



OSUN STATE UNIVERSITY
OSOGBO, NIGERIA

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SAVING HUMANITY AND THE PLANET EARTH:

HUMANITY MUST RETHINK ITS DEVELOPMENT TRAJECTORY

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INAUGURAL LECTURE SERIES 014

by

Anthony Kola-olusanya, Ph.D
Professor of Environmental Sustainability



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Tuesday, 8th August, 2023

The logo of Osun State University is located in the top right corner. It features a circular emblem with an open book in the center, the year '30 80' below it, and the motto 'LIVING SPRING OF KNOWLEDGE' on a banner at the bottom. The text 'OSUN STATE UNIVERSITY' is written around the top of the circle.

OSUN STATE UNIVERSITY

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The Vice-Chancellor,
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Bursar,
University Librarian,
Provosts of Colleges,
Deans of Faculties,
Academic Directors,
Heads of Department,
Members of the University Community,
Students of Osun State University,
Invited Guests and Friends,
Gentlemen of the Press and;
Distinguished Ladies and Gentlemen

Introduction

The years preceding my appointment to the full Professorial chair were years that I had to listen to many pieces of advice and pep talks regarding the best time to start putting together one's inaugural lecture. As such, those talks marked the beginning of my thoughts towards delivering my inaugural lecture. Mr. Vice-Chancellor, sir, in the last seven years, and having attained the position, the question I have had to attend to during this period has been when are you giving your inaugural lecture? My answer to this many quizzes has been, don't worry, I will knock something together and present; it's that easy! However, arriving at this point today and standing before this distinguished audience, I can confidently say, borrowing the words of Professor Darren Sproston, that "inaugural lectures are not easy – trust me." Particularly exasperating is the expectation that you will present something as a Professor, appropriately professorial and erudite". This particularly made me more tense and unnerving than I had thought. Daily, as I thump the keyboards of my MacBook, I became

haunted by a feeling of how I would pull this through. Then came one day, the defining moment. This was when I came across Nelson Mandela University's description of the inaugural lecture, which states:

an inaugural lecture is an auspicious occasion for the University to acknowledge the appointment or promotion of new, full professors, introduce them to the academic and non-academic community of the University, and provide an opportunity for engagement with the greater community.

This description resonated with me, and I hope it also resonates with this distinguished gathering. Here I present the two perspectives to the Inaugural Lecture. Mind you, it isn't that this descriptions are different from others. It's just that it speaks more to me today as I present my Inaugural Lecture being the 14th in the series of Osun State University and the 2nd since post-Covid 19 Pandemic lockdown, 2nd in College of Education and 1st in the Department of Environmental Education. What, then, is an Inaugural Lecture? On this premise, I will define the inaugural lecture and its importance in the life and career of university academics.

Mr. Vice-Chancellor, sir, the inaugural lecture to the individual academic "represents a significant milestone in an academic's career, celebrating his/her promotion to the rank of Professor, or his/her appointment to a Chair or other Professorship at the university." Accordingly, "for new Professors, inaugural lectures provide an opportunity of presenting their career so far, update colleagues on current and future research plans, and introduce their field of expertise to wider audiences." For the University, on the other hand, "the event is a chance to recognise their achievement, host a celebratory event to bring staff together, and an opportunity to engage with audiences with a broader interest

in its research, including funders and decision-makers from government, academia and industry." In addition, the expectation is that Professors must usually give their inaugural lecture within 12 months of their appointment. However, the delayed delivery of the inaugural lectures in our clime is almost turning the inaugural lectures into valedictory lectures. With these definitions and clarifications, I feel honoured to be the Inaugural Lecturer this afternoon.

Distinguished ladies and gentlemen, the life of an academic is often very lonely and excruciating, and the more we try to create or re-create life for ourselves, the lonelier the journey becomes. On this lonely road, I have had to live my life and forge a meaning or what I can call a path to my career as a university teacher and researcher. My career has made it possible for me to review the many meanings and our understanding as humans and our misunderstandings of what our roles as humans in the scheme of nature should be. Therefore, the opportunity to present something representative of my area of expertise should not be too daunting a prospect, but where do I begin to talk about the various facets that make up my academic life and journey as a researcher?

My interest in the field of environmental management and sustainability was nurtured in the 1990s in Lagos by Professor Peter Okebukola, then Ag Vice-Chancellor and later the pioneer Director of the Centre for Environment and Science Education (CESE) (now Centre for Environmental Studies and Sustainable Development (*CESSSED*)) at the Lagos State University, who hired me as a junior researcher and encouraged me to return to the graduate school for my higher degrees. Also, Professor Okebukola was instrumental to my membership of the National Environmental Education Project of the Science Teachers' Association of Nigeria (STAN), making it possible for me to be part of the development of effective strategies for teaching concepts on the Environment in Nigeria.

At the outset, permit me to extend my eternal gratitude to all my teachers who shaped and moulded this idea, and to my elders for exposing me early to the sacredness of the Earth – the source of life. My understanding of humanity's connection to the environment and nature dates back to childhood. Back then, I remember being told, for example, never to collect the rain with my hand, stand near the doorpost, or rest my back against the wall when rain falls for fear of lightning and thunder. I was also taught not to throw garbage into the stream or any flowing water or drainage because of the risk of flooding. Moreover, I was introduced to the need to respect the sacredness of the Earth – the source of life, to care, nurture, and protect all life forms, whether plants or animals, for as much as they are there for humanity's sake, we are also here for their sake. This symbiotic relationship, I was told, is responsible for the overall happenings, events, and cycles that occur on Earth.

The sound and memory of my first call to environmental ethics and nature protection have remained ever since. I hope we all still remember the Yoruba nature ethical poem

*Yi ẹ̀sẹ̀ rẹ̀ sí apákan
Má ẹ̀ tẹ̀ kòkòrò wọn-ọ̀n-nì
Kòkòrò tí iwọ̀ kò le è dá,
Şèbí Ọ̀lórún rẹ̀ ló dá wọn*

*Turn your foot to the other side!
Do not step on that insect
The insect you cannot create
Were created by your God*

With these learning experiences, I developed my understanding of the culture, worldview, and paradigm of the Yoruba country, my people and my race, and the centrality of the environment and nature in our ways of life. These learning experiences would later form the basis of my understanding of the ethics and implications

of humanity's actions, the people's struggle, and the need for Earth's protection. Today, as an adult, a researcher and a teacher, these learning experiences continue to guide my thoughts, consciousness, awareness, and understanding that the various environmental crises currently threatening humanity's existence on Earth result from our lack of respect for the source of life.

In the journey so far in my career, spanning a quarter of a century, I have developed a particular interest in the human dimensions of environmental problems. The many conclusions strengthen this interest that humans are mainly responsible for the poor state of the environment, having been found seriously responsible for climate change. This has contributed to my interactions with the field in various dimensions. Considering the enormity of the threat, the question is whether we need to unlearn our unsustainable livelihoods and work to attain an environmentally just and sustainable society. Equally troubling is the thought of how soon will it be for us to get there. It is with this question on my mind that I am going to approach my assignment today. Therefore building on my introductory reflections, it is crucial to set the tone for today's inaugural lecture, and I hasten to state that this inaugural lecture is about making alternatives. I hope some environmental and sustainability questions will be answered today.

Assessment of the Human-Induced Environmental Destruction

Mr. Vice-Chancellor, sir, the Earth is about 4.53 billion years old. It has existed for about 4.3 billion years before the introduction of humans into its space, from its primitive beginning about 200,000 years ago to the present. Over time, humans (i.e., modern humans) have realised that the planet Earth is a home, providing several

opportunities for survival. Suffice it to say; humans have also moved and made monumental adjustments to make their interactions more rewarding within this short existence of living and interacting within the Earth's environment. From our hunter/gatherer forebears, we moved to tool-making around 90,000 years ago. We then embraced agriculture as we know it today when humans began to grow food and change their surroundings to survive and eat around 12,000 years ago. As food became more sustainable and living became easier, humans began to produce more humans. From 12,000 years ago, there was no stopping us. Since then, we have made monumental strides in our quest for development and moved at jet-setting paces, which began with the industrial revolution in Europe about 200 years ago.

Ladies and gentlemen, you might wonder what could propel and motivate these humans. The simple answer is Power. Power is as old as the creation of the world. A rational explanation can be found in these quotes in the holy books, God's first expression of power was at the creation of the Heavens and the Earth. [Genesis 1 v. 1 - 2]. The Qur'an states, *"Allah created the heavens and the earth, and all that is between them."* [Qur'an 7:54]. Humans were created in the image and likeness of God, *"Let us create man in our image, to our likeness."* [Genesis 1 v. 27]. This means that humans look like God and possess the attributes of God - with absolute dominion [power] over all things created by God. Psalm 82 poignantly emphasises humans' superiority over other creatures: *"I said, you are 'gods'; you are all sons of the MOST-HIGH"*. The Bible, in the book of Genesis, went further *"Be fruitful and increase in number, fill the earth and subdue it, rule over the fish in the sea, and the birds in the sky, and every creature that moves on the ground"* (King James Bible, Gen. 1:28). The wrong application and misrepresentation of Gen. 1:28 have led humans to assume the

masters of, and over everything. Within this assumption, and through our anthropogenic journey and conquest of the natural environment, human beings created reasons (both objective and subjective) to justify our ruinous ways of life. History is replete with pieces of evidence that lend credence to this dangerously erroneous notion amplified in Genesis 1: 28, which speaks to our ethical and spiritual failures and is closely linked to our perceptual and prudential failures to situate ourselves as ecological beings. Therefore, the more radically we separate ourselves from nature to justify its domination, the more we lose the ability to respond to it in ethical and communicative terms. We also gain a false idea of our character and location, including an illusory sense of independence from nature. The results can be dangerous, making us insensitive to ecological limits, dependence and interconnections (Plumwood, 2002).

From an experience that started with crude implements, the history of humankind is replete with efforts, directly and indirectly, resulting in a permanent alteration of the planet for its benefit. Never minding Earth had existed long before us, humanity has done more harm to the Earth in a very short time. Humans have continued the exploitation of the natural environment for their advantage without recourse and without caring about Earth's health or sustainability. Consequently, the conquer and subdue mentality has littered history, with several catastrophes dating many centuries. Early unsustainable agriculture practices and poor irrigation activities by humans helped create deserts worldwide. Examples include the Sahara Desert in Africa, and the Dust Bowl in the United States of America. These two deserts used to be noted for their green vegetation. Aralkum Desert (between Kazakhstan and Uzbekistan) is another pathetic example of humans' recklessness as what used to be known as the Aral Sea dried up, leaving behind a large expanse of salty sea of sand. The Former

United Nations Secretary-General Ban Ki-Moon called the shrinking of the Aral Sea "one of the planet's worst environmental disasters". The region's once-prosperous fishing industry has been devastated, bringing unemployment and economic hardship. The story is not different in many other spots across the planet.

Consistently since the 1990s, there has been an agreement among experts that the loss of rainforest daily is up to 80,000 acres and 16 million hectares per year. The result is that the world's forest cover has decreased by over 80 million hectares. Furthermore, in over just three decades (precisely thirty-one years), the Food and Agricultural Organization (FAO) "estimated that 420 million hectares of forest had been lost through conversion to other land uses". Humanity's need for profit, food, clothing and shelter is at the centre of this alarming forest loss.

The preceding shows that the human race faces grave environmental problems and challenges occasioned by the dramatic changes within the Earth's systems. Since humanity depends on the Earth's ecosystem and the goods and services they provide (Cullen et al., 2007; UNEP, 2006), this dependence over time has brought about swift and comprehensive change in the ecosystem than witnessed in any other comparable period. The effect of humanity's actions on the planet is justifiably a general concern. Devastatingly, these changes have resulted in biodiversity loss, the maintenance of which is crucial to the continued well-being and survival of all humanity (MEA, 2005; Norse, 1993; Sala & Knowlton, 2006). In addition, humanity's actions have resulted in climate change, the long-term shifts in temperatures and weather patterns, mainly caused by human activities, especially the burning of fossil fuels. Other consequences of climate change include threats to national security and prosperity and a disastrous effect on the world's economy, possibly shrinking by 20% each year (Flavin & Topher, 2002b).

In terms of land, an estimated 150-300 million hectares of cropland (10-20 per cent of the world's total) are now degraded (Flavin & Topher, 2002a). In addition, according to Flavin and Topher (2002b), due to automobile-centred transportation, the world's fossil fuel consumption and carbon emissions have continued to rise exponentially, worsening climate change incidence. Therefore, it is clear that the planet is threatened by climate change, and the potential for associated disasters is genuine.

Over the last decade and a half, the world has continued to witness several environmental catastrophes, such as the endangering desertification, flooding and gross environmental pollution in Nigeria, Tsunamis in East Asia, Hurricanes - Katrina, Harvey, and Maria in the United States, Irma in the Caribbean Islands, earthquakes in Southern China and Turkey, the cyclone disaster in Myanmar (Burma), continued drought and rapid desertification across the African continent, as well as the continued loss of tropical forests in the Amazon, further demonstrate the fragile nature of the planet as well as the need to take action. During this period, the world's attention was drawn to the different dimensions of environmental catastrophes and their consequences for humanity and the Earth's biodiversity through mass media, such as television, public movies, books, newspapers, and the Internet (Kola-Olusanya, 1998a). In consequence, several pro-environmental measures, such as a tax to curb pollution, the banning of "old" incandescent light bulbs and other inefficient lighting technologies, cutting down on packaging due to its impact on landfills, and the introduction of a carbon tax (a tax on the emission of carbon dioxide and other greenhouse gases), have been proposed or are being presented in the western world and some parts of the global south at different levels of governance; to help preserve the environment as well as reduce the continued threat of climate change.

My Place in the Environmental Crisis

The scattering across the earth's surface has contributed in no small ways to the present environmental problems we are currently facing. Although, several actions globally have articulated and captured the issues as it was on for about half a century ago. None could have anticipated the threat of climate change, biodiversity loss, and environmental degradation. It is approximately forty-nine years since the idea of sustainable development originated from the United Nations Conference on Human Environment in Stockholm, Sweden, in 1972. More than three decades have passed since the landmark *Brundtland Commission Report on Sustainable Development* in 1987, three decades have passed since the *Rio Earth Conference* in 1992, and almost three decades since the first conference on climate change in Kyoto in 1997. Yet, the human race continues to grapple with the threat of climate change and environmental destruction. At the same time, unsustainable economic production practices and development activities continue to cause anxiety globally, particularly regarding how far the planet can absorb its continued abuse. Tragically, twenty-one years after the 2002 *World Summit on Sustainable Development* in Johannesburg and eight years after the launch of Education for Sustainable Development (ESD), global efforts toward environmental sustainability have yet to yield significant results in most contexts. In recent years, the planet has, in an exponential manner, suffered one major environmental crisis after another in quick successions.

These global activities have also been instrumental to my understanding of the basis of my connections to global environmental problems. My early interaction with nature captures my growing experiences. The abundance or richness of nature's wealth or resources can be astounding for a young boy growing up

in Molete, Ibadan. My experiences of the wild and nature are encapsulated in visits to my grandfather in my hometown, Ijebu-ode. The visits, which I continually reminisce about, allowed me to relate to the magnificence of nature and the wild. Each visit was a discovery of the power of nature, its purity and the essence of humanity's connection to the environment. Placing this with my experiences of growing up in the metropole of Ibadan, where natural forest vegetation, flowing streams and its ecosystem quickly gave way to urbanisation, points to the humans' lack of appreciation of the essence of nature. These have helped me realise my place and contributions to environmental degradation. This realisation encapsulates my attempt to measure and present the beginning of my carbon footprints and contributions to the problems.

Reflecting, I can link my available carbon footprint to a point in my very young years when a ram was slaughtered for my sake as part of a traditional celebration. At that point, being a little boy and being told by my parents that the ram was for my celebration was one of the most remarkable and significant moments I could imagine. Standing beside my three little friends and watching the burning of the ram to dehair the animal, we watched with glee the smoke from the fire rising skywards; I proudly drew their attention to the sky. Pointing my forefinger to the sky, I told them the smoke from my ram had made the sky what it was. In awe, they all stood affixed to the spot while I continued to feel like the 'real deal'. This feeling is the same as our forebears who have had to explore the earth's surface, foraging for what Abraham Maslow described as the human's primary three needs. These needs are simplified as follows – food, shelter and clothing.

From that moment onwards till date, my place in the present global environmental crisis was established. Since then, I have

contributed in no small ways through my ecological and environmental footprints, ranging from some sheets of paper used to the quantum of wasted food and kilometres accumulated in terms of land and air travel, thereby accumulating ecological footprints of between 16.2 tonnes of Co₂ per year in Nigeria and 19.5 tonnes of Co₂ per year in Canada, and whichever way I choose to rationalise it, like many others, I am categorised as a '*Climate Villain*'. These ecological footprints occasioned by my activities have defined me as a member of the human race caught in the quest to meet Maslow's basic human needs over the last ninety thousand years on the Earth's surface.

Ecological Footprints and the Humanity

Ecological Footprint is a resource-accounting tool that measures the amount of the Earth's regenerative capacity demanded by a given activity, that is, the measure of impacts of an individual or community on the environment and can be expressed as the amount of resources consumed (Nautiyal & Goel, 2021; Wackernagel & Kitzes, 2008).

The concept of Ecological Footprints as a way of ascertaining sustainability was developed by Bill Rees and his students, particularly Mathis Wackernagel, at the University of British Columbia in Vancouver, Canada (Rees, 1997; Wackernagel & Rees, 1996). It is a concept promoted and popularised by Global Footprint Network. The ecological footprint can help individuals understand their consumption and impact on the planet; countries improve sustainability and well-being, and local leaders optimise investments for public projects. It is described as a measure that focuses on multiple impacts of an activity rather than on a single one in determining sustainable human activities. It has been designed to show a possible exceedance of this - sustainability

threshold (Wiedmann & Barrett, 2010). The concept measures how much nature we have and how much of nature we use. It captures how much of nature is still available for humans and what is left in real terms if we go by the nature of humans' anthropogenic activities. It measures human demand on the Earth's ecosystems and helps in accounting for the *demand* on and *supply* of nature. It is a standardised measure of demand for natural capital that may be contrasted with the planet's ecological capacity to regenerate.

The total "footprint" for a designated population's activities is measured in 'global hectares.' One global acre (or hectare) represents one acre (or hectare) of biologically productive land or water, that is, one hectare (2.47 acres) of biologically productive space with annual productivity equal to the world average. The biosphere has approximately 11.2 billion hectares of biologically productive space, corresponding to roughly one-quarter of the planet's surface. Wackernagel et al. (1997) defined biologically productive areas as (a) *arable land*; (b) *pasture*; (c) *forest*; (d) *sea space* (used by marine life); (e) *built-up land*; and (f) *fossil energy land* (land reserved for carbon dioxide absorption). The current global biologically productive area is 10.8 billion hectares, of which 21% is the productive ocean and 79% is productive land. Today, Ecological footprint analysis is most acceptable as an indicator of environmental sustainability. Its other uses include measuring, managing, and using resources throughout the economy (IAS, 2019).

Besides its primary function, ecological footprints are also "an effective heuristic and pedagogic device for presenting total human resource use in a way that communicates easily to almost everyone" (Costanza, 2000). Despite contestations regarding the specific methods of measuring ecological footprints, there appears to be a consensus about the importance of the land area as the

primary standard by which the value computed of ecological footprints is calculated (Herendeen, 2000; Simmons & Lewis, 2000).

Sustainability requires living within the regenerative capacity of the biosphere. Meanwhile, a measurement of the extent to which humanity satisfies this requirement shows that human demand on the environment for the production of food and other goods and services, together with the absorption of wastes, may have exceeded the biosphere's regenerative capacity since the 1980s. Findings from a preliminary and exploratory assessment reveal that humanity's load corresponded to 70% of the capacity of the global biosphere in 1961 and grew to 120% in 1999 (Wackernagel et al., 2002). In real terms, the ecological footprints for a particular population are the measure of the total available "area of productive land and water ecosystems required to produce the resources that the population consumes and assimilate the wastes that the population produces, wherever on Earth that land and water may be located" (Costanza, 2000; IAS, 2019; Rees, 2000). The Ecological Footprint of an area measures how much land it takes to support one person in each country. The demand-side measures the ecological assets a population needs to produce the natural resources it consumes and absorb its carbon waste and other waste.

These natural resources include animal and sea products, timber, plant-based food, and fibre products. At the same time, the supply side suggests that a given population's bio-capacity represents the productivity of its ecological assets. Biocapacity, on the other hand, according to World Population Review (2021), refers to "the capacity of a given biologically productive area to generate a supply of renewable resources and to absorb its wastes". Preceding from the earlier implies that where a given population's

ecological footprint exceeds its biocapacity, that population has an ecological deficit (World Population Review 2021). The implications are that if the population's demand for natural resources exceeds its supply, it leads to depletion and high carbon dioxide emissions into the air. As such, a footprint smaller than biocapacity is a necessary condition for the sustainability of humanity.

The world's average ecological footprint was 2.75 global hectares per person (22.6 billion total), and the average biocapacity was 1.63 global hectares (World Population Review 2021). What this implies is that there is a global deficit of 1.1 global hectares per person. The individual footprints vary by country (see Table 1). At the individual levels, the sustainable average per person is 2.2 hectares, and Nigeria's ecological footprint per person is 1.16. This implies that Nigeria's level of consumption is insufficient to meet its needs. This is because many Nigerians continue to burn fossil fuels in large quantities for energy by adding extra carbon CO₂ to the atmosphere. The consequence of using fossil fuels has been worsened by deforestation over the years. In essence, ecological footprints and biocapacities vary significantly among countries, given that every country's footprint and biocapacity depend on several factors, including geography, population size, and environmental policies.

Table 1: Ecological Footprint by Country in 2021

S/N	Country	Footprint Per Capital	Biocapacity Per Capital	Biocapacity Deficit Per Capital	Total Biocapacity	Population in 2021 Millions
1.	Luxembourg	15.82	1.68	-14.14	-7.35	634.814
2.	Aruba	11.88	0.57	-11.31	-1.13	107.204
3.	Qatar	10.8	1.24	-9.56	-19.6	2930.528
4.	Australia	9.31	16.57	7.26	167.34	25788.215
5.	United States	8.22	3.76	-4.46	-1416.05	332915.073
6.	Canada	8.17	16.01	7.83	272.8	38067.903
7.	Kuwait	8.13	0.55	-7.58	-24.64	4328.55
8.	Singapore	7.97	0.05	-7.92	-41.98	5896.686
9.	United Kingdom	7.93	0.56	-7.37	-483.83	68207.116
10.	Trinidad and Tobago	7.92	1.56	-6.36	-8.52	1403.375
11.	Montserrat	7.78	1.36	-6.42	-0.03	4.977
12.	Oman	7.52	1.92	-5.6	-18.54	5223.375
13.	Bahrain	7.49	0.58	-6.91	-9.12	1748.296
14.	Belgium	7.44	1.19	-6.25	-69.13	11632.326
15.	Sweden	7.25	10.62	3.38	32.14	10160.169
16.	Estonia	6.86	10.53	3.67	4.73	1325.185
17.	Bahamas	6.84	9.55	2.71	1	396.913
18.	Latvia	6.29	9.55	3.26	6.72	1866.942
19.	Israel	6.22	0.35	-5.87	-44.85	8789.774
20.	Mongolia	6.08	15.66	9.58	26.82	3329.289
21.	Austria	6.06	3.07	-3	-25.38	9043.07
22.	Taiwan	5.93	1	-4.13	1	23855.01
23.	Finland	5.87	13.44	7.57	40.95	5548.36
24.	Lithuania	5.83	5.67	-0.17	-0.52	2689.862
25.	Slovenia	5.81	2.35	-3.47	-7.18	2078.724
26.	Switzerland	5.79	1.3	-4.48	-35.84	8715.494
27.	Bermuda	5.77	0.13	-5.64	-0.34	62.09
28.	Russia	5.69	6.79	1.1	157.49	145912.025
29.	South Korea	5.69	0.68	-5.01	-245.49	51305.186
30.	Cayman Islands	5.65	0.32	-5.33	-0.32	66.497
31.	Saudi Arabia	5.61	0.5	-5.12	-144.84	35340.683
32.	New Zealand	5.6	10.14	4.54	20.25	4860.643
33.	Ireland	5.57	3.73	-1.83	-8.38	4982.907
34.	Kazakhstan	5.55	3.41	-2.14	-34.82	18994.962
35.	Denmark	5.51	4.78	-0.73	-4.09	5813.298
36.	Turkmenistan	5.47	2.79	-2.68	-13.86	6117.924
37.	Antigua and Barbuda	5.38	0.94	-4.44	-0.4	98.731
38.	Germany	5.3	2.27	-3.02	-250.06	83900.473
39.	Netherlands	5.28	1.17	-4.11	-68.68	17173.099
40.	Czech Republic	5.19	2.46	-2.73	-29.1	10724.555
41.	France	5.14	3.11	-2.04	-130.52	65426.179
42.	Belarus	5.09	3.64	-1.45	-13.63	9442.862
43.	Japan	5.02	0.72	-4.3	-547.18	126050.804
44.	Norway	4.98	8.18	3.19	15.92	5465.63
45.	United Arab Emirates	4.94	1.32	-3.62	-22.82	9991.089
46.	Saint Kitts and Nevis	4.94	0.62	-4.31	-0.22	53.544

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47.	Bhutan	4.84	5.27	0.43	0.32	779.898
48.	French Polynesia	4.73	1.37	-3.36	-0.91	282.53
49.	Italy	4.61	1.08	-3.53	-215.05	60367.477
50.	Barbados	4.48	0.19	-4.29	-1.2	287.711
51.	Poland	4.44	2.08	-2.36	-90.18	37797.005
52.	Greece	4.38	1.61	-2.77	-30.8	10370.744
53.	Chile	4.36	3.63	-0.73	-12.75	19212.361
54.	Suriname	4.25	89.33	85.08	45.94	591.8
55.	Cyprus	4.21	0.34	-3.87	-4.37	1215.584
56.	Paraguay	4.16	10.52	6.36	42.55	7219.638
57.	Slovakia	4.06	2.71	-1.35	-7.36	5460.721
58.	Brunei	4.06	2.87	-1.19	-0.49	441.532
59.	Equatorial Guinea	3.97	4.4	0.44	0.33	1449.896
60.	Croatia	3.92	2.8	-1.12	-4.83	4081.651
61.	Portugal	3.88	1.51	-2.37	-25.12	10167.925
62.	Lebanon	3.84	0.33	-3.51	-16.32	6769.146
63.	Botswana	3.83	3.47	-0.35	-0.7	2397.241
64.	Montenegro	3.78	3.24	-0.54	-0.33	628.053
65.	Malaysia	3.71	2.41	-1.3	-38.01	32776.194
66.	Libya	3.69	0.7	-3	-18.48	6958.532
67.	Spain	3.67	1.25	-2.42	-113.16	46745.216
68.	Reunion	3.65	0.18	-3.47	-2.98	901.686
69.	New Caledonia	3.58	7.67	4.09	1.02	288.218
70.	Venezuela	3.57	2.78	-0.79	-23.67	28704.954
71.	Mauritius	3.46	0.71	-2.75	-3.41	1273.433
72.	China	3.38	0.94	-2.44	-3435.62	1444216.107
73.	Turkey	3.33	1.52	-1.81	-133.94	85042.738
74.	Bulgaria	3.32	2.86	-0.46	-3.35	6896.663
75.	South Africa	3.31	1.15	-2.16	-113.16	60041.994
76.	Guadeloupe	3.23	0.45	-2.77	-1.27	400.02
77.	Argentina	3.14	6.92	3.78	155.32	45605.826
78.	Bosnia and Herzegovina	3.12	1.63	-1.49	-5.71	3263.466
79.	Brazil	3.11	9.08	5.97	1186	213993.437
80.	Saint Vincent and the Grenadines	3.11	1.26	-1.85	-0.2	111.263
81.	Guyana	3.07	66.58	63.51	50.81	790.326
82.	Grenada	2.98	1.96	-1.01	-0.1	113.021
83.	Bolivia	2.96	16.73	13.77	144.59	11832.94
84.	Nauru	2.94	0.19	-2.76	-0.03	10.876
85.	Hungary	2.92	2.17	-0.75	-7.49	9634.164
86.	Uruguay	2.91	10.32	7.41	25.19	3485.151
87.	Fiji	2.9	2.37	-0.52	-0.46	902.906
88.	Mexico	2.89	1.27	-1.62	-195.78	130262.216
89.	British Virgin Islands	2.86	2.05	-0.81	-0.02	30.421
90.	Ukraine	2.84	2.27	-0.58	-26.41	43466.819
91.	Costa Rica	2.84	1.53	-1.31	-6.29	5139.052
92.	Iran	2.79	0.9	-1.89	-144.43	85028.759
93.	Panama	2.79	2.94	0.15	0.57	4381.579

INAUGURAL LECTURE SERIES 14

94.	Samoa	2.77	1.93	-0.85	-0.16	200.149
95.	Romania	2.71	2.32	-0.39	-8.49	19127.774
96.	Serbia	2.7	1.25	-1.44	-13.75	8697.55
97.	Tonga	2.7	1.48	-1.22	-0.12	106.76
98.	Thailand	2.66	1.24	-1.42	-94.83	69950.85
99.	Dominica	2.57	1.03	-1.54	-0.11	72.167
100.	Mauritania	2.54	4.48	1.93	7.33	4775.119
101.	Cape Verde	2.52	0.62	-1.9	-0.93	561.898
102.	Namibia	2.48	6.88	4.4	9.94	2587.344
103.	Saint Lucia	2.45	0.34	-2.1	-0.38	184.4
104.	Tunisia	2.34	0.93	-1.4	-15.23	11935.766
105.	French Guiana	2.34	111.35	109.01	26.16	306.448
106.	Uzbekistan	2.32	0.92	-1.4	-39.96	33935.763
107.	Azerbaijan	2.31	0.85	-1.46	-13.59	10223.342
108.	Peru	2.28	3.97	1.69	50.68	33359.418
109.	Armenia	2.23	0.89	-1.35	-4.01	2968.127
110.	Albania	2.21	1.18	-1.03	-3.25	2872.933
111.	Djibouti	2.19	0.77	-1.42	-1.22	1002.187
112.	Ecuador	2.17	2.2	0.03	0.46	17888.475
113.	Egypt	2.15	0.56	-1.59	-128.34	104258.327
114.	Algeria	2.12	0.59	-1.53	-58.87	44616.624
115.	Jordan	2.1	0.21	-1.89	-13.25	10269.021
116.	Martinique	2.08	0.39	-1.7	-0.68	374.745
117.	El Salvador	2.07	0.61	-1.46	-9.2	6518.499
118.	Wallis and Futuna	2.07	1.51	-0.56	-0.01	11.094
119.	Gabon	2.02	26.31	24.29	39.59	2278.825
120.	Eswatini	2.01	0.88	-1.14	-1.4	1172.362
121.	Ghana	1.97	1.35	-0.62	-15.73	31732.129
122.	Cuba	1.95	0.76	-1.19	-13.41	11317.505
123.	Papua New Guinea	1.91	3.92	2.01	14.41	9119.01
124.	Kyrgyzstan	1.91	1.3	-0.61	-3.34	6628.356
125.	Guatemala	1.89	0.99	-0.9	-13.57	18249.86
126.	Jamaica	1.89	0.43	-1.46	-4.04	2973.463
127.	Iraq	1.88	0.29	-1.59	-52.12	41179.35
128.	Colombia	1.87	3.6	1.72	82.04	51265.844
129.	Moldova	1.78	0.8	-0.98	-3.44	4024.019
130.	Morocco	1.68	0.71	-0.96	-31.22	37344.795
131.	Honduras	1.68	1.77	0.09	0.71	10062.991
132.	Lesotho	1.66	0.78	-0.87	-1.78	2159.079
133.	Vietnam	1.65	1	-0.65	-59.02	98168.833
134.	Indonesia	1.58	1.26	-0.32	-79	276361.783
135.	Georgia	1.58	1.17	-0.41	-1.79	3979.765
136.	Niger	1.56	1.24	-0.32	-5.49	25130.817
137.	Mali	1.53	1.58	0.05	0.74	20855.735
138.	Dominican Republic	1.53	0.56	-0.97	-9.97	10953.703
139.	Guinea-Bissau	1.53	3.03	1.49	2.47	2015.494
140.	Syria	1.51	0.6	-0.91	-19.92	18275.702
141.	Sao Tome and Principe	1.49	0.87	-0.61	-0.12	223.368

INAUGURAL LECTURE SERIES 14

142.	Chad	1.46	2.03	0.57	7.1	16914.985
143.	Myanmar	1.43	1.84	0.41	21.65	54806.012
144.	Guinea	1.41	2.09	0.68	7.79	13497.244
145.	Benin	1.41	0.88	-0.53	-5.33	12451.04
146.	Nicaragua	1.39	2.25	0.87	5.21	6702.385
147.	Zimbabwe	1.37	0.62	-0.75	-10.29	15092.171
148.	Tanzania	1.32	1.08	-0.24	-11.47	61498.437
149.	Sri Lanka	1.32	0.44	-0.88	-18.57	21497.31
150.	Republic of the Congo	1.29	10.91	9.63	41.97	5657.013
151.	Solomon Islands	1.29	4.36	3.08	1.69	703.996
152.	Ivory Coast	1.27	1.78	0.51	10.12	27053.629
153.	Uganda	1.24	0.59	-0.66	-23.99	47123.531
154.	Somalia	1.24	1.27	0.03	0.31	16359.504
155.	Sierra Leone	1.24	1.24	0	0	8141.343
156.	Central African Republic	1.24	7.87	6.62	29.99	4919.981
157.	Laos	1.22	1.62	0.4	2.66	7379.358
158.	Burkina Faso	1.21	0.98	-0.22	-3.62	21497.096
159.	Senegal	1.21	1.05	-0.16	-2.2	17196.301
160.	Cambodia	1.21	1.09	-0.11	-1.63	16946.438
161.	Liberia	1.21	2.57	1.35	5.66	5180.203
162.	Cameroon	1.17	1.69	0.52	11.28	27224.265
163.	North Korea	1.17	0.6	-0.57	-14.11	25887.041
164.	India	1.16	0.45	-0.71	-878.05	1393409.038
165.	Nigeria	1.16	0.7	-0.47	-79.35	211400.708
166.	Togo	1.13	0.53	-0.6	-3.98	8478.25
167.	Philippines	1.1	0.54	-0.56	-54.16	111046.913
168.	Kenya	1.03	0.51	-0.52	-22.45	54985.698
169.	Yemen	1.03	0.5	-0.53	-12.64	30490.64
170.	Gambia	1.03	0.82	-0.21	-0.38	2486.945
171.	Comoros	1.03	0.32	-0.7	-0.5	888.451
172.	Ethiopia	1.02	0.58	-0.44	-40.36	117876.227
173.	Madagascar	0.99	2.63	1.64	36.56	28427.328
174.	Zambia	0.99	2.23	1.24	17.46	18920.651
175.	Nepal	0.98	0.59	-0.38	-10.44	29674.92
176.	Angola	0.93	2.55	1.61	35.52	33933.61
177.	Tajikistan	0.91	0.53	-0.38	-3.04	9749.627
178.	Mozambique	0.87	2.06	1.19	29.99	32163.047
179.	Rwanda	0.87	0.54	-0.32	-3.67	13276.513
180.	Malawi	0.81	0.66	-0.15	-2.39	19647.684
181.	Burundi	0.8	0.32	-0.48	-4.73	12255.433
182.	Pakistan	0.79	0.35	-0.44	-78.83	225199.937
183.	Afghanistan	0.79	0.5	-0.3	-8.95	39835.428
184.	Bangladesh	0.72	0.38	-0.35	-54.15	166303.498
185.	Haiti	0.61	0.27	-0.34	-3.46	11541.685
186.	Eritrea	0.49	1.3	0.88	5.39	3601.467
187.	Timor-Leste	0.48	1.78	1.3	1.44	1343.873

Source: World Population Review, 2021

Table 1 shows that humanity has been in an ecological overshoot since the 1970s, where demand for natural resources exceeded that of what the Earth can regenerate. For example, Humanity is using nature 1.8 times faster than our planet's biocapacity can regenerate, which is equivalent to using the resources of 1.8 Earths. According to Salas (2023), as of 2022, if the world's entire population lived like those in the United States, we would need resources equivalent to five times what our Earth can regenerate to satisfy the global demand. (See Figure 1).

*The question that arises, therefore, is, **how many Earths would we need if everyone on the planet lived like the residents of the United States of America?** Here's how we calculate that, using the United States as an example:*

The Ecological Footprint for the United States was **8.04** gha per person (in 2022), and global biocapacity was **1.5** gha per person (in 2022). Therefore, we would need **$(8.04/ 1.5) = 5.36$** Earths if everyone lived like Americans. So, in the case of Nigeria, the ecological footprint was 1.16gha person in (2022), and global biocapacity was **1.5 (in 2022)**. Therefore, as a country, we need **$(1.16/1.5 = 0.77$ earth** (refer to Table 2). This explanation gives credence to the concept of Earth Overshoot. Earth Overshoot is the day of the year on which humanity's demand for nature exceeds the Earth's annual biological capacity to regenerate in the year. The consequence is that the deficit is maintained by liquidating stocks of ecological resources and accumulating waste, primarily carbon dioxide, in the atmosphere. Notably, for Earth Overshoot Day 2022, the total Ecological Footprint increased by 1.2 % compared to the previous year, while total biocapacity increased by 0.4% over the same period. Thus in 2022, *Earth Overshoot Day fell on July 28th*, meaning that between January 1st and July 28th, humanity's

demand for biological regeneration was equivalent to the planet's annual regeneration. The sad pointer is that we continue to live with a carefree attitude whilst rolling back the successes of the previous year's efforts.

Table 2: How many Earths? How many countries?

Country	Number of Countries required	Number of Earths required
Afghanistan	2.0	0.4
Albania	1.9	1.2
Algeria	4.1	1.5
Angola	0.5	0.5
Antigua and Barbuda	5.4	2.9
Argentina	0.5	2.1
Armenia	3.1	1.2
Aruba	8.0	2.8
Australia	0.6	4.5
Austria	2.3	3.8
Azerbaijan	2.6	1.3
Bahamas	0.5	2.7
Bahrain	17.6	5.2
Bangladesh	2.2	0.6
Barbados	21.3	2.5
Belarus	1.5	2.8
Belgium	9.0	4.3
Belize	2.2	5.0
Benin	1.7	1.0
Bermuda	43.0	3.3
Bhutan	1.0	3.3
Bolivia	0.2	2.0
Bosnia and Herzegovina	1.9	2.5
Botswana	0.7	1.5
Brazil	0.3	1.6
British Virgin Islands	1.2	1.5
Brunei Darussalam	2.0	3.4
Bulgaria	1.1	2.3
Burkina Faso	1.3	0.8
Burundi	1.5	0.5
Cabo Verde	3.9	1.2
Cambodia	1.3	0.9

Cameroon	0.8	0.8
Canada	0.5	5.1
Cayman Islands	10.9	1.9
Central African Republic	0.2	0.8
Chad	1.0	1.0
Chile	1.3	2.7
China	4.1	2.4
Colombia	0.5	1.2
Comoros	3.4	0.8
Congo	0.1	0.6
Congo, Democratic Republic of	0.4	0.5
Cook Islands	5.9	5.2
Costa Rica	1.6	1.5
Croatia	1.4	2.5
Cuba	2.3	1.1
Cyprus	18.7	2.4
Czech Republic	2.5	3.6
Côte d'Ivoire	0.8	0.9
Denmark	1.8	4.2
Djibouti	3.4	1.5
Dominica	2.2	1.6
Dominican Republic	2.6	1.1
Ecuador	0.9	1.1
Egypt	5.0	1.2
El Salvador	3.4	1.3
Equatorial Guinea	0.6	1.3
Eritrea	0.4	0.5
Estonia	0.9	5.1
Eswatini	2.6	1.6
Ethiopia	1.8	0.6
Fiji	1.1	1.7
Finland	0.5	4.1
France	1.9	2.8
French Guiana	0	1.2
French Polynesia	3.1	2.5
Gabon	0.1	1.2
Gambia	2.0	0.7
Georgia	1.8	1.5
Germany	3.1	3.0
Ghana	1.5	1.3
Greece	3.5	2.6

Grenada	1.2	1.6
Guadeloupe	7.0	2.3
Guatemala	1.9	1.1
Guinea	0.9	1.2
Guinea-Bissau	0.6	0.9
Guyana	0	2.2
Haiti	2.6	0.4
Honduras	0.9	1.0
Hungary	1.5	2.4
India	2.7	0.8
Indonesia	1.4	1.1
Iran, Islamic Republic of	4.5	2.1
Iraq	11.3	1.1
Ireland	1.7	3.3
Israel	25.4	2.9
Italy	5.2	2.7
Jamaica	3.9	1.0
Japan	7.8	2.9
Jordan	11.7	1.1
Kazakhstan	1.4	3.1
Kenya	2.1	0.6
Korea, Democratic People's Republic of	2.1	0.7
Korea, Republic of	9.8	4.0
Kuwait	15.8	5.0
Kyrgyzstan	1.3	1.0
Lao People's Democratic Republic	1.1	1.2
Latvia	0.8	4.0
Lebanon	11.7	1.9
Lesotho	1.9	1.0
Liberia	0.4	0.8
Libyan Arab Jamahiriya	5.5	2.1
Lithuania	1.3	3.8
Luxembourg	10.7	8.2
Madagascar	0.4	0.6
Malawi	1.3	0.6
Malaysia	2.0	2.7
Mali	0.9	1.0
Malta	11.2	3.4
Martinique	8.6	2.2
Mauritania	0.6	1.6

Mauritius	4.8	2.0
Mexico	2.1	1.5
Mongolia	0.5	4.6
Montenegro	1.7	2.7
Montserrat	3.4	2.7
Morocco	2.2	1.1
Mozambique	0.5	0.5
Myanmar	0.9	1.0
Namibia	0.4	1.6
Nepal	1.9	0.8
Netherlands	7.3	3.6
New Zealand	0.6	3.3
Nicaragua	0.7	0.9
Niger	1.2	1.0
Nigeria	1.6	0.7
Norway	0.8	3.6
Oman	4.4	4
Pakistan	2.3	0.5
Panama	1.2	1.8
Papua New Guinea	0.5	1.1
Paraguay	0.3	1.9
Peru	0.7	1.5
Philippines	2.9	0.9
Poland	2.5	3.0
Portugal	3.5	2.9
Qatar	15.5	9.0
Republic of Moldova	1.5	1.2
Republic of North Macedonia	2.1	2
Romania	1.1	2.3
Russian Federation	0.8	3.4
Rwanda	1.9	0.5
Réunion	26.4	2.9
Saint Lucia	7.1	1.4
Samoa	1.5	1.7
Sao Tome and Principe	1.7	0.8
Saudi Arabia	12.1	3.1
Senegal	1.3	0.9
Serbia	1.8	1.9
Sierra Leone	1.1	0.7
Singapore	104.6	3.7
Slovakia	1.7	3.0

Slovenia	2.4	3.4
Solomon Islands	0.5	1.1
Somalia	1.2	0.6
South Africa	3.8	2.4
South Sudan	0.9	1.0
Spain	2.9	2.8
Sri Lanka	3.3	1.0
State of Palestine	11.9	0.7
Sudan	1.1	0.9
Suriname	0	1.9
Sweden	0.7	4.0
Switzerland	4.4	2.7
Syrian Arab Republic	2.7	0.8
Tajikistan	2.4	0.7
Tanzania, United Republic of	1.2	0.7
Thailand	1.9	1.5
Timor-Leste	0.4	0.4
Togo	1.8	0.7
Tonga	2.7	1.8
Trinidad and Tobago	5.0	4.7
Tunisia	3.0	1.3
Turkey	2.6	2.1
Turkmenistan	2.1	3.1
Uganda	2.3	0.7
Ukraine	0.9	1.5
United Arab Emirates	15.7	5.1
United Kingdom	4.1	2.6
United States of America	2.4	5.1
Uzbekistan	3.1	1.3
Venezuela, the Bolivarian Republic of	0.9	1.5
Viet Nam	2.4	1.4
Yemen	1.4	0.3
Zambia	0.7	0.8
Zimbabwe	2.0	0.8

Source: National Footprint and Biocapacity Account 2022

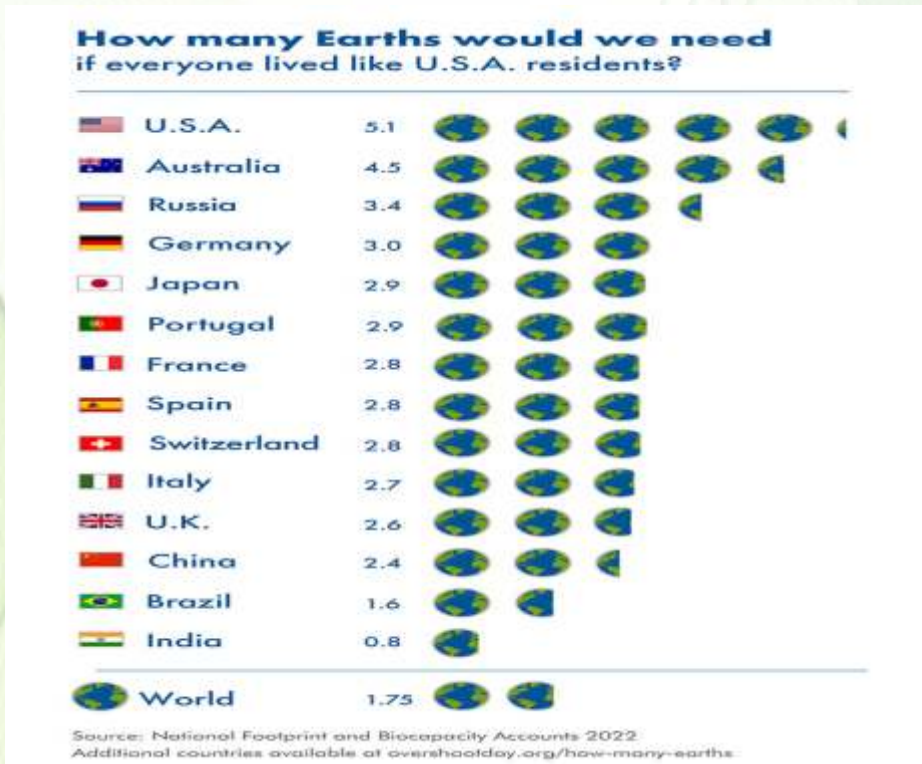


Figure 1: How many Earths? How many countries?

Source: National Footprint and Biocapacity Account 2022

The Humans' Tragedy of the Commons, Planetary Boundaries and SDGs: Implications for Environmental Sustainability

Following the preceding section, the need arises to establish a connection between humanity's inordinate drive for resources and its survival principle as the only basis for plundering the earth's resources. The tragedy of the commons can be likened to the weakness of the human race to realise the limitations inherent in the inconsiderate removal of resources for use without recourse to

the likely consequences. The planetary boundaries can be viewed as a list of the greatest global environmental problems caused by and facing humankind. The section attempts to establish a linkage between the two concepts.

It is very critical in this discourse to establish the interconnectedness of planetary boundaries to sustainable development goals. Its critical nature is borne from the fact that the two concepts also speak to the inherent challenges in the two concepts. This understanding goes beyond the regular thoughts for which the two concepts are targeted. Instead, establishing the linkage requires answering a few salient questions, which bothers what if humanity fails in its quest? What happens if nature determines itself and its course by playing a fast one on humankind? These questions flow from the need to establish, beyond jingles and catchphrases, veritable and verifiable efforts, which in the end, will serve both the good of the planet, humanity and other occupants of the planet. This perspective can only be helpful when thinking and analysing the priorities and goals inherent in the two concepts. This attempt further strengthens and recognises the complexities, scale, and significance of humanity's challenges in articulating developmental priorities for the planet (Pinter *et al.*, 2013). Arguing for integrating the two concepts (Griggs *et al.*, 2013) opined that planetary stability must be integrated with United Nations targets to fight poverty and secure human well-being. As argued by Hajer, Nilsson *et al.* (Hajer *et al.*, 2015), because of the limited effectiveness of intergovernmental efforts and questions about the capacity of national governments to affect change, the SDGs need to additionally mobilise new agents of change, such as businesses, cities and civil society.

To galvanise such a broad set of actors, multiple perspectives on sustainable development are needed that

respond to these different actors' various motives and logic of change. We propose four connected perspectives which can strengthen the universal relevance of the SDGs: "planetary boundaries" to stress the urgency of addressing environmental concerns and to target governments to take responsibility for (global) public goods; "the safe and just operating space" to highlight the interconnectedness of social and environmental concerns and its distributive consequences; "the energetic society" to benefit from the willingness of a broad group of actors worldwide to take action; and "green competition" to stimulate innovation and new business practices (Hajer *et al.*, 2015).

Undoubtedly, all shreds of evidence have shown that humanity's increasingly dominant role in pushing natural processes beyond or close to critical boundaries speaks clearly to the need to adjust development towards more sustainable trajectories. Conscious that humanity is already transgressing the boundaries, especially for climate change, biodiversity loss, chemical pollution, and altered nutrient cycles. Therefore, the future sustainable development goals, as well as their implementations, must reflect an awareness of planetary/environmental boundaries, with a view for tighter controls viz, legislations, conventions and treaties such that will project a more decisive action to avoid overshooting the boundaries (Hajer *et al.*, 2015). Given that, the rate and scale of human perturbation are a global concern, not just a local one. This suggests that SDGs must keep up with the priority of meeting human development needs while staying within a safe and just space for humanity by meeting societal needs at an acceptable level without risking going beyond critical planetary/environmental boundaries (Raworth, 2012). This relationship is clearly expressed by the "safe operating space" concept that points to the need for human society to ensure adequate human development for all without crossing the critical

thresholds beyond which the stability of the Earth's life support systems is compromised (Rockström et al., 2009). Of the nine boundaries, the researchers report that four have now been crossed: extinction rate (one of two indicators for biosphere integrity), deforestation, atmospheric carbon dioxide (an indicator for climate change), and the flow of nitrogen and phosphorus. Action, therefore, needs to be taken to return to a safe operating space in these processes (Steffen et al., 2015).

The initial position also speaks to the "smallness of our planet" theory (Pinter et al., 2013), pointing to the dangers associated with the rapidly growing population, increasing and unsustainable consumption, and their resulting high ecological footprints. This is undoubtedly working against the Earth's physical and space limitations that must be shared among the over eight billion people and others contending for space with human beings. Thus, the Small Planet concept serves as a reminder that development choices should be guided by a necessity to distribute the space for development and habitation justly and sustainably among Earth's human and non-human inhabitants (Pinter et al., 2013). Similarly, planetary boundaries argue that approaching a boundary provides a warning signal to decision-makers, indicating that we are approaching a problem while allowing corrective action before it is too late. Indeed, identifying these core boundaries may help decision-makers to develop policies that help us avoid a less hospitable Earth (Steffen et al., 2015). Against the previous positions, it can be submitted that the 17 sustainable development goals (SDGs) require comprehensive new pathways to development rooted in planetary boundaries and a safe operating space (Obersteiner et al., 2016). Sustainable development goals (SDGs) are a wide range of global sustainable development targets for the environment, society and economy (Jones et al., 2017).

Therefore, it suffices to say that a miss can have a cascade of ripple effects on the other goals. Suffice it to say that SDG's actions expectedly should be local in their ramifications and hold global galvanising potential towards attaining safe operating space within the planetary boundary. This thought is situated in the maxim 'think globally, act locally'. A vivid example is the recent global climate agreement embraced mainly by all countries, including the USA. The climate agreement sets the target for each country to reverse the carbon threshold in the atmosphere within a set target limit (Kola-Olusanya, 2022).

While the SDGs inspire and challenge multiple agents of change, including governments: "planetary boundaries" strengthens the urgency of addressing environmental concerns and "the safe and just operating space" to highlight the interconnectedness of social and environmental problems and their distributive consequences globally (Newell 2002; Elliott 2005; Prins and Rayner 2007; Hajer, Nilsson *et al.* 2015). Since planetary boundaries emphasise the urgency of environmental problems, SDGs speak to the need to galvanise the environmental focus of planetary boundaries to be complemented with development perspectives that correspond to the motives and logic of change in society and business large (Hajer *et al.*, 2015). The 2030 Agenda, thereby, provides a facilitating context for environmental sustainability. For instance, food, energy, and water security requirements link ecosystems and resource management at multiple scales with human well-being. A biodiversity management transformation at a global scale would comprise strategies for managing the world's species that will operate at local and regional scales where the species live.

Planetary boundaries should be considered in the context of a more comprehensive sustainable development agenda. That is,

pointing specifically to principles of social equity as an important complement to the planetary boundaries. This allows for connecting to responsive SDG indicators by enabling policy targets to be derived at the various sub-global levels of governance. Safeguarding ecosystems, species and genetic diversity is recognised as a universal priority by the Housing, Land and Property (HLP) and an enabler of human well-being and sustainability by the United Nations System Task Team (UNSTT) (United Nations, 2013; UNSTT, 2012). The Sustainable Development Solution Network (SDSN) report considers biodiversity as part of a broader goal related to "secure ecosystem services and biodiversity, ensure good management of water and other natural resources" (SDSN, 2013).

Planetary boundaries can be employed for national allocation of the planetary 'safe operating space' to determine the level of sustainable use or tolerable emission and open up opportunities for socioeconomic and equity co-benefits. The inherent benefits of environmental sustainability suggest that both planetary boundaries and SDGs can help propel humanity's action towards environmental sustainability on a larger scale. This is evident in the close interrelatedness of goals 1, 2, 3, 4, 11, 12, 13, 14, 15 and 17. Though the goals are interrelated, the crucial goals being education and elimination of poverty and hunger, this reinforces the notion that the success of these two will save the environment from further assault. This further re-emphasizes earlier view espoused in this paper and by scholars that a miss of one goal could fail the others due to the interrelatedness of the goals since an educated citizenry will be free from hunger and poverty and still be able to care about the consequences of their actions on the environment and be committed to other goals, According to Fang *et al.* (2015) the indispensable role of planetary boundaries in sustainable development is strengthened by the ability of

environmental sustainability to fill the sustainability gap between contemporary anthropogenic interference and critical capacity thresholds, which allows one to map the reserve or transgression of the nation-specific environmental boundaries.

Sustainable Development, the SDGs and Environmental Sustainability

Undoubtedly, the complex and manifold connections of the global environmental crises that characterise our world today have resulted in human apprehension, worries and fear. There is general recognition and consensus that the wasteful, extravagant and inequitable nature of current development patterns, when projected into the not-too-distant future, leads to biophysical impossibilities. This consciousness has led to the realisation that qualitative change in how we do things necessitates living sustainably by promoting economic change and institutional, social and environmental changes. These promoted qualitative changes are today captured as sustainable development or sustainable development goals (SDGs). In essence, sustainable development redefines the concept of development to include attaining basic needs for all people, improving opportunities for a better life and maximising present human interests without depriving future generations of the same. Sustainable development, as such, can be said to be strongly biased towards the moral and ethical responsibility of the present generation for the sustenance of the global environment and its resources so that current development will not deprive the future generation of the ability to attain a level of well-being equivalent or superior to that achieved today. Implicit in this notion of sustainability is the realisation that we are “a part” of the planet rather than “apart” from it. In this lecture, I define sustainable development as the

intersection of sustainability, comprising the three pillars of environment, economy and society (including culture).



Figure 2. Sustainable development is at the intersection of the three pillars of sustainability (IUCN, 2004)

Based on this, I adopt the sustainable development model endorsed by the World Conservation Union (IUCN), which recognises that changes are needed to put the environmental pillar at par with the social and economic pillars (IUCN, 2004)

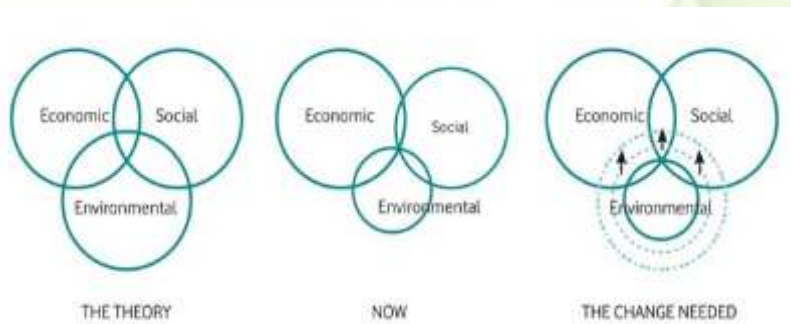


Figure 3: The three pillars of sustainability, from left to right, the theory, the reality and the change needed to balance the model (IUCN, 2004, p. 5).

While sustainable development refers mainly to how a society produces and reproduces human existence, a sustainable lifestyle is related to options people choose. Thus, I argue that one thing depends on the other. Therefore, it is imperative that changing the nature of development involves changing people who change development. This speaks to sustainable development goals (SDGs) as the new model for development for achieving a better and more sustainable world. By implication, SDGs are the driver for addressing critical global challenges, including health, population, quality of water and air, energy use, quality of life, education, social protection and job opportunities, poverty, inequality, peace and justice and good governance while tackling climate change and environmental protection.

Meanwhile, if sustainability is the route to a better future, sustainable development (and SDGs) is the means to guide humanity on this trip to the future. Sustainability refers to the different ways of living in the world, which proves the importance of thoughtfully relating sustainable development to global environmental protection. For example, sustainable development alone cannot reverse by itself; the global warming and devastating climate change generated by 150 years of atmospheric pollution. Herein lies the need to expand our common perception of human activity to more clearly connect it with the ecological concept of interdependence, thus delineating the boundaries of this use of sustainability to correspond to the overlay of human activity upon the functioning of the supporting ecosystem. A sustainable society must be socially responsible, focussing on environmental protection and dynamic equilibrium in human and natural systems. Suffice it to say that environmental sustainability promotes the sustenance of global life support systems indefinitely, principally those systems that maintain life and are essential for humanity's

survival. It is a condition that produces balance, resilience, and interconnectedness that allows human society to satisfy its needs while staying within the capacity of its supporting ecosystems to continue regenerating the services necessary to meet those needs and without diminishing biological diversity. In Broader terms, environmental sustainability concerns protecting and maintaining environmental resources for future generations. Environmental sustainability (Figure 4) speaks to the boundary of operation for humans, that is, a safe operating zone within the environment's constraints. In this wise, it suffices to say that environmental sustainability is critical to humanity's continued existence on the planet.

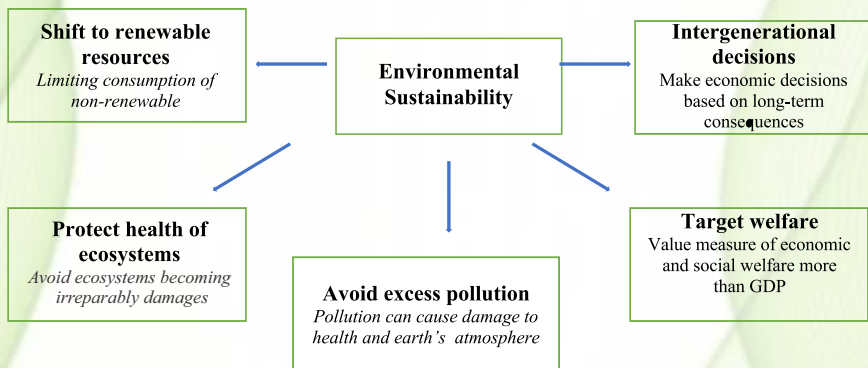


Figure 4: Issues in Environmental Sustainability.

It outlines pragmatic operational methods to reverse environmental damage and reduce poverty. Its aim is that the (aggregate) environmental impacts shall not impair the functioning of resource regenerative systems and waste assimilative systems, and the use of non-renewable resources is compensated for by equivalent increases in supplies of renewable or reproducible substitutes (Dietz & Van der Straaten, 1992; Opschoor, 1992, 1994; Opschoor & Van der Straaten, 1993).

Environmental sustainability points to the need for humans to aggressively seek solutions and alternatives to guarantee future generations and the planet's survival.

Has the End Come?: Climate Change and its Consequences, The Future “Fire” and Our Present Reality

Our Earth is having a fever. Ocean heat is surging. Meanwhile, decision-makers are arguing whether the patient is ill and continues to feed it with the same unhealthy food that some say is killing it. Yes, that is precisely right - they are dithering whilst the planet continues to heat up to devastating levels triggering tipping points in which we will be mere spectators to our demise and happening much faster than predicted. This description speaks to humanity's most dangerous calamity and global emergency – climate change.

Mr. Vice-Chancellor, sir, ladies and gentlemen, climate change, is a global emergency beyond national borders. It is an issue that requires international cooperation and coordinated solutions at all levels. In addition to increasing global temperatures, human-induced greenhouse gases lead to more ocean heating and acidification, sea ice and glacier melt, sea level rise and more extreme weather. To tackle climate change and its negative impacts, world leaders at the United Nations Climate Change Conference have met yearly to address climate change. From the first Conference of Parties (COP1) meeting held in Berlin, Germany, in March 1995, to COP 27 in Sham el-Sheikh in United Arab Emirates (UAE) in 2022. The most notable is COP 21 meeting in Paris in 2015 which reached the historic Paris Agreement (UN, 2015). The Paris Agreement sets long-term goals to guide all nations, among others, to

- substantially reduce global greenhouse gas emissions to limit the global temperature increase in this century to 2 degrees Celsius while pursuing efforts to limit the increase even further to 1.5 degrees to avoid or reduce adverse impacts and related losses and damages;
- review countries' commitments every five years; and,
- provide financing to developing countries to mitigate climate change, strengthen resilience and enhance abilities to adapt to climate impacts.

The Paris Agreement (UN, 2015) sets long-term goals to guide all nations to substantially reduce global greenhouse gas emissions to limit the global temperature increase in this century to 2 °C while pursuing efforts to limit the increase even further to 1.5 °C, to avoid or reduce adverse impacts and related losses and damages. Despite the Paris Agreement, a recent report from the World Meteorological Organization suggests a 66% likelihood that the annual average near-surface global temperature between 2023 and 2027 will be more than 1.5°C above pre-industrial levels for at least one year. There is a 98% likelihood that at least one of the next five years, and the five-year period as a whole, will be the warmest on record (WMO, 2023). The 1.5 C benchmark matters because it's what the 2015 Paris Agreement and subsequent climate accords have set as a threshold to limit the most catastrophic impacts of climate change.

Temperature is a key indicator of how the climate changes in response to greenhouse gas (GHG) emissions from human activities, as increasing GHG concentrations result in lower atmosphere warming. Temperature change can influence crops, forests, infrastructure, human health, the spread of disease, the availability of water and the health of ecosystems. This heat wave is

reminiscent of the one in 2020, during which the values reached 38°C. An event whose probability was judged to be 600 times higher due to global warming linked to human activity by *World Weather Attribution*. However, the heat wave of 2023 is again bringing the climate of the planet's coldest regions, such as the Arctic, Canada and Siberia, to warm up the fastest: 3 to 4 times faster than the rest of the world. Among the most harmful consequences of the heat on these polar regions is the melting of the permafrost, which then releases enormous quantities of methane (a greenhouse gas much warmer than CO₂) and CO₂, exacerbating global warming.

Ladies and gentlemen, as predicted in the bible, the end of our present world or planet will be a fire (see 2 Peter 3: 7 and 3: 10 KJV). This position of the holy bible is beyond religious connotations, it has assumed a scientific relevance especially when you take into consideration the alarming rate of heat and fires across the northern hemisphere. This simply points to the fact that an environmental crisis, that is, climate change will most likely cause the end of the present planet Earth. Like in the age of dinosaurs, humans have continued to live with reckless abandon, not minding the consequences. After decades of a 'culture of denialism', the human race has finally woken up from our deluded slumber to realise (howbeit) too late that climate change is our biggest problem (IPCC, 2007).

Before this point, businesses and politicians have denied that climate change exists, while others continue to question the severity of its impact, despite the overwhelming scientific evidence. Of note are the fossil fuel companies, hoping to prolong the world's reliance on their products and oppose fossil fuel regulation on ideological grounds. This combination of money and deep-seated ideology has helped prevent the world from taking bolder climate action for decades. Perhaps due to the reality of the

dangers and shifting opinions, today, even oil and gas companies publicly admit that climate change is a serious problem. However, the last two decades have seen an upsurge in the serious global push to contain climate change. This is evidenced in the many set targets to reverse climate change trends. However, things appear like “too little, too late”. The most globally accepted was recently in 2015 when 195 countries signed up to the Paris Agreement's greenhouse gas emission reduction targets and promised to limit global warming to 1.5°C and 2°C. These promises have not been kept.

Today, climate change has significantly impacted the temperatures in world regions; the scenario is better captured by the many record-breaking temperatures consistently recorded over the last 20 years. For example, the average global air temperature was 17.180C (62.90F) on Tuesday, July 4th 2023, according to data collated by the US National Centers for Environmental Prediction (NCEP), surpassing the record 17.010C reached a day earlier on Monday, July 3rd. Until the start of this week, the hottest day on record was in 2016, during the last El Niño global weather event, when the global average temperature reached 16.920C. Until the start of July, the hottest day on record was in 2016, when the global average temperature reached 16.920C. In 2020 Earth's global average surface temperature tied with 2016 as the warmest year on record. As revealed by NASA and World Meteorological Organization (WMO), the temperature record showed Earth in 2021 was about 1.10C (1.90F) warmer than the late 19th-century average (NASA, 2021, WMO, 2020). This may not seem like much, but it is enough to cause significant changes in weather patterns and ecosystems worldwide. Climate scientists predict that if we continue to emit greenhouse gasses at the current rate, the planet's temperature will continue to rise, with potentially catastrophic consequences (Figure 5).

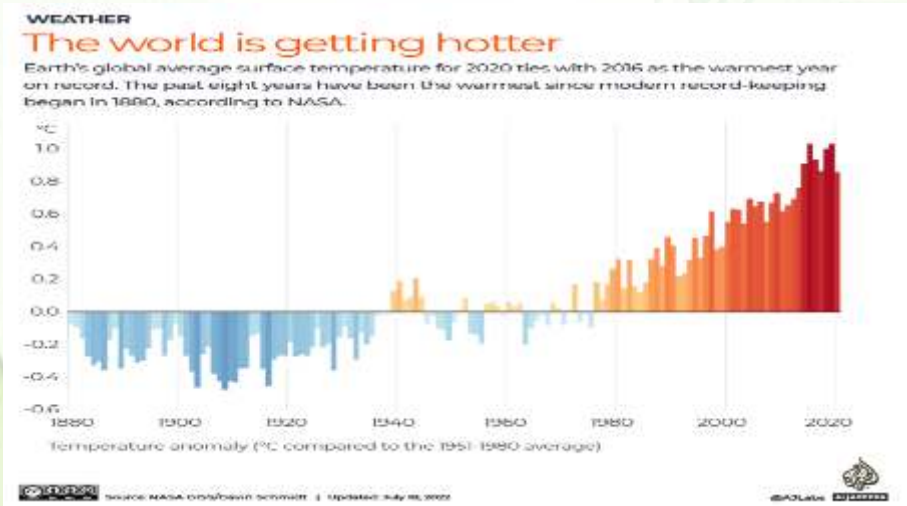


Figure 5. Showing the temperature anomaly between 1880 and 2020.

In addition, while the hot trend continues, we witness less precipitation globally. For example, climate change is now driving dramatic and irregular changes to the length and start dates of the seasons. Rain Seasons and winters have shortened over time. As Wang et al. (Wang et al., 2021) noted, on average, field summer grew from 78 to 95 days between 1952 and 2011, while winter days shrank from 76 to 73 days. Spring and autumn also contracted from 124 to 115 days and 87 to 82 days in the northern hemisphere, respectively. As a result, there have been several warnings that if these trends continue without any effort to mitigate climate change, by 2100, winter will last less than two months, and the transitional spring and autumn seasons will shrink further (Wang *et al.*, 2021).

Similarly, the story is not different in the southern hemisphere, just like in the northern hemisphere. Current climate models indicate that rising temperatures will intensify the Earth's water cycle, thus

resulting in increased evaporation. Consequently, increased evaporation will result in more frequent and intense storms and contribute to drying over some land areas. The result is that storm-affected areas will likely experience increased precipitation and increased risk of flooding. In contrast, areas far from storm tracks will likely experience less precipitation and an increased drought risk (NASA, 2020). This incidence is impacting farming and farmlands seriously. Today, it is common to see the rain pouring torrentially with venomous anger year-in-year-out, causing flooding and burying farmlands. The implications of this flooding on agriculture are enormous. Besides destroying farmlands and reducing farming activities, the simultaneous effect is best captured in low yield and reduced harvests, potentially leading to hunger and increased diseases. This point is driven home by Wang *et al.* (2021) warnings of a high risk of extreme rainfall variability across the various regions in the next five years, with some facing drought and others flooding.

Furthermore, the consequences of climate change are not unidirectional but multi-dimensional, given that the manifestations will vary from location to location. Pieces of evidence of this can be seen in the raging wildfires destroying parts of Canada's provinces of Alberta, Quebec and Nova Scotia, and other regions of the USA like we have had recently in California. We shouldn't be oblivious that these fires are the consequences of climate change. Climate change is a major driver of biodiversity erosion, and loss of biodiversity also accelerates climate change processes, as the capacity of degraded ecosystems to assimilate and store CO₂ tends to decrease.

Another related but indirectly caused problem associated with climate change is conflict, one issue capable of generating a

possible global war - for example, the farmers-herders conflict in Nigeria. An example at the African level is Sudan's civil war, often described as the first modern climate change-induced conflict. Similar scenarios are also observable in the Sahelian belt in West Africa and other parts of Sub-Saharan Africa, even inducing uprisings and regime change. The evidence is clear that climate change does contribute to increased conflicts but along indirect pathways. Various context factors - particularly socioeconomic conditions, governance, and political factors - interact and play a key role in translating climate change into conflict risks. Climate change does contribute to increased conflict, but this often happens along indirect pathways. It makes the most vulnerable even more vulnerable. For instance, no group is more vulnerable than those who fled their homes, villages, or people displaced by a combination of conflict and the consequences of climate change and environmental degradation.

Further evidence suggests that changes in rainfall amplify existing tensions (IPCC); a prime example is Syria, where the civil war was linked to the drier climate. In water-stressed areas with existing tensions between groups or states over a water source, the impact of climate change on water resources might increase tensions, particularly in the absence of strong institutional capacity. Compounded droughts, flooding, locust plagues, environmental degradation, and poor governance lead to an increasingly precarious and complicated situation for tens of millions of people. We do not know enough about the specific triggers for why individuals or communities migrate. Still, we can say that the cascading series of disasters in many parts of the world, including throughout Africa, and the Arid Corridor in the Americas, is exacerbating other trends, such as urbanisation and the abandonment of small farm holdings.

My Contributions to Knowledge

Mr. Vice-Chancellor, sir, distinguished ladies and gentlemen, research is the soul and life of an academic, and the mantra we all grew up with and got used to is “publish or perish”. As such, it is expected that one’s research should contribute to or build on an existing body of knowledge. In my academic journey at the university, I have endeavoured to veer my research towards contemporary issues in my area of specialisation, which is presented in the following sections. To this extent, I have broadly categorised my contributions to knowledge and intervention into the following categories: building awareness for environmental understanding and sustainable development, promoting indigenous ecological knowledge for sustainable development and environmental education, climate change and its dimensions on humanity, and environmental justice and logic of care.

Building Awareness for Environmental Understanding and Sustainable Development

Environmental education (EE) produces *a citizenry knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution* (Stapp, 1969). The importance of EE is well presented in the definition. EE aimed to cultivate citizens who had environmental knowledge were concerned about environmental problems, and could solve and actively participate in resolving the issues. There was an understanding that environmental issues are complex and cannot be understood through a single discipline or department. Despite its earlier global challenges, the Nigerian environmental and sustainability education field took off with the notion that environmental educators should change the existing education

targets' minds, establish environmentally friendly behaviours, and enhance the learner's competence with natural systems. The interventions of the Nigeria Association for Environmental Education (NAFEE), STAN's National Environmental Education Project, Lagos State University's Centre for Environment and Sustainable Development in the 1990s, and later the University of Ibadan's Centre for Sustainable Development pioneering efforts in multi-, inter- and transdisciplinary approaches to sustainable development education in 2010 changed the narratives in Nigeria.

Following these efforts, it was imperative to understand the perception of both stakeholders within the school system (that is, students and teachers). This became necessary given the understanding of the complexity of environmental issues and concepts and the need to properly position teachers' and students' level of appreciation of these issues and the best-suited strategies for presenting and teaching the issues within an educational environment (formal and informal) (Kola-Olusanya & Arove, 2007; Okebukola, Arove, *et al.*, 1997). It is on the premise that several of our studies were based on the need first to develop effective strategies for teaching environmental concepts within Nigeria's educational environment (Kola-Olusanya & Okebukola, 2000; Okebukola, Arove, *et al.*, 1997; Okebukola, Akpan, *et al.*, 1997). As a result, findings revealed that certain strategies were adequate for bringing the students to understand complex environmental concepts and issues. (Arove & Kola-Olusanya, 2003; Kola-Olusanya, 1997; Kola-Olusanya, 1998c, 2001, 2002). Considering the fact that environmental awareness exists beyond the formal school environment. It is imperative to know that there are different ways to categorise the types of environmental awareness. Still, one common approach is to identify five levels of awareness: awareness of environmental issues, understanding the

causes of environmental problems, personal responsibility, community action, and global responsibility. The five levels of awareness speak to the importance of awareness as central to building consciousness about environmental issues. As such, building awareness was a sine qua non to exploring environmental issues, engaging in problem-solving, and acting to improve the environment (cf. Kola-Olusanya, 1998b, 2002). I opined that such awareness is best cultivated from a very young age; consequently, research efforts have proven this truism, just as the voices of children and pupils have been heard through their activities promoting environmental awareness. Such voices range from their perception of environmental issues to taking concrete actions for environmental awareness and practice. By implication, learning, in this view, best occurs in response to real needs and the life situation of the learner (Kola-Olusanya, 2004; Kola-Olusanya, 2005; Kola-Olusanya, 2006b; Kola-Olusanya, 2007). Relatedly, learning for the environment was also found to be free and contextual among children in different informal learning contexts such as home (family and play), museums, zoos, nature parks and wilderness, among many others. For instance, such learning, otherwise known as free-choice learning, holds great potential for explaining how learning occurs in these settings and how such domains or sectors can contribute to understanding what is at stake in environmental learning and thus help us build a sustainable future (Kola-Olusanya, 2005). Furthermore, we also examine children's environmental awareness and knowledge in different environmental contexts and the role of education in forming environmental awareness. The effect of education on environmental concerns is significant, but when the results of degradation can be felt and seen in daily life, there is an increase in this awareness. The study shows that children's environmental concerns and demand for action were more substantial.

Interestingly, they were measurably aware of environmental issues and could relate them to human activities, suggesting reinvention education for sustainable development and enriching environmental knowledge and consciousness. (Kola-Olusanya, 2000, 2004, 2006a).

Promoting Indigenous Ecological Knowledge for Sustainable Development and Environmental Education

It is a truism that humans were generating, transmitting, and applying information about the natural world long before the scientific inquiry was formalised. The generation, transmission and application form the basis of several ecological teachings passed to us growing up, even before we started interacting with the Western modes of learning, and we did not know their importance or what they meant to us. Those teachings were warnings, promoting sanitation, cleanliness, respect, and care for the Earth and other co-occupants. Although uncoded or written, this knowledge was passed from generation to generation, and they have endured. Accordingly, indigenous peoples worldwide have developed, maintained, and evolved knowledge systems via direct experience interacting with biophysical and ecological processes, landscapes, ecosystems, and species over millennia (Atleo, 2011; Berkes, 2018; Cajete, 2000). In resolving many questions relating to humans' mismanagement of the planet, indigenous knowledge has served as a forte and the prism through which an understanding and knowledge can be further advanced. Therefore, traditional ecological learning has been promoted for sustainability and everyday life through indigenous knowledge. Indigenous knowledge also provides an opportunity to experience new ways to understand human relations to co-habitant life, nature and environment and confront the neoliberal, post-colonial

capital through the re-emergence of traditional thinking (Glazebrook & Kola-Olusanya, 2018). Glazebrook and Kola-Olusanya (2018) further described indigenous knowledge as a living history that details values and beliefs about nature in the traditional African knowledge systems, identifies tensions that emerge between indigenous knowledge and globally destructive, colonising logics of capital and recommends conscious re-investment in traditional conceptions for responding to contemporary environmental issues. Thus, I have linked my studies to promoting indigenous knowledge in environmental understanding and its science and pedagogy. In those attempts, I tried to focus on using indigenous knowledge to engage and motivate traditional (local) communities to improve the quality of their lives and learn from them. To this end, I have explored and deployed Yoruba indigenous philosophy to understand humanity's connection and responsibility towards nature (Kola-Olusanya, 2009, 2022).

Further, relying on indigenous knowledge, I studied indigenous farmers and explored their understanding of the impacts of climate change and weather variability on their activities. The finding confirmed indigenous farm-holders' knowledge of climate variability and its connection to low agricultural yield (Kola-Olusanya, 2014, 2019). Conscious of the imperative and its millennia-long and continued application by Indigenous peoples to environmental management, IK holds its potential for place-based knowledges accumulated across generations within myriad specific cultural contexts. To this extent, I relied on detailed and diverse examples to highlight how IK is increasingly incorporated into the teaching, enhancing understanding of - and contributing novel insight into the intersections of culture, context, technology and environmental education and applied practice (that is, management) to promote environmental sustainability within the

formal school system (see for instance, Kola-Olusanya, 2012, 2020). To this end, with appropriate consideration of this collaborative process, the potential of IK to continue to inform environmental and sustainability understanding is vast. It will yield many more contributions to theory and practice.

Climate Change Dimensions and Impact on Humanity

The first step in understanding human dimensions of climate change is the examination of the adaptive mechanisms of human populations to environmental change, the differential responses to the magnitude and the frequency of perceived and actual changes, and the differences between adaptive responses at the individual level and those visible at the population level (Brondizio & Moran, 2008). Undoubtedly, the global climate is warming at an unprecedented rate, and an overwhelming body of evidence is that global temperatures will continue to rise and that human activities such as fossil fuel combustion, deforestation, and agriculture are the dominant cause. As a result, these global environmental changes, in turn, have significant human impacts and demand human responses (Castree, 2016). Given that, the magnitude of change, impact and response will only increase in the decades to come. There is a need to understand the dynamics of climate change and its effects on humans. We must understand the imperative of the processes that mediate perceptions of environmental change and the behavioural responses from the individual to the community levels.

Meanwhile, there is no shortage of rational arguments supporting urgent action to avert catastrophic climate change impacts. At the same time, dominant policy approaches have failed to generate action near the rate, scale or depth needed (IPCC, 2022a, 2022b).

The prevalence of research data from science, technology, engineering and mathematics (STEM) and its domination of the climate change discourse suggests that STEM is the only pathway to understanding or addressing climate change issues. Since the United Nations Sustainable Development Goals SDGs promote the need for STEM subjects and the social sciences to play equal roles in forging a better world because science and technology cannot achieve these alone. Thus, the need to view climate change from human dimensions perspectives to better understand and proffer actionable mitigative human-based solutions. With this consciousness, I aligned my research with those seeking to explore climate change issues from environmental social sciences perspectives. I tried to understand and seek to alter human behaviour so that our planet remains liveable for all people (Hackmann *et al.*, 2014). My research efforts examine the impact of climate change on various facets of human life, from economics, agriculture and climate/environmental conflicts.

First, it is a global truism that climate change negatively impacts developing countries, especially poor people and poor and low-income communities in Africa and other developing countries. The impact is more severe because of these groups' dependence on natural resources and limited capabilities to cope with climate variability and extremisms. According to the Intergovernmental Panel on Climate Change's 4th Assessment Report (2007b), Africa is "a continent already under pressure from climate stresses and highly vulnerable to the impacts of climate change". In a study examining climate vulnerability in Africa, Kola-Olusanya (2013) explores the impacts of climate change in sub-Saharan Africa, its capacity, and the adaptation pathways. In that study, I reviewed the limitations experienced in Africa and the severity of climate change compared to other regions. The study showed that climate

change has implications for sub-Saharan Africa that are highly distinctive, and this is compounded by far greater exposure of its economy to climatic variations despite the continent's minor contribution of a mere 3.6% to global emissions. The study recommended sub-Saharan Africa's involvement in carbon trading by using the Clean Development Mechanism (CDM) to earn income from reducing CO₂ emissions.

Second, the question of food security depends largely on agriculture. The factor most likely to impact agricultural production in Africa is global climate change which is predicted to exacerbate and accelerate all adverse influences on agriculture. With a third of sub-Saharan Africans living in drought-prone areas, agricultural production in Africa, due to climate change, is expected to experience catastrophic declines. For example, climate change impacts will bring less forage and feed crops and less water for animals. This implies that many communities will suffer severe damage from climate change that affects their crops and animals (Glazebrook & Kola-Olusanya, 2014; Kola-Olusanya & Glazebrook, 2012). In a study exploring the relationship between climate change and food availability in Africa, Kola-Olusanya (2015) hinged Africa's food insecurity on the three components of availability, access and utilisation driven mainly by climate change. This indicates that the impact of climate change on hunger will be profound where social inequality in development is maintained. In another study, Kola-Olusanya (2014) examined climate change risks among smallholder farmers in Southwest Nigeria. The study provided the ground to understand the processes mediating environmental change perception and the differential behavioural adaptations among smallholder farmers. Relying on interviews and focus group discussions, the study examined how smallholder farmers interact, explain, interpret, and cope with climate change

risks. The study found a general low-level understanding of the scientific discussion and policies regarding climate change phenomenon among smallholder farmers even though they were not uninformed about climate change. The study also revealed that the smallholders believed they had been coping largely with climate change by employing local mitigative approaches. In this context, adaptation to change and the degree of vulnerability of smallholder farmers are functions of culture (e.g. repertoire of responses, language cues, knowledge of environmental signals), society and economics (e.g. social networks, supporting services, infrastructure) and the environment (e.g. spatial pattern of land cover, vegetation phenology, topography, rainfall distribution) (Brondizio & Moran, 2008).

The third human dimension of climate change is conflicts, otherwise called climate-induced conflicts. Another consequence of climate's impact in recent years is the continuous conflict. Growing evidence points to a changing climate marked by rising global temperatures and sea levels (IPCC, 2013). Although the global community has aimed to keep the global average temperature increase to less than 2 degrees Celsius, the Intergovernmental Panel on Climate Change (2007a) reports that Africa is the region most vulnerable to the negative impacts of climate change, which is likely to contribute to a range of conflicts on the continent. Land, water, agricultural and forestry-related environmental-induced conflicts linked to climate change are at the heart of these conflicts. The growing empirical literature has identified a strong relationship between warming and African resource conflicts (Calderone et al., 2014; Mwiturubani & Wyk, 2010; Onuoha, 2010).

Conscious of this, I examined climate change as a human security

issue by studying Nigeria and Sudan, particularly in northern Nigeria and the Darfur region of Sudan. By selecting these areas, I sought to show the link between climate change and resource conflict as responsible for what many perceive as ethnic/tribal cleansing and religious conflicts (Kola-Olusanya, 2016). The two areas are characterised by the devastation of lands occasioned by drought, poor soil conservation practices, and other human activities, including over-grazing and deforestation. The study revealed a profound linkage between the herder/pastoralist-farmer interactional patterns and the root causes of the two areas' resource-based conflicts. This linkage underpins the climate-induced conflicts and renewable resources scarcity and competition common to the two areas. The study underlines the immediacy of the need for mitigation and adaptation strategies aimed at curtailing the continued threat of climate change and its potential for exacerbating the crises of resource scarcity in sub-Saharan Africa.

In another study, Kola-Olusanya (in press) considered resource and environmental threats as national security issues. Thus, making it easy to explore the danger of resource and environmental threats as a national security issue to ascertain its implications. The paper contributes to the theory by showing a link between climate change, conflict and development in Nigeria. The study pointed to climate change as a potent catalyst for violent conflicts in Nigeria. The study identified a typology of climate-related conflicts and their effect on National security (see table 3). The study concludes with the implication for the country's dire future and recommends environmental relearning of the climate change issues within the context of the educational system since this will engender an open-minded approach to the crises and save the country from conflicts linked to climate change or environmental issues.

Table 3: Typology of climate-related conflicts and their effect on National Security

Conflict Type	Location	Manifestations	Effects on National Security
Herder/farmer Indigene/settler	Dumer Village 2002	Scarcity (Vegetation and land)	Forced migration, social dislocation and internal security threats
Farmer (cultivator/ Cultivator	Jukun /Tiv Conflict 2003	Reinforcement of group identity and relief from scarcity (i.e. arable land)	Destruction of lives and property (threat to internal security)
Cultivator/ Cultivator (indigene/Settler)	Yelwa/Shendam/Wase Communal Disturbances 2004	Scarcity and reinforcement of group identity. Inter -ethnic (arable land)	Threat to internal dislocation, creation of rural inequality, instability and destruction of the economic base
Herder/Farmer Conflict Indigene /Settler	Demsa Area Crises 2005	Scarcity Inter-ethnic (grazing land)	Forced migration and incessant conflict with backlash on internal security
Herder/Farmer Conflict Indigene/Settler	Bali Village Reprisal 2005	Scarcity and reinforcement of group identity (Arable Land)	Forced migration and economic dislocation
Resource Conflict	Niger Delta	Resource control	Economic sabotage, hostage - taking and kidnapping.

Source: Adapted from Obiora (2008)

Young People, Education for Sustainable Development and Sustainability Interventions

Mr. Vice-Chancellor, sir, sustainable development has moved from being an oxymoronic cliché characterised by several criticisms post its launch in 2015 by scholars who argued that development could not be sustainable. The angle to this argument, though, is not baseless. It is well-grounded in the position that the alteration of the environment synonymously characterises development, which cannot be said to be sustainable. However, today, according to Bartlett (1994), the related terms “sustainable” and “sustainability” have become popular and are used to describe a wide variety of activities which are generally ecologically laudable. Further sustainable development has become an avenue for environmental compromises, as evidenced in the 17 Sustainable Development Goals and 169 targets. This is because the goals and

targets balance economic, social and ecological dimensions and place the fight against poverty and sustainable development on the same agenda for the first time. This has implicitly contributed to the concept's huge global interest and appreciation, especially among the younger generations because these younger generations have come to terms with the fact that living and enjoying a more sustainable life starts with every day and that everyday life is not something isolated and separable from the broader social, economic, political and environmental forces.

As such, today, it is not unusual to see younger generations leading efforts aimed at creating a sustainable world and unlearning unsustainable everyday practices by addressing environmental and sustainability issues directly. The younger generations referred to in this lecture are categorised as *Gen Y* (digital natives) and *Gen Z*. To avoid doubt, *Gen Y* refers to millennials born between 1982 and 1994, and technology is part of their everyday lives. A screen mediates all their activities. *Gen Z*, on the other hand, refers to young people born between 1996 and 2010. The digital age, climate anxiety, a shifting financial landscape, and COVID-19 have shaped this generation's identity. As such, seeing this new generation of pro-environment-conscious individuals at the forefront of solutions to the myriads of environmental and sustainability issues is not out of place.

To better understand the issue of sustainability and its relevance with young people. I explored young adults' environmental learning and experiences that influence their decision to live sustainably. In particular, my studies focus on young adults' environmental and sustainability perceptions. It elaborates on young adult's views about environmental and sustainability issues, such as climate change, the sources for their learning about these issues, and how young adults' learning encounters, in turn, affect

their actions toward environmental protection and decision-making (their willingness to make compromises towards the environment). The qualitative study provides insight into young adults' understanding, learning experiences, and actions regarding environmental and sustainability issues through individual interviews with university young adults. The findings were analysed and discussed within three overlapping environmental learning contexts: personal, sociocultural, and physical settings. This framework allows for examining the complex interactions and relationships that shape how and where environmental ideas are formed and shaped. The findings in this study suggest that the three overlapping learning contexts —personal, sociocultural, and physical - play an important role in shaping young adults' learning about environmental and sustainability issues. Finally, the results of this study demonstrate the centrality of knowledge and experience concerning environmental and sustainability issues in the actions and thoughts of young adults. The study illuminates the implications of these various contexts for a sustainable global environment and future. Furthermore, it provides insight into the views of young adults regarding the future of the global environment and current sustainability initiatives in a world that faces ever-greater challenges.

Environmental Justice and Logic of Care

Beyond professional experience, I have used my opportunity as an academic to project my other life, *activism*. Therefore, understanding my role as an academic demand that I deploy my knowledge to advance humanity, social justice, and human and political rights. Consequently, my career would be incomplete if I failed to play my role as an activist academic. Being an activist academic allowed me to merge my activism into academics, my scholarship, teaching and service, and my commitment to justice

while navigating the lived realities of both worlds. As such, in today's world of corporate media churning out "alternative facts," you will agree that there is no alternative for academics committed to justice to just rely on disseminating new knowledge in the ivory tower without lending their voice and scholarship to occurrences in the streets. Undoubtedly, the situation of eco-injustice and environmental despoliation in Nigeria's Niger Delta Region resulting from years of oil exploration and spillages offers me the opportunity to use my field to advance the need for environmental renewal and promote the logic of care in the area. Based on this, Kola-Olusanya and Glazebrook (2009) examined the role of Niger Delta women in ecological justice struggles. The study reviewed the importance of women's organised resistance from the angle of the logic of care. It was discovered that the manifestation of the logic of care in women's resistance is not because they are women but rather because there was a need for an alternative and the possibility of an end to the travesty of the Niger Delta and the suffering of its people. Contrasting the women's resistance to other resistances in the Niger Delta, we concluded that the women who resist oil extraction operate on a different logic than the state, corporations and militant youths because their different location within the communities of the Niger Delta positions them relationally in different ways. In another scholarly effort on the Niger Delta, Glazebrook and Kola-Olusanya (2011) explored the nature of violent reactions to environmental degradation occasioned by oil exploration activities and noted the absence of distributive, recognition, restoration and intergenerational justice. Our study found that the Niger Delta is an example of distributive injustice because those who reap oil profits do not reside in the people in the area. Recognition and intergenerational justice were also breached as people of the area are recognised as undeserving of human dignity, with several generations suffering social and environmental consequences from oil exploration. Our study

concluded with a recommendation that remedies be sought through restorative justice: restoration of livelihoods through education and capacity building, improvement in measures such as maternal and infant mortality, life expectancy and through the development of schools, hospitals, roads and other infrastructure (Glazebrook & Kola-Olusanya, 2011).

Future Direction of My Research

The strength of my work over the past two decades and a half is that it blends theoretical and practical insights regarding environmental education and awareness, education for sustainable development and environmental-social sciences into my area of specialisation: Environmental Sustainability. The critical nature of environmental sustainability here is the need to investigate the nature of human efforts and understanding of climate change and its reversal, the role of sustainable development viz the SDGs and the 169 targets. The intersection of four dominant issues will rely on the dynamic interactions between academia, industry, CSOs and government – the Quadruple Helix model. This idea will provoke discussions on the model, especially to understand the working relationship between the quadruple helix's four partners, to lead to a productive research endeavour about the quality of the natural environment and enhance innovative solutions and confidence to take actions towards sustainable development

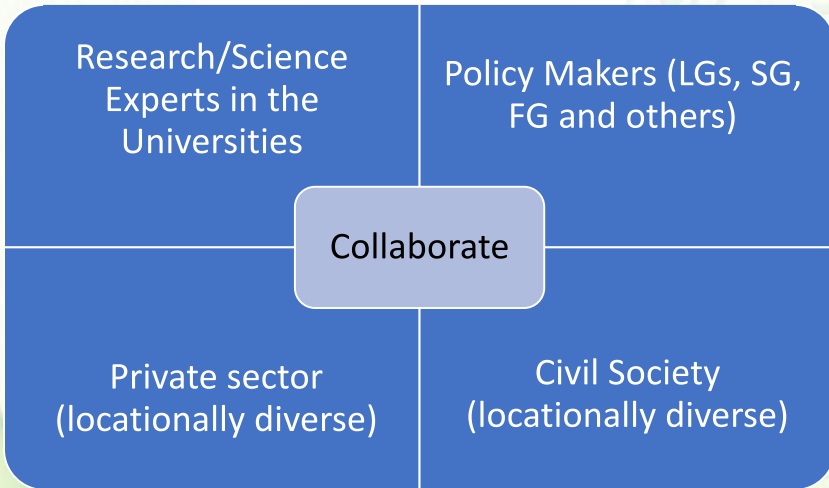


Figure. 6: The Quadruple Helix
 Source: Labode Popoola (2023).

Given that the higher education sector in Africa has a very significant role in leading development, being the training grounds for (mostly) youths that fill government and civil service, run corporations and industries. The urgency of resolving the crises now suggests we inspire the younger generation to seek solutions to our challenges because there is too much at stake to sit on the sidelines. The direction of my future work will focus on the higher education sector as an important vehicle for youths to participate in addressing the many complex problems facing the world. The first part of this endeavour is to examine what motivates young people in the higher education system to be more humane, caring and embrace those sustainable values that will engender innovative solutions and guide the transition to a more sustainable planet. Second is the investigation of the interplay between the young people's readiness to promote a sustainable life, that is, how they employ appropriate technologies, cooperation, economies and individual efforts and how this shapes their consumption and, by implication, the economy in a manner that will prompt

government policy on how industries can transit to a more sustainable economic and industrial environment. Third is their understanding of how they hope to survive the dominant culture, which are social and cultural forces driving young people into unsustainable lifestyles and consumption patterns.

Today's inaugural lecture has allowed me to share my works and present the direction of my future research interventions and engagements. Mr. Vice-Chancellor, sir, distinguished ladies and gentlemen, you will agree that young people constitute a vital force. They possess aspirations particular to this time in their lives. And this suggests that if we hope to attain a new beginning, such potential and energy must not be lost or discounted in Nigeria and Africa, especially considering the population of this generation of Nigerians and Africans.

Conclusions and Policy Recommendations

Agenda 2063, the African Union document for sustainable growth and development, "Africa We Want", is Africa's blueprint and master plan for transforming Africa into the global powerhouse of the future. The continent's strategic framework aims to deliver on its inclusive and sustainable development goals based on pan-African ideals. Similarly, the 1999 Nigerian constitution recognises the importance of improving and protecting the environment. It makes provisions for it in section 20 with an objective of the Nigerian State to improve and protect Nigeria's air, land, water, forest and wildlife. Therefore, Nigeria must make conscious efforts to drastically reduce climate change and other forms of environmental degradation to achieve a healthy and safe environment to give these rights effect.

At this juncture, Mr. Vice Chancellor, Sir, I find it difficult pretending to have the solution to the problems of corporate

Nigeria as symbolised by the various environmental degradation and climate issues. However, as tradition demands, I like to share thoughts on what I consider an appropriate chest of remedies. Before advancing it, let me say that I have noticed a common tendency among academics and practitioners to see the government as a black box. Let me propose the following recommendations based on my research experience and expertise as pathways that can help guarantee an environmentally sustainable future for the country in line with the current goals of Agenda 2063.

1. Education has been noted as a powerful driver of behavioural change in all societies. To achieve environmental sustainability, youths and children within the formal and informal learning sectors must be taught about the 17 sustainable development goals as the path to achieving a more sustainable future and to be aware of their roles in addressing global challenges like:
 - a. Clean water and sanitation: Such as learning to avoid wasting water.
 - b. Climate action: Acting now to stop global warming.
 - c. Life below water: Avoiding the use of plastic bags to keep the oceans and rivers clean from such wastes.
 - d. Life on land: Planting trees to help protect the environment.
 - e. Responsible consumption and production: Recycling paper, plastic, glass and aluminium items.
 - f. Sustainable cities and communities: Biking, walking or using public transportation

2. Sustainable development is a societal challenge, not simply an environmental one - improvements in education and healthcare are therefore required to achieve higher income and better environmental decisions.

3. Policies must be in place that promote the decarbonisation of the energy industry through clean energy resources and renewable processes, which will be necessary to provide clean and affordable energy for all.
4. There should be food and clean water for all while protecting the biosphere and the oceans, which will require efficient and sustainable food systems, achievable through increasing agricultural productivity and reducing meat consumption.
5. Smart Cities: urban planning patterns should be transformed for the good of the population and the environment, which may be done through 'smart' infrastructure and internet connectivity.
6. Responsible consumption and production, and the importance of doing more with fewer resources, are important to adopt a circular economy and reduce demand.
7. A digital revolution in science, technology, and innovation would be required to support sustainable development, as it is hoped that the world will use the development of Information Technology to facilitate sustainability.
8. It is also expected that resources will be reused to suit the continued national increase in population in what is commonly referred to as a 'circular economy'. This change would allow one person's waste to be another's resource in a process that would greatly reduce waste and create a more efficient supply chain.
9. With the climate crisis, the government must make environmental sustainability a more appealing priority

for businesses to encourage people to live more sustainably to positively impact climate over the whole value chain, improve impact on the environment, people, and atmosphere, and productive input on society. As such, companies should be held accountable for all aspects of the industry, and any environmental damage or harmful emissions should be limited or removed from productive processes.

10. Undoubtedly, climate change-induced conflicts threaten Nigeria's national security and internal stability and continue to strain the ingenuity of all efforts toward curtailing it. To this extent, it is not out of place to argue for a focus on environmental relearning of the climate change issues within the context of the educational system. Doing this will engender an open mind approach to the crises and save the country from conflicts linked to climate change or environmental issues.
11. Indigenous Knowledge (IK) is a suite of place-based knowledge and is often distinct from Western science in motivation and approach, but there are shared conceptual foundations that can support productive and mutually beneficial collaborations. Given its numerous contributions to understanding ecology, evolution, and applied ecology, Indigenous knowledge holds the capability for humanity to attain a sustainable future. It is recommended that scientists and scholars should enter into a thoughtful social contract with IK holders, foremost working toward partnered research that benefits the communities, governments, and nations of Indigenous peoples.
12. Finally, to Shape humanity's development trajectory demands collective rethinking, leaving no one behind. A stitch in time, as they say, saves nine.

Acknowledgments

Finally, as I complete this assignment, I want to thank the almighty God who made today possible. What God cannot do does not exist. From my first day in primary school, until the decision to deliver this inaugural lecture through the writing and today's presentation, God's abounding grace saw me through. Looking at this gathering of distinguished audiences (physical and virtual) further confirmed the God factor in my life. I profusely appreciate your presence from all corners of Nigeria and worldwide. May God grant you and yours, His special grace as you return to your destinations.

Although the journey of my academic life has been lonesome, however, many people have played several supportive roles in my career and life to this day, and they exist in various forms, including friends, benefactors, colleagues, family members and loved ones whom God has used to bless my academic career and life. In my attempt to acknowledge everyone, being human, I know there is every possibility of forgetting to mention a few names; I crave your understanding to forgive and bear with me.

Having said this, while they are no longer with us, I express my deepest gratitude to my late parents, Mr. William Olabinjo and Mrs Lydia F. Olusanya, who taught me never to give up, that perseverance is the key to success and who shared and supported my dreams throughout their lives. God used you to chart my path in life; even when I seemed lost in the jungle of life, you were always there supporting me with your prayers and advice. You were firm disciplinarians with very high moral standards. My most turbulent times were when I was suspended, rusticated and finally expelled for my student activism, yet you took it calmly. It's a great pity that you are not here today to witness and share in your last child's moments of glory. However, I am sure you are smiling and proud of my achievements. I miss you this afternoon and know my debt to

you is beyond measure. I thank my siblings, both alive and those who have gone to the greater beyond. Mrs. Egun Pedro and I will continue to remember Engineer Segun Olusanya, Mr. Emmanuel Olu Olusanya, and Mrs. Omotunde Aje. May your wonderful souls continue to rest in perfect peace. I do not forget other significant family members, Mummy Ogunboyejo, Messers Gilbert Ogebule, Mr. Muiyiwa Ogunsanwo, Mrs. Adesola Olubajo, Olori Odukoya and I also thank my uncles, aunts, nieces and nephews, and cousins.

I also acknowledge especially the support of my second family. I am very grateful to my late father-in-law, Mr. David Ajayi, and my mother-in-law, Mrs. Catherine Ajayi, who has continued to pray for my success even in her very old age. I also wish to thank Mr. Akanbi Amoloja, Mr. Ademola Ajayi, Professor Adefisayo Oduwole, Dr. Idowu Ajayi, their families, and others not listed here.

I count myself highly privileged because of my many families (though not biological). My Ibadan Grammar School family has remained an important part of my life forever. I thank the President of Ibadan Grammar School Old Students Association (IGSOSA), Mr. Dimeji Mako, ably represented by the National Publicity Officer and my Class set Chairman, Mr. Akinyinka Akintola. I also appreciate my classmates (IGSOSA 77/82 set), members of IGSOSA Osun State, my seniors, especially Snrs. Akinpelu, Yinka Ogungbemi and others here present. Ibadan Grammar taught me that living for a just course is worthwhile and that service to God and our fatherland is any citizen's most extraordinary commitment. *Deo et Patrie*, (For God and our Fatherland). Up School!

I always tell people that I am a native of Lagos State University (LASU). Many probably will wonder why? You don't spend six years on a four-year programme plus additional five years as a staff and not become a native. Besides the fact that closures and strikes were synonymous with my time at the university, I ran into murky

and troubled waters with the university administration for my daring struggles for a better academic environment alongside others, and we became the NFA (No future ambition). I would later be suspended, rusticated and expelled by the University alongside 33 other students (famously known as the LASU 34). We challenged our expulsion and were reinstated by the Court of Justice, and we were able to graduate. Upon graduation, I was employed as an academic staff and would later become Secretary of the ASUU-LASU Branch. I appreciate all members of the LASU family here represented, and thank you immensely for coming.

In Nigeria, I have been privileged to fight alongside many great patriots and the finest men and women for a better country. Too numerous to mention. Some of them are today, and some have passed away. I extend fraternal greetings to Mr. Femi Falana (who ensured we were reinstated by the court), Mr. Luke Aghanenu, Hon. Uche Onyegocha, Dr. Yomi Gidado, Mr. Adesina Oke, Ezenwa Nwagu, Faith Nwadishi, Wale Adeoye, Segun Jegede, Professor Femi Obayori, Professor Odion Sylvester Akhaine, Dr. Laja Odukoya, Egun Adegboruwa, SAN, HRM Kabiyesi Alaiyeluwa Oba Odidiomo Afolabi Oladimeji Ilarada I, Olu of Igbokoda, Dr. Chima Amadi, Mahmud Abdul Aminu, Agnes Shaba, Senator Opeyemi Bamidele, Hauwa Mohammed, Wale Arigbabu, Kayode Ogundamisi, Adeola Soetan, S.A. Anjorin, Wale Okuniyi, Dr. Olayiwola Adeosun, Dr. Bola Balogun, Chido Onuma, Lekan Akinosho, Nasiru Kura, Auwal Ibrahim Musa and others I cannot list due to space limitations. I recognise and appreciate you all for being part of my life ever since, and thank you for letting me know that though tribes and tongues may differ, we stand together as one!

I am forever grateful to the UNIOSUN community for welcoming and accepting me as a member of this great academic family since 2009, when I joined the University on my return from Canada. I

appreciate the Pro-Chancellor, Professor Adewale Ladipo, immediate past Pro-Chancellor, Mallam Yusuf Olaoluwa Ali, SAN and all the eminent members of the University's Governing Council. Serving on the Council since 2017 allowed me to be part of decision-making at the highest level of the University. I like to very specially thank the pioneer Vice-Chancellor Professor Sola Akinrinade, who gave me the opportunity to serve as the Vice Dean of Student Affairs just as I was resuming, former Acting Vice-Chancellor Professor G. O. Olatunde, who appointed me acting Dean of Student Affairs, the 2nd Substantive Vice-Chancellor Professor Bashir Okesina, who appointed me the acting Dean of Faculty of Social Sciences, former acting Vice-Chancellor, Professor Oguntola Alamu for appointing me as the acting Dean of Students, Acting Dean and Provost, College of Education, Ipetu-Ijesha Campus of the University, the 3rd Substantive Vice-Chancellor, my egbon and confidant, Professor Labode Popoola, who appointed me as the pioneer Director of Inter-Campus and Public Affairs and to whom, I would later serve as Deputy Vice-Chancellor, Academic, Research, Innovation and Partnerships (ARIP). I am immensely grateful to the 1st Deputy Vice-Chancellor (ARIP), the Chairman of today's event and the 4th Substantive Vice-Chancellor, Professor Odunayo Clement Adebooye, for considering me worthy of a second term as the Deputy Vice-Chancellor (ARIP), thus making me the second Deputy Vice-Chancellor to serve two terms. I appreciate the support of other Principal Officers of the University, Professor Janet Olaitan (former DVC Administration and Development), Professor Afeez Bello, DVC (A&D), Mr. G. A. A. Shittu, the Registrar, Mr. Bolarinwa Feruke, Bursar and Mrs. Tinuade Adewale, University Librarian.

A big thanks to all University Senate members for electing me twice as a Senate Representative to the Governing Council and Deputy Vice-Chancellor (ARIP), respectively. This humbles me, and I pray

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Special appreciation to Professor Lee Bartel and Professor Linda Cameron of the University of Toronto - in ways I least expected, Professor Cameron became my mother, mentor, colleague, friend, supervisor, and connector. Professor Cameron is all of these things, and she displays such understanding and insight into what support I might need as I work to balance and fulfill my family role and

academic responsibilities. My experience with Professor Cameron has been transformative, and I consider her a role model in the greatest sense. I am greatly indebted to Professor Cameron for her help, insightful feedback, and constant encouragement throughout my doctoral studies. Her words of helpful advice, including positive criticism received throughout the course of the project and my dissertation, will be remembered.

Meanwhile, the journey to today began with faith so strong in resilience and perseverance. I have decided to put this here to let my wife and children know that I was answering a call of faith when I had to return to Nigeria. Looking back at the day in early 2009 when I received the call from my academic father, teacher, supervisor, mentor and sponsor, Professor Peter Akinsola Okunola Okebukola, *"Tony, I want you to come back to Nigeria to join Osun State University, you know, we are trying to build a world-class university here, and I want you to be part of the dream."* Thus was my return to Nigeria and the continuation of my career at Osun State University. Professor Okebukola introduced me to the world of research and academic publishing. I count myself most highly privileged to have been mentored by you, sir. Everyone has a giant on whose shoulders they stand; for me, it is a greater honour and privilege to stand on Professor Okebukola's shoulders. Thank you very much, sir, for allowing me to drink from your knowledge fountain.

Mr. Vice-Chancellor, sir, and distinguished ladies and gentlemen, God's consistent love, through His son Jesus Christ, has always abounded in my life. Otherwise, how would I have explained His presence in my home? My children, Oluwaseye, Olugbemi, Olatoyasodomi and Boluwatiwi, you have become amazing young men and women under the strangest circumstances. You are smart, and more importantly, you are kind, and you are thoughtful, and you are full of passion. You wore the burden of my years of

absence so easily. I want you to know that of all things I have done in my life, I am most proud to be your dad.

I would not be standing here this afternoon without the unyielding support of my best friend and the rock of our family, the love of my life, the defence minister, and my wife, Olushola. The journey wouldn't have been easy, but for you, for the past 22 years, you have been my wife and mother of my children and my best friend. I wouldn't be the man I am today without you by my side. Fourteen years ago, you took on a role you didn't prepare for and made it your own with grace, grit, style and commitment. Thank you for bringing up our children during my absence from the home front and being a role model. You have made me proud, and you have made motherhood proud. Let me say this publicly. Olushola, I have never loved you more.

Mr. Vice-Chancellor, sir, permit me once more to close my lecture with the following quotes from the holy bible. As the book of Hebrews 11:1 (KJV) says, *“Now faith is the substance of things hoped for, the evidence of things not seen.”* We have not seen it but believe, *“For with God, nothing shall be impossible”* (Luke 1. 37, KJV).

“Nínú òfù, nínú òlára ni omọ pándòrò òdàgbà”

Thank you for your attention!

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