

Re-imagining Indigenous African Epistemological Entanglement and Resilience Adaptation in the Anthropocene

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Abstract

This paper examines how indigenous African communities have become critical for developing epistemologies of relation and entanglement in the dominant problem of contemporary resilience understandings of adaptation in the Anthropocene imaginary. Grounded in the indigenous African epistemological philosophies, this paper explores critical alternative futural framings that directly oppose the modernist epistemological understandings of resilience imaginaries in the Anthropocene. The analysis presented here is based on understanding indigenous non-modern ways of knowing as key in the context of ecological crisis in the Anthropocene resilience. This paper argues that reductionist modernist epistemology fails to fully acknowledge how alternative futural imaginaries of indigenous non-modern ways of knowing have become central to critical Anthropocene resilience approaches in the discipline of International Relations. In contrast, this paper explores indigenous African epistemologies of relation and entanglement as alternative futural imaginaries that better capture resilience climate adaptation in the Anthropocene. The paper concludes that focusing on resilience and understandings of adaptation in the Anthropocene opens other possibilities for the development of indigenous non-modern ways of knowing.

Keywords: Anthropocene; climate change; African epistemologies; African environmentalism

Introduction

This article engages with indigenous African epistemologies of relation and entanglement in resilience imaginaries of adaptation in the contemporary Anthropocene sensitivities. The paper attempts to articulate critical alternative futural imaginaries of indigenous non-modern ways of knowing concerning their relations to non-human others. These have become central to critical Anthropocene thinking. Epistemologically, indigenous African communities have come to be imagined and to be seen as contributing to thinking of the Anthropocene in the policy discourses of conventional critical thought on resilience imaginaries of adaptation. This paper argues that we can better grasp the contemporary crisis of Anthropocene through contextually specific problematization of ecological relations by engaging with indigenous non-modern ways of knowing. This paper moves beyond a modernist world to alternative non-Eurocentric imaginary/worlds in existing practices or knowledges in the

philosophies of indigenous African societies, enabling distinct understandings of a less anthropocentric or more-than-human analytics associated with Anthropocene resilience (CHIPATO & CHANDLER 2023; PUGH & CHANDLER 2021; LEPPARD 2018; WAKEFIELD ndn., 2020). The concept of the Anthropocene, understood as a Anthropogenic changes to the Earth, is cohered around the view that human beings have become “a crucial planetary actor and the boundaries between society and nature become destabilized” (CHIPATO & CHANDLER 2023, 2).

Critical disciplines as varied as Climatology, Geology, Philosophy, Geography, International Relations, Anthropology, Ethnography and Visual Arts (HELMUS ndn., 2014; LEPPARD 2018; SALINAS-DE-LEÓN 2020; PUGH & CHANDLER 2022; CHIPATO & CHANDLER 2023), have taken up the task of thinking through the moment of the Anthropocene. Critical approaches have offered critiques of the Anthropocene; however, their criticism focuses largely on top-down, modernist understandings and governance (PUGH & CHANDLER 2022; CHIPATO & CHANDLER 2023). Much recent critical scholarship in the moment of the Anthropocene resilience has not appropriated non-Western and indigenous understandings that question human/nature binary of modernist Western, Eurocentric, and epistemological framing (CHANDLER, 2022; CHIPATO & CHANDLER, 2023). Contemporary concerns over environmental catastrophe in the Anthropocene resilience have not so explicitly highlight how African-based environmentalism is grounded “in relational epistemologies, entangled nature and culture and the recognition of non-human agency”(CHIPATO & CHANDLER 2023, 2). Many scholars who have written about indigenous African community in the Anthropocene have not focused on how indigenous epistemologies of relation and entanglement are increasingly driving critical thought and practice today (JORIS ndn., 2017; WRIGHT, 2019; NUHU ndn., 2019; ADU-PRAH ndn., 2019; ANTWI-AGYEI & NYANTAKYI-FRIMPONG 2021). This paper seeks to go beyond the dominant framing of Anthropocene resilience by problematizing these relational epistemologies in critical thought.

The recognition of nature/culture, inside/outside, time/space binaries, non-human agency, which emphasize flatter epistemology has become critical to how indigenous peoples are constituted in global North scholarship and research in the Anthropocene resilience imaginaries. Flatter epistemology basically downplays the ability of perceiving the world beyond our own experience. The preceding problematic of nature/culture, inside/outside, time/space binaries exemplify how all life is relationally entangled . Capacities and potentialities of indigenous African communities are framed within human/nature dualism, specifically their resiliency in wider resilience imaginaries of adaptation in the Anthropocene (HESSLER 2018; WOLFE 2017). This paper contends that the indigenous African communities’ relational epistemology that entangles nature and culture eschews anthropocentrism and recognizes both humans and more-than-humans within the diversity of the natural environment and other ecosystems (rivers, mountains, savannas etc.). Their epistemologies of relation and entanglement specifically recognize that humans are not alone on Earth, but rather share its space and history with other non-human forms of life. This position challenges the modernist Western, Eurocentric, and epistemological

understandings from non-Western and indigenous perspectives in a new Anthropocene imaginary. Indigenous African communities' humans and more-than-humans imaginary calls for humans' obligation towards non-human elements, particularly the Earth, because of its mutual entanglement in its existence and future.

This mutual entanglement allows us to unsettle and disrupt the epistemological foundations all the way down with other humans, beings, things, and processes to open up plausible possibilities that allow us to rethink approaches to environmental catastrophe in a new Anthropocene imaginary. To this end, African epistemologies of relation and entanglement in the Anthropocene resilience require us to understand the whole world as inextricably related to all other life forms within an interconnected web. The idea of indigenous African thought in this fashion should not be wrongly read to suggest that it is one homogenous "other" to modernist Western, Eurocentric, and epistemological framing. Modernist Western, Eurocentric, and epistemological framing tends to be grasped in the limits of Otherness (the limits of ways of knowing and non-ways of knowing) (WAKEFIELD ndn., 2020; CHANDLER & PUGH 2023). African indigenous people do not share the same understanding of climatic resilience and environmental stress, nor that they follow the same methods (AMO-AGYEMANG 2021). In spite of the fact that indigenous epistemologies are diverse, complex, and multiple there are common strands in indigenous African peoples' epistemologies (AMO-AGYEMANG 2021). Any attempt to reduce these to a unity gets tied into needless and baseless contradictions. The paper contributes to the argument for engagement with indigenous African communities, specifically those of epistemological framing with which the Anthropocene resilience is being grasped. It also contributes to African epistemological view of the climate catastrophe of the Anthropocene resilience, that is widely differentiated from modernist Western, Eurocentric, and epistemological framing. The question for us then becomes, how are we to understand the resonance between discourses of resilience and the Anthropocene in the 21st century?

Anthropocene

Anthropocene-thinking brings discourses of resilience and adaptation to the forefront as epistemology – modes of thinking (a way of knowing and becoming that caused anthropogenic climate change). Discourses of resilience as epistemology are so important in enabling and engendering different relational understandings and contexts rather than generalizations or forms of universal or discredited assumptions of linear causality approaches to problem-solving (CHANDLER ndn., 2020; CHIPATO & CHANDLER 2022; CHANDLER 2020). Dominant framing on the discourses of resilience and adaptation in the Anthropocene is reflected in much of contemporary social and political thought (WAKEFIELD ndn., 2020; CHIPATO & CHANDLER 2022). There is a resonance between resilience and the Anthropocene; this resonance is a central preoccupation for contemporary social and political thought like never before. As a consequence of this resonance, Anthropocene resilience approaches attempt to recalibrate, and re-stabilize how environmental change is known and governed in our contemporary times. Anthropocene thinking ironically profoundly reverses and problematizes the inevitability of shocks and the fact that adaptation is the

only way forward (WAKEFIELD ndn., 2020). The Anthropocene reframing of nature/culture, inside/outside, time/space binaries, non-human agency dichotomies offers a critique of reductionist forms of modernist thought, precisely because it conceptualizes anthropogenic impacts on the environment (CHANDLER ndn., 2020; CHIPATO & CHANDLER 2022; WAKEFIELD 2020). The Anthropocene resilience approaches grapple with the challenge of reflexive engagement in a time of catastrophic unintended consequences of anthropogenic climate change and global warming.

The contemporary Anthropocene sensitivities force us to confront the haunting past, troubling present, and precarious future. It offers a critical agenda through which to navigate human entanglements with nature. The idea of Anthropocene sensitivities prompts us to see the fact that human beings are the driving force behind catastrophic environmental change. Anthropocene sensitivities increasingly draw upon indigenous African peoples adaptive capacities, especially their relational entanglements move beyond human/nature divide of modernity, enabling alternative ways of knowing. The idea of Anthropocene sensitivities equally prompts human beings to take action to mitigate catastrophic environmental change. Anthropocene-thinking reconfigures environmental governance around practices of resilience and adaptation in the face of catastrophic unintended consequences of anthropogenic climate change to shape contemporary thought and governmental imaginaries (WAKEFIELD ndn., 2020; CHIPATO & CHANDLER 2022). The Anthropocene-thinking transforms and extends prevailing understandings of Earth, space, time, and knowledge, which are fundamental to resilience thinking. Faced with the Anthropocene's long-term material basis for the life of humans, things, natures, and non-humans, necessarily underlying resilience-thinking that radically elides any nature/human and subject/object binary. Anthropocene thinking is defined by human impact on the planet's ecosystems, physical landscapes, global climate change and other environmental problems. The Anthropocene is an evocation of human alteration of planet earth, which generates a new geological era where humanity's actions now threaten the species' survival and its many non-human forces.

Situating resilience in relation to the Anthropocene is cast by a highly uncertain world hit by existential threat of environmental destruction provoked by humankind due to anthropogenic climate change, and the great acceleration of human intervention in ecosystems. The Anthropocene-thinking urges humanity to face a future of destruction and live amid perpetual danger, harm, risk and loss (HARRINGTON 2016). The Anthropocene-thinking is increasingly characterized by powerlessness and apathy with its so-called apocalyptic sentiments on a global scale rather than one of progress and emancipation as promised by neoliberal economics (CHANDLER 2018; KARERA 2019). In many ways, the Anthropocene brought into being the more-than-human hybrid epistemologies, a new guiding axiom, one which productively provides a great opportunity to investigate and gain insights into the integration of human and natural systems (CHANDLER 2021; GROVE 2018; ROTHE 2019). Indigenous African communities' modes of knowing of human and natural forces distinction seen as mutually co-constitutive and mutually entangled goes beyond those of the modernist framings, so problematic in Anthropocene-thinking. In the epoch of the Anthropocene, indigenous non-modern ways of knowing are more of a guarantee

of effective responsiveness and adaptation to change (including the impacts of climate change and other conditions).

Resilience

The discourses of resilience and its learning practices have received unprecedented attention from a variety of disciplines over the past two decades across many disciplines and settings (BRAD & REID 2014; CHIPATO & CHANDLER, 2023; GROVE 2018; WAKEFIELD ndn., 2020; WAKEFIELD 2020). To claim that the discourses of resilience are becoming increasingly prevalent in debates centered around global warming and climate change within the Anthropocene- thinking is, by now, a well-worn refrain among contemporary policy-makers, scholars, critical theorists in the humanities and social sciences (CHIPATO & CHANDLER 2022; WAKEFIELD ndn., 2020). It is noteworthy that despite resilience prominence within policy world during the late 1990s and early 2000s, it lacks definitional clarity. Much of resilience-thinking has focused on “the capacity of a system, community, or society to resist or change in order that it may obtain an acceptable level of functioning and structure” (UNITED NATIONS 2004, Ch.117). Modernist resilience is figured in terms of “the ability of groups or communities to cope with external stresses and disturbances because of social, political, and environmental change”(ADGER 2000, 347).

Thus, resilience imperative and goals become the ability of physical materials to rebound and recoil and most importantly, “capacities for self-organised adaptation to external shocks” (WAKEFIELD ndn., 2020, 3). Julian Reid and Brad Evans, among others, have long argued that resilience has become ubiquitous property universally applicable to all forms of policies (BRAD & REID 2014; WAKEFIELD ndn., 2020; GROVE 2018). Today, governments, people, cities, economies, and countries in the developing world must become resilient. It is imperative to recognize that resilience-thinking critiques specific problematizations of what we now call the Anthropocene. The proposed necessities of resilience, adaptation, and vulnerabilities require us to conceive of a world in which threats and dangers are endemic. This framing constructs resilience as offering a potentially innovative approach to environmental governance. The fundamental truth that underpins the discourses of resilience is that we have entered an age of ecological catastrophe – an age in which no human being possibly can fight against, contain, do anything to change – and, in fact, more darkly where life is thereby reduced to the on-going work of survival and adaptation (REID 2017; BRAD & REID 2014). The point here is simply that the all-encompassing discourse of resilience enables us to change the way in which we think about our world and ourselves, and this has important implications for the position of indigenous non-modern ways of knowing to contemporary resilience imaginaries in the Anthropocene.

Resilience framings fundamentally degrade the capacities and potentials of the human being: critical approaches to resilience demand a sea change in the nature of human subjectivity. The underpinning truth claim of the discourses of resilience and its learning practices is thus concerned with the practice of exposing oneself to continuous dangers and threats (BRAD & REID 2014; REID 2017). Thus, resilient forms of adaptation largely presuppose a completely different

theory of the human subject and a different politics (CHANDLER & REID 2019; BRAD & REID 2014; REID 2017). Resilience imaginaries of adaptation and vulnerabilities presuppose something completely different for human existence, one in which human subjects can simply confront the dangerousness of this world to survive and develop their lives. And most fundamentally, it dangerously debases the nature of human subject regarding the possibility of security (BRAD & REID 2014). In fact, resilience imaginaries in the Anthropocene are more about negating the very way of thinking of nature and our world, rather than having the agency to make life better, get safer and more progressive in a complex and inter-dependent world. Effectively, indigenous African subjects resilience imaginaries question discourses of resilience, adaptation and vulnerabilities by activating our poetic imagination where human subjects can conceive of being free from threats, stress, perturbations, catastrophic processes and danger. Indigenous African subjects resilience imaginaries is such that we have the agency as human beings to make life get better, flourish, progressive, get safer and move on in life. The point of the foregoing is that Anthropocene-thinking extends and transforms the focus on relationality of discourses of resilience that undercut, destabilize, and disrupt modernist frameworks of nature/culture, inside/outside, time/space binaries, non-human agency dichotomies/binary.

This paper argues that indigenous African communities' relational entanglements of epistemology, which are said to define humans and non-humans, remain significant to resilience framing for many concerned with contemporary engagements with adaptive capacities within the Anthropocene. It may be argued that understanding the entangled relations of nature/culture, inside/outside, time/space, non-human agency is essential to resilience-thinking. What is clear is that the necessity of re-thinking how indigenous non-modern ways of knowing by African communities with autonomous capacities of resilience and potentialities for adaptation in coping with its surrounding environment has been acknowledged.

African Environmental Epistemologies, Anthropocene Entanglement and Resilience Adaptation

The conditions/nature of knowledge in African epistemological tradition profoundly depart from the changing ways in our moment of the Anthropocene. The African systems of thought, especially from the epistemological thinking/perspectives, are ways of understanding reality and knowledge from African viewpoints (CHIMAKONAM & UCHENNA OGBONNAYA 2021). Indigenous African resilience epistemologies move away from hegemonic, modernist categories of thought, and linear causal understandings. They radically and forcefully disrupt flat or Western epistemic hegemony (CHIMAKONAM & UCHENNA OGBONNAYA 2021). These epistemologies are key to grappling with the changing ways in our moment of the Anthropocene. Engaging with indigenous African community brings to the forefront the modern implications of seeing or perceiving something through changes in another entity rather than one of linear cause-and-effect and binaries of thought, so problematic in modernist epistemology. African indigenous futural imaginaries of human/world relations are about modern or non-anthropocentric approaches to material or contextual capacities of ways of knowing in challenging modernist forms of scientific reasoning or assumptions. Thus, indigenous African communities approaches

increasingly articulate the engagement with the knowledge of experience, of practices encoded, embedded, and embodied in ways of knowing to address the challenges of the Anthropocene.

Epistemological Tropes of Relational Environmental Entanglement

Epistemological tropes of relational environmental entanglement bring thought to the forefront through an array of animal species, including plants, animals, insects, fishes found in the rivers, and micro-organisms, which enable new problems and possibilities to be detected. Movements of animal organs in the sky, arrival and disappearance, and certain sounds and cries can alert African indigenous people to potential problems largely through changes in bodily indicators even if the sources of those problems are unknown (LAJUL 2021; UNUIGBE 2020; OGAR & BASSEY 2019). Such an intuitive awareness of changes in bodily indicators demonstrates an important characteristic of awareness of the sort beyond sensory cue or surpasses the ordinary. In fact, extra-sensory perception (or paranormal) cognition as a mode of knowing in the Akan epistemology, for example, contradicts the fundamental ideas and principles upon which modern science has been based (AJEI 2014). However, I maintain that paranormal cognition provides us with genuine and reliable knowledge (AJEI 2014) in ways that problematize and go beyond modernist binary, the Human/Nature framings.

Paranormal cognition forms and informs the Akan people's understanding of what is real and knowable (AJEI 2014). With time and experience, indigenous African people have come to realize the distinct and unique features of some of the birds, such as caucal, ducks, wild bird, and Golden Oriole (DEJENE & YETEBAREK ndn., 2022), which surpass or transcend thought. Some expressions in the Akan language and philosophical thinking reflect a way of knowing, a mode of perceiving the world commonly described as *nea etra adwen* (beyond the reach of the senses, any rational thought or sensory cue). Thus, for example, pollution which can harm human health can be detected in due time before it irreversibly spreads in the environment. For this reason, the environment and the ancestors in the Akan cosmology rarely died of pollution-related ailments. In this case, the traditional Akan philosophy has the competence in knowing events in the invisible realm which *tra adwen* (transcends thought or sensory cue) (AJEI 2014). I claim that the Akan traditional thought and value systems, as expounded and explained are non-anthropocentric and make a genuine and meaningful contribution to human knowledge in the moment of the Anthropocene.

My example on Akan of Ghana traditional belief in the paranormal phenomena is common to many African cultures. The Dogon traditional religion possessed the knowledge of extrasolar astronomical understanding and capacities that undercut reliance on naked-eye observation (GRIAULE 1965). The Dogon's astronomical knowledge goes beyond a modernist understanding, able to take into account specific details of celestial bodies. Indeed, the Bantu-Kongo strongly shares the indigenous concept of time (FU-KIAU 1994). The understanding and the concept of time among the Bantu- Kongo is deeply rooted in their worldview, cultural, spiritual traditions, belief systems and cosmology (FU-KIAU 1994).

The Bantu-Kongo acute awareness and understanding of the concept of time enable them to know when to till the land and seed it for excellent harvest; and when to venture inside forests and avoid mosquitoes and snake bites (FU-KIAU 1994). Thus, we can conceive of ourselves as the source of life itself and its functioning through our awareness and understanding of the concept of time. The indigenous Kongo society and other Bantu groups imaginaries of man/nature entanglement call for truths to our existence (FU-KIAU 1994). The central idea is that Kongo society and other Bantu groups emphasize the notion of human entanglement with nature, as truths to our existence seek to challenge the anthropocentrism embedded in modernist thought, especially in our moment of the Anthropocene.

Aketema and Ladzepko (2023) who, while examining the significance of the role of indigenous cultural norms, conventions, deep respect and connections to plants and animals within the Kasena-Nankana Municipality of Navrongo and Ewes of Volta region of Ghana posit that the existence of knowledge systems within these communities are co-relational and go beyond the limits of modernist epistemological assumptions about a split between human and nature. For them, there is no binary between God and nature (AKETEMA & LADZEPKO 2023). God is nature and nature is God. The value of the indigenous knowledge system of Ewes of Volta region of Ghana in preserving and protecting plant species for healing cannot be overlooked. The Ewes' more-than-human imaginaries reconstitute plant species as knowing and relational subject. The Ewes employ the spiritualist (*Boko*), for instance, in pursuit of herbs for healing and pouring of libation (*adzadodo*) (AKETEMA & LADZEPKO 2023). This is an understanding that seeks to treat the herb as an animate entity rather than an inanimate entity that one can just pluck home without spiritual attachments to the herb. The indigenous traditions of Kasena-Nankana Municipality of Navrongo, which are grounded in the inter-connectedness with Mother Earth inform how they treat plants and animals essentially because of their medicinal prowess. The African bamboo, for instance, is given sacred status in some cultures in the Upper East and Northern regions of the Republic of Ghana (AKETEMA & LADZEPKO 2023). The entangled, relational, and more-than-human imaginaries of Kasena-Nankana Municipality of Navrongo and Ewes of Volta region inform their fundamental belief in the preservation of water, trees, and how to relate with each other.

The Akan people of Ghana *akyiwadee* (that which is forbidden or prohibited), at least locally, has been crucial in preserving and protecting a healthy ecosystem and natural resources (NTIAMOA-BAIDU 2008). An African conceptualization of “moral considerability, grounded in the notion of an interconnected “web of life,” is able to accord moral standing to species *qua* species”(BEHRENS 2017, 5). In this way, African moral thought and the obligation to prevent extinctions and to preserve biodiversity for posterity provide conditions necessary for the survival of other species. What is interesting for me here is how discourses of humans and their relationship with nature provide an exceptionally good reason for us to preserve biodiversity and prevent extinctions. Within the Akan traditional thought and culture, “any acts that desecrate the Earth must be avoided” (DONKOR 1997, 28–29). The designation of certain forests as sacred is another example of perceptions and specific practices associated with the inter-connectedness and inter-linkages with nature . The Akan epistemological

perspective contains numerous participants—spirits, humans, animals, and plants so that the sacred and mundane cannot be dichotomized (AJEI, 2014). To the Akan, this relationship is not dichotomized or compartmentalized, but impinged upon one another in a spiritual web interactions. It could be argued that in the Akan philosophy of knowledge, humankind and nature, subjects and objects are one and the same reality (WIREDU 2009). The Ogeriagbo forest within the Ogeriagbene community in the Bomadi area of Delta State, Nigeria is one such sacred forest (OKPOKO 2020). For the Ogwa community among the Esans, the killing of a *Boa* constrictor is prohibited. The Orogun's of Delta prohibits the killing of *Iguanas*. Such constraints are contained fundamentally within them some germinant principles of moral order to govern human social life and to manage the natural environment.

The indigenous pragmatic experience of the natural environment in Nigeria is intricately embedded in the spirituality of forests, which are believed to house spirits and, in some cases, give sacred status and are subject to several rules on access and use (IKEKE 2013). Cutting the sacred trees according to the Yoruba belief is tantamount to the violation of the will of God (ABOSEDE 2017). Thus, Yoruba culture, for example, places plants, animals, and human persons as one family, possessing within them, the same divine energy (IKEKE 2013; ABOSEDE 2017). In Ethiopia, the largest ethnic group, the Oromo. *se saffiuu or ceeraa fokko*, an ethical principle, to govern the use of natural resources (KELBESSA 2018).

Totems such as squirrels, iguanas, and baboon are isolated and revered in most Kasena-Nankana communities (AKETEMA & LADZEPKO 2023). Indeed, Anatoli Ignatov (2023), in highlighting the Gurene notion of *Tiŋa* rejects modernist, Eurocentric juridical discourses about African ecology-based sovereignty. Anatoli Ignatov (2023), avers that Eurocentric juridical discourses about African ecology-based sovereignty are fictitious and can no longer hold in the present context of anthropocentric forms of ecological crisis and the ascendance of neoliberal orthodoxy wrought by such practices in the Anthropocene.

In contrast, Anatoli Ignatov (2023) insist on an alternative concept of resilient traditions of earth jurisprudence as a (para-)epistemological understanding to resist the ascendance of neoliberal, anthropocentric forms of ecological wrought by such practices in the contemporary moment of the Anthropocene. The narrow reductive approach to the world, framed in an anthropocentric form of ecological crisis fails to acknowledge what might be called non-modern binary imaginaries fully. Indigenous African religious beliefs and indigenous moral laws, which are non-anthropocentric in outlook directly impose a system of ecological check and balanced existence with other natural things (DENSU 2017). This also importantly fosters a responsible attitude towards nature, transforming more-than-human thinking across many academic disciplines and policy practices and opening other possibilities for thought within a modernist epistemology of separation. Adaptive governance of responsiveness to changes in indigenous African communities and cultures works on the basis of problem-solving and analysis of root causes. This enables a fundamental shift in the dominant approaches of critical Anthropocene scholarship today.

The notion of the Earth as a Mother from whom is the source of subsistence and to whom all take existence in an inter-linkage is a common idea

within traditional African thought and value system (AKETEMA & LADZEPKO 2023). In the famous conversations with Ogotemmêli, the French anthropologist Griaule (1965) in a crucial sense sketches Dogon indigenous ethnic group custom and cosmology and religious beliefs. Myths, codes, and signs structured and ordered the Dogon world. Griaule (1965) points out that Dogon indigenous ethnic group refers to earth as cosmogonic Mother. The earth as a Mother is the *raison d'être* of human existence; the Earth as a Mother within African society's cosmological, political, and cultural milieu embraces notions of reciprocity (AKETEMA & KAMBON 2012). These perspectives and approaches as Aketema and Kambon (2012) describe it have served us faithfully in our present context wrought by ecological crisis in the Anthropocene. Anatoli Ignatov (2023) points out how African elders, soothsayers, and earth priests as contemporary eco-theorists with plural practices of theorizing better capture the enduring intellectual traditions including alternative ethical ways of ecological life. The apparent deafness and negative impression of Euro-American political theory to African political thought from the field of environmental political theory in favor of abstract theorizations that privilege anthropocentric perspectives would only seem to underline Ignatov's claims. He argues that we should avoid simply repeating the same dogmatic critique of African alternative ethical ways of ecological life to be found in the Euro-American political theory (IGNATOV 2023). The challenging task confronting Euro-American environmental political theory is that it is too reductionist, abstract, and linear to make sense and/ or understand non-anthropocentric perspectives in African thought.

Traditional African thought of inter-connectedness and inter-linkage with nature and all life essentially reflects how human well-being depends on the well-being of other natural factors and vice-versa. This is indeed the crux. The traditional African thought of inter-connectedness with nature deconstructs the anthropocentric-ecocentric distinction which has characterized and continues to characterize debates made thus far to contemporary environmental ethics (KELBESSA 2018; DENSU 2017). The African philosophy of the inter-connectedness of all life by which one's peace is tied to the peace of others sharing a common environment is consistent with the Yoruba proverb *irorun igi ni irorun eye* (the convenience of the tree is the convenience of the bird) (OKPOKO 2020). According to the Igbo notion of *ezi n'ulo*, every human and non-human entity matters (CHIMAKONAM 2020). A relationship of inter-dependence and complementarity underlying African discourse on ecosystem assumes that humans would not be here without other entities (CHIMAKONAM 2020). The unknown and unseen forces can comfortably be grasped in a relational account of African discourse on ecosystem (CHIMAKONAM 2020). The Igbo notion of *ezi n'ulo* poses fundamental questions to understandings of non-modern and relational epistemology and exclusions of modernity in the face of the Anthropocene, enabling alternative futures to come into being.

Clearly, the above discussion indicates that African cultures are capable of deep insights, thought and actions that provide rich environmental ethics (DENSU 2017). This is conducive for human being-becoming, emerging from debates focused on climate change and global warming ruptures and fissures created under the influence of sociocultural, spiritual, and biological variables. African epistemologies and reflection on ways of knowing allow us to recognize

how unique indigenous people are. And this should cause us to celebrate our differences and those of others in a complex, uncertain, and ever-evolving world rife with climate change variability and ecological crisis. This article asserts that resilience dominant problematic in the Anthropocene should be driven and underpinned by African worldviews and epistemologies for it to resonate with the African poor. Understanding and respect for African traditional knowledge systems by global North intervention in Africa (among others) can help bring about a more appropriate resilience interventions in the Anthropocene. African epistemologies would challenge the knowledge assumptions underpinning mechanistic and reductionist views of resilience discourses in the Anthropocene. Indigenous individuals would take charge of the politics of everyday life as well as allow for the building of genuine resilience strategies that are adequately in tune with their predicament, priorities, concerns, and plight.

The Xhosa/Zulu aphorism *umuntu nugumuntu ngabantu* (a person is a person through other people) underlines the same principle. Consequently, traditional African thought seeks to protect the web of inter-connectedness, inter-dependence and the balance between humanity and pragmatic bonds with nature (DENSU 2017; TERBLANCHÉ-GREEFF 2019). In particular, the Gamo people of Southwest Ethiopia hold the belief that “.....everything is connected and bound in a delicate balance because all ... are interconnected, if any one aspect is denied or imbalanced, then the whole system is understood to be a risk” (GLOBAL ONENESS PROJECT 2009,1). The Frafra ethnic group sense of interconnectedness with human beings and the natural world is one of mutual respect, gratitude, acknowledgement of dependence and inter-connectedness with animals, plants, and other environmental features (YIRAN ndn., 2016). Indeed, adaptive governance of responsiveness to changes within the indigenous African community is seen as a retreat from causal assumptions of governance highly generative for contemporary resilience and thinking within/influenced by the Anthropocene and its link to anthropogenic climate change and ecological instability.

African indigenous people's cosmological and religious beliefs, often through weather, climate, and climate change, are not always compatible with linear conceptions of time and statistical findings through humanistic research (KELBESSA 2018). For example, their cosmological and religious beliefs relate environmental understandings in metaphorical terms (DENSU 2017; KIJAZI ndn., 2013). Storytelling, dancing, and drumming are specific cultural activities through which the Frafra ethnic group cope with, narrate, and respond to climatic and environmental changes. Frafra ethnic group culture tells of vibrant humanity coping with an uncertain future but more crucially, a tell-tale of cultural resiliency (YIRAN ndn., 2016). To the Frafra ethnic group, human advancement and well-being are the basis of all values, and human fellowship is the most important of human needs and interest. This implies that if we consider ourselves humans just as other humans are, then we will escape the trap of the world's destruction. This implicitly reveals how the present activities of the Frafra ethnic group in responding to the impacts of climate change are steeped in knowledge of past geographies and local experiences (NUHU ndn., 2019). It strikes me that perhaps we can think of African animism in ways which enable us to approach epistemological framings of the Anthropocene. African animism refuses the desire

of the binaries—body/soul, nature/culture (IGNATOV 2017), so problematic in anthropocentric thinking. In this regard, African animism salvages and redeems this world rather than human-non-human other, which are refigured as socio-ecological relations in our contemporary moment of the Anthropocene (IGNATOV 2017). The earth regarded as life-generating ancestor affirms new bonds and attachments, constituting and transforming our world. In these circumstances, baobab trees, for example, may perceive humans as kin. This is a complex, overlapping, and inter-linking processes of the world, but they do not mesh together (IGNATOV 2017), seen as the limits of modernist ways of thinking.

Indigenous African communities variously advocate how to live better “in the ruins” of modernity and how to “stay with the trouble” (HARAWAY 2016, 23). Accordingly, smallholder farmers and pastoralists in East Africa manage climate-related risks and adapt to anthropogenic climate change through local indicators and experiences to observe and forecast for seasonal weather conditions (CHANG’A ndn., 2010; ACHARYA 2011; EGERU 2012). Thinkers in an indigenous African setting make forecasts for seasonal climate variability for crop and livestock production decisions. Many resource-poor and vulnerable communities in East Africa rely on meteorological, biological, and astrological indicators to cope with climate variability and adapt to anthropogenic climate change (AYAL ndn., 2015). Army ants, odontotermes (flying ants), butterflies, and frogs are commonly used to predict weather and climate in Lushoto (AYAL ndn., 2015; DEJENE & YETEBAREK ndn., 2022). Thus, one could argue that the proliferation of new epistemological understandings essentially characterizes contemporary indigenous governance enable them to bounceback during shock and perturbations quite nuanced for human intellect to grasp in modernist forms of command-and-control of governance. The point is that traditional African peoples’ epistemological understandings offer normative ways forward in thinking influenced by the contemporary Anthropocene, but also proffer political change horizons. As such, indigenous imaginaries of human/world relations implicitly or explicitly enable new forms of thinking, adaptive capacity, and responsivity to emerge in the moment of the Anthropocene. Indigenous science and knowledge are seen as vital attribute for survival, most notably in the Anthropocene. Indigenous ways of knowing and the notion of interconnectedness is essentially the basic sense of learning from the natural world in ways that deeply problematize modernist framings of the linear temporality and binaries of human/nature. For instance, the traditional culture of Akan people of Ghana stresses a is strong and closely-knit relationship with the environment, enabling deep respect for nature and interaction with it.

The impact of traditional Akan view accepts environmental management in the form of strictures, beliefs, customs, traditions and taboos related to water bodies, land, and deep/ sacred forest (ANTWI-AGYEI & NYANTAKYI-FRIMPONG 2019; NTIAMOA-BAIDU 2008). Given this, beliefs, customs, traditions and taboos related to water bodies, land and deep/ sacred forests enable the indigenous Akan community to adapt to their natural environment (NTIAMOA-BAIDU 2008). Traditional social-ecological knowledge often results from enduring associations between people, non-human species, and ecosystems. Adaptive traditional resource practices and social mechanisms of traditional

societies such as taboos illuminate the importance of a deeper understanding and respect of the resource conservation practices (ANTWI-AGYEI & NYANTAKYI-FRIMPONG 2019; ADU-PRAH 2019). Clearly the Akan mind centuries ago have sense of interconnectedness namely that plants, animals, and humans are inextricably linked to one another in the web of food, medicine, space, clean water, and clean air. But crucially, indigenous African knowledge and wisdom reflect the respect for the conservation of nature highlighted by indigenous communities' ecosystems and cultures concerned with unlocking, enabling, and enhancing their resilience in the Anthropocene.

Communities of Ghana's Central and Western coastal regions and African-rooted traditions and indigenous practices such as the belief in the sea as goddess, *Maame wata* (Mother Water). Indigenous African communities and cultures, in particular, do not see nature as separate from people, disrupting reductionist understandings which fail to recognize cultural particularities that have universal validity and intelligibility. Interestingly, as the work of scholars such as Ladzepko and Aketema has made increasingly apparent, "we can only reap the benefits of the environment if we adhere to the social and ethical principles guiding their sustenance" (AKETEMA & LADZEPKO; 2023, 15). As Anatoli Ignatov argues, "what the earth gives humans are affected by what humans give to the earth. In fact, Ladzepko and Aketema ultimately argue that "a give-and-take relationship with the earth acknowledges human inter-dependence with natural processes" (IGNATOV 2017, 66–67) in great many respects. It should be emphasized that indigenous African communities offers a distinctive worldview and imaginaries that privilege the interconnectedness of humans and non human- tress, animals, people, ancestors, and spiritual world as wider practices for engaging the Anthropocene. Let us note that indigenous African community notions of identity tend to emphasize the "natural environment" in its totality and, thus enabling insights into the intelligibility of transcendental concepts, which Wiredu (1996, 27) defines as "concepts referring to entities, beings, processes, relations that are, in principle, not conceivable through possible experience". In indigenous Akan languages, the word *Asaase* denotes land and places everything on it and in it, including all flora and fauna as well as waterways, oceans, mountains, and forests. On this view, land is of physical, social, and spiritual significance to the indigenous Akan people, enabling more-than-human assemblages of responsivity and adaptability in the Anthropocene. Combination of plants, animals, insects, meteorological, and astrological indicators become key to sensing changing climactic and environmental conditions but, importantly, also seems likely to endure beyond the Anthropocene.

The Akan philosophical thinking and mode of reasoning are in consonance with the eternal mutual custodianship of life with ancestors and descendants. Equally important is the indigenized Jamaican *Kumina*, with roots in Africa (BILBY & FU-KIAU 1983). *Kumina* African cultural traditions and practices rely upon increasing ancestral veneration to bridge the gap between the living and the dead . Thus the *Kumina* relations and inter-connections with ancestral spirits are obscured by a modern epistemology. The Akan cosmological resilience in the disruptive forces of anthropogenic climate change offers an important way of engaging with the environmental changes in the Anthropocene. The point is that climate has always been important for an Akan indigenous

community (ADU-GYAMFI 2007; NTIAMOA-BAIDU 2008). Plants and trees found in various parts of the community impact individuals' social, economic, and cultural well-being (ADU-PRAH ndn., 2019), generating new and creative life forms. From the character of local winds and rain clouds to the forecasting of drier and rainy seasons, the Akan people have built up extensive knowledge of local climate through the generations. This finds an expression in an old Akan local proverb "a ring around the sun or moon brings rain upon you soon." These forms of knowledge and practices among other activities in fishing and hunting, gathering and other harvesting activities have traditionally helped to make important decisions about the best time to farm (ADU-GYAMFI 2007; ADU-PRAH 2019). It seems to me that the loss of traditional cultures and perspectives in the developed world by contrast has led to a disconnect between people and nature. In my opinion, what is popularly understood as indigenous cosmologies have close connection between imaginaries of tightly knit inter-dependencies of African communities and cultures' ontologies understood to be immersed in practices of process and relations (RAMOSE 2017; ABOSEDE 2017). The sense of interconnectedness of universal web of life and natural processes in Akan thought has often been found to have intimate familiarity with indigenous peoples, becoming generative of new ways of being resilient in the Anthropocene. Their intimate familiarity with the natural rhythms and processes of their ecosystem yet again pushes further alternative possibilities beyond the world bounded by modernist epistemic concerns in analytic approaches associated with Anthropocene resilience.

Indigenous science and knowledge (modes of knowing) are fundamentally based on natural signs. The timing of the onset of actual productive rains in the Sudan savanna of northern Nigeriacan be predicted effectively by observing the behavior of living organisms (appearances and behavior of certain insects, animals, and plants), the direction of the wind, and types of clouds). As such, watching the behavior of living organisms (appearances and behavior of certain insects, animals, and plants), the direction of the wind, and types of clouds) enables us to avoid an impending danger or disaster before it occurs because many animals and plant because many animals and plant species can sense earthquakes and other natural disasters before humans (DESTA ndn., 2011; LYAMCHAI ndn., 2011; KYAZZE & KRISTJANSON 2011). An integral part of the indigenous African worldview is that all things are connected and that nature must be respected. Therefore, learning from nature in this way can be a benevolent part of the whole community and culture. Various indigenous African communities and cultures align themselves in this world and can predict and interpret the occurrence and magnitude of drought and flood events based on their experience. In Hoima and Rakai in Uganda, forecasts are used for making crop and livestock production decisions, conserving the environment, and dealing with other natural disasters and climate variability (LUSENO ndn., 2003; CHANG'A ndn., 2010; AYAL ndn., 2015; EGERU 2012).

In rural Tanzania, the formation and color of clouds can be interpreted by most farmers and pastoralists to identify indigenous communities' cultures over the horizon while in Lushoto lightning in the evening during dry season is an indication of onset of short-rain season, locally known as *vuli* (DEJENE & YETEBAREK ndn., 2022). In northern Kenya, indigenous community and

cultures observation and monitoring of the behavior of retained animals, birds, plants, and insects would give an indication of the distance to land (KADI ndn., 2011; ACHARYA 2011; KIJAZI ndn., 2013). Most impressively, in Southern Malawi and Zimbabwe, star paths are followed when travelling longer distances (RISIRO ndn., 2012). In Borana, Ethiopia, the traditional astrologists (*Urgin Elaltus*) can locate the appearance of the moon, the position and size of each star locally known as Kormi Mado with mathematical precision, reliability, validity, and accuracy to cope with climate variability and adapt to anthropogenic climate change (DEJENE & YETEBAREK ndn., 2022). Traditional astrologists based on star-moon alignment (Gobana) can forecast the timing, duration, and amount of rainfall or drought up to 6 months or years in advance (DEJENE & YETEBAREK ndn., 2022). Changes in the human body, such as palpitation on top of the right eye and one-sided headaches, for example, are traditional indicators that are used to predict climate variability in Lushoto and Tanzania (DEJENE & YETEBAREK ndn., 2022).

The above are indicators that local African epistemologies for tackling climate-related problems exist. These local strategies have been praised for their viability but also criticized for being crude and unscientific. Perhaps, part of the discourse on decolonizing Western epistemic hegemony could involve the modernization of local African strategies for climate change adaptations.

Conclusion

African indigenous communities have ways of understanding climate impacts on ecologies when they tell material stories of life's inter-dependencies in our moment of Anthropocene, enabling a different form of knowledge or inter-species entanglements. I have argued that African indigenous imaginaries of human/world relations call for the generation and production of development of new Anthropocene epistemologies. The unique philosophies of the contemporary African's conception and comprehension of current environmental issues fundamentally question modernist assumptions or Eurocentric imaginaries of progress and capacities to know (accepted pathways of knowledge) with regards to anthropogenic climate change and environmental unpredictability influenced by the Anthropocene. I am suggesting that the indigenous African community's ways of sensing and predicting or reading their environment are important instruments for Eurocentric epistemological pretensions in relation to vulnerability and adaptation in contemporary Anthropocene. Accordingly, their worldview and imaginaries play a crucial role in the debate on adaptation and resilience to the forces of the Anthropocene.

Essentially, the kind of holistic view of the world that is truly indigenous modes of knowing and seeing, is something that global North approaches are trying to achieve. Indeed, indigenous African people have been practicing and learning for millennia, and it is absolutely critical that we not only respect that knowledge but actively seek for it to guide us: a point only the most unrepentant and shameless racists would deny. African society's worldview, cultural underpinnings, and understandings contribute a powerful and much needed critique of the dominance of politically neutral and colonial discourses and governance of resilience in the Anthropocene. African epistemological tradition and philosophies provide a futural alternative that has intellectual resources to

contribute to the resolution of human existential problems in the Anthropocene resilience. There is a further need on the part of those who have the power to produce knowledge to change the negative attitudes towards indigenous modes of knowing, crucial to survival in the Anthropocene resilience

Declarations

*The author declares no conflict of interest and no ethical issues for this research.

Relevant Literature

1. ABOSEDE, Priscilla Ipadeola. “The Imperative of Epistemic Decolonization in Contemporary Africa”, [Theme, Issues, and Problems in African Philosophy, E. Ukpokolo, Ed.],pp. 146–160, 2017. Palgrave Macmillan: Cham.
2. ACHARYA, Sandeep. “Prediction of Rainfall Variation through Flowering Phenology of Night-Flowering Jasmine (*Nyctanthes arbor-tristis* L. Verbenaceae) in Tripura”. [Indian J. Traditional Knowledge], pp 96-101, 2011. Vol 10. No 1.
3. ADGER, Neil, W. “Social and Ecological Resilience: Are they Related”? [Progress in Human Geography],pp 347–364. 2000. Vol 24.
4. ADU-GYAMFI, Yaw. [Leviticus 16 and Asante Odwira Festival: A Comparative Analysis with Reference to Christian Witness in Ghana. Unpublished PhD Thesis], 2007. The University of Sheffield.
5. ADU-PRAH, Samuel, APPIAH-OPOKU, Seth & ABOAGYE, Dacosta. “Spatio-Temporal Evidence of Recent Climate Variability in Ghana”. [African Geographical Review],pp 172–190. 2019. Vol 38.
6. AJEI, Martin Odei. [The Paranormal: An Inquiry into some Features of an African Metaphysics and Epistemology], 2014. Martin Keiper: Hamburg.
7. AKETEMA, Joseph & KAMBON, Obádélé Bakari. “Maat and the Rebirth of Kmt ‘Land of Black People’: An Examination of Beatty’s Djehuty Project”. [Filosofia Theoretica: Journal of African Philosophy, Culture and Religions],pp47-76. 2021. Vol 10. No 2.
8. AKETEMA, Joseph & Ladzepko, Joseph. J. “Indigenizing, and Developing Africa: The Role of Indigenous Cultural Norms and Values”. [Journal of Black Studies], pp, 374-393.2023. Vol 54. No 5.
9. ALAIMO, Stacy. [Exposed: Environmental Politics & Pleasures in Posthuman Times], 2016. University of Minnesota Press: Minneapolis MN.

10. AMO-AGYEMANG, Charles. “Decolonizing the Discourse of Resilience”. [International Journal of African Renaissance Studies - Multi-, Inter- and Transdisciplinarity]. 2021. DOI:10.1080/18186874.2021.1962725
11. ANTWI-AGYEI, Philip & NYANTAKYI-FRIMPONG, Hanson. “Evidence of Climate Change Coping and Adaptation Practices by Smallholder Farmers in Northern Ghana”. [Sustainability],pp1-18, 2021. Vol 13. No 3
12. AYAL, Desalegn Yayeh, DESTA Solomon, GEBRU, Getachew, KINYANGI, John, RECHA, James & RADENY, Maren. “Opportunities and challenges of Indigenous Biotic Weather Forecasting among the Borena Herders of Southern Ethiopia”. [Springer Plus],pp 617, 2015. Vol 4
13. BEHRENS, Kevin. “An African Account of the Moral Obligation to Preserve Biodiversity”[*African Philosophy and Environmental Conservation* J.O. Chimakonam Ed,], pp 43-57. 2017.
14. BILBY, Kenneth M & FU-KIAU, Kia Bunseki. [Kumina: A Kongo-Based Tradition in the New World], 1983. CEDAF.
15. BRAD, Evans & REID, Julian. [Resilient Life: The Art of Living Dangerously], 2014. Cambridge: Polity.
16. CHANDLER David & REID Julian. [Becoming indigenous: Governing imaginaries in the Anthropocene], 2019. Rowman & Littlefield: London.
17. CHANDLER, David & PUGH, Jonathan. “Response: The Anthropocene Islands Agenda”. *Dialogues in Human Geography*, pp448-452, 2021. Vol 11. No 3.
18. CHANDLER, David. [Ontopolitics in the Anthropocene: An introduction to Mapping, Sensing and Hacking], 2018. Routledge: Abingdon.
19. CHANG’A, Ladislaus & NGANA, James. “Indigenous Knowledge in Seasonal Rainfall Prediction in Tanzania: A Case of the South-Western Highland of Tanzania”. [Journal Geogr Reg Plann],pp 66–72, 2010. Vol 3. No 4.
20. CHIMAKONAM, Jonathan, O. “Ohanife: An Account of Ecosystem Based on the African Notion of Relationship”, [African Philosophy and Environmental Conservation, J. O, CHIMAKONAM, Ed,], pp, 120-135, 2020. Routledge: London.
21. CHIMAKONAM, Jonathan, O. OGBONNAYA, UCHENNA L. [African Metaphysics, Epistemology, and a New Logic: A Decolonial Approach], 2021. Springer: Cham.

22. CHIPATO, Farai & CHANDLER, David. “Another Decolonial Approach is Possible: International Studies in an Antiblack World”. [Third World Quarterly], 2022. DOI:10.1080/01436597.2022.2069092
23. CRUTZEN Paul & STOERMER, Eugene. “The Anthropocene”. [IGBP Newsletter], pp 17–18, 2000. Vol 41.
24. DEJENE, Alemayehu, YETEBAREK, Hizekeal. “The Relevance and Practices of Indigenous Weather Forecasting Knowledge among the Gabra Pastoralists of Southern Ethiopia”. [Journal of Agriculture and Environment for International Development – JAEID],pp. 59-76, 2022. Vol 116. No1.
25. DESTA, Tezera, S, GEBRU, Getachew & KRISTJANSON, Patricia. [Summary of Baseline Household Survey Results: Borana, Ethiopia], 2011. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS): Copenhagen, Denmark.
26. DONKOR, Anthony. [African Spirituality: On Becoming Ancestors], 1997. Africa World Press: New Jersey.
27. EGERU, Anthony. “Role of Indigenous Knowledge in Climate Change Adaptation: A Case Study of the Teso Sub-region, Eastern Uganda”. [Indian Journal of Traditional Knowledge], pp217–224, 2012. Vol 11. No 2.
28. FU-KIAU, Kia Bunseki. “Ntangu-Tandu-Kolo: The Bantu-Kongo Concept of Time. Time in the Black Experience”, [Time in the Black Experience, edited by Joseph ADJAYE], pp17-34, 1994. Greenwood Press: Westport, CT.
29. GLOBAL ONENESS PROJECT. “Gamo Fact Sheet: The Gamo Highlands of Ethiopia”.2009. <https://www.globalonenessproject.org/sites/default/files/downloads/Gamo%20Fact%20Sheet.pdf>
30. GRIAULE, Marcel. [Conversation with Ogotemmêli], 1965. Oxford University Press: Oxford.
31. GROVE, Kevin. [Resilience], 2018. Routledge: Abingdon.
32. HARAWAY, DONNA. J. [Staying with the Trouble: Making Kin in the Chthulucene], 2016. Duke University Press: Durham, NC.
33. HARRINGTON, Cameron. “The Ends of the World: International Relations and the Anthropocene”. [Millennium: Journal of International Studies], pp478–498, 2016. Vol 44. No 3.
34. HELMUS, Matthew, R, MAHLER, Luke, D & LOSOS, Jonathan. B. “Island Biogeography of the Anthropocene”. [Nature], pp543–546, 2014. Vol 513. No 7519.

35. HESSLER, Stefanie. [Tidialectics: Imagining an Oceanic Worldview Through Art and Science], 2018. MIT Press: Cambridge, MA.
36. IGNATOV, Alexander. “Theorizing with the Earth Spirits: African Eco-Humanism in a World of Becoming”, [*The Palgrave Handbook of Environmental Politics and Theory*, Ed.], pp. 503-538, 2023. Springer International Publishing: Cham.
37. IGNATOV, Alexander. “The Sovereign Order of Tiqa: Enduring Traditions of Earth Jurisprudence in Africa”, [*The Routledge Handbook of Law and the Anthropocene*, Ed.], pp. 18-34, 2023. Routledge: London.
38. IKEKE, Omorovie Mark. “The Forest in African Traditional Thought and Practice: An Ecophilosophical Discourse”. [*Open Journal of Philosophy*], pp 345–350, 2013. Vol 3. No 2.
39. JORIS CROMSIGT, P.G.M, ARCHIBALD, Sally & OWEN-SMITH, N. [*Conserving Africa’s Mega-Diversity in the Anthropocene: The Hluhluwe-iMfolozi Park Story*], 2017. Cambridge University Press: Cambridge.
40. KADI, Mohammed, NJAU, Leonard Njogu, MWIKYA, John & KAMGA, Andrew. [*The State of Climate Information Services in East African Countries*], 2011. CCAFS Working Paper 5: Copenhagen, Denmark.
41. KARERA, Axelle. “Blackness and the Pitfalls of Anthropocene Ethics”. [*Critical Philosophy of Race*],pp32–56, 2019. Vol 7. No 1.
42. KELBESSA, Workineh. “Environmental Philosophy in African Traditions of Thought”. [*Environmental Ethics*],pp309-323, 2018. Vol 40. No 4.
43. KYAZZE, Florence, B & KRISTJANSON, Patricia. [*Summary of Baseline Household Survey Results: Rakai District, South Central Uganda*], 2011. CGIAR Research Program on Climate Change, Agriculture and food security (CAAFS): Copenhagen, Denmark.
44. LAJUL, Wilfred. “Bioethics and Technology: An African Ethical Perspective”. [*African Values, Ethics, and Technology*], pp189–216, 2021. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-030-70550-3_12
45. LEPPARD, Thomas, P. “Rehearsing the Anthropocene in Microcosm: The Palaeoenvironmental Impacts of the Pacific Rat (*Rattus Exulans*) and other Non-Human Species during Island Neolithization”, [*Multispecies Archaeology*, S. E. P. Birch, Ed.], pp. 47–64, 2018. Abingdon: Routledge.
46. LUSENO, Winnie, MCPEAK, John, BARRETT, Christopher, LITTLE, Peter, & GEBRU, Getachew. “Assessing the Value of Climate Forecast

- Information for Pastoralists: Evidence from Southern Ethiopia and Northern Kenya”. [World Development], pp1477–1494, 2003. Vol 31. No 9.
47. LYAMCHAI, Charles, YANDA, Premakumar, SAYULA, George & KRISTJANSON, Patti. [Summary of Baseline Household Survey Results: Lushoto, Tanzania], 2011. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS): Copenhagen, Denmark.
 48. NTIAMOA-BAIDU, Yaa. “Indigenous Beliefs and Biodiversity Conservation: The Effectiveness of Sacred Groves, Taboos and Totems in Ghana for Habitat and Species Conservation”. [Journal for the Study of Religion, Nature and Culture],pp 309-326, 2008. Vol 3.
 49. NUHU, Mohammed Gali & MATSUI, Kenich. “Climate Change and Farmers’ Coping Strategies in the Upper east Region of Ghana”. [Int. J. Clim. Chang. Impacts Responses], pp 1-13, 2019. Vol 11. No 4.
 50. OGAR, Joseph Nkang & BASSEY, Samuel Akpan. “African Environmental Ethics”. [RAIS Journal for Social Sciences],pp 71-81, 2019. Vol 3. No1.
 51. OKPOKO, Mercy Osemudiam. “Interconnectedness with Nature: The Imperative for an African-Centered Eco-philosophy in Forest Resource Conservation in Nigeria”. [Ethics, Policy & Environment], 2020. DOI: 10.1080/21550085.2020.1848190.
 52. PUGH, Jonathan & CHANDLER, David. [Anthropocene Islands: Entangled Worlds]. 2021. Ubiquity Press: London.
 53. RADENY, Maren, DESALEGN, Awal & MUBIRU, Dawit. “Indigenous Knowledge for Seasonal Weather and Climate Forecasting across East Africa”. [Climatic Change], pp 509–526, 2019. Vol 156.
 54. RAMOSE, Mogobe. “African Philosophy; Edwin Etieyibo, Ubuntu and the Environment”, [The Palgrave Handbook of African Philosophy, A, Afolayan and Falola, T, Eds,], pp. 633–57, 2017. Palgrave McMillan: New York.
 55. REID, Julian. “We the Resilient: Colonizing Indigeneity in the Era of Trump”. [Resilience], pp. 255–270, 2019. Vol 7. No 3. <https://doi.org/10.1080/21693293.2019.1605662>
 56. RISIRO, Joshua, MASHOKO, Dennis, TSHUMA, Doreen & RURINDA, Elias. “Weather Forecasting and Indigenous Knowledge Systems in Chimanimani District of Manicaland”. [Zimbabwe Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS)],pp561–566, 2012. Vol 3. No 4.

57. TERBLANCHÉ-GREEFF, Aida. C. “Ubuntu and Environmental Ethics: The West can Learn from Africa when Faced with Climate change”, [African Environmental Ethics. The International Library of Environmental, Agricultural and Food Ethics, M. Chemhuru, Ed.], pp 29-52, 2019. Springer: Cham.
58. UNITED NATIONS. [Living with Risk: A Global Review of Disaster Reduction Initiatives], 2004. UN Publications: New York.
59. UNUIGBE, Ngozi Finette. “African Eco-Philosophy and its Implications for Ecological Integrity in Africa”. [Ecological Integrity in Science and Law, WESTRA, L., BOSSELMANN, K., FERMEGLIA, M. eds], pp99–109, 2020. Springer: Cham.
60. WAKEFIELD, STEPHANIE, GROVE, Kevin & CHANDLER, David. [Resilience in the Anthropocene: Governance and Politics at the End of the World], 2020. Routledge: New York.
61. WAKEFIELD, Stephanie. [Anthropocene Back Loop: Experimentation in Unsafe Operating Space], 2020. Open Humanities Press: London.
62. WIREDU, Kwame. [Cultural Universals and Particulars: An African Perspective], 1996. Indiana University Press: Bloomington.
63. WIREDU, Kwame. “An Oral Philosophy of Personhood: Comments on Philosophy and Orality”. [Research in African Literatures],pp 40-63. 2009. Vol 2. No 13.
64. WOLFE, Carry. “Of Ecology, Immunity, and Islands: The Lost Maples of Big Bend”, [Posthumous life: Theorizing Beyond the Posthuman, J. Weinstein and C. Colebrook Eds,], pp. 137–152, 2017. Columbia University Press: New York.
65. WRIGHT, Timothy Sean. “Surviving the African Anthropocene: Dilman Dila’s Mutational Aesthetics”. [Research in African Literatures],pp1-17, 2019. Vol 50. No 2.
66. YIRAN, Gerald. A & STRINGER, Lindsay. C. “Spatio-Temporal Analyses of Impacts of Multiple Climatic Hazards in a Savannah Ecosystem of Ghana”. [Climate Risk Management], pp11–26, 2016. Vol 14.