1990, although both regions show a substantial reduction in the rate of gain since 2010. The figure below shows the rate deforestation from 1990 to 2020.

¹⁹⁵ Paulo Moutinho (ed). *Deforestation around the world*. Croatia: Intech, 2012, 3.

¹⁹⁶ Lydia Bjornlund. *Deforestation*. San Diego: ReferencePoint Press, 2010, 28.

¹⁹⁷ Ibid.

¹⁹⁸ "Investment and Financial Flows to Address Climate Change", UNFCCC 2007, 81.

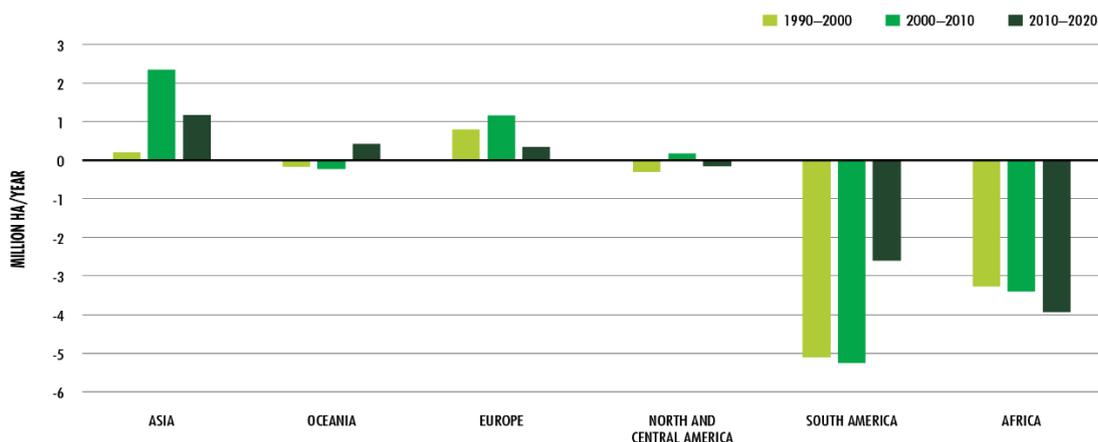
https://unfccc.int/resource/docs/publications/financial_flows.pdf

¹⁹⁹ Nathaniel O. Adeoye et al. “Geospatial Analysis of Deforestation and Land Use Dynamics in a Region of Southwestern Nigeria”. In *Deforestation around the world*, edited by Paulo Moutinho, 150. Croatia: Intech, 2012.

²⁰⁰ Ibid.

²⁰¹ There is however a substantial decrease in deforestation from 16 million hectares to 10 million hectares per year between 2015-2020. This is according to the report of Food and Agriculture Organisation of the United Nation on *The State of the World’s Forests 2020. Forests, biodiversity and people*. Rome, 2020. <https://doi.org/10.4060/ca8642en>

²⁰² FAO and UNEP. *The State of the World’s Forests 2020. Forests, biodiversity and people*. Rome, 2020, 10.



SOURCE: FAO, 2020.

Unfortunately, Africa which has about 16 percent of the world’s forests, is losing its forests at a higher rate than any other continent.²⁰³ Rhett A. Butler laments this situation, when she says that Africa’s “once verdant and extensive rainforests are now a historical footnote. Gone to build ships and furniture, feed hungry mouths, and supply minerals and gems to the West, the band of tropical forests that once extended from Guinea to Cameroon are virtually gone.”²⁰⁴

Even though experts disagree about the extent of deforestation, most of them agree that the loss of forests would have a long-term impact on the health of the Earth and its inhabitants.²⁰⁵ This is because forests are giant reservoirs of carbon and biodiversity that must remain largely intact if we want to bring global warming under control and preserve life on earth.²⁰⁶ But with deforestation, we are not only losing forests’ store of valuable timber products, but also more valuable environmental services and especially a substantial decline in biodiversity. An alarming estimate shows that rainforest is losing 137 plant, animal, and insect species every single day due to deforestation, which equates to about 50,000 species a year.²⁰⁷ And much more, burning forests increases the atmospheric carbon dioxide by releasing those that stored in the plants into the air, and by stopping the forest from sequestering more carbon dioxide which is the major cause of global warming.²⁰⁸

There is now no doubt, Peter Sale concludes, “that the loss of forests worldwide is having important effects on global climate and biodiversity.”²⁰⁹ It goes without saying that deforestation causes changes climatic conditions, expands desertification, and causes displacement of population. More

²⁰³ Lydia Bjornlund. *Deforestation*, 25.

²⁰⁴ “Goodbye to West Africa’s Rainforests”. Rhett A. Butler. 22 January 2006. Consulted 24/06/2022. <https://news.mongabay.com/2006/01/goodbye-to-west-africas-rainforests/>

²⁰⁵ Lydia Bjornlund. *Deforestation*, 26.

²⁰⁶ Paulo Moutinho (ed). *Deforestation around the world*. Croatia: Intech, 2012, IX.

²⁰⁷ *Ibid.*, 152.

²⁰⁸ Dana Desonie. *Atmosphere: Air pollution and its effects*, 87.

²⁰⁹ Peter F. Sale. *Our Dying Planet An Ecologist’s View of the Crisis We Face*. USA: University of California Press, 2011, 59.

especially a major cause of global warming, since “the loss of trees resulting from deforestation prevents photosynthesis from converting atmospheric carbon dioxide to organic material.”²¹⁰ Marquita Hill quoting Stephanie Meeks says: “We may never solve the climate challenge unless we address the loss of tropical forests, a loss which puts out as much carbon dioxide as all the planes, trains, and cars worldwide.”²¹¹

²¹⁰ Mark Z. Jacobson. *Air Pollution and Global Warming History, Science, and Solutions*, 273.

²¹¹ Marquita Hill. *Understanding Environmental Pollution*, third edition. United Kingdom: Cambridge University Press, 2010, 4.

3.4. Loss of biodiversity

The term “*biodiversity*” was coined in 1985 by Walter G. Rosen for a conference that was held in Washington DC in 1986.²¹² According to the *Encyclopedia of Biodiversity*, biodiversity is a measure of the relative abundance of species found in a certain area at a particular time.²¹³ Biodiversity as a concept reflects an observation about the character of our world. It brings to bear the fact that the planet displays a wide variety of living things. And these varieties are responsible for the ecological systems and the earth’s evolutionary processes and ecological systems.²¹⁴ Simply put, biodiversity is a way to talk about the vast variety of life, a way to note the differences and distinctions between individuals and species.

The individual components of biodiversity - genes, species, and ecosystems - provide society with a wide array of goods and services. Examples include the genes that plant breeders use to develop new crop varieties; the species that we use for various foods, medicines, and industrial products; and the ecosystems that provide services, such as water purification and flood control.²¹⁵ The value of these components of biodiversity cannot be overemphasized since it is the source of all our food and many of our medicines, fuels, and industrial products. Pope Francis clearly captures this fact when he says that biodiversity constitute extremely important resources for food and medication.²¹⁶ He further adds that “[d]ifferent species contain genes which could be key resources in years ahead for meeting human needs and regulating environmental problems.”²¹⁷ According to the National Research Council, “the economies of most developing countries depend more heavily on natural resources, so biodiversity-related sectors contribute larger shares of their GDPs.”²¹⁸ Consequently, a change in the composition and abundance of the species that make up an ecosystem can alter the services that can be obtained from the system.²¹⁹

Due to human’s selfish activities, this change is evident today with the myriads of problems facing the ecosystem. Many fragile species are endangered as the changing climate alters their ecosystems faster than they can adapt. As we develop land by deforestation, the animals that lived, fed, and

²¹²James Maclaurin and Kim Sterelny. *What Is Biodiversity?*. Chicago: The University of Chicago Press, 2008, 2.

²¹³ Ian R. Swingland “Biodiversity, definition of”. In *Encyclopedia of Biodiversity vol 1*, chief editor Simon Asher Levin, 377-391. United States: Academic Press.

²¹⁴ Kevin J. O’Brien. *An Ethics of Biodiversity*, 21.

²¹⁵ Paulo Moutinho (ed). *Deforestation around the world*. Croatia: Intech, 2012, 165. 43.

²¹⁶ Pope Francis. *Laudato Si’*, 32.

²¹⁷ Ibid.

²¹⁸ National Research Council. *Perspectives on Biodiversity: Valuing Its Role in an Everchanging World*, 44.

²¹⁹ Ibid., 43.

bred there must find new habitat or die off. As we turn fertile ground into large-scale industrial farms, the variety of plant life in our ecosystems shrinks.²²⁰

There is a rising alarm and concern for saving biodiversity because many species of the earth are facing a catastrophic extinction. Edward O. Wilson, puts it this way: “Researchers of biodiversity agree that we are in the midst of the seventh mass extinction.”²²¹ He further says that if we do not shift our present development course, “at least a fifth of the species of plants would be gone or committed to early extinction by 2030, and half by the end of the century.”²²² Research has it that “over the past few hundred years, humans have increased species extinction rates by as much as 1,000 times background rates that were typical over Earth’s history.”²²³ There is a consensus among concerned scientists that the irreversible loss of species may by 2100 reach one-third of all species now living.²²⁴

Furthermore, the Amazon rainforest which is one of earth’s richest biodiversity locations has been found out to be vulnerable to widespread collapse and been replaced by degraded savannas.²²⁵ In addition, seven out of the world’s twenty-five most critical places with high endemic species concentrations are undergoing habitat loss.²²⁶ This is what Pope Francis decries when he says: “Each year sees the disappearance of thousands of plant and animal species which we will never know, which our children will never see, because they have been lost for ever.”²²⁷ According to Gerardo Ceballos “we are losing species much more rapidly now than in the last two million years.”²²⁸ So one can see going by this pace that “we may lose a large proportion of vertebrates, including mammals, birds, reptiles, amphibians, and fishes, in the next two to three decades.”²²⁹ There would be great consequences on the earth if we lose these species because we would be eroding those conditions that maintain life in our *common home*.

Ethically, biodiversity loss, causes environmental injustices. According to Kevin J. O’Brien when species are driven into extinction due to the actions of wealthy and industrialized people; when crop diversity is replaced by monocultures; when ecosystems are weakened and environments can no longer support life, the effects are felt most by those who cannot afford or would not

²²⁰ Kevin J. O’Brien. *An ethics of biodiversity: Christianity, Ecology and the variety of life*. Washington D.C: Georgetown University press, 2010, 4-5.

²²¹ E. Wilson. “Vanishing Before Our Eyes,” *Time* 255 (2000): 30.

²²² Edward Wilson. *The Future of Life*. New York: Alfred A. Knopf, 2002, 21.

²²³ Holmes Rolston III. *A new environmental ethics: The Next Millennium for Life on Earth*, 126.

²²⁴ John Bellamy Foster. *Ecology Against Capitalism*, 73.

²²⁵ *Ibid.*, 142.

²²⁶ *Ibid.*

²²⁷ Pope Francis, *Laudato Si’*, 33.

²²⁸ Gerardo Ceballos. “Pope Francis’ encyclical letter *Laudato Si’*, global environmental risks, and the future of humanity”. *The quarterly review of biology* 91, n° 3 (2016): 291.

²²⁹ Gerardo Ceballos. “Pope Francis’ encyclical letter *Laudato Si’*, global environmental risks, and the future of humanity”. *The quarterly review of biology* 91, n° 3 (2016): 291.

want to substitute one place for another.²³⁰ Pope Paul VI had warned that humanity was running the risk of destroying nature and becoming in turn a victim of its degradation if no urgent action is taken.²³¹ Therefore, as G. Ceballos affirms: “We are the only species that has the capability to save all endangered animals. Paradoxically, saving them is the only way to save humanity.”²³²

²³⁰ Kevin J. O’Brien. *An Ethics of Biodiversity: Christianity, Ecology, and the Variety of Life*, 5-6.

²³¹ Pope Paul VI. *Octogesima Adveniens*, 21.

²³² Gerardo Ceballos. “Pope Francis’ encyclical letter *Laudato Si’*, global environmental risks, and the future of humanity”, 293.

Conclusion

Pope John Paul II once affirmed that the ecological crisis is not just a scientific and socio-political problem but also and fundamentally a moral one.²³³ According to Peter C. Phan, the moral dimension of the crisis is seen from three different angles: First, is the result of indiscriminate application of advances in science and technology, especially in the fields of industry and agriculture. Secondly, the lack of respect for life. And thirdly, the unscrupulous biological research and genetic manipulation, not only in plant and animal life but in human life as well.²³⁴ These three moral failures evident in the destruction of the environment violate, according to John Paul II, two basic moral principles: respect for life, especially human life, and respect for the integrity of creation²³⁵.

We have shown clearly in this chapter that the earth is confronted by an unprecedented slow but potentially dreadful ecological crisis. And this crisis is the potential destruction of conditions that sustain human life on earth.

The climate change we experience and its negative consequences is as a result of global warming. The rise in the earth's temperature is largely caused by air pollution and deforestation. These in turn results in myriad of problems including loss of biodiversity, desertification, etc. And these further compounds the climate problem.

The frightening part of these problems is that they have a chain relation. One leads to the other. And their most important common feature is their large scale. The activities of one person or one nation can affect all people and all nations. And because these problems are global, all nations must be involved in their solution.

However, their effects may be slow but deadly. This could be likened to cancer disease that quietly destroys the cells of the body until it eventually burst forth with deep damage and causes death. According to Chris William, there is a death sentence hanging over our world as regards pollution.²³⁶

Let us note that humanity's exploitation of natural resources has exceeded earth's sustainable resource-carrying capacity and if not checked, the future of our *common home* would be at risk. Thus, a society cannot claim to have achieved sustainability when the system of which it is a part is unsustainable.

²³³ Pope John Paul II. "Peace with God the creator, peace with all of creation". Message for the celebration of the World Day of Peace 1 January 1990, 5.

²³⁴ P. Phan. "Pope John Paul II and the Ecological Crisis". *Irish Theological Quarterly* 60 (1994): 56-60.

²³⁵ Pope John Paul II. "Peace with God the creator, peace with all of creation", 7.

²³⁶ Chris William. *Ecology and Socialism*. Chicago: Haymarket Books, 2010, 1.

Chapter 4. Ecological Crisis: The African situation

It goes without saying that the earth's three centuries of unrestrained and imprudent industrialization and the burning of fossil fuels with the accompanying greenhouse gas emissions has been the principal cause of global warming. And Africa is the hardest hit by the awful effects of global warming. The continent is currently facing huge environmental challenges: drought and food insecurity; significant desertification; rising sea levels and ocean temperatures; rapid shrinking of lakes, etc.

It is widely known that the environmental crisis we face has multiple effects on human life. Extreme events such as floods may spread water-borne diseases and lead to damages to property, which, in turn, sometimes leads to psychological problems among the affected population.

Cultivation of crops, raising of livestock, crafts and herbal medicines are still part of a living tradition in Africa. The old relationship between man and his environment still hold sway in many African societies. Thus, any change in the climatic condition, directly affects the lives of the people.

With the current global ecological crisis as a result of global warming, Africa is indeed in trouble. The attendant effects of climate change, loss of biodiversity, etc have a serious implication in the social, economic and political well-being of Africa. The impact of all these on African countries, which already have fragile socio-economic structures, is grave.

Migration and conflict are two of the major social consequences of environmental change as predicted in the environment-migration and climate-conflict subfields.²³⁷ So we shall look at the socio-economic crisis facing the African continent as a result of climate variability.

²³⁷ L. Freeman. "Environmental Change, Migration, and Conflict in Africa: A Critical Examination of the Interconnections". *Journal of Environment & Development* 26 (2017): 352.

4.1. Poverty

Poverty has been described as a pronounced deprivation in well-being of an individual, such that he or she lacks basic resources required for him or her to live a decent life.²³⁸ This will include lack of adequate education; lack of access to health facilities, clean water and sanitation; insufficient capacity and lack of opportunity to better one's own life.²³⁹ Poverty has a devastating effect on developing nations and particularly on sub-Saharan Africa,²⁴⁰ where millions continue to live far below the minimum levels required for a decent human existence, deprived of shelter, food and clothing, health and sanitation.²⁴¹

Unfortunately, the poor have traditionally taken the blame for causing society's many problems. And one accusation directed against them is that they cause environmental degradation. The general consensus seems to be that poverty is a major cause of environmental degradation.²⁴² For example, in the Brundtland Commission Report, it explicitly states that "poverty is a major cause and effect of environmental problems"²⁴³ and amelioration of poverty is a necessary and central condition of any effective program to deal with environmental concerns.²⁴⁴

According to the environmental Kuznets curve, "economic development initially leads to a deterioration in the environment, but after a certain level of economic growth, a society begins to improve its relationship with the environment and levels of environmental degradation reduces."²⁴⁵ In as much as this sounds factual, there must always be a well laid out set of policies that would be binding and that would serve as guide for developmental actions.

It is true that the deplorable environmental conditions can be attributed partly to poverty itself, but the governments of many developing countries must share the blame. When the government is unable to provide the basic necessities of life for its citizens, for example electricity, they are forced to embark in the use of firewood or charcoal which leads to deforestation. Furthermore, many development policies of these governments have been

²³⁸ B.B. Omoniyi. 2018, "An examination of the causes of poverty on economic growth in Nigeria". *Africa's Public Service Delivery and Performance Review* 6, n° 1 (2018): 3.

²³⁹ Ibid.

²⁴⁰ Ibid., 1.

²⁴¹ D. D. Eni& E. Ubong. "Poverty and Environmental Degradation in Uyo Urban, Akwa Ibom State, Nigeria". *African Journal of Educational Studies in Mathematics and Sciences* 6 (2008): 57.

²⁴² A. K. Duraiappah. "Poverty and Environmental Degradation: A Review and Analysis of the Nexus". *World Development* 26, n° 12 (1998): 2169. 2169-2179.

²⁴³ World Commission on Environment and Development. *Our Common Future*. Oxford: Oxford University Press, 1987

²⁴⁴ A. K. Duraiappah. "Poverty and Environmental Degradation: A Review and Analysis of the Nexus", 2169.

²⁴⁵ "Environmental Kuznets curve". Tejvan Pettinger. 11 Sept. 2019. Consulted 16/11/2022. <https://www.economicshelp.org/blog/14337/environment/environmental-kuznets-curve/>

conceived out of selfishness, or incompetence, and have worsened the plight of the poor.²⁴⁶ And the very resources upon which the poor depend have in many cases been plundered through their corrupt policies.²⁴⁷ It is ironical that the poor are both agents and victims of environmental damage.

It cannot be overstated that environmental degradation is a factor that leads to poverty. Both national and international experts have acknowledged that “environmental degradation is a major factor constraining socio-economic development in the Africa region and that reversing this trend is an essential ingredient in any poverty alleviation policy.”²⁴⁸ People whose lives depend on natural resources suffer directly from the effects of environmental degradation.²⁴⁹ If the impacts of global climate change increase climatic variability and allow for the destruction of the environment, it seems reasonable to say that the impacts will fall predominantly on those whose life depend on the environment.

A World Bank (WB) report confirmed that a greater variation in rainfall patterns is likely to increase the variability of crop yields.²⁵⁰ In the Sahel, desertification has brought an alarming drop in agricultural production. The harvest of sorghum, millet, and groundnut harvests have been critically low.²⁵¹ Speaking on the impact of desertification in Africa, Michael B. K. Darkoh, points to the fact that desertification deprives people of biological resources that are important for human sustenance.²⁵² This impact reduces incomes of hundreds of millions of already poor peasants who form part of the same economy. Worse still, environmental crisis, such as floods or hurricanes, can also wipe out household assets and contribute to loss of life.²⁵³

According to World Commission on Environment and Development (WCED), “many parts of the world are caught in a vicious downward spiral: poor people are forced to overuse environmental resources to survive from day to day, and the impoverishment of their environment further impoverishes them, making their survival even more difficult and uncertain.”²⁵⁴ The poor are forced to engage in unsustainable exploitation of resources in their

²⁴⁶ Jack M. Hollander. *The real environmental crisis*. California: University of California Press, Ltd., 2003, 14.

²⁴⁷ Ibid.

²⁴⁸ Kempe Ronald Hope, Sr. *Poverty, Livelihoods and governance in Africa: Fulfilling the Development Promise*. New York: Palgrave Macmillan, 2008, 20.

²⁴⁹ B.B. Omoniyi. 2018, “An examination of the causes of poverty on economic growth in Nigeria”, 3.

²⁵⁰ The World Bank. *Poverty and environment: Understanding Linkages at the Household Level*. Washinton DC: The World bank, 2008, 6.

²⁵¹ Ibid.

²⁵² M. B. K. Darkoh. “The nature, causes and consequences of desertification in the drylands of Africa”. *Land degradation & Development* 9 (1998): 13. 1-20

²⁵³ The World Bank. *Poverty and environment: Understanding Linkages at the Household Level*, 6.

²⁵⁴ World Commission on Environment and Development. *Our Common Future*.

environment for short-term survival.²⁵⁵ This is the only available source of income generation. They rely on it for survival.

One could affirm with Kempe Ronald Hope, that there will be declines in crop yields, pastures for animals, the availability of forest products, if the environmental problems of deforestation, desertification, soil erosion, etc continue in Africa.²⁵⁶ And “such continuing declines of environmental resources will have greater impacts on the poor given their much greater dependence on those resources for their survival and livelihoods.”²⁵⁷

A background paper for the World Bank Environmental Strategy gave the following conclusion on the impact of environmental factors on poverty:

- Opportunity declines when poor people who depend on natural resources for their livelihoods, can no longer do so because of environmental resource degradation and lack of reasonable alternatives.
- Capacity is impaired when poor people’s health is damaged by dirty water, dirty air or by diseases related to environment (such as malaria). Illnesses related to environment are some of the biggest killers and causes of sickness amongst the poor.
- Security is threatened by natural disasters and climatic variation. As we have argued, the poor tend to be more physically vulnerable to natural disasters and have fewer resources to enable them to ride out the shocks.²⁵⁸

Therefore, in line with Jack Hollander, we could confidently say that it is “socially responsible and morally binding” for the rich nations to collaborate with people in the developing world.²⁵⁹

²⁵⁵ D. D. Eni& E. Ubong. “Poverty and Environmental Degradation in Uyo Urban, Akwa Ibom State, Nigeria”, 56.

²⁵⁶ Kempe Ronald Hope, Sr. *Poverty, Livelihoods and governance in Africa: Fulfilling the Development Promise*, 11.

²⁵⁷ Ibid.

²⁵⁸ J. Bucknall, C. Kraus, P. Pillai. *Poverty and environment: background paper for the World Bank environment strategy*. 2001, 33.

http://web.worldbank.org/archive/website00346F/WEB/PDF/POVERTY_.PDF

²⁵⁹ Jack M. Hollander. *The real environmental crisis*, 2.

4.2. Agro-Pastoral Conflict²⁶⁰

There are close links between warfare and climate change and other forms of environmental degradation. Environmental destruction can cause or be an instrument of a conflict. Conflicts have been associated with how struggles over shrinking environmental resources, due to overuse or misuse and an unfair distribution, build up the stresses which trigger conflict.²⁶¹ According to Homer-Dixon:

Scarcities of environmental resources - in particular cropland, fresh water, and forest - are contributing to mass violence in several areas of the world. While these “environmental scarcities” do not cause wars between countries, they do sometimes aggregate stresses within countries, helping stimulate ethnic clashes, urban unrest, and insurgencies.²⁶²

Agro-pastoral conflict is described as that which puts communities whose main activity is farming, against communities who derive their livelihood from raising cattle.²⁶³ While herders or pastoralists depend largely on mobile livestock herding, farmers are mostly sedentary and live on small plots of land and from rain-fed agriculture. During certain seasons, farmers and herders share grazing/growing land and water sources. These two groups often compete for the use of land and water, and this competition sometimes leads to violent conflicts. So this proximity creates interactions and sometimes conflicts because of resource allocation issues.²⁶⁴

Researchers on issues relating to climate change and security in sub-Saharan Africa, see agro-pastoral conflict as a likely manifestation of resource struggles stemming from climate change.²⁶⁵ One of these reports puts climate/resource related conflicts at 40%.²⁶⁶

According to Leif Brottem, the pervasiveness of conflicts, in West Africa for example, is due to a seasonal incompatibility between the two means of sustenance: farming and animal husbandry.²⁶⁷ He explains that this incompatibility often occurs at the end of the rainy season when farmers are attempting to harvest their crops and at the same time, herders are working to provide their animals with adequate water and pasture before the annual dry

²⁶⁰ It could also be referred to as Farmer-Herder conflict or clashes.

²⁶¹ C. I. Obi. “Globalization and Environmental Conflict in Africa”. *African Journal of Political Science* 4, n° 1 (1999): 45.

²⁶² T. Homer-Dixon. “Environmental Scarcity, Mass Violence and the Limits to Ingenuity”, *Current History* 95, n° 604, (1996): 359.

²⁶³ Charlène Cabot. *Climate Change, Security Risks and Conflict Reduction in Africa*. New York: Springer, 2017, 32.

²⁶⁴ Charlène Cabot. *Climate Change, Security Risks and Conflict Reduction in Africa*. 32.

²⁶⁵ L. V. Brottem. “Environmental Change and Farmer-Herder Conflict in Agro-Pastoral West Africa”. *Human Ecology* 44 (2016): 547.

²⁶⁶ Ibid.

²⁶⁷ Ibid., 549.

season begins.²⁶⁸ These conflicts typically occurs when crop damage is not compensated financially or is perceived as an intentional act by the farmers. While Herders, on the other hand, see the steady expansion of agricultural fields into their grazing areas and around their water points as an equally unjust and provocative practice.²⁶⁹ Hence, the conflict erupts into more direct and violent confrontations. And at times it escalates into a kind of communal or religious war.²⁷⁰

Obviously, societies with population groups like this, that depend heavily on natural resources are especially vulnerable and likely to see a surge in conflicts and violence due to climate change. The debate on climate change has highlighted the fact that negative effects on environment would certainly lead to conflicts and wars, and problems of sustainable development.²⁷¹

Redie Bereketeab outlined four outstanding features that characterize the Horn of Africa²⁷²: state crisis, chronic conflicts, environmental degradation and dearth of development.²⁷³ These crises are so related that one leads to another. The environmental degradation which leads to severe shortage of resources such as food, water, grazing pastures, wood, etc push people to scramble for meagre available resources that finally leads to conflicts and wars.²⁷⁴ It is generally acknowledged that the conflict fault line between the Hutu majority and the Tutsi minority was an ethnic one. However, it is much less known that *Hutu* and *Tutsi* are not solely the names of ethnic groups but respectively mean *people who farm* and *people who own cattle*.²⁷⁵ Mersie Ejigu identifies the confrontation as a typical example of an agro-pastoral conflict.²⁷⁶ For him, causes of such conflicts usually relate to disputes over the sharing of natural resources such as water and grazing land.²⁷⁷

Another case of similar complexity is that of Darfur in Sudan. Many researchers are of the view that the conflict in Darfur is a *climate change conflict* and that the transformation of the ecological zones and the ongoing land degradation and desertification processes were underlying causes of

²⁶⁸ Ibid.

²⁶⁹ Ibid., 549.

²⁷⁰ Ibid.

²⁷¹ R. Bereketeab. "Environmental Change, Conflicts and Problems of Sustainable Development in the Horn of Africa". *African and Asian Studies* 13 (2014): 295. 291-314.

²⁷² Sudan, South Sudan, Somalia, Ethiopia, Eritrea and Djibouti.

²⁷³ R. Bereketeab. "Environmental Change, Conflicts and Problems of Sustainable Development in the Horn of Africa", 292.

²⁷⁴ Ibid.

²⁷⁵ Mersie Ejigu. 2009: "Environmental Scarcity, Insecurity and Conflict: The Cases of Uganda, Rwanda, Ethiopia and Burundi", 891 in: Brauch, Hans Günter et al (eds.): *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts*. Hexagon Series on Human and Environmental Security and Peace, vol. 4. New York: Springer 2009.

²⁷⁶ Ibid.

²⁷⁷ Ibid.

violence.²⁷⁸ A research on the relationship between temperature and conflict showed that much warmer than normal temperatures raise the risk of violence, whereas average and cooler temperatures have no effect.²⁷⁹

According to Charlene Cabot there is a tendency most times to consider these conflicts along ethnic or religious lines since the fault line between the two groups is often also ethnical or religious.²⁸⁰ This agro-pastoral conflicts are indeed so because of the differences in lifestyles (sedentary or nomadic), subsistence activities (farming or herding) and religious inclinations (Christian or Muslim). However, ethnicity or religiosity is often a mere channel of and not a cause of conflict.²⁸¹ Changing environmental conditions is the major cause of this conflict.

In Nigeria for example, many researchers have attributed the herder-farmer conflict to diminishing natural resources engendered by climate change.²⁸² The scarcity of livestock feed caused by desertification in northern Nigeria, has driven herders and their livestock to the Middle Belt and Southern parts of the country in search of grassland where much of the population are Christian and generally farmers.

While the farmers have attributed the conflict to the tendency of cattle to damage their crops and pollution of water sources, the herders argued that cattle rustling and barricade of traditional grazing routes are the major drivers of the conflicts.²⁸³ According to Nsemba Edward Lenshie et al, the conflict between herders and farmers in Nigeria is a struggle for economic spaces for survival which is made worse by the effects of climate change.²⁸⁴

²⁷⁸ Charlène Cabot. *Climate Change, Security Risks and Conflict Reduction in Africa*. New York: Springer, 2017, 12.

²⁷⁹ N. Solomon et al. "Environmental impacts and causes of conflict in the Horn of Africa: A review". *Earth-Science Reviews* 177 (2018): 288.

²⁸⁰ Charlène Cabot. *Climate Change, Security Risks and Conflict Reduction in Africa*. New York: Springer, 2017, 35.

²⁸¹ Ibid.

²⁸² N. E. Lenshie , K. Okengwu , C. N. Ogbonna and C. Ezeibe. "Desertification, migration, and herder-farmer conflicts in Nigeria: rethinking the ungoverned spaces thesis". *Small Wars & Insurgencies*, (2020): 1-2.

²⁸³ Ibid.

²⁸⁴ Ibid.

4.3. Environmental related diseases

Environmental factors are known to be of great importance to the wellbeing of every living thing. Many writers have considered the importance of the relationship between climatic variations and health. As early as the 4th century BC Hippocrates, for example, had suggested that, for one to study the art of healing, he or she must first observe the seasons and be mindful of warm and cold winds.²⁸⁵

The World Health Organisation has copiously proven that climate change is adversely impacting the health and lives of billions of people around the world.²⁸⁶ According to WHO, it is “the single biggest health threat facing humanity”.²⁸⁷ Climate change as we have noted earlier in this work, affects the ecosystem, food production, shelter and economic development in general. And the deterioration of these conditions has adverse effects on people’s health.²⁸⁸ The “One Health” model²⁸⁹ of WHO is a further confirmation of the fact that “the health of humans, animals and ecosystems are interconnected.”²⁹⁰ If current trends of increase in temperature, and in the frequency of extreme weather events continue, there would be serious consequences to human health. Many prevalent human diseases are linked to climate fluctuations, from cardiovascular mortality and respiratory illnesses due to heatwaves, to altered transmission of infectious diseases.²⁹¹

In their research, A. Afolayan, and I. Adelekan indicates three potential health implications of climatic variation especially on migrant families: 1) exposure to diseases resulting from movement through different ecological zones, for example, malaria, 2) physical stress, which can lower the resistance of individuals and increase the susceptibility to infection, for example, fatigue and under nutrition/malnutrition; and 3) psychological stress, in terms of problems of adjustment, which may also increase the risk of disease.²⁹²

According to Peter Nkashi Agan, “climate change could alter and disrupt natural systems thereby bringing new challenges to the control of infectious diseases since a changing climate makes it possible for diseases to

²⁸⁵ A.A. Afolayan, and I.O. Adelekan. “The role of climatic variations on migration and human health in Africa”. *The Environmentalist* 18 (1998): 212. 213-218.

²⁸⁶ “Climate change and health”. World Health organisation. 30 October 2021. Consulted 22 August 2022. <https://www.who.int/en/news-room/fact-sheets/detail/climate-change-and-health>

²⁸⁷ Ibid.

²⁸⁸ Walter Leal Filho et al. *Climate Change and Health: Improving Resilience and Reducing Risks*. Switzerland: Springer International Publishing, 2016, 2.

²⁸⁹ One Health is a collaborative, multisectoral, and transdisciplinary approach—working at the local, regional, national, and global levels—with the goal of achieving optimal health outcomes recognizing the interconnection between people, animals, plants, and their shared environment.

²⁹⁰ J. S Mackenzie and M. Jeggo. “The One Health Approach—Why Is It So Important?”. *Tropical Medicine and Infectious Diseases* 4 n° 88 (2019): 2.

²⁹¹ Ibid.

²⁹² A.A. Afolayan, and I.O. Adelekan. “The role of climatic variations on migration and human health in Africa”, 214.

spread or emerge in areas where they had been limited or had not even existed before”.²⁹³ For example, it has been reported that areas that were malaria-free are now experiencing it in a near-epidemic proportion due to climate variation.²⁹⁴

An assessment on the impact of climate on health carried out by the IPCC holds that Africa has a number of climate-sensitive diseases and the most prominent are malaria, meningitis and cholera.²⁹⁵ It is estimated that about 93% of the people living in Africa are at the risk of malaria disease. According to reports, malaria kills over two million people every year and over 80% of this people are in Africa.²⁹⁶ The death toll is predicted to double in the next 20 years if no new control measures are developed. This is one of the common and serious diseases in Africa.

Temperature plays a fundamental role in the rate of multiplication of mosquitoes. A minimum temperature of 16 °C, restricts parasite development and prevents the development of the vector in the aquatic stages.²⁹⁷ In Nigeria for example where the temperature is between 28 and 35 °C, there is every tendency for rapid development of mosquitoes. And this fact was corroborated by Vincent Nduka Ojeh and Sheyi A. Aworinde when they held that the average temperature condition of Nigeria is suitable for the development of both the vector and the parasite, and this is why malaria is one of the major diseases in Nigeria.²⁹⁸

Moreover, extreme temperatures during the dry season are also a good habitat for the bacteria that cause meningitis.²⁹⁹ In Cameroon, as reported by Mbih J. Tosam and Richard A. Mbih, the three northern regions which are threatened by desertification, usually experience extreme temperatures in the dry season and meningitis is very common in the region during the months of November through February.³⁰⁰

Another major problem apart from the spread of disease is the shortage of medicinal plants. Obviously, the life cycles of plants follow seasonal changes, thus, alterations in the timing of such cycles, where some seasons

²⁹³ P. N. Agan. “Climate Change and Health Nexus: A Review”. *Journal of Earth Science & Climatic Change* 8, n° 12 (2017): 1. 1-3.

²⁹⁴ Ibid.

²⁹⁵ Anthony J. McMichael et al (eds). *Climate change and human health: Risks and Responses*. Geneva: World Health Organization, 2003, 51.

²⁹⁶ Ibid., 173.

²⁹⁷ Walter Leal Filho et al. *Climate Change and Health: Improving Resilience and Reducing Risks*, 173.

²⁹⁸ Vincent Nduka Ojeh and Sheyi A. Aworinde. “Climate Variation and Challenges of Human Health in Nigeria: Malaria in Perspective” in *Climate Change and Health: Improving Resilience and Reducing Risks* edited by Walter Leal Filho et al. 174. Switzerland: Springer International Publishing, 2016.

²⁹⁹ M. J. Tosam and R. A. Mbih. “Climate change, health, and sustainable development in Africa”. *Environmental development and sustainability* 17 (2015): 792 787-800)

³⁰⁰ Ibid.

extend far beyond their normal periods, spells doom for these plants.³⁰¹ Consequently, African Traditional Medicine practitioners find it difficult to get the necessary plants for their work. About 85 % of Africans depend on traditional medicine, which uses tree barks, leaves, herbs and other plants for medicinal purpose.³⁰² The unavailability of these medicinal plants is synonymous to spread of diseases and ultimately death. It is quite obvious, as Pope Francis noted, that the loss of forests and woodlands would mean the loss of species which may constitute extremely important resources for curing disease.³⁰³

³⁰¹ Vincent Nduka Ojeh and Sheyi A. Aworinde. "Climate Variation and Challenges of Human Health in Nigeria: Malaria in Perspective", 173.

³⁰² M. J. Tosam and R. A. Mbih. "Climate change, health, and sustainable development in Africa", 792.

³⁰³ Pope Francis. *Laudato Si'*, 32.

4.4. Forced Migration³⁰⁴

Migration is a typical survival strategy used by people confronting disasters. It is an expected response, when faced with the issue of safety and security.³⁰⁵ According to Yang, “at a very high level, migration correlates with natural disasters in developing countries ... Shocks stimulate people to migrate to escape the negative effects of disasters.”³⁰⁶ Pope Francis regrets the fact that “there has been a tragic rise in the number of migrants seeking to flee from the growing poverty caused by environmental degradation.”³⁰⁷

Forced migration has to do with the non-voluntary movement of people in order to escape a situation of violence, armed conflict, violation of their rights, a natural or man-made disaster.³⁰⁸ Evacuation in the face of life-threatening climate events could be considered also as a form of forced migration. According to Oli Brown, *forced migration* hinders development in at least four ways; a) by increasing pressure on urban infrastructure and services; b) by undermining economic growth; c) by increasing the risk of conflict; 4) by leading to worse health, educational and social indicators among migrants themselves.³⁰⁹

Generally, the principal factors of migration are considered in three categories: 1) factors related to the region or country of origin, including political instability and conflict, lack of economic opportunities, and lack of access to resources; 2) factors related to the region or country of destination, including the availability of employment and demand for workers, higher wages, political stability or access to resources; and (3) intervening factors that facilitate or restrict migration, including ease of transportation, family or social networks, government immigration or emigration policies, economic ties such as trade and investment linkages, or social and cultural exchanges.³¹⁰

In 2015, the number of international migrants globally was estimated at about 244 million and about 740 million people had migrated within their own country of birth.³¹¹ Disasters triggered by climate and weather-related hazards, such as floods and storms, accounted for the bulk of the 24.2 million in 2016.³¹² Each year since 2008, an average of 25.3 million people have been

³⁰⁴ Referred to by some authors as ecological or environmental migration

³⁰⁵ Oli Brown. *Migration and Climate Change*. Geneva: International Organization for Migration, 265.

³⁰⁶ As quoted by Frank Laczko and Christine Aghazarm. *Migration, Environment and Climate Change: Assessing the evidence*, 265.

³⁰⁷ Pope Francis. *Laudato Si'*, 25.

³⁰⁸ Frank Laczko and Christine Aghazarm. *Migration, Environment and Climate Change: Assessing the evidence*. Geneva: International Organization for Migration, 2009, 252.

³⁰⁹ Oli Brown. *Migration and Climate Change*, 10.

³¹⁰ *Ibid.*, 69.

³¹¹ International Organisation for Migration. *World Migration Report 2018*. Geneva: International Organization for Migration, 2017, 38.

³¹² International Organisation for Migration. *World Migration Report 2018*. Geneva: International Organization for Migration, 2017, 38.

newly displaced by disasters alone.³¹³ Obviously, this is far greater than the average for conflict and violence.³¹⁴

William Peterson was one of the earliest authors who considered the effects of the physical environment on migration as being the movement from ecologically risky areas to safer locations.³¹⁵ In recent literature, researchers of environmental migration agree on the conclusion that adverse climate change is a contributory reason for the migration of people.³¹⁶

According to a report, climate change is one of the major causes of migration in Africa:

drought influenced by an El Niño climate cycle in 2015 and 2016 has caused a humanitarian crisis related to widespread food shortages and famine, contributing ... to human displacement in a number of countries. Rapid-onset disasters such as flooding in 2016 also displaced around 300,000 people in Ethiopia, 40,000 in Kenya, 70,000 in Somalia, and thousands more in the United Republic of Tanzania and Madagascar.³¹⁷

Sadly, the death toll of African migrants who regularly risk their lives to cross into the European Union in nightmarish journeys across the Sahara desert or Mediterranean is alarming. About 6,281 migrants worldwide died or went missing in 2015.³¹⁸ In 2016, it was about 7,927, 26 per cent more.³¹⁹ In the Mediterranean, the number of deaths and missing migrants recorded increased from 3,785 in 2015 to 5,143 in 2016.³²⁰ The Mediterranean alone accounted for more than 60 per cent of migrant deaths and missing migrants in both years. And nearly 1,400 deaths and missing migrants were recorded in North Africa in 2016, mostly due to the harsh natural environment, violence and abuse, dangerous transportation conditions, and sickness and starvation.³²¹

Human migration patterns have long been a reflection of climatic changes and natural disasters. For example, Lake Chad, which formerly extended into Niger, no longer exists within that country's territory.³²² And this has led to the migration of the people whose livelihoods mainly depend on the lake.³²³ It is anticipated that climate change will result in higher temperatures,

³¹³ Ibid.

³¹⁴ Ibid.

³¹⁵ W. Petersen. "A General Typology of Migration", *American Sociological Review* 23, n° 3 (1958): 256–266.

³¹⁶ N. Kobetska, L. Danyliukii and Z. Yaremak. "Environmental Migration". *Environmental Policy and Law* 49, n° 6 (2019): 396.

³¹⁷ International Organisation for Migration. *World Migration Report 2018*. Geneva: International Organization for Migration, 2017.

³¹⁸ Ibid.

³¹⁹ Ibid.

³²⁰ Ibid.

³²¹ Ibid.

³²² Frank Laczko and Christine Aghazarm. *Environment and Climate Change: Assessing the evidence*, 216.

³²³ Ibid.

more intense rainfall and more extreme weather events, such as droughts, storms and floods that will prompt further population movements.³²⁴ As Pope Francis laments: “changes in climate, to which animals and plants cannot adapt, lead them to migrate; this in turn affects the livelihood of the poor, who are then forced to leave their homes, with great uncertainty for their future and that of their children.”³²⁵

Internationally, it has been suggested that in addition to regulating migration and protecting the rights of persons forced to change their place of residence, special attention should be given to measures aimed at eliminating the factors contributing to migration.³²⁶ According to Toyin Falola and Niyi Afolabi, “the solution to the economic tensions, political controversies, and human costs involved in African migrations, lies in inviting a spirit of collaboration and partnership between beneficiaries and benefactors.”³²⁷

³²⁴ Ibid. 274.

³²⁵ Pope Francis. *Laudato Si'*, 25.

³²⁶ N. Kobetska, L. Danyliukii and Z. Yaremak. “Environmental Migration”, 396.

³²⁷ Toyin Falola and Niyi Afolabi (eds). *The Human Cost of African Migrations*. New York: Routledge 2007, 383.

4.5. Environmental refugees³²⁸

Refugees or people in flight from their traditional homelands has been very much a part of human history.³²⁹ However, one of the startling developments in the twenty first century in the area of environmental degradation, is the emerging concept of environmental refugees.

A United National Environmental Programme (UNEP) researcher Essam El-Hinnawi describes *environmental refugees* as those who have been forced to leave their traditional homeland, temporarily or permanently, because of an obvious environmental disruption that has jeopardized their existence and seriously affected the quality of their lives.³³⁰ He further adds that ‘environmental disruption’ refers to “any physical, chemical, and/or biological changes in the ecosystem (or the resource base) that renders it, temporarily or permanently, unsuitable to support human life.”³³¹ For Norman Myers, those who can no longer gain a secure livelihood in their homelands because of drought, soil erosion, desertification, deforestation and other environmental problems, are environmental refugees.³³² In their desperation, they abandon their homelands to seek refuge elsewhere with little hope of a foreseeable return.³³³

Environmental degradation has been a great threat to the development of human societies. The deluge of the biblical time and the great floods³³⁴ are examples of how hostile nature could remove people from their habitable land. The story is very much real in our world today. Due to the negative effects of global warming, natural catastrophes, deforestation and desertification, millions of hectares of fertile land are lost every year. Consequently, millions of people worldwide are involuntarily removed from their land and are forced to flee to new places where living conditions are normally much worse than what they had. These are the people referred to as *environmental refugees*.³³⁵

According to Jodi Jacobson, environmental refugees could be seen within the context of three main causal agents, namely: “those displaced temporarily because of a local disruption such as an avalanche or earthquake; those who migrate because environmental degradation has undermined their livelihood or poses unacceptable risks to health; and those who resettle because

³²⁸ Referred to by some authors as *climate or environmental migrants, ecological refugees*.

³²⁹ W. Olivier. “International refugee law: a reappraisal”. *Journal of South African Law* 1993: 424-438.

³³⁰ El-Hinnawi, E. *Environmental Refugees*. Nairobi, Kenya: United Nations Environmental Programme. 1985, 4.

³³¹ Ibid.

³³² N. Myers. “Environmental refugees: a growing phenomenon of the 21st century”. *Philosophical Transactions of the Royal Society B: Biological Sciences* 357 (2022): 609.

³³³ Ibid.

³³⁴ Genesis 7 & 8.

³³⁵ E. Boon & T. Le Tra. “Are Environmental Refugees Refused?”. *Studies of Tribes and Tribals* 5, n° 2 (2007): 87.

land degradation has resulted in desertification or because of other permanent and untenable changes in their habitat.”³³⁶

Emmanuel K. Boon and Tran Le Tra gave three reasons why *environmental refugee* is different from *conventional refugee*³³⁷: Firstly, it clearly confirms that environmental disruption is a reason for the mass movement of humans, besides wars and social conflicts, in contemporary time. Secondly, the definition includes man-made ecological disasters and thus helps to identify those who are responsible for the related environmental changes. Lastly, the definition does not specify that one should leave his or her country in order to be recognised as an environmental refugee.³³⁸ In other words, crossing international borders is not a major reason for one to be recognised as a refugee and to be assisted and protected by international laws and treaties.

In a report by the United Nations High Commissioner for Refugees (UNHCR), an average of 21.5 million people were forcibly displaced each year due to climate related factors between 2008 and 2016.³³⁹ And it further warns that “tens of millions of people, however, are likely to be displaced over the next two to three decades due in large measure to climate change impacts.”³⁴⁰ In 2021, it was reported that in Somalia, a total number of one million people were internally displaced due to drought alone.³⁴¹ And this number is expected to rise between five and seven million people due to hunger caused by the drought.³⁴² The shrinking of the lake Chad basin has displaced over 2.4 million people.³⁴³ And the magnitude and recurrence of the flooding events in the Zambezi river valley in central Mozambique, have displaced so many people. “In 2001, 2007 and 2008 heavy rains caused flooding that affected over one million people in the Mozambique.”³⁴⁴

Obviously, scientific research has shown that greenhouse gas emissions is the major cause of climate change. And historically, developed countries

³³⁶ Jodi L. Jacobson. *Environmental refugees: a yardstick of habitability*. Washington D.C: Worldwatch Institute, 1988, 37-38.

³³⁷ A person who is outside his/her country of nationality or habitual residence; has a well-founded fear of persecution because of his/her race, religion, nationality, membership in a particular social group or political opinion; and is unable or unwilling to avail himself/herself of the protection of that country, or to return there, for fear of persecution.

³³⁸ E. Boon & T. Le Tra. (2007) “Are Environmental Refugees Refused?”, 87.

³³⁹ “Report on the impact of climate change on migration”. The White House. October 2021. <https://www.whitehouse.gov/wp-content/uploads/2021/10/Report-on-the-Impact-of-Climate-Change-on-Migration.pdf>

³⁴⁰ Ibid.

³⁴¹ “One million people displaced by drought in Somalia”. UNHCR and NRC. 11 August 2022. Consulted 12 August 2022. <https://www.unhcr.org/en-us/news/press/2022/8/62f4c3894/million-people-displaced-drought-somalia.html>

³⁴² Ibid.

³⁴³ Amali Tower. *Shrinking option: The nexus between climate change, displacement and security in the Lake Chad basin*. Nigeria: Climate Refugees 2017, 12.

³⁴⁴ K. Warner et al. “Climate change, environmental degradation and migration”. *Nat Hazards* 55 (2010): 705.

have been almost entirely responsible for those emissions. However, it is not the developed countries that are likely to suffer the worst consequences of climate change. Even if they do, they have the resources to adapt almost immediately, unlike those living on marginal land are likely to suffer desertification, drought, flooding and consequently starvation. Generally, any poor area lacking the economic capacity and infrastructure to cope with any increase in extreme weather condition will not be spared. Of course, developed countries may suffer some adverse effects but they are better placed to respond to climate change and its consequences. Thus, the role of developed nations in creating environmental burdens for less developed nations suggests an historic injustice that needs to be rectified.³⁴⁵ On this approach, as suggested by Derek Bell, duties to environmental refugees would be duties of corrective justice.

It is unfortunate that in international refugee law, environmental conditions do not constitute a basis for international protection.³⁴⁶

³⁴⁵ D. R. Bell. "Environmental Refugees: What Rights? Which Duties?" *Res Publica* 10 (2004): 139.

³⁴⁶ K. Warner et al. "Climate change, environmental degradation and migration". *Nat Hazards* 55 (2010): 689.

Conclusion

It is important to know that there are myriad environmental problems affecting Africa as a continent that we did not mention in this chapter like toxic waste disposal exported by developed countries, illegal hunting, land grabbing for intensive agriculture etc.

Nonetheless, in this chapter, we have shown some of the socio-economic impact of the current ecological crisis and its devastating effects on the African continent. We have seen how conflicts between farmers and herders over natural resources, more specifically land and water, have been exacerbated by climate change. Many have been driven out of their homeland by environmental disaster. And they have become refugees living in terrible conditions. More still, we noted that climate's abnormality triggers the high spread of diseases especially malaria which is a common and serious disease in Africa. Outbreaks of diseases such as cholera is a common sequela of floods.

Certainly, some of Africa's problems have been largely caused by factors beyond her will or control since extreme weather conditions have considerable impacts on those who depend on climate sensitive resources and ecosystems for their livelihoods. It is not possible in the African context to isolate environmental from social problems. These problems have been aggravated by human choices, political incompetence, and unwillingness of the ruling elites in Africa to chart a course.

As the effects of global warming and climate change become more pronounced, the impact on a continent with pre-existing environmental vulnerabilities and where the effects of climate change are predicted to be most keenly felt should be the focus of every discussion. The submission of Walter Leal Filho et al, is very instructive:

If we maintain the current production and consumption models, the situation will worsen further, and will bring probably irreversible consequences. It is therefore urgent to develop policies that compromise us all, individually and collectively, in a transformative change: reducing greenhouse gas emissions (replacing fossil fuels and developing renewable energy sources), changing patterns of production and consumption, changing social conditions and behaviours.³⁴⁷

³⁴⁷ Walter Leal Filho et al. *Climate Change and Health: Improving Resilience and Reducing Risks*, 7.

Chapter 5. The human roots of ecological crisis

According to Pope Francis, it would hardly be helpful to merely describe symptoms of the ecological crisis without acknowledging its human origins.³⁴⁸ With this assertion he opens the section on the “Human roots of the ecological crisis,” in the encyclical letter *Laudato Si’*, proposing to “focus on the dominant technocratic paradigm and the place of human beings and of human action in the world.”³⁴⁹ In fact, the technological advances reached by humanity in the last two centuries are undeniable, at the same time it has to be taken into account that such an “immense technological development has not been accompanied by a development in human responsibility, values and conscience.”³⁵⁰

Environmental degradation as a phenomenon is not a new thing. It has occurred throughout human history, with profoundly negative consequences. It has caused widespread harm to the non-human world as well. Sadly, it has become a global threat in the last couple of decades. On the one hand, the number of people on this planet has drastically increased and on the other, humans have created technologies that cause far greater damage than ever before. And to the current predicament, the dominant socioeconomic structure – capitalism – neither knows nor accepts limits to its expansion.

Thus, in this chapter we shall discuss how the root cause of ecological crisis stems from human ideologies and activities such as distorted anthropocentrism, consumerism, capitalism etc. We shall also espouse the need for fairer distribution and the common utilization of goods, the social consequences of new technologies and the need for justice across generations. Let us look at these issues in detail one after the other.

³⁴⁸ Pope Francis. *Laudato Si’*, 101.

³⁴⁹ *Ibid.*

³⁵⁰ *Ibid.*, 105.

5.1. The technocratic paradigm

Man has always searched for solutions and means to overcome scarce resources. And technology has been of great help in achieving this dream. For example, he invented aeroplane after vehicles in order for him to reach far places within a short time. And with the inventions of machines, he could carry out daily activities with ease and efficiency. It goes without saying that these discoveries are necessary for the improvement of human life. These inventions and discoveries, as asserted by Pope Francis, have become a remedy to the countless evils which used to harm and limit human beings.³⁵¹

While valuing and relying on science, the Church's Social Teaching criticises scientism because as Pope John Paul II says: “The scientific mentality has succeeded in leading many to think that if something is technically possible it is therefore morally admissible”.³⁵² It is this mentality that has led to the destruction of nature and the exploitation of people and the most vulnerable population.

Pope Francis in addressing this question alludes to the *technocratic paradigm*. He refers to it as a specific set of cultural meaning and values that distorts our relationship to one another and to the created order by viewing the world as a gigantic mechanism open to endless manipulation by human agents.³⁵³ He states categorically that this paradigm is at the roots of our ecological crisis: “it is the way that humanity has taken up technology and its development according to an undifferentiated and one-dimensional paradigm”³⁵⁴ that values the rational manipulation and control of all things found in the world.

According to this understanding of man's relationship with his environment, the latter exists solely in order to be used by the former. In this sense, Pope Francis decries that man not only receive what nature itself allows, instead he exploits and attempts to extract everything possible from nature while ignoring the reality of this relationship.³⁵⁵ He further states that man has refused to work *with* nature, he prefers *twisting* her and *wresting* from her not only what is in accord with her natural potentialities, but of anything and everything which our technique can manage to extort.³⁵⁶ Today, what matters is to extract all that is possible from things through the imposition of technology. Thus, the technocratic paradigm replaces the image of a friendly encounter

³⁵¹ Pope Francis. *Laudato Si'*, 102.

³⁵² John Paul II. *Fides et Ratio*, 88.

³⁵³ Dennis O'Hara, Matthew Eaton, and Michael Ross (eds). *Integral Ecology for a More Sustainable World: Dialogues with Laudato Si'*. United Kingdom: Lexington Books, 2020, 209.

³⁵⁴ Pope Francis. *Laudato Si'*, 106.

³⁵⁵ *Ibid.*

³⁵⁶ *Ibid.*

between humanity and nature with an image of confrontation and exploitation.³⁵⁷

In today's world, as Benedict XVI puts it, the human person has become so self-centred in his use of technology that its usage has become irrational to the point that he does not only reject its true meaning and value but that this irrational use also brings suffering and emptiness unto his life.³⁵⁸ Man has been engulfed by this *technocratic paradigm* that he feels lonely or not safe without it. He firmly believes that without technology he will find life difficult and incomplete.³⁵⁹

Pope Francis categorically rejects the argument that technologies are neither intrinsically good nor bad, and that it all depends on the uses to which they are put. He states: “We have to accept that technological products are not neutral, for they create a framework which ends up conditioning lifestyles and shaping social possibilities along the lines dictated by the interests of certain powerful groups.”³⁶⁰ Unfortunately, “the economy accepts every advancement in technology with a view to profit, without concern for its potentially negative impact on human being.”³⁶¹ The world is reduced to raw material for our desires, other people are reduced to tools and to users of technology, and we are reduced from creatures called to sacrifice and to immortality to searchers for transient and often debased pleasures.³⁶²

It is really lamentable to see through the *technocratic paradigm* the dislocation of our present age from the natural environment. This is expressed in the cosmological vision of the world as simply a pliable source of raw resources and a dumping place for our trash. According to Pope Francis “our home, is beginning to look more and more like an immense pile of filth” due to industrial actions.³⁶³ Hence we should not be surprised to find, in conjunction with the omnipresent *technocratic paradigm*, the rise of a relativism which sees everything as irrelevant unless it serves one’s own immediate interests.³⁶⁴

Conclusively, if man's exploiting of nature continues, according to Jerome A. Ypulong, the world will turn into ashes, *nature* will be turned into a big marketplace wherein everything would be mere commodities,

³⁵⁷ Ibid.

³⁵⁸ Benedict XVI. *Caritas in Veritate*, 76.

³⁵⁹ Pope Francis. *Laudato Si'*, 108.

³⁶⁰ Ibid., 107.

³⁶¹ Ibid., 109.

³⁶² “Is the technocratic paradigm our new religion?”. Edward Hadas. 16th November 2021. Consulted on 9/06/2022. <https://catholicsocialthought.org.uk/is-the-technocratic-paradigm-our-new-religion/>

³⁶³ *Laudato Si'*, 21.

³⁶⁴ Pope Francis. *Laudato Si'*, 122.

“commodities that are to be used, abused and exploited just to serve his needs. And this includes even man himself”.³⁶⁵

³⁶⁵ “The Technocratic Paradigm”. Jerome Augustine Ypulong. 08/04/2015. Consulted 09/06/2022.
https://www.academia.edu/14674705/The_Technocratic_Paradigm

5.2. Excessive anthropocentrism

The word *anthropocentrism* is derived from the two Greek words; *anthrōpos* “human being”, and *kéntron* “centre.” So, anthropocentrism is the idea that humans are the most significant or central entities on Earth.³⁶⁶ It regards humans as separate from and superior to nature and holds that human life has intrinsic value while other entities like animals, plants, mineral resources, etc. are resources that may justifiably be exploited for the benefit of humankind. However, environmentally-concerned authors have argued that anthropocentrism is ethically wrong and at the root of ecological crises.³⁶⁷ There have been substantial debates regarding the origin of anthropocentrism. But its origin is traced to either monotheistic religion or Enlightenment philosophy.

A. McGrath³⁶⁸ traces it to one of Plato's dialogues where the philosopher Protagoras declares his belief that “man is the measure of all things.”³⁶⁹ So ideas and values were judged according to whether they suited and served human beings. This thread of thought can be found throughout the complex pattern of Western intellectual history. He further explains that during the Middle Ages, this notion was relegated to the background by the dominant Christian idea that there was some intrinsic ordering in nature which could be discerned, and which was to be respected. God had made nature, and there were limits to what humans were allowed to do with it. Humans saw themselves as being part of a greater cosmic ordering, which offered them both privileges and responsibilities. Human beings might well stand at the apex of nature; they did not, however, have the right to alter its course or change its contours.³⁷⁰

However, during the period of Western culture known as the *Enlightenment*, there was a deliberate rejection of the authority of anything and anyone other than individual human reason. A revolt against God and liberation from the *tyranny* of the Church and *bondage* to outmoded superstitions. Human reason, *Enlightenment* thinkers believed, was endowed with all the resources necessary for the education and advancement of the human race.³⁷¹ Thus, the theme of “man as the measure of all things” began to play again an increasingly important role in Western thought and culture.

³⁶⁶ “What Is Anthropocentrism? Definition, Roots, and Environmental Implications”. Rebecca Coffey. 3 February, 2022. Consulted 6 June 2022. <https://www.treehugger.com/anthropocentrism-definition-environmental-implications-5204180>

³⁶⁷ Helen Kohn et al. “Anthropocentrism: More than Just a Misunderstood Problem”. *Journal of Agricultural and Environmental Ethics* volume 31 (2018): 110-111.

³⁶⁸ Alister McGrath. *The Re-enchantment of Nature: The Denial of Religion and the Ecological Crisis*. New York: Double Day, 2002.

³⁶⁹ *ibid*

³⁷⁰ *Ibid*.

³⁷¹ *Ibid.*, 56.

It was this line of thought that is at the root of the misinterpretation of the Creation story told in the book of Genesis, in which humans are created in the image of God and are instructed to *subdue* the earth and to *have dominion* over all other living creatures. This passage has been interpreted as an indication of humanity's superiority to nature, where the natural world has value only as it benefits humankind. According to Pope Francis, the modern anthropocentrism flows from a distorted Christian theology that stresses not stewardship and communion, but mastery and dominion.³⁷² He further adds that when humans put themselves at the centre of the universe, all that would be important to them would be their own immediate gratification.³⁷³ According to him: "Once the human being declares independence from reality and behaves with absolute dominion, the very foundation of our life begins to crumble".³⁷⁴ This is possible, he says, because "instead of carrying out his role as a co-operator with God in the work of creation, man sets himself up in place of God and thus end up provoking a rebellion on the part of nature".³⁷⁵

This distorted Christian theology was the focus of Lynn White's attack on the Christian theology of creation. Lynn White claims that the roots of the ecological crisis could be linked to Judeo-Christian theology which separated humans from nature and then made humans dominate nature. He said regarding the creation story: "Man named all the animals, thus establishing his dominance over them. God planned all of this explicitly for man's benefit and rule: no item in the physical creation had any purpose save to serve man's purposes. And, although man's body is made of clay, he is not simply part of nature: he is made in God's image."³⁷⁶ L. White claimed that God's command for humans to have *dominion* licensed the exploitation of nature and produced science and technology to satisfy human cares, and this has resulted in an ecological crisis.³⁷⁷

In response, Alister McGrath categorically refuted this claim. According to him, "Lynn White is completely right when he argues that human self-centeredness is the root of our ecological crisis, and completely wrong when he asserts that 'Christianity is the most anthropocentric religion the world has seen'".³⁷⁸ As we have explained earlier, the most self-centred religion in history is the secular creed of twentieth-century Western culture, whose roots lie in the *Enlightenment*³⁷⁹ of the eighteenth century and whose foundation belief is that humanity is the arbiter of all ideas and values.

³⁷² Pope Francis. *Laudato Si'*, 116.

³⁷³ *Ibid.*, 204.

³⁷⁴ *Ibid.*, 117.

³⁷⁵ *Ibid.*

³⁷⁶ Lynn White. "Historical Roots of Our Ecological Crisis". *Science* 155 (1967): 1203-1207.

³⁷⁷ *Ibid.*

³⁷⁸ Alister McGrath. *The Re-enchantment of Nature: The Denial of Religion and the Ecological Crisis*, 54.

³⁷⁹ The period of rigorous scientific, political and philosophical discourse that characterised European society during the 18th century.

In a nutshell, anthropocentrism despite its origin, is at the root of ecological crisis. So long as anthropocentric ethics predominates, the destruction of the natural world will continue unabated. As an ideology that is obsessed only with humans, it will always pursue the *human project* forgetting that humanity is fully dependent on nature. According to Helen Kopnina et al.: “Anthropocentrism is clearly a significant driver of ecocide and the environmental crisis” and “cannot lead us to a sustainable future.”³⁸⁰ Robyn Eckersley affirms: “Concern for ourselves at the expense of concern for the non-human world is held to be a basic cause of environmental degradation and potential disaster.”³⁸¹

³⁸⁰ Helen Kopnina et al. “Anthropocentrism: More than Just a Misunderstood Problem”, 123.

³⁸¹ Robyn Eckersley. *Environmentalism and Political Theory: Toward an Ecocentric Approach*. New York: State University of New York Press, 1992, 179.

5.3. Global inequality

As a normative term, inequality evokes an unfair or unjust distribution of privileges across societies.³⁸² This unequal distribution of privileges can occur in different areas of life: economic, political, environmental, social, cultural, spatial, and knowledge-based.³⁸³ These inequalities invariably intersect and potentially reinforce each other.

A number of studies have shown that inequality is, in fact, adverse to the sustainable management of common resources as it disrupts and disorganizes human communities.³⁸⁴ However, some scholars think of inequality as a source of integration in society. The functionalist view, for example, argues that since rewards provide motivation to do certain tasks, the structure of inequality is really an incentive system that helps the whole society survive.³⁸⁵ One side argues that inequality is always going to be present because of personal differences among individuals either in the form of basic differences in their own makeup or differences in the amount of effort they expend. As Kenneth Cauthen argues: “some inequalities come about as a result of unavoidable biological inequalities of physical skill, mental capacity, and traits of personality”.³⁸⁶

Nonetheless, it is important to clarify that what we refer to here is *institutionalized* rather than *individual* inequality. A “structured inequality between categories of individuals that are systematically created, reproduced, legitimated by sets of ideas, and relatively stable.”³⁸⁷ Inequality may be impossible or difficult to eliminate if it is inherent in the human condition. But if it arises because of the “conscious, intentional, and freely-willed actions of individuals or the structures they create in society, then it can be altered.”³⁸⁸ Isn't it shocking that the flow of wealth in the world is from the poorer nations to the richer ones?³⁸⁹

Eloi Laurent³⁹⁰ identifies five macro-ecological channels by which inequality exacerbate the ecological crisis:

³⁸² M. Hamann et al. “Inequality and the Biosphere”. *Annual Review of Environment and Resources* 43 (2018): 64.

³⁸³ Ibid.

³⁸⁴ K. Andersson and A. Agrawal. “Inequalities, institutions, and forest commons”. *Global Environmental Change* 21 n° 3 (2011): 866- 875.

³⁸⁵ Charles E. Hurst, Anne M. Nurse, Heather M. Fitz Gibbon. *Social Inequality Forms, Causes, and Consequences*. New York: Routledge, 2019, 20.

³⁸⁶ Kenneth Cauthen. *The Passion for Equality*. New York: Rowman & Littlefield, 1987, 8.

³⁸⁷ Charles E. Hurst et al. *Social Inequality Forms, Causes, and Consequences*, 22.

³⁸⁸ Ibid., 22-23.

³⁸⁹ John Houghton. *Global Warming: The Complete Briefing*, THIRD EDITION. Cambridge: Cambridge University Press, 2004, 326.

³⁹⁰ Eloi Laurent, Social-ecology: Exploring the missing link in sustainable development. Working Paper 2015, OFCE, 2015. <http://www.ofce.sciences-po.fr/pdf/dtravail/WP2015-07.pdf>

1. Inequality increases the need for environmentally harmful and socially unnecessary economic growth.
2. Inequality increases the ecological irresponsibility of the richest, within each country and among nations.
3. Inequality, which affects the health of individuals and groups, diminishes the socio-ecological resilience of communities and societies and weakens their collective ability to adapt to accelerating environmental change.
4. Inequality hinders collective action aimed at preserving natural resources.
5. Inequality reduces the political acceptability of environmental preoccupations and the ability to offset the potential socially regressive effects of environmental policies.

Inequality is indeed one of the causes of ecological crises. It increases social vulnerability.

In his final thoughts on the section on Global Inequality, Pope Francis begins with the fact that most of the world's natural reserves are located in developing countries and while these countries provide resources to the wealthier countries, they are sacrificing the health of their own land, both in the present as well as in the future.³⁹¹ The most striking example of this global injustice is seen in Africa. The continent accounts for less than 3% of global emissions, but water stress in Africa due to climate change could threaten the well-being of up to 600 million people in the coming decades.³⁹² Pope Francis discusses the idea that the rich and developed countries need to help pay the *ecological debt* by significantly limiting their consumption of non-renewable energy and by assisting the poorer countries to support policies and programs for sustainable development.³⁹³

As regards the wealthy versus the poor, he reminds us that “we need to strengthen the conviction that we are one single human family. There are no frontiers or barriers, political or social, behind which we can hide, still less is there room for global indifference.”³⁹⁴

Furthermore, in discussing the economy and income distribution in *Evangelii Gaudium*, Pope Francis calls for the dismantling of “the structural causes of inequality,” making clear that “inequality is the root of social ills”.³⁹⁵ Calling for such a firm and outright rejection of the dominant economic models that have dictated political, economic, and social policies throughout most of

³⁹¹ Pope Francis. *Laudato Si'*, 52.

³⁹² Eloi Laurent. “Social-ecology: Exploring the missing link in sustainable development”, 8.

³⁹³ Pope Francis. *Laudato Si'*, 52.

³⁹⁴ Ibid.

³⁹⁵ *Evangelii Gaudium* 202.

the West since the late 1970s, he says: “We can no longer trust in the unseen forces and the invisible hand of the market.”³⁹⁶

Recent research shows that inequality could play a key role in bringing about a global ecological collapse. And this collapse can only come about because of the economic stratification of society into elites/rich and masses/poor.³⁹⁷ And one of the economic models responsible for this is capitalism.

³⁹⁶ Ibid., 204.

³⁹⁷ M. Safa, J. Rivas, E. Kalnay. “Human and nature dynamics (HANDY): Modelling inequality and use of resources in the collapse or sustainability of societies”. *Ecological Economics* 101, (2014): 90-102.

5.4. Capitalism

The root of the ecological crisis is not reducible to a single denominator. Rather it consists of a complex bundle of problems. Nevertheless, it is becoming commonly accepted that most ecological problems can be traced to the growth in economic activities leading to expansive exploitation of natural resources.³⁹⁸ Toni Ruska argues that many of the critical environmental problems are either caused or made worse by capitalism.³⁹⁹ This is because “capitalism as a world economy, divided into classes and driven by competition, embodies a logic that accepts no boundaries on its expansion and its exploitation of its environment”.⁴⁰⁰ As far as the natural environment is concerned, capitalism perceives it not as something to be cherished and enjoyed but as means to the paramount ends of profit-making and still more capital accumulation.⁴⁰¹

Capitalism could be defined as “an economic and social system in which the owners of capital (or capitalists) appropriate the surplus product generated by the direct producers (or workers), leading to the accumulation of capital—investment and amassing of wealth—by the owners.”⁴⁰² It is a system that pursues endless growth.⁴⁰³ Thus, since the earth is finite and the capitalist structure has to expand in order to reproduce, there are compelling reasons to believe that there is an absolute contradiction between the planet and the capitalist system.⁴⁰⁴

Alvin Toffler made a profound description of the ecological crisis caused by the capitalist civilization: “Never before did any civilization create the means for literally destroying not a city but a planet. Never did whole oceans face toxification, whole species vanish overnight from the earth as a result of human greed or inadvertence.”⁴⁰⁵ Toffler’s description shows us the devastating ecological consequences brought about by the capitalist-led globalization.

We live in an era, as described by Rachel Carson, “dominated by industry, in which the right to make a dollar at whatever cost is seldom challenged”.⁴⁰⁶ The Western capitalist industrial civilization has created a

³⁹⁸ Ibid., 92.

³⁹⁹ Toni Ruska. “Reproduction of Capitalism in the 21st Century: Higher Education and Ecological Crisis”. Doctoral dissertation, 59.

⁴⁰⁰ Ibid.

⁴⁰¹ Paul M. Sweezy. 1989. “Capitalism and the Environment”. *Monthly Review* 41, n^o 2 (1989): 8.

⁴⁰² Fred Magdoff and John Bellamy Foster. *What Every Environmentalist Needs to Know about Capitalism: A Citizen’s Guide to Capitalism and the Environment*. New York: Monthly Review Press, 2011, 31.

⁴⁰³ Y. Zhang. “Capitalism and Ecological Crisis”. *Journal of Sustainable Society* 2, n^o 3 (2013): 72.

⁴⁰⁴ John Bellamy Foster. *Ecological Revolution : Making Peace with the Planet*. New York: Monthly Review Press, 2009, 15.

⁴⁰⁵ Quoted by Y. Zhang. “Capitalism and Ecological Crisis”, 72.

⁴⁰⁶ Rachel Carson. *Silent Spring*. Boston: Houghton Mifflin, 1962, 8.

global economy and brought the world into an unprecedented new era of rapid economic development, and has also brought unprecedented “ecological deficit” to humans, especially to the developing countries.⁴⁰⁷ Currently, the global north, with 20% of the world's population, consumes 80% of the world's total resources and continues to leave the major negative impacts of ecological damages to the south.⁴⁰⁸ As we have seen in the previous chapters, that the pressure created by humankind on the earth's ecosystems is not equally distributed, some parts of the earth and its species are already suffering from the consequences more than others. But eventually the damaging of ecosystems will negatively affect the entire human population.

It is disheartening to see how Ken Saro-Wiwa, an author and activist, was executed in 1995 by the Nigerian government because of his environmental activism on behalf of his Ogoni people and against the pollution and corruption of the oil companies, dominated by Shell. He described this region as “a blighted countryside ... full of carbon dioxide, carbon monoxide and hydrocarbons; a land in which wildlife is unknown; a land of polluted streams and creeks, of rivers without fish.” Or, as he put it in a poem:

The flares of Shell are flames of hell
We bake beneath their light
Nought for us save the blight
Of cursed neglect and cursed Shell.⁴⁰⁹

This goes to show that Capitalism leads to a loss of connection with nature, fellow humans, and community. The self-centred and consumer culture fostered by the system promote this loss of connections with nature. The earth is seen predominantly as a source of materials for enhancing the exploitation of other people and other communities.⁴¹⁰ Capitalist production has negative ecological side effects because as a system it has no other propelling force other than selfish accumulation of capital without end.⁴¹¹ “Its very operations violate the laws of restitution and metabolic restoration.”⁴¹²

According to Yonghong Zhang, an economic system that pursues endless growth, which requires the use of ever-greater quantities of resources, would undermine the base on which ecological and human sustainability depends.⁴¹³ Several environmental scientist have come to the conclusion that the capitalist tendency must give way to “a socio-economic system that has as its very purpose the meeting of everyone's basic material and nonmaterial

⁴⁰⁷ Y. Zhang. “Capitalism and Ecological Crisis”, 71

⁴⁰⁸ Ibid.

⁴⁰⁹ Ken Saro-Wiwa. *A Month and a Day*. New York: Penguin Books, 1995, 79.

⁴¹⁰ Fred Magdoff and John Bellamy Foster. *What Every Environmentalist Needs to Know about Capitalism: A Citizen's Guide to Capitalism and the Environment*, 62.

⁴¹¹ F. Magdoff. “Global Resource Depletion”. *Monthly Review*, 64 n° 8 (2013)

⁴¹² Y. Zhang. “Capitalism and Ecological Crisis”. *Journal of Sustainable Society* 2, n° 3, (2013): 72.

⁴¹³ Ibid.

needs, which, of course, includes healthy local, regional, and global ecosystems.”⁴¹⁴

Hence today we are seeing the rise throughout the world of an ecological critique of the capitalist world economy and of all societies that subordinate ecology and human welfare to the treadmill of production. According to John B. Foster this critique rests on three propositions: 1) That a system geared to endless exponential growth and the infinite acquisition of riches, no matter how much it rationalizes its use of natural resources, can never be anything but destructive in its relation to the earth, and is in the long run unsustainable. 2) That a system that disconnects people from all sense of being native to some place and all ecological roots is incompatible with ecological stability. (3) That a system that divides the planet, creating an “ecology of rich and poor,” is likewise insupportable.⁴¹⁵ He adds that it would be impossible to prevent the world’s environmental crisis from getting progressively worse unless root problems of production, distribution, technology, and growth are dealt with on a global scale.⁴¹⁶ And that the more such issues are raised, “the more it becomes evident that capitalism is unsustainable - ecologically, economically, politically, and morally - and must be superseded.”⁴¹⁷

⁴¹⁴ Ibid.

⁴¹⁵ John Bellamy Foster. *Ecology against Capitalism*. New York: Monthly Review Press, 2002, 88.

⁴¹⁶ Ibid.

⁴¹⁷ Ibid., 67.

5.5. Hyperagency

Hyperagency is a term that Paul Schervish⁴¹⁸ uses to describe wealthy philanthropists who exert control over their own lives and that of others. Endowed with material and psychological capacity, who are able to shape the future not just for themselves but for others as well. According to this writer, “wealth holders are uniquely endowed with material resources and cognitive dispositions that enable them, both as a group and as individuals, to fashion outcomes they desire to effect”.⁴¹⁹ Whereas others construct their identity around how they fit within the established structures of the world, wealth holders rather influence the world’s structure to adapt them to their own views.⁴²⁰ Schervish’s work offers a useful language to address a long-standing concern in Catholic Social teaching: the wealthy wielding power over the poor.

Obviously, Pope Francis did not use the term *hyperagency* in *Laudato Si’*, but the idea runs through the encyclical. The rich-world consumers who use their power to destroy nature and harm others could fairly be described as *hyperagents*. In providing a theological dimension to the concept *hyperagency*, Kate Ward identifies three ways wealthy nations manifest *hyperagency* with a dire consequence on those in poorer societies: ignorance of the condition of the poor, self-justification for consumption practices known to be destructive, and the death-dealing consumption practices themselves.⁴²¹

Firstly, one of the most insidious attitudes that *hyperagency* bestows is the ability to remain unaffected by the plights of people and of the earth. In their privilege, the wealthy have structured the society in such a way that they are not aware of the problems that affect the *excluded*. As Pope Francis explicitly observes: “This lack of physical contact and encounter, encouraged at times by the disintegration of our cities, can lead to a numbing of conscience”.⁴²² Therefore, choosing to live a life structured around the avoidance of encounter with the poor betrays a failure to understand how profoundly we are all interrelated.

Secondly, it is curious to see the way the holders of wealth indulge in self-justification even in their environmental responses, shifting blame unto others. One example is the attempt to impose population controls on impoverished countries, blaming ecological destruction on birth rates among the poor instead of “extreme and selective consumerism on the part of

⁴¹⁸ Paul G. Schervish, “Introduction: The Wealthy and the World of Wealth,” in *Gospels of Wealth: How the Rich Portray Their Lives*. Paul G. Schervish, Platon E. Coutsoukis, and Ethan Lewis (eds). Westport, CT: Praeger, 1999.

⁴¹⁹ *Ibid.*, 4–5.

⁴²⁰ Kate Ward. *Wealth, Virtue, and Moral Luck: Christian Ethics in an Age of Inequality: Christian ethics in the age of inequality*. Washington DC: George town university press 2021, 134.

⁴²¹ Kate Ward. “Wealthy Hyperagency in the Throwaway Culture Inequality and Environmental Death” in *Integral Ecology for a More Sustainable World Dialogues with Laudato Si’*. Dennis O’Hara, Matthew Eaton, and Michael Ross (eds). United Kingdom: Lexington Books, 2020.

⁴²² Pope Francis. *Laudato Si’*, 49.

some”.⁴²³ Pope Francis strongly warns the wealthy who in an effort to legitimate and continue their own destructive consumption, shift environmental responsibility to the poor.⁴²⁴

And thirdly, *hyperagency* promotes death-dealing consumption practices. It erodes human relationships, destroys nature, and takes human lives. When the wealthy fail to distribute resources justly, they are responsible for the deaths of those who die out of their negligence. According to St Basil the Great, those who refuse to share with others in time of urgent need, when starvation and disease pose an imminent threat to human life, may be accounted guilty not only of theft, but even of murder.⁴²⁵ Pope Francis gives a detailed understanding of the banality with which many wealthy world consumers destroy the environment in the service of their own comfort, without giving it a thought: “A simple example is the increasing use and power of air-conditioning”; the volume of cars carrying single persons around cities, “consuming enormous quantities of non-renewable energy”, drug use in affluent societies which creates a continual and growing demand for products imported from poorer regions, where lives are destroyed, and the environment continues to deteriorate.⁴²⁶

Great theologians and writers like Basil the Great, Augustine, John Chrysostom, Francis of Assisi and Thomas Aquinas have reiterated the fact that the rich see their wealth as self-made rather than a gift from God; that they spend their surplus on their own pleasure instead of helping the poor people to survive; and that they use their wealth to shield themselves from the poor.⁴²⁷ Correlatively, in her Christian ethical analysis of power, Christine Firer Hinze avers that from experience power holders face the temptation to exercise prerogatives over others in an irresponsible and self-serving fashion.⁴²⁸ She adds: “it is no wonder that Christians have frequently argued that to exercise power is to come into contact with, if not sin itself, at least ‘near occasions’ of sin, corruption and evil”.⁴²⁹ How can one explain the fact that “twenty percent of the world’s population consumes resources at a rate that robs the poor nations and future generations of what they need to survive”?⁴³⁰

In conclusion, it is imperative to maintain a correct understanding of human life oriented towards God to be able to combat *hyperagency*. As Pope

⁴²³ Ibid., 50.

⁴²⁴ Ibid.

⁴²⁵ St Basil the Great. *On Social Justice*. New York: St Vladimir’s Seminary Press. 2009, 22. (Translation with Introduction and Commentary by C. Paul Schroeder)

⁴²⁶ *Laudato Si’*, 55, 142, 153.

⁴²⁷ Kate Ward. *Wealth, Virtue, and Moral Luck: Christian Ethics in an Age of Inequality: Christian ethics in the age of inequality*, 139.

⁴²⁸ Christine Firer Hinze. *Comprehending power in Christian social ethics*. Atlanta: scholars press, 1995, 274

⁴²⁹ Ibid.

⁴³⁰ *Laudato Si’* 95.

Francis suggests: “The best way to restore men and women to their rightful place, putting an end to their claim to absolute dominion over Earth, is to speak once more of the figure of a Father who creates and who alone owns the world”.⁴³¹ In addition, we should correctly see nature neither as divine nor exploitable, but as fragile. “A fragile world, entrusted by God to human care, challenges us to devise intelligent ways of directing, developing and limiting our power.”⁴³²

⁴³¹ Ibid., 75.

⁴³² Ibid., 78.

Conclusion

Thanks to scientific research, the underlying sources of the ecological crisis have been found: the major villain is unconstrained human activities. Human beings are degrading earth's ecosystems, creating serious problems for all creatures with her technological and ideological prowess.

With the pace of technology, capitalism, excessive anthropocentrism, global inequality etc and their consequences the earth may be unable to sustain life in the manner we know it. To avoid this dire consequence, competition must yield to cooperation; selfishness must give way to generosity in sharing limited resource on this planet. If not, the alternative is geopolitical chaos and war from which both man and his environment would be destroyed. Meadows et al. warns:

If society's implicit goals are to exploit nature, enrich the elites, and ignore the long term, then that society will develop technologies and markets that destroy the environment, widen the gap between rich and poor, and optimize for short-term gains. In short, that society develops technologies and markets that hasten a collapse instead of preventing it.⁴³³

⁴³³ Donella Meadows et al. *The Limits to Growth: the 30-Year Update*. United Kingdom: Chelsea Green Publishing, 2002, 223-224.

Chapter 6. Ecological solidarity: a new paradigm for sustainable development in Africa.

Today we are faced with a challenge that calls for a shift in our thinking, so that humanity stops threatening its life support system. We are called to assist the Earth to heal her wounds and in the process heal our own ... This will happen if we see the need to revive our sense of belonging to a larger family of life.⁴³⁴

According to John Paul II, the “threat of ecological breakdown is teaching us the extent to which greed and selfishness - both individual and collective - are contrary to the order of creation, an order which is characterized by mutual interdependence.”⁴³⁵

We have clearly shown in previous chapters that human beings are the authors as well as victims of the ecological crisis. If they are part of the problem, they must also be part of the solution. “No one can face life in isolation. We need a community that supports and helps us, in which we can help one another to keep looking ahead.”⁴³⁶

We shall discuss the ecological solidarity framework as a new paradigm vis a vis our responsibility towards each other as human beings and the ecosystem at large. The African cultural worldview would be a useful guide in the search for a sustainable development.

In the final analysis, ecological solidarity outlines two moral issues which are essential to sustainable development: firstly, an ecological awareness that recognises the interconnectedness of human life and other forms of life in the ecosystem. And secondly, an obligation to be responsible for other human beings and the ecosystem.⁴³⁷

⁴³⁴ W. Maathai. “We Are Called to Help the Earth to Heal”. In *Moral Ground: Ethical Action for a Planet in Peril*, edited by K. D. Moore and M. P. Nelson, 272. San Antonio, Texas: Trinity University Press 2010.

⁴³⁵ John Paul II. Peace with God the creator, peace with all of creation. World day of peace message, 1st of January 1990. https://www.vatican.va/content/john-paul-ii/en/messages/peace/documents/hf_jp-ii_mes_19891208_xxiii-world-day-for-peace.pdf

⁴³⁶ Pope Francis. *Fratelli tutti*, 7.

⁴³⁷ Jacquineau Azetsop, S.J. and Paolo Conversi (eds). *Foundations of integral ecology*. Rome: Gregorian and Biblical Press, 2022, 430-431.

6.1. The concept of ecological solidarity

It was first introduced by the French government in their environmental law during its reform of national parks. The law states that a national park:

is composed of one or more core areas, defined as the terrestrial and maritime areas to be protected, as well as an area of membership, defined as all or part of the territory of the communes (i.e. the French lowest administrative unit) which, having the vocation to be part of the national park because of their geographical continuity or their ecological solidarity with the core area, have decided to accede to the charter of the national park and to voluntarily contribute to this protection.⁴³⁸

With its presence in the 2006 law, ecological solidarity provides the management of national parks with a legal foundation to facilitate cooperation as well as a conceptual framework towards revitalising the ecosystem services that contribute to the environmental, economic and social well-being of local communities.⁴³⁹ So ecological solidarity is “implemented through the commitments made by the communes that accede to the charter to protect the core area of the park, and ... to ensure the maintenance of economic activities within the membership area.”⁴⁴⁰ The human society is recognised as part of a natural contract with the rest of other living entity. It can evaluate the impact of its activities on the ecosystem and adopts responsible forms of management.⁴⁴¹

According to many environmental scientists, the concept of ecological solidarity is based on two main dimensions: on Ecology (i.e., biophysical and functional interactions), and on the solidarity among people with a shared goal and a sense of community.⁴⁴² These have to do with the dynamic relationship and interdependence between all living things and the non-living components of the planet. A national park for example depends for its efficient functioning on the human activities outside it and the biodiversity within, can be influenced from without.⁴⁴³ This is where ecological solidarity takes on its full meaning.

Ecological solidarity can thus be defined as “the reciprocal interdependence of living organisms amongst each other and with spatial and

⁴³⁸ R. Mathevet *et al.* “Environmental Stewardship and Ecological Solidarity: Rethinking Social-Ecological Interdependency and Responsibility”. *Journal of Agricultural and Environmental Ethics* 31 (2018): 617.

⁴³⁹ J. D. Thompson. “Ecological solidarity as a conceptual tool for rethinking ecological and social interdependence in conservation policy for protected areas and their surrounding landscape”, 416.

⁴⁴⁰ R. Mathevet *et al.* “Environmental Stewardship and Ecological Solidarity: Rethinking Social-Ecological Interdependency and Responsibility”, 618.

⁴⁴¹ J. D. Thompson. “Ecological solidarity as a conceptual tool for rethinking ecological and social interdependence in conservation policy for protected areas and their surrounding landscape”, 417.

⁴⁴² R. Mathevet *et al.* “Environmental Stewardship and Ecological Solidarity: Rethinking Social-Ecological Interdependency and Responsibility”, 618.

⁴⁴³ *Ibid.*

temporal variation in their physical environment.”⁴⁴⁴ According to Raphaël Mathevet *et al*, this definition in the first place contains the idea of a debt.⁴⁴⁵ Due to the fact of our interdependency, we become debtors when we contribute to the destruction of the environment. Thus, ecological solidarity underscores the moral tie between the human society and the environment as well as the web of relationships that exists between humans and nonhumans, some chosen and some not.⁴⁴⁶ Secondly, the definition implies a certain form of limitation of human action on nature in terms of rights and duties. As such, “ecological solidarity participates in the implementation of a principle of responsibility for nature and for future generations of humans and other species.”⁴⁴⁷

They further enumerate three key principles that are associated with ecological solidarity. The first is the sense of a community of life that leads a stakeholder or social group to wisely use land and natural resources and to support humans or nonhumans in the belief that he/she shares certain values and objectives with all or some of the community members. The second is the voluntary obligation of a stakeholder or social group to adopt a strategy of land- use and natural resource use which supports humans or nonhumans in the belief that some are better equipped than others to achieve these objectives. And the third are obligations (laws and social rules) to sustainably use land and natural resources and to support others in harmony with nature.⁴⁴⁸

It is important to note the nuance between ecological solidarity and ecological interdependence: solidarity is chosen, interdependence is often not. In this sense ecological solidarity becomes a moral and positive attitude; a deliberate and purposeful commitment to interdependence and reciprocity derived from acknowledging objective social and ecological interdependencies.⁴⁴⁹

Therefore, the use of ecological solidarity in environmental policy is key in confronting the ecological crisis especially in the 21st century since it is “based on the notion that individuals become united around a common goal and are conscious of their common interests and shared responsibility.”⁴⁵⁰ In choosing development trajectory, ecological solidarity will highlight the common destiny humans share with the rest of nature, as well as the

⁴⁴⁴ J. D. Thompson. “Ecological solidarity as a conceptual tool for rethinking ecological and social interdependence in conservation policy for protected areas and their surrounding landscape”. *Comptes Rendus Biologies* 334 (2011): 414.

⁴⁴⁵ R. Mathevet et al. “Protected areas and their surrounding territory: socioecological systems in the context of ecological solidarity”. *Ecological Applications* 26, n° 1, (2016): 7.

⁴⁴⁶ *Ibid.*

⁴⁴⁷ *Ibid.*

⁴⁴⁸ *Ibid.*, 9.

⁴⁴⁹ R. Mathevet *et al.* “Environmental Stewardship and Ecological Solidarity: Rethinking Social-Ecological Interdependency and Responsibility”, 620.

⁴⁵⁰ *Ibid.*, 619

importance of being aware of our interdependences.⁴⁵¹ Raphael Mathevet *et al* affirm that, “it is a concept that provides a compelling invitation to strive towards a major transformation of our moral and political order based on the virtues of common sense, humanity, and respect.”⁴⁵²

⁴⁵¹ Ibid., 618.

⁴⁵² R. Mathevet et al. “Protected areas and their surrounding territory: socioecological systems in the context of ecological solidarity”, 14.

6.2. Earth stewardship: hearing the cry of mother earth

In the first chapters of the Book of Genesis, after creating the heavens, the sea, the earth and all it contains, God created man and woman. He saw all he had made, and they were very good. God entrusted the whole of creation to the man, and only then could he *rest from all his work*.⁴⁵³

The call of Adam and Eve to share in God's plan of creation brought to the fore those abilities and gifts which distinguish them from all other creatures. At the same time, this call established a fixed relationship with God, humankind and the rest of creation. Their task was to "cultivate and care for creation".⁴⁵⁴

In the biblical Jubilee, the people and the land had a rhythmic relationship which allowed each to rest and to be restored:

When you come into the land which I give you, then the land shall keep a sabbath to the Lord. Six years you shall sow your field, and six years you shall prune your vineyard, and gather its fruit; but in the seventh year there shall be a sabbath of solemn rest for the land, a sabbath to the Lord. You shall neither sow your field nor prune your vineyard. What grows of its own accord of your harvest you shall not reap, nor gather the grapes of your untended vine, *for* it is a year of rest for the land.⁴⁵⁵

The religious interpretation for this rest is to honour the Lord. However, on the other hand, it emphasizes the fact that this rest is not just for the benefit of the people, it is for the land.⁴⁵⁶

As regards the Sabbath, every seventh day, the people and their domestic animals were to refrain from work in order to celebrate the Sabbath: "Six days you shall do your work, and on the seventh day you shall rest, that your ox and your donkey may rest, and the son of your female servant and the stranger may be refreshed".⁴⁵⁷ This prescription allows them to rest as well as every other created thing in order to regain strength. We see in these prescriptions an implicit sense of care for every created thing, the interdependence of all creatures and the intrinsic value placed on creation. These biblical considerations help us to understand better the relationship between human activity and the whole of creation.

With respect to the intrinsic worth of each being, Alfred North Whitehead affirms:

Everything has some value for itself, for others, and for the whole. This characterizes the meaning of actuality. By reason of this

⁴⁵³ Gen. 1 and 2.

⁴⁵⁴ Ibid., 2:15.

⁴⁵⁵ Leviticus 25: 2-5.

⁴⁵⁶ L. Fernández. "La tierra no está en venta. Eco justicia en Levíticos 25". *Reseña Bíblica* 111 (2021): 19.

⁴⁵⁷ Exodus 23: 12.

character, constituting reality, the conception of morals arises. We have no right to deface the value experience which is the very essence of the universe. Existence, in its own nature, is the upholding of value intensity. Also, no unit can separate itself from the others, and from the whole. And yet each unit exists in its own right. It upholds value intensity for itself, and this involves sharing value intensity with the universe. Everything that in any sense exists has two sides, namely, its individual self and its signification in the universe. Also, either of these aspects is a factor in the other.⁴⁵⁸

Unfortunately, the earth now cries out to us because of the harm we have inflicted on her by our irresponsible use and abuse of the goods with which God has endowed her. The earth is beginning to look more and more like an immense pile of filth.⁴⁵⁹ The Ecumenical Patriarch Bartholomew of Constantinople lamentable notes:

Our very own financially developed world is already leaving an untenable footprint through the greedy production and consumption of goods, the uncontrollable pollution of modern transportation, the limitless waste and endless carbon emissions, together with the vast industrial and nuclear accidents, all of which contribute immensely to global warming and climate change with irreparable and irreversible ramifications.⁴⁶⁰

This greedy production mentality needs to be transformed by a culture of caring for the environment. We need to move from a sense of *earth ownership* to a sense of *earth stewardship*, in the way we relate with creation. This movement also involves an anthropological turn from who we think we are as humans as well as imagine how our role on earth should be. This is the only way to ensure a responsible form of management of human activities and their impacts on the natural environment. This will help “to ensure the conservation of biodiversity, natural resources and their values in terms of use and non-use for future generations of humans and non-humans”⁴⁶¹

Therefore, an understanding of our common origin and interrelatedness with everything in the universe could help us realize our close affinity to the whole of creation.⁴⁶² Everything is connected to everything in the universe. Inspired by the spirituality of St. Francis of Assisi, Pope Francis, in *Laudato Si'*, offers a lyrical meditation on the deep interconnectedness of all things in

⁴⁵⁸ Alfred North Whitehead. *Modes of Thought*. New York: Macmillan, 1938, 11.

⁴⁵⁹ Pope Francis. *Laudato Si'*, 21.

⁴⁶⁰ “Ecumenical Patriarch: address root causes of environmental crisis”. Catholic Culture. June 09, 2017. Consulted 1 December 2022.

<https://www.catholicculture.org/news/headlines/index.cfm?storyid=31801&repos=4&subrepos=2&searchid=2170762>

⁴⁶¹ R. Mathevet *et al.* “Environmental Stewardship and Ecological Solidarity: Rethinking Social-Ecological Interdependency and Responsibility”, 607.

⁴⁶² Fr. Benigno P. Beltran, SVD. “Earth stewardship, economic justice, and world mission: The teachings of *Laudato Si'*”. *Missiology* 48, n° 1 (2020): 44.

the universe. If everything is interconnected, then every violation of solidarity would be harmful.⁴⁶³

The Pontiff brings to bare the sacramental view of creation: “soil, water, mountains: everything is, as it were, a caress of God.”⁴⁶⁴ There is a “mystical meaning to be found in a leaf, in a mountain trail, in a dewdrop, in a poor person’s face.”⁴⁶⁵ He reminds us that we are “united as brothers and sisters on a wonderful pilgrimage, woven together by the love God has for each of his creatures, and which also unites us in fond affection with brother sun, sister moon, brother river, and Mother Earth.”⁴⁶⁶ The universe is an expression of God’s love for mankind: “Each of the various creatures, will in its own being, reflect in its own way a ray of God’s infinite wisdom and goodness”.⁴⁶⁷ Every creature has an intrinsic value and so connected that the human person “can feel the desertification of the soil almost as a physical ailment, and the extinction of a species as a painful disfigurement.”⁴⁶⁸

However, in the course of history, there have been environmental justice theories that have been to a large extent the cause of this painful disfigurement and degradation of the earth.

⁴⁶³ Pope Francis. *Laudato Si'*, 142.

⁴⁶⁴ *Ibid.*, 84.

⁴⁶⁵ *Ibid.*, 233.

⁴⁶⁶ *Ibid.*, 94.

⁴⁶⁷ *Ibid.*, 69.

⁴⁶⁸ *Ibid.*, 89.

6.3. Inadequate Environmental Justice theories.

In recent times, environmental justice has become one of the key issues in environmental debates especially in such a time of severe environmental degradation and global ecological crisis. It can be defined as “the fair treatment⁴⁶⁹ and meaningful involvement⁴⁷⁰ of all people regardless of race, colour, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies”.⁴⁷¹

Robert Figueroa and Claudia Mills see environmental justice from two perspectives: distributive and participatory justice.⁴⁷² The first deals with how environmental benefits and burdens are distributed between nations. And the second has to do with how the distributive decisions are taken and by whom.⁴⁷³ The distributive dimension recognises that there are people or nations with a disproportionate amount of environmental burden and tries to create a kind of environmental equity. The participatory dimension deals with the fact that the poor nations and people of the unindustrialized South should be included in the decision making process. More often than not, those who suffer this environmental burden are excluded in the decision making or policy formulation process.⁴⁷⁴

Environmental justice can be traced to the Environmental Justice Movement (EJM) which developed from local struggles against environmental discrimination and environmental racism in the United States.⁴⁷⁵ The poor especially African Americans suffered most from environmental pollution, racially prejudiced disparities, and inequalities. And this led to public demonstrations against such injustices in different parts of the United States. However, the term environmental justice began to be applied to issues outside of the United States in the early 2000s.⁴⁷⁶ Today, it has also been applied to the issues of climate change and has become a global concern and movement. This movement across the globe has advanced environmental wellbeing and

⁴⁶⁹ Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies.

⁴⁷⁰ Meaningful involvement means that: (1) people have an opportunity to participate in decisions about activities that may affect their environment and/or health; (2) the public can contribute to regulatory agency’s decision-making; (3) their concerns will be considered in the decision-making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected.

⁴⁷¹ Munamoto Chemhuru (ed). *African Environmental Ethics: A Critical Reader*. Switzerland: Springer Nature Switzerland AG, 2019, 176.

⁴⁷² Robert Figueroa and Claudia Mills. “Environmental Justice”. In *A companion to Environmental philosophy*, edited by Dale Jamieson. USA: Blackwell Publishers 2001.

⁴⁷³ Ibid.

⁴⁷⁴ Ibid.

⁴⁷⁵ R. Bullard. “Dismantling Environmental Justice in the USA”. *Local Environment* 4, n° 1 (1999): 5–20

⁴⁷⁶ P. Mohai, D. Pellow, and J. T. Roberts. “Environmental Justice”. *Annual Review of Environmental Resources* 34 (2009):420.

instigated sustainable development practices.⁴⁷⁷ It has also challenged the social, political and economic inequalities that make a particular set of people, usually the poor, suffer the negative impacts of environmental degradation caused by the avaricious-driven attitudes of others, usually the wealthy.⁴⁷⁸

All over the world the poor has always been at the receiving end of the effects of any environmental crisis since they have not enough resources to cope with drastic environmental change. They are less likely to enjoy the benefits of environmental resources and are rarely compensated for the environmental harm inflicted on them by industrial activities.⁴⁷⁹ In Nigeria, for example, the Movement for the Survival of the Ogoni People (MOSOP) issued the “Ogoni Bill of Rights” to the Federal Government of Nigeria in 1990, demanding for local benefits sharing with respect to the oil fields in their lands as well as for redress for the environmental degradation caused by the oil industry.⁴⁸⁰ Unfortunately, some of them were executed by the then military government. The advocates of environmental justice explicitly seek a fair distribution of environmental outcome.

It is universally accepted that the unequal distribution of environmental benefits and burden is unjust. In a search for the best social and distributive model that will ensure equity and fair redistribution of environmental benefits and burdens, there came different theories of justice. For example, “the principle of commensurate burdens and benefits” states that “those who enjoy the benefits of some activity should also shoulder the associated burdens, and vice versa, unless there good justification for them not doing so.”⁴⁸¹ In other words those who derive benefits from environmental resources should be held liable for the burdens they produce. Also, “the principle of social cooperation” states that “justice increases when the benefits and burdens of social cooperation are born more equally except when moral considerations or other values justify greater inequality”.⁴⁸² Thus inequality can be justified.

John Rawls, in his theory on justice, advocates for basic equality of liberty or resources and only permits inequality when it serves to benefit those who may not have similar access.⁴⁸³ This is to say that the basic structure of any society ought to be arranged in such a way that no social group advances at

⁴⁷⁷ Ibid., 421.

⁴⁷⁸ R. Bullard. “Dismantling Environmental Justice in the USA”, 5–20.

⁴⁷⁹ Ronald Sandler. *Environmental Ethics: Theory in practice*. New York: Oxford University Press, 2018, 359.

⁴⁸⁰ IkpoBari Dumletam Senewo. “The Ogoni Bill of Rights (OBR): Extent of actualization 25 years later?”. *The Extractive Industries and Society 2* (2015): 664–670.

⁴⁸¹ Peter S. Wenz. “Just Garbage: The Problem of Environmental Racism”. In *Environmental Ethics: Readings in Theory and Application*, 6th ed, edited by L.P. Pojman and P. Pojman, 531–532. California: Wadsworth, 2012.

⁴⁸² Ronald Sadler. *Environmental Ethics: Theory in practice*. New York: Oxford University Press, 2018, 359.

⁴⁸³ John Rawls. 2001. *Justice as Fairness: A Restatement*. Cambridge, MA: Harvard University Press, 2001, 122-124.

the cost of another.⁴⁸⁴ This point of view is also shared by D. Bell, who believes that a Rawlsian environmental justice “is committed to the idea of guaranteed minimum environmental standards as part of the social minimum for the least advantaged group.”⁴⁸⁵ On his part, D. Keller asserts that a Rawlsian model of environmental justice will be one where “a social group bears a disproportionate burden of the costs on industrialization in comparison to a wider population, and that group would be better off without industrialization.”⁴⁸⁶

It is evident, from the above, that environmental justice theories appear to mainly concentrate on attaining fair distribution of environmental resources and burdens for both the rich and the poor, majority and minority groups, the global north and south as well as between the advantaged and the disadvantaged, with little or nothing said with regards to the sustainability of the natural environment. Thus, one is forced to conclude that humans are the only beneficiaries of environmental justice. According to Margaret Ssebunya *et al*, the fact that the environment is not considered “renders the usually anthropocentric Western theories of environmental justice inadequate.”⁴⁸⁷ They further add that these models of environmental justice theory do not take into consideration the cultural and traditional principles of the African people who are worse hit by the effects of climate change.

From what has been discussed about the features of African communitarian societies and about the principles underpinning the various African environmental ethics, it is clear that an African theory of environmental justice would be holistic. It reflects solidarity and the importance of human interconnectedness with one another and also with the environment. Thus, a theoretical framework that integrates the important principles of solidarity, shared values, and mutual responsibilities that permeate the communitarian lives of the African people as well as assures its sustainable development would be the “ecological solidarity” paradigm.

⁴⁸⁴ Ibid.

⁴⁸⁵ D. Bell. Environmental Justice and Rawls' Difference Principle. *Environmental Ethics* 6, n° 3 (2004): 303.

⁴⁸⁶ D. Keller. “Environmental Justice”. In *Encyclopedia of Global Justice*, ed. D. Chatterjee, 298–302. Berlin Heidelberg: Springer-Verlag, 2011.

⁴⁸⁷ Margaret Ssebunya, Stephen Nkansah Morgan and Beatrice D. Okyere-Manu. “Environmental Justice: Towards an African Perspective”. In *African Environmental Ethics: A Critical Reader*, edited by Munamoto Chemhuru, 184.

6.4. African culture at the service of Ecological Solidarity

We have seen that attempts at solutions to environmental injustices have relied mostly on theories of social and distributive justice based on principles of utilitarianism, libertarianism, free-market approach, right-based approach etc. These theories are inadequate to resolve the ecological crisis nor mitigate the plights in Africa. In dealing with environmental issues, especially in Africa, there is need to proffer solutions that suits the African worldview.⁴⁸⁸ We need to appreciate the African sense of harmonious relationship that is communitarian, cooperative, conciliatory and accommodative.⁴⁸⁹

The search for harmony between human and non-human world as well as a moral consideration for future generation is very important to proffering solutions to the ecological crisis. The world is searching for theoretical framework that will help to prevent further environmental degradation and mitigate the effects of climate change. Africa being rich in culture and natural resources can lend a voice to the search for ethical attitude of mankind to the environment.

Godfrey Tangwa, in his “eco-bio-communitarian ethic”, argues that the metaphysical outlook of a traditional African involves the recognition and acceptance of interdependence and peaceful co-existence between humans, (both past and future) animals and plants.⁴⁹⁰ This viewpoint is responsible for the relational attitude of traditional Africans societies towards animate and inanimate things and the various invisible forces of the world.⁴⁹¹ This respectful co-existence is the reason for offerings of sacrifices to God, to the divine spirits, to the departed ancestors and to the various invisible forces of nature.⁴⁹² Correlatively, Chinedu Ifeakor and Andrew Otteh opine that there are great lessons to be learnt from the respect for nature that adorn traditional African culture.⁴⁹³

On his part, Segun Ogungbemi notes that the traditional African relationship with nature was that of not taking more than what one needed from nature. He refers to this relationship as an “ethics of care”. He clearly states:

In our traditional relationship with nature, men and women recognize the importance of water, land and air management. To our traditional communities the ethics of not taking more than you need from nature is a moral code. Perhaps this explains why earth, forests, rivers, wind, and other natural objects are traditionally

⁴⁸⁸ Munamoto Chemhuru. *African Environmental Ethics: A Critical Reader*, 180.

⁴⁸⁹ *Ibid.*, 190.

⁴⁹⁰ Tangwa, Godfrey. “Some African Reflection on Biomedical and Environmental Ethics”. In *A Companion to African philosophy*, edited by Kwasi Wiredu, 385, Oxford: Blackwell publishers, 2004.

⁴⁹¹ Chinedu Stephen Ifeakor and Andrew Otteh. “African environmental ethics: a non –anthropocentric African environmentalism. the journey so far”. *IGWEBUIKE* 3 n° 6, (September 2017): 76.

⁴⁹² Tangwa, Godfrey. “Some African Reflection on Biomedical and Environmental Ethics”, 389.

⁴⁹³ Chinedu Stephen Ifeakor and Andrew Otteh. “African environmental ethics: a non –anthropocentric African environmentalism. the journey so far”, 77.

believed to be both natural and divine. The philosophy behind this belief may not necessarily be religious, but a natural means by which the human environment can be preserved. The ethics of care is essential to traditional understanding of environmental protection and conservation.⁴⁹⁴

Furthermore, the African holistic worldview seeing reality as a composite, unity and harmony of natural forces is taken up by P. Ikuenobe.⁴⁹⁵ He notes that the African community comprises mutually reinforcing natural life forces consisting of humans, spirits, gods, deities, stones, sand, mountains, rivers, plants, and animals. “Everything in reality has a vital force or energy such that the harmonious interactions among them strengthen reality.”⁴⁹⁶ For an African, one cannot flourish as a person without a close relationship with others and with the cosmos. “The whole world in an African understanding is interconnected with each other. A harm to one aspect like the physical nature will have a strong effect on the rest of the ecosystem and this informs human relationship with her environment.”⁴⁹⁷ The African concept of *Ubuntu* articulates this interconnectedness.

There is no doubt that a return to traditional environmental beliefs and practices, in tandem with adequate political commitment towards environmental protection and conservation, would contribute immensely to sustainable development in Africa. As Amitav Gosh laments:

The cumulative effect is the extinction of exactly those forms of traditional knowledge, materials skills, and ties of community that might provide succour to vast numbers of people around the world—and especially those who are still bound to the land—as the impacts intensify we must look to the past for some solutions.⁴⁹⁸

Similarly, a Palestinian writer observes:

Building the world requires more than one knowledge discourse, and it necessitates dialogue to ensure the inclusion of different views and experiences. In contrast to western social philosophies—which are generally predicated on the primacy and exceptionalism of the human experience, and human domination over all there is—those that emerged from indigenous or First Nation peoples, and which are available to us principally in the form of proverbs and

⁴⁹⁴ Segun Ogungbemi. “An African Perspective on the Environmental Crisis”. In *Environmental Ethics: Readings in Theory and Application*, 2nd ed, edited by L. Pojman, 265–271. Belmont, CA: Wadsworth Publishing Company, 1997.

⁴⁹⁵ P. Ikuenobe. “Traditional African Environmental Ethics and Colonial Legacy”. *International Journal of Philosophy and Theology* 2 (2014): 2.

⁴⁹⁶ Ibid.

⁴⁹⁷ Chinedu Stephen Ifeakor and Andrew Otteh. “African environmental ethics: a non –anthropocentric African environmentalism. the journey so far”, 86.

⁴⁹⁸ Amitav Gosh. (2016). *The Great Derangement. Climate Change and the Unthinkable*. Gurgaon: Penguin Books, 2016.

observable ways of life, are informed by a humility that places humans in a larger natural order.⁴⁹⁹

From these principles underpinning the African societies, it is evident that the African perspective of environmental justice cannot be devoid of solidarity and interconnectedness of humans person with one another as well as with the environment.⁵⁰⁰ It is marked by the “African communitarian character of shared responsibilities and the projection of the community’s good above that of anyone else’s”.⁵⁰¹ It does not suggest from the onset that only individuals who are benefitting from the environmental resources should be held equally liable as suggested by most environmental justice theories. According to Margaret Ssebunya *et al*, African understanding of environmental justice is “characterised by mutual dependence, cooperation, harmony, relationality and communion in order to promote the common good of the people as well as the good of the environment for both current and future generations”.⁵⁰²

Since the human person in an African setting depends on the community for survival, care for its sustenance was paramount. This informs the cautious use of common environmental resources such as rivers, lakes, streams, forests, grasslands and vegetation. Natural resources were considered to belong to everybody and everyone has right to its usage.⁵⁰³ Nevertheless, individuals were mindful of how they use these common resources so as not to pollute the environment because this would be contrary to the African communitarian society’s values. Negative actions such as pollution of streams, improper waste disposal, etc would show a lack of care and concern for others.⁵⁰⁴ However, there were categories of punishment meted out to those who do not respect this social order. This is done to correct an offender and deter others from committing such offense.⁵⁰⁵

There are many examples of community-based initiatives of collective responsibility where African societies express their environmental justice system especially in the pre-colonial era. In Buganda region of Uganda, there is a practice of *bulungibwansi* which means “for the good of the country”.⁵⁰⁶ A day is set aside for the cleaning of the environment. There is a similar practice in Kenya called *Harambee* which literally means “pooling efforts together”. “This involves community members undertaking communal

⁴⁹⁹ S. Abulhawa. “Before the last river”. In *Will the flower slip through the asphalt. Writers respond to Capitalist Climate Change* edited by Vijay Prashad 103, New Delhi: New Left Words, 2017.

⁵⁰⁰ *Ibid.*, 184.

⁵⁰¹ *Ibid.*

⁵⁰² Margaret Ssebunya, Stephen Nkansah Morgan and Beatrice D. Okyere-Manu. “Environmental Justice: Towards an African Perspective”. In *African Environmental Ethics: A Critical Reader*, edited by Munamoto Chemhuru, 174.

⁵⁰³ Thomas W. Bennett. *Customary Law in South Africa*. Durban: Juta Publishers, 2004, 374.

⁵⁰⁴ *Ibid.*, 182.

⁵⁰⁵ *Ibid.*

⁵⁰⁶ *Ibid.*, 183.

work as a contribution towards individual and communal causes”.⁵⁰⁷ The Akans in Ghana, have also this practice of communal labour called *Omanadwuma* which literally means “working in the interest of the community/nation-state.”⁵⁰⁸ On the day of *Omanadwuma*, members of the community are called for communal work. In Rwanda, *umuganda* was a monthly communal activity which entails “de-silting drainages, sweeps streets and village paths, makes composts, clears bush lands and builds houses for the elderly and ultra-poor”.⁵⁰⁹

The case is not different in Nigeria where people are used to planting trees around their homes to provide fresh air and fruits for consumption and nutrition. In 1984 the Federal Government of Nigeria introduced the monthly environmental sanitation exercise. It was a day set aside for cleaning of the environment and to inculcate in the citizens the importance of caring for the environment where we live. According to T. K. Adekunle and Hilary Nwaechefu, there still exist traditional environmental protections practices in agriculture used by rural communities in Nigeria for ages.⁵¹⁰ These farming practices include shifting cultivation, crop rotation, bush fallowing etc. “By these methods the forest or vegetation are preserved and protected against uncontrolled bush burning and tree felling”.⁵¹¹ The forests were preserved because the communities realized that their wellbeing depends on them. Many ailments were cured by the barks and leaves of some of the trees.⁵¹²

So the principles underlining these practices within the African societies were born from the African understanding of the interconnectivity that exist in the ecosystem. Such relationality, cooperation and communion that characterise the African worldview were paramount in ensuring social and environmental justice. According to Margaret Ssebunya *et al*, the African principles “stand in disparity to the widespread selfishness, capitalism, oblivious competitiveness, and the prevailing large scale private ownership of property that have greatly contributed to environmental injustices today”.⁵¹³

⁵⁰⁷ Ibid.

⁵⁰⁸ N Fobih. “In Search of an Alternative Model of Development in Africa: The Role of the State, Donor Agencies, International Non-Governmental Organizations and Community-Based Organizations in Ghana’s Development”. Master of Arts Thesis, St. Mary’s University, Canada, 2001, 213.

⁵⁰⁹ Paul Mugabi Luberenga. “Traditional African Collective Actions for Community Development: A search into the Internal and External Factors that Arouse Collective Synergies for Sustainable Grassroots Development in Kalungu District”. A postgraduate dissertation. Uganda Martyrs University Nkozi, 2012, 20-21.

⁵¹⁰ T. K. Adekunle and H. Nwaechefu. “Environmental sustainability in the pre-colonial, colonial and post-colonial era in Nigeria: The key to human survival”. *Global Journal of Politics and Law Research* 7, n° 6 (September 2019): 38. 33-48.

⁵¹¹ Ibid.

⁵¹² Ibid.

⁵¹³ Margaret Ssebunya, Stephen Nkansah Morgan and Beatrice D. Okyere-Manu. “Environmental Justice: Towards an African Perspective”, 183.

6.5. Ecological Solidarity and Sustainable Development in Africa

6.5.1. How African Culture of Ecological Solidarity could contribute to its Sustainable Development

The African continent has an important role to play in the sustenance of the earth. The Congo basin, for example, has been referred to as one of the *lungs* of the earth.⁵¹⁴ It has also been found out that the world's largest global reserve of peat bogs is found in Africa, storing some thirty billion tonnes of carbon which is equivalent to three years of global emissions of green-house gas.⁵¹⁵ And Pope Francis reminds us “how important these are for the earth and for the future of humanity”.⁵¹⁶ Consequently, one can say that the continent of Africa has a huge role to play in the ecological debate. However, the position of Africa in ecological discourse has been one of passivity or pity as if Africa has got nothing to offer.

An historical review of the pre-colonial African kingdoms points to the fact that they were great centres of rich culture, tradition, trade, and efficient governance structures.⁵¹⁷ According to C.T. Eyong and I.I. Foy, unsustainable development practices began with the advent of European colonial masters and missionaries who referred to Africans as primitive, savage, barbaric, etc.⁵¹⁸ They denied African nations the right to pursue its development path by using Western-styled systems, expertise, standard and problem-solving methods which largely did not bear much fruits.

That notwithstanding, Africa was not the only continent colonised. It can't continue to lick its wound forever. It has to rise up and propagate its cultural heritage including its ecological wisdom especially as the world is facing a global ecological crisis. African rationality and world view which appeals to the ethics of solidarity with and care for the earth needs to be propagated. It may not be possible to achieve sustainable development by sticking to the Western capitalist model.⁵¹⁹ Sustainable development, as Okechukwu Ukaga affirms, “is generally homegrown and not something that is readily or easily exported from one place to another.”⁵²⁰ So Africa has to contribute to the global ecological discourse.

Article 8 (j) of the Convention on *Biological Diversity* emphasizes the fundamental importance of indigenous values and knowledge in achieving sustainable development. It states:

⁵¹⁴ Pope Francis. *Laudato Si'*, 38.

⁵¹⁵ Jacqueline Azetsop, S.J. and Paolo Conversi (eds). *Foundations of integral ecology*, 325.

⁵¹⁶ Pope Francis. *Laudato Si'*, 38.

⁵¹⁷ C.T. Eyong and I.I. Foy. “Towards alternative strategies for sustainable development in Africa” *International Journal for Sustainable Development and Planning* 1, n° 2 (2006): 135. 133–156

⁵¹⁸ Ibid.

⁵¹⁹ Mbih Jerome Tosam. “African Environmental Ethics and Sustainable Development”, 184.

⁵²⁰ Okechukwu Ukaga and Osita Afoaku. *Sustainable Development in Africa – A multifaceted Challenge*. New Jersey: African World Press, 2005, 1.

Subject to National Legislation, to respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.⁵²¹

Nonetheless, there has to be a conducive political environment and selfless leaders that will make legislations guiding environmental behaviours.

In precolonial Nigeria, for example, there were various system of government like monarchy, gerontocracy, etc.⁵²² The monarchical system was a centralized form of government where the king is selected from the royal family. Gerontocracy on the other hand was a non-centralized political system. Here elders and lineage heads performed religious and political functions. Despite these various system of government, there was great understanding between people of various tribes and political organisation especially in trade. Consequently, there is the need for African unity. Unity is so essential that without it, it is nearly impossible to achieve anything. One of the stumbling blocks to sustainable development in Africa is the disunity among African leaders.⁵²³ Contradictions and mutual distrust among the political elites have prevented them from speaking with one voice in the global sphere. “For example, while Libya and Zimbabwe hold a radical position within the African Union (AU) and New Economic Partnership for Africa’s Development (NEPAD), Nigeria and South Africa take a liberal and pro-Western stance.”⁵²⁴ Internal divisions would always diminish bargaining power. According to Kwesi Kwaa Prah African unity will grant Africa and Africans the ability to successfully resist further exploitation of its natural resources as well as extract benefits for itself from global trading system.⁵²⁵ Unfortunately, there are still trade barrier that exist between some African states. This will definitely hamper its progress.

Furthermore, these system of government earlier mentioned, provided effective and efficient governance system.⁵²⁶ The kings or the leader in a typical African society were believed to be divinely ordained. He cannot enforce his personal will indiscriminately since he was only a representative of the divine. He held absolute powers, but was assisted by an institutionalized

⁵²¹ United Nations. Convention on Biological Diversity, 1992. <https://www.cbd.int/doc/legal/cbd-en.pdf>

⁵²² A. A. Oladiti. “Religion and politics in pre-colonial Nigeria”. *Cogito* VI, n^o 2 (June, 2014): 78-79. 72-84

⁵²³ Okechukwu Ukaga and Osita Afoaku. *Sustainable Development in Africa – A multifaceted Challenge*, 19.

⁵²⁴ C.T. Eyong and I.I. Foy. “Towards alternative strategies for sustainable development in Africa”, 140.

⁵²⁵ Kwesi Kwaa Prah. “Catch as Catch Can: Obstacles to Sustainable Development in Africa”. In *Sustainable Development in Africa – A multifaceted Challenge*, edited by Okechukwu Ukaga and Osita Afoaku, 19, New Jersey: African World Press, 2005.

⁵²⁶ A. A. Oladiti. “Religion and politics in pre-colonial Nigeria”, 79-80.

council of respected chiefs. Public interest was paramount. Therefore, good governance and effective leadership is a *conditio sine qua non* to achieving the goal of sustainable development. Embezzlement and poor management of state funds are the bane of most African government. And these definitely pave way to external begging. Africa is blessed with rich human and natural resources. However, as Albert Ahenkan and Alex Osei-Kojo opine, “the quality of life of any given society depends not just on the availability of resources but the management of such resources.”⁵²⁷ Therefore, we must promote good and accountable governance in order to achieve sustainable development in Africa.

More still, there was a strong belief that the ancestors would always reward people for good behaviours and punish bad actions. For this purpose everyone is urged to comply with the laws of the land in order to attract peace and prosperity. “Because rulers and their subjects wanted peace and prosperity, emphasis was placed on satisfying the ancestors and gods through regular and annual sacrifices. Also there were mechanisms to resolve conflicts. According to E.J. Alagoa,

First, the principle of impartiality of the manager of conflict. Rulers in all Nigerian communities were expected to behave impartially in their office.... Second, the principle of fairness. That is, the poor and weak should receive a fair deal as well as the rich and powerful.... Third, the ... principle of accommodation, compromise and a disposition for reconciliation, as opposed to the principle of “winner takes all” or the “zero sum game”.... Fourth, the principle of reciprocity. The spirit of accommodation must be mutual and reciprocal to be effective.... Fifth, the principle of moderation and of measured action and response. It was this principle that informed the deliberate limitation of the level of violence in conflicts within Nigerian communities in the past... Sixth, the principle of incompatibility or separation. That is where the parties to a conflict cannot be reconciled, the best policy would be to separate them...⁵²⁸

African government should assist in seeking ways to resolve conflicts and promote peace rather than result to violence. “In a climate of chaos, inter-ethnic mistrust, insecurity and violence, no amount of development aid can put a society on its path to sustainable development.”⁵²⁹ Farmers should not see herders as their enemy and vice visa. Christians should not think the Muslims are their problem. We are already suffering the effect of climate change, we will worsen it by further destroying the environment with armed conflicts and civil wars.

⁵²⁷ Albert Ahenkan and Alex Osei-Kojo. “Achieving sustainable development in Africa: Progress, challenges and prospects”. *International Journal of Development and Sustainability* 3, n° 1 (2014): 169-170. 162-176

⁵²⁸ E.J. Alagoa, “Conflict Resolution: The Nigerian Perspective”, *Kiabara: Journal of Humanities* 7, n° 1 (2001): 1-8.

⁵²⁹ C.T. Eyong and I.I. Foy. “Towards alternative strategies for sustainable development in Africa”, 140.

Religion plays a very important role in African. African religious leaders possess the moral authority to form the conscience of the society as well as provide meaning and guidance to societal issues. The people listen to them because it is believed they speak on behalf of God. Therefore, African religious leaders must begin to decolonize and contextualize Christian religious beliefs. The task of inculturation must be taken seriously. African theology should reflect African experiences and realities. “The dominance of perspectives from the Global North must be challenged in African theology and religious studies.”⁵³⁰ African religious researchers would have to devote more time in reflecting on African realities and using their findings to ameliorate the living conditions of Africans. Also, the importance of education in this debate cannot be overemphasised. The educational system should be revisited to include resource management and environmental education.

Lastly, sustainable development can be achieved if African governments would take interest in the promotion of indigenous systems of knowledge and practices with regard to environmental protection. Unfortunately, the revitalization of these knowledge systems has been a major challenge facing African governments who are largely unwilling.⁵³¹ Indigenous knowledge refers to a social, political, economic, and spiritual dimension of a local way of life that has been built up and passed from one generation to another.⁵³² Culture is essential in this regard because it “encompasses all that members of a society do and is passed from one generation to another.”⁵³³ Consequently, sustainable development must be pursued against the backcloth of this cultural process. Africa can promote sustainable development on the basis of its rich culture.

To conclude, the appeal of the South African bishop conference as echoed by Pope Francis finds its basis at this point. According to the South African bishops, Africa must be ready to contribute her quota to the ecological discourse.⁵³⁴ The richness of its culture could help in constructing a body of thought capable of tackling the ecological crisis.

⁵³⁰ Ezra Chitando, Ernst M. Conradie and Susan M. Kilonzo (eds). *African Perspectives on Religion and Climate Change*, 12.

⁵³¹ C.T. Eyong and I.I. Foy. “Towards alternative strategies for sustainable development in Africa”, 143-144.

⁵³² Ezra Chitando, Ernst M. Conradie and Susan M. Kilonzo (eds). *African Perspectives on Religion and Climate Change*. London: Routledge, 2022, 25.

⁵³³ Kwesi Kwaa Prah. “Catch as Catch Can: Obstacles to Sustainable Development in Africa”, 19.

⁵³⁴ Pope Francis. *Laudato Si'*, 14.

6.5.1.1. How Ecological Solidarity towards Africa could contribute to its Sustainable Development

We have seen that the global ecological crisis we face today is as a result of the cumulative and unintended result of human economic activities over the centuries. And the effects are staring us at the face with a serious existential danger for future generations. Africa suffers the greatest burden of the adverse effects of global climate change even though she bears the least onus of responsibility for it. Actions to mitigate the effects of climate change must be built upon a framework that does not put the poor at greater risk or place disproportionate and unfair burdens on developing nations. This responsibility weighs more heavily upon those with the power to act because the threats are often greatest for those who lack similar power, namely, vulnerable poor populations, as well as future generations.⁵³⁵

Pope Francis made an implicit reference to Africa when he spoke of “ecological debt” of the global North towards the South.⁵³⁶ The Pope highlights some of the ecological damages suffered by Africa due to the economic activities of the highly industrialised country: increase in greenhouse gas, exploitation of raw materials, dumping of toxic waste from those countries on the African continent etc.⁵³⁷ His assessment is that: “the gravest effects of all attacks on the environment are suffered by the poor”.⁵³⁸ Some legal scholars argue that at some point “there will be a general obligation of industrialized nations under international law to compensate developing nations for damage resulting from anthropogenic climate change”⁵³⁹

According to James Rice, there are several beneficial characteristics of ecological debt as a tool for promoting a reconceptualization of North-South political-economic relations.⁵⁴⁰ Firstly, it acknowledges the mutually constituted interconnections between society, nature and economy that are so often held as separate in policymaking. Secondly, it can contribute an historical dimension to discussions bordering on the prospects for the sustainable development of human societies, drawing attention to how present ecological challenges confronting human societies are products of long-term inequitable processes of capital accumulation and exogenous imposition of destructive socio-ecological relations. Thirdly, it illustrates the potential socio-cultural and ecological obligations industrialized countries owe to the South. Thus, rather

⁵³⁵ “Global Climate Change A Plea for Dialogue Prudence and the Common Good” A Statement of the United States Conference of Catholic Bishops June 15, 2001. Consulted 17/12/2022.

<https://www.usccb.org/resources/global-climate-change-plea-dialogue-prudence-and-common-good>

⁵³⁶ Pope Francis. *Laudato Si'*, 51.

⁵³⁷ Ibid.

⁵³⁸ Ibid., 48

⁵³⁹ R.J.S. Tol and R. Verheyen. “State responsibility and compensation for climate change damages - a legal and economic assessment”. *Energy Policy* 32, (2004): 1109.

⁵⁴⁰ J. Rice. “North south relations and the ecological debt: Asserting a counterhegemonic discourse. *Critical Sociology* 35 (2009): 246.

than appeal to charity or development aid as rationale to settle the external debt crisis, it instead reframes the cancellation of external debt as a moral obligation. And finally, it holds the potential to convey a new voice united by common experiences within the arenas in which international development concerns are debated.

Obviously, there are certain principles and concepts used in Multilateral Environmental Agreements (MEAs) as espoused by Rikard Warlenius *et al* that already bear striking resemblance to this ecological debt:

- 1) The principle of *common but differentiated responsibilities* has to do with the acknowledgement of the historical responsibility of industrialized countries for global environmental problems, which implies their obligation to take far-reaching measures in responding meaningfully to such problems;
- 2) The principle of *intra- and intergenerational equity* addresses the problems caused by unsustainable production and consumption patterns and promotes policies for restitution of past degradations;
- 3) The *polluter pays principle* (PPP) has to do with the allocation of economic obligations for activities that are damaging the environment, with prevention being important and inherent to the concept;
- 4) The principle of *equitable benefit sharing*, which states that commercial use of certain natural resources should be shared in a fair and equitable way with the country providing those resources.
- 5) The Adaptation Fund under the Kyoto Protocol, which is funded by a two per cent levy on clean development mechanism projects and thus financed by developed countries. It is used for projects in developing countries. Some consider it the first step to repaying the carbon debt.⁵⁴¹

However, the Adaptation Fund is more about responding to climate change and not to prevent it. In the just concluded COP 27 in Sharm El-Sheikh, Egypt, nations for the first time agreed to set up another fund to provide payouts to developing countries that suffer *loss and damage*⁵⁴² from climate-driven crisis.⁵⁴³ We await to see the level of compliance from member states. Nevertheless, even though there is no legal international framework to ensure international commitments, ethics should always guide political will.⁵⁴⁴ I think there are some concrete steps that could be taken by the Global North that will have a far-reaching impact than these promises that most times do not see the light of day.

⁵⁴¹ R. Warlenius, G. Pierce, V. Ramasar. "Reversing the arrow of arrears: The concept of "ecological debt" and its value for environmental justice". *Global Environmental Change* 30 (2015): 27.

⁵⁴² The principle of *Loss and damage* seeks to help people especially covering the cost of damage that they cannot avoid or adapt to.

⁵⁴³ "Sharm el-Sheikh Implementation Plan". UNFCCC. 20/11/2022. Consulted 25/01/2023.

<https://unfccc.int/documents/624444>

⁵⁴⁴ C.T. Eyong and I.I. Foy. "Towards alternative strategies for sustainable development in Africa", 148.

On one hand, there should be a strong commitment on the part of the Global North towards cutting down emission of greenhouse gases.⁵⁴⁵ If there is no genuine effort to this effect, nor an ethical understanding of humanity's interconnectedness, it will amount to cutting the nose to spite the face. *Mitigation, Adaptation* and, *Loss and damage* funds are effective responses to the crisis. However, dealing with the root causes of the crisis would be both effective and efficient. Africa is worse hit today, but the crisis is global.

On the other hand, Africa is heavily reliant on conventional energy. Over 640 million Africans do not have access to clean and affordable energy.⁵⁴⁶ With the amount of sunlight in the continent, for example, solar energy has greater capacity to provide energy in rural areas and create an opportunity for Africa's sustainable growth.⁵⁴⁷ Therefore, investment in this sector would go a long way in bridging the development inequality gap and assist in the sustainable development project in Africa. More still, agriculture which is the backbone of most African states suffers from inadequate infrastructure for production, processing, marketing and storage. And since agricultural activities are rain-fed, the ecological crisis has dealt a heavy blow on its productivity. This has hampered food production and kept many other countries dependent on imported food.⁵⁴⁸ In Nigeria, for example, pastoralists move their herds from the northern to southern part of the country in search of grass and water, covering a distance of over one thousand five hundred kilometres. If African countries are assisted with the appropriate agricultural infrastructures, it will increase food production, eliminate farmers/herders clashes, boost export etc.

However, according to John Paul II, there is no form of environmental solution or strategy that will be able to effect the necessary changes unless we are truly convinced of the absolute need for a new solidarity, which is demanded of us by the ecological crisis and which is essential for peace.⁵⁴⁹ Therefore, ecological solidarity, which is based on the notion that individuals become united around a common goal and are conscious of their common interests and shared responsibility would be a way out of this crisis. It is only when we come to this realisation that the steps suggested by various commissions, authors, encyclicals as well as non-governmental organisation can be effective. Be it at the international, national, societal or even individual level, if we fail to expand and extend our norms of right recognition and right relationship to the natural world, we will be forced to contract them in the

⁵⁴⁵ Carbon dioxide – CO₂, methane, nitrous oxide, hydro fluorocarbons, and others

⁵⁴⁶ Ezra Chitando, Ernst M. Conradie and Susan M. Kilonzo (eds). *African Perspectives on Religion and Climate Change*. London: Routledge, 2022, 205.

⁵⁴⁷ Ibid.

⁵⁴⁸ Okechukwu Ukaga and Osita Afoaku. *Sustainable Development in Africa – A multifaceted Challenge*, 196.

⁵⁴⁹ John Paul II. "Peace with God the creator, peace with all of creation", Message for the celebration of the World Day of Peace 1 JANUARY 1990. https://www.vatican.va/content/john-paul-ii/en/messages/peace/documents/hf_jp-ii_mes_19891208_xxiii-world-day-for-peace.html.

human world.⁵⁵⁰ “A growth in moral awareness or the ability to see connections previously unseen are plausible outcomes of the interpretive transformation effected by the trajectory of [ecological] solidarity.”⁵⁵¹

⁵⁵⁰ Bruce Jennings. “Ecological Solidarity”. *Minding Nature* 8 n° 1 (2015): 8.

⁵⁵¹ *Ibid.*

General conclusion

According to Pope Francis, since many efforts to seek concrete solutions to the environmental crisis have proved ineffective, “we need a new and universal solidarity” where we seek “to restore the various levels of ecological equilibrium, establishing harmony within ourselves, with others, with nature and other living creatures, and with God.”⁵⁵² A new solidarity with an urgent moral need for a renewed sense of intragenerational and intergenerational connectedness.⁵⁵³

In the first chapter, we looked at the term solidarity, its meaning, biblical and theological foundation as well as its Christological dimension. And using the African concept of *ubuntu* to expatiate its application in real life situation, we came to a conclusion that to be a human being and not live in solidarity would be a contradiction in terms. Thus, solidarity is a *conditio sine qua non* for peace, development and progress. The ecological crisis can be prevented in the long term only when there is an economy and development plan based on universal solidarity and communality.

The issue of sustainable development is taken up in chapter two with an overview of the *Agenda 2030* SDGs alongside the role of religion and culture in ensuring the conservation of resources and protection of the environment for both present and future generation. We realised that sustainable development ensures a long-term stability of the economy and safe environment for the present and future generation.

Chapter three analyses the environmental crisis we face due to unhealthy human activities. The emission of greenhouse gas and depletion of the ozone layer threatens life in the ecosystem. The immediate effects which have led to widespread catastrophe is visible. It is worrisome that the earth is confronted by an unprecedented slow but potentially dreadful ecological crisis. This chapter clearly brings to the fore that there is a *death sentence* hanging over our world.

Unfortunately, Africa is experiencing the negative effects of this crisis. Her plight is discussed in the fourth chapter: poverty, conflict, forced migration are some of the effects due to climate change. And these problems have been aggravated, on one hand, by broken promises of those who seem to have lost sight of the fact that their historic carbon emissions is the cause; and on the other hand, the political incompetence and unwillingness of the ruling elites in Africa to chart a course.

Chapter five reels out the human activities that are foundational to the crisis: technocratic paradigm, distorted anthropocentrism, capitalism etc. There is clarion call to fundamentally reorganise our capacity and management of

⁵⁵² Pope Francis. *Laudato Si'*, 14, 210.

⁵⁵³ *Ibid.*, 162.

industries from an ecological perspective if we want technology to serve us in the long run. And the existing concept of economic progress must be broken.⁵⁵⁴

The last chapter advances a new paradigm that would be necessary in resolving the global ecological crisis especially as it regards mitigating the negative effects of climate change. There is the need for African leaders to chart a course for sustainable development through indigenous ecological wisdom and African rich culture. This is necessary because the Technocratic Paradigm is not environmental friendly. But for Africa to effectively engage in sustainable model of development, it would need financial assistance from foreign bodies.

The fact that we need of a new kind of global solidarity cannot be overemphasized. It is quite clear that the ecological crisis can only be solved by all and sundry. It is not a problem of the global South nor North but a universal problem that will affect everyone sooner or later. Thus in the midst of this crisis, all hands must be on deck by interweaving communities and promoting sustainable processes of growth that are truly human. So the fact of the interdependence between people, nations, and the ecosystem, must be transformed into relationships aimed at true ethical and social solidarity, which is a moral requirement inherent in all relationships.⁵⁵⁵

The errors committed in the past by the global North should not be repeated by the global South in the name of development. We must seek sustainable means of progress no matter how difficult it would be at the beginning. Nevertheless, it is the only guaranty for a better future for ourselves and generations yet to come.

Finally, let us bear in mind that despite our national and continental borders; our division between the global north and south, rich nations and poor nations; the differences among peoples, whites and blacks; the differences in weather conditions, temperate and tropical; we all have a common home. We are all residents of the same “smoke-filled room” and its continued existence is everyone's responsibility. “Only with an all-out effort that spans national boundaries and local self-interests can we utilize the existing technology to save our planet.”⁵⁵⁶ Ecological solidarity is more than a simple doctrine; its scientific, cultural, and religious basis provides a moral obligation to act.

⁵⁵⁴ Stephen E. Hunt. *Ecological Solidarity and the Kurdish Freedom Movement Thought, Practice, Challenges, and Opportunities*. Unite Kingdom: Lexington Books, 2021, 81.

⁵⁵⁵ *Sollicitudo rei socialis*, 38.

⁵⁵⁶ Jack Fishman and Robert Kalish. *Global Alert The Ozone Pollution Crisis*. New York: Plenum Press,1990, 276.

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