AFRICAN CULTURAL POLICY NETWORK (ACPN)

CULTURAL POLICY WORKING PAPER

ON

CULTURE AND CLIMATE CHANGE

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Executive Summary

The aim of this paper is to interrogate the cultural policy theme of culture and climate change and provide African perspectives on this theme bearing in mind that Africa itself is not homogeneous, but that it differs considerably to other world regions. The paper also aims to act as a springboard for further research, debate and devolution on the theme of culture and climate change by the partners and collaborators of the African Cultural Policy Network (ACPN). The paper further aims at developing knowledgeable, informed and bold African cultural policy thinkers who are able to present well argued positions on the theme of culture and climate change.

The paper notes that Africa's climate, more than that of any other continent, is generally uniform. That's the result of the position of the continent in the tropical zone, the impact of cool ocean currents, and the absence of mountain chains serving as climatic barriers.

Interestingly, the paper observes that across Africa, the landscape is changing. The snowy caps of Mount Kilimanjaro are melting and the shorelines of lakes Chad, Tanganyika and Victoria are receding. The once mighty Lake Chad is half the size it was 35 years ago. These and many other changes have led to unreliable farming seasons and low water supplies – a serious problem for a continent almost entirely dependent on rain for its agriculture.

The paper further observes that despite the fact that Africans have contributed the least to climate change, there are widespread fears that Africa will be the worst hit. And most experts agree that Africa is the most vulnerable continent and the least able to adapt to the effects of climate change. Many scientists agree that Africa's best course of action is to reduce their energy consumption and take other steps to protect the environment.

The paper also reveals that viewed from a different perspective, climate change provides African governments with an added incentive to put in place policies that are long overdue – and to demonstrate leadership on the international stage. This is already happening: countries such as Ethiopia, Kenya and Rwanda have already developed climate-resilient strategies to reduce poverty, raise productivity and cut emissions.

The paper makes a unique revelation of the fact that what people 'know' about climate change is as much a reflection of their beliefs, values, worldviews and objectives as a descriptive account of what climate change is and what they must do about it and that, knowledge of climate change

exists in a knowledge-belief-practice complex. That is; knowledge is related to what one believes and what one does.

The paper concludes that although cultures are endangered by climate change, perhaps no more so than they have been endangered by a multiplicity of other anthropogenic changes; cultures can and will survive. The paper observes that for people who see this as paradoxical, it is only because they fall too easily into the trap of believing cultures to be static entities, bound by traditions, that now find themselves to be pitched into a situation that forces change upon them, rather than dynamic interactive systems that are always in motion, transforming, mutating, sometimes dying–yet with surprising varieties of phoenix rising from the ashes.

The paper therefore recommends that, using and supporting a culture dimension is essential in addressing the negative impacts of climate change especially on the African Continent. The paper further recommends that supporting African Cultural and Heritage Organizations such as the African Cultural Policy Network (ACPN) is a sure way of providing some creative ways to protect culture that eventually plays a big role in figuring out solutions to climate-related threats.

1.0 Introduction

Climate change is one of the biggest risks facing mankind. Changes in climate conditions are known to impact societies in a number of ways. This includes physical, psychological and emotional aspects. In addition to these, climate change has profound impacts on some cultures, forcing changes to individual's daily routine. Conversely, cultural beliefs, values and religion influence how individuals address climate change adaptation and mitigation decisions.

The urgency and magnitude of problems created by climate change, coupled with the deep embeddedness of its causes, raises major issues for society. Despite attempts to date at prevention and mitigation, greenhouse gas emissions have continued to rise. The European Environment Agency (EEA) has argued that: "the most fundamental shift in modern society in the 21st century will be to reinvent what it means to have a high level of societal well-being, while accepting and embracing the limits of the planet. Otherwise there is an increasing risk that breaching tipping points and moving beyond limits might bring more disruptive and unwelcome pushes towards societal change".

This paper presents analyses of cultural worldviews that broaden the current treatments of culture and climate change mitigation and adaptation decision making in communities. The paper looks at how the issue of climate change manifests socially and how ideas about climate change are produced by the cultural contexts across scales from the local to the global. In particular, the paper pays much emphasis on how climate change impacts on culture and how culture (in its anthropological sense – traditions, worldviews, beliefs, values, lifestyles, language, relationships, forms of social organization, etc) may be used to address climate change impacts on the African Continent.

Climate change risks and opportunities are perceived very differently within and between societies and this paper explores some of the reasons for these differences, including issues such as;- the status of experts, the cultural cognition of risk and climate contrarianism.

The paper also considers how climate change is represented through language, metaphor and imagery, representations which shape public and policy discourse. In the recent years, the creative arts have engaged the idea of climate change through the imagination – in film, fiction, sculpture and performance – and this paper makes an evaluation of some of this work.

The authors of the paper, Ellady Muyambi and Mike van Graan who were the participants in the working group reviewed literature and policy documents containing insights from community-based climate research and Cultural Theory of Risk conceptual frameworks to community understandings of, and responses to, climate impacts.

2.0 Definitions

This paper provides definitions for two important terms namely;-

(a) Climate change

This is a change in the statistical distribution of weather patterns when that change lasts for an extended period of time. Climate change may refer to a change in average weather conditions, or in the time variation of weather within the context of longer-term average conditions.

Climate change is caused by factors such as biotic processes, variations in solar radiation received by the Earth, plate tectonics, and volcanic eruptions. Certain human activities have been identified as primary causes of ongoing climate change, often referred to as global warming.

Climate change has long-since ceased to be a scientific curiosity and is no longer just one of many environmental and regulatory concerns. The United Nations Secretary General called it the "major overriding environmental issue of our time and the single greatest challenge facing environmental regulators". Climate change will not only influence our economies, but also our health, safety, food production, security and other dimensions.

(b) Culture

Culture is the sum total of the ways in which a society preserves, identifies, organizes, sustains and expresses itself. One is also right to define culture as the totality of thought and practice by which a people creates itself, celebrates, sustains and develops itself and introduces itself to history and humanity.

Culture, from an anthropological perspective, encompasses all learned and shared aspects of life in human societies. Included is not only 'high culture'—the arts and literature—but also science, technology, and more practical, everyday activities and beliefs: how to plant a potato or pray for rain, to seek good luck in battle or in exams at school. Cultures are not static; they change in response to wars, plagues, new inventions—as well as to environmental and climate variability.

Culture concerns itself with socially transmitted behaviour patterns, arts, beliefs, institutions and all other products of human work and thought. Culture includes tangible and intangible heritage, which is varied, complex, and in constant evolution. The tangible heritage includes monuments or architecture, art and crafts, sites, manuscripts, books and other objects of artistic and historical interest. The intangible heritage includes language, oral traditions, performing arts, music, festive events, rituals, social practices, traditional craftsmanship, knowledge and practices concerning nature.

There are many definitions in literature to describe the term *culture.* There is no consensus about what exactly it is. In general, culture is described as a total of meanings or knowledge that human beings need to function in a certain situation: knowledge of language, habits, rituals, opinions, values and norms. Both the products of a person as his functions are determined by the culture in which he or she was raised. Nevertheless people are, for the greater part, unaware of their culture. It determines how they feel, how they value the things around them and how they respond to them. However, they don't realize that these feelings are determined by their culture. The culture of a society is more or less transferred from generation to generation.

One key truth about culture as defined anthropologically is that, EVERYONE has it. There are not some special, 'more evolved' groups who have more of it, or 'backward' people who have less. Every human society has culture in the same measure, though the expression of that culture can of course be radically different from place to place.

3.0 Description

The Earth's climate has always changed but because of human activities such as;- burning of fossil fuels for heating, transport and power generation, clearing of wetlands and bush for agriculture, deforestation, and animal overgrazing among others, it is now changing faster than it has for thousands of years. This is what scientists and politicians mean when they talk today of climate change. This climate change is here to stay. It will affect all spheres of our lives and nearly every aspect of society, from our health and food supplies to business and national economies.

The Earth receives energy from the sun in the form of ultraviolet rays (light) and releases some of this energy back into the space as infrared rays (heat). Gases can absorb some of this outbound energy and re-emit it as heat. These gases – which include water vapour, carbon dioxide, methane, nitrous oxide and others – are called 'greenhouse' gases. They act like a blanket that surrounds the Earth and keeps it warmer than it would otherwise be, just as the glass panes of a greenhouse allow the sun's energy to enter but prevent some of the heat from escaping.

Without this natural process known as the greenhouse effect, our planet would be on average about 30 degrees Celsius cooler, so the greenhouse effect is essential. But too much of an effect will create problems. Human activities over recent generations have artificially raised the concentration of greenhouse gases in the atmosphere and scientists conclude that this is why the planet has warmed in recent history. But, because greenhouse gases can last in the atmosphere for a long time, even if all emissions worldwide stopped today, the climate would continue to change.

The greenhouse effect is not a new discovery. Joseph Fourier discovered it in 1824, John Tyndall experimented on it in 1858, and Svante Arrhenius quantified it in 1896. Since then, scientists have provided growing evidence not only that the concentration of greenhouse gases in the atmosphere has increased, but also that this increase threatens to cause dangerous climate change.

Measurements from Antarctic ice cores show that for about 10,000 years before the Industrial Revolution, the concentration of carbon dioxide in the atmosphere was about 280 parts per

million (ppm) by volume. Since then, it has risen rapidly: in 2013, the concentration reached 400 ppm, a threshold that last occurred over three million years ago. Then, the world on average was 3-4 degrees Celsius warmer than it is today and sea levels were much higher.

Major sources of greenhouse gas emissions from human activities include power generation (about 25 per cent of all emissions), transport, industrial activities, deforestation and agriculture. Countries have historically varied greatly (and continue to today) in the type, source and amount of greenhouse gases they emit. The biggest emitter overall today is China, but its large population means that emissions per person (per capita) are lower than in many other countries.

Historically, the United States of America (USA) has emitted more greenhouse gases than any other country, and today, its per capita emissions are still among the highest worldwide: 100-200 times greater than per capita emissions in most African nations. The question of who is responsible for climate change becomes complicated when consumer demand in one country increases emissions in another.

Greenhouse gases are not the only things to affect the temperature of the atmosphere and the Earth. The sun's rays vary in strength. Periodic events called El Niño and La Niña alter the circulation of warmer and cooler water in ocean currents, leading to changes in climatic patterns across large regions. Clouds reflect sunlight back into space and, in doing so, reduce the amount of energy that reaches the Earth. And when volcanoes erupt, they produce tiny particles that also reflect light energy in this way. Conversely, particles of black carbon or soot absorb heat. Transport fuels and burning forests and vegetation produce these particles, which scientists think have a warming effect about two-thirds as strong as that of carbon dioxide.

The main scientific authority on climate change is the Intergovernmental Panel on Climate Change (IPCC), which the UN set up in 1988. The IPCC gathers thousands of scientists to review the global body of knowledge about climate change and summarize it in reports that policymakers can use. Every few years, the IPCC produces an Assessment Report. Before the IPCC publish these reports, scientists first review them and then governments review and endorse them. Almost all the Assessment Reports concur that there is no doubt now that the atmosphere is warming, that human activities are 90 per cent likely to be the cause of most of the recent warming and that, the impacts of climate change could be sudden and irreversible.

The Intergovernmental Panel on Climate Change (IPCC) works under the rules of the United Nations Framework Convention on Climate Change (UNFCCC), an international treaty that nearly 200 governments agreed in 1992 with the aim of preventing dangerous climate change. This treaty produced the Kyoto Protocol, the agreement that requires some industrialized countries to reduce their emissions of greenhouse gases. Each year, the countries that are party to the UNFCCC meet to review progress and negotiate new actions.

The two main strategies for reducing the threat climate change poses are mitigation and adaptation. Mitigation refers to any activities that reduce the overall concentration of greenhouse gases in the atmosphere. This includes efforts to switch from fossil fuels to renewable energy sources such as wind and solar, or to improve energy efficiency. It also includes efforts to plant trees and protect forests, or to farm land in ways that prevent greenhouse gases from entering the atmosphere. Adaptation refers to activities that make people, ecosystems and infrastructure less vulnerable to the impacts of climate change. This includes things like building defenses to

protect coastal areas from rising seas, switching to drought or flood resistant crop varieties, and improving systems to warn of heat-waves, disease outbreaks, droughts and floods.

Africa's emissions are low in both absolute and per capita terms. Total emissions for Africa increased twelve-fold between 1950 and 2016, reaching over 311 million metric tons of carbon, which is still less than the emissions for some single nations including China, the United States of America, India, Russia, and Japan. Although per capita emissions in 2016, at over 0.32 metric tons of carbon, were three times those in Africa for 1950, they were still only 6.6 per cent of those in North America.

Emissions from all fuel sources have grown in the African region over time with liquid and solid fuels now each accounting for approximately 35 per cent and gas fuels accounting for 17 per cent of the regional total. A small number of nations are largely responsible for the African emissions from fossil fuels and cement production; South Africa accounts for 38 per cent of the continental total, and another 46 per cent comes from Egypt, Algeria, Nigeria, Libya and Morocco combined.

These are the only six countries on the African Continent with annual CO2 emissions in excess of 10 million metric tons of carbon. Only four African countries have per capita CO2 emissions higher than the global average (1.3 metric ton of carbon per year): Libya (2.53), South Africa (2.39), the Seychelles (2.22), and Equatorial Guinea (1.99). Based on the recent per capita emission rates, 28 of the 55 African nations for which data are available have per capita emission rates less than 0.1 metric ton of carbon per person per year.

Climate change threatens to reverse many of the development gains that African nations have made. Climate change is already a reality in Africa. There are prolonged and intensified droughts in Eastern Africa; unprecedented floods in Western Africa; depletion of rain forests in Equatorial Africa; and an increase in ocean acidity around Africa's Southern Coast. Vastly altered weather patterns and climate extremes threaten agricultural production and food security, health, water and energy security, which in turn undermine Africa's ability to grow and develop.

As the poorest continent, Africa is considered the most susceptible to climate change due to its vulnerability and inability to cope with the physical, human and socioeconomic consequences of climate extremes. Moreover, the existing adaptation mechanisms and resources under the Kyoto Protocol designed to mitigate climate change's effects on Africa (and other developing regions) have been directed at limiting future carbon emissions, rather than addressing the region's vulnerability and lack of resilience to the impacts of climate change on its economies and populations.

The 2013 UNESCO Report on climate change notes that Africa will be one of the continents hardest hit by the effects of climate change. Increased drought, desertification, variability in rainfall and other consequences resulting from environmental changes undermine the continent's ability to adapt. Many African countries are marked by grinding poverty, and possess unsupportable infrastructures and weak governance mechanisms that contribute to political instability. These fragile states have an increased risk of conflict. Moreover, if the underlying causes of conflict are not fully addressed during post conflict reconstruction, conflict is likely to recur. Climate and environmentally related disasters which threaten human security can induce forced migration and produce competition among communities and nations for water and basic

needs resources, with potential negative consequences for political stability and conflict resolution.

According to the 2014 IPCC Assessment Report, Africa has been identified as one of the parts of the world most vulnerable to the impacts of climate change. For instance, Sub-Saharan Africa is a rapidly developing region of great ecological, climatic and cultural diversity. The UN Department of Economic and Social Affairs 2013 Report notes that, by 2050, its population are projected to approach 2 billion people—a figure which rises to nearly 4 billion by 2100.

The 2014 IPCC Assessment Report further notes that Climate change has already led to changes in freshwater and marine ecosystems in Eastern and Southern Africa, and terrestrial ecosystems in Southern and Western Africa. The extreme weather events have demonstrated the vulnerability of some of South Africa's ecosystems. The migration patterns, geographic range and seasonal activity of many terrestrial and marine species have shifted in response to climate change. The abundance and interaction among species has also changed.

Africa is home to just 17% of the world's forests, yet deforestation on the continent is estimated to be four times the global average—and the pace is accelerating. Practices like rapid deforestation combined with excessive greenhouse gas emissions from around the world are all contributing to climate change. Rising temperatures are having a catastrophic impact on the African people, resulting in unreliable farming seasons, low water supplies, increased droughts, severe heat waves, heavy storms, and flooding.

The world's forests are crucial to efforts to limit climate change because they absorb carbon dioxide from the air and store it for long periods in soil and plant tissues. Cut down or burn a forest and this carbon will enter the atmosphere and trap more heat. One initiative that aims to reduce this threat is called Reduced Emissions from Deforestation and (forest) Degradation (or REDD+). The basic idea is to compensate nations that forgo development opportunities when they conserve, restore or enhance their forests. Africa is poorly served by a climate finance system with as many as 50 funds operating under a fragmented patchwork of mechanisms that does little to bring in private investment.

The repercussions of climate change are being felt in various ways throughout both natural and human systems in Sub-Saharan Africa. Climate change projections for this region point to a warming trend, particularly in the inland subtropics; frequent occurrence of extreme heat events; increasing aridity; and changes in rainfall—with a particularly pronounced decline in southern Africa and an increase in East Africa. The region could also experience as much as one meter of sea-level rise by the end of this century under a 4 _C warming scenario.

Sub-Saharan Africa's already high rates of under-nutrition and infectious diseases can be expected to increase compared to a scenario without climate change. Particularly vulnerable to these climatic changes are the rainfed agricultural systems on which the livelihoods of a large proportion of the region's population currently depend. As agricultural livelihoods become more precarious, the rate of rural–urban migration is expected to grow, adding to the already significant urbanization trend in the region.

The movement of people into informal settlements will expose them to a variety of risks different but no less serious than those faced in their place of origin, including outbreaks of

infectious diseases, flash flooding and food price increases. Impacts across sectors are likely to amplify the overall effect but remain little understood.

Africa consumes a tiny fraction of the world's fossil fuels, yet it is predicted to shoulder far more than its share of the negative impacts of climate change. Between its size, vast natural resources, and unique weather patterns, the continent is especially susceptible to the effects of rising temperatures. Without comprehensive measures to understand and address the impacts of climate change, the well-being of both Africa's wildlife and its people are in jeopardy.

Right now, the effects of climate change are already being felt by the people across Africa. Evidence shows that the change in temperature has affected the health, livelihoods, food productivity, water availability, and overall security of the African people. According to the Climate Change Vulnerability Index for 2015, seven of the ten countries most at risk from climate change are in Africa.

Africa has seen a decrease in rainfall over large parts of the Sahel and Southern Africa, and an increase in parts of Central Africa. Over the past 25 years, the number of weather-related disasters, such as floods and droughts, has doubled, resulting in Africa having a higher mortality rate from droughts than any other region.

The 2009 UN Report on the *State of the World's Indigenous Peoples*, highlights the widespread belief that climate change will be especially cruel to indigenous peoples:

Despite having contributed the least to GHGs [Green House Gases], indigenous peoples are the ones most at risk from the consequences of climate change because of their dependence upon and close relationship with the environment and its resources.

Although climate change is regionally specific and will be significant for indigenous peoples in many different ways, indigenous peoples in general are expected to be disproportionately affected. Indigenous communities already affected by other stresses (such as, for example, the aftermath of resettlement processes), are considered especially vulnerable.

The same report goes on to cite the following specific 'changes or even losses in the biodiversity of their environment' for indigenous groups, that will directly threaten aspects of indigenous life:

- *the traditional hunting, fishing and herding practices of indigenous peoples, not only in the Arctic, but also in other parts of the world;*
- *the livelihood of pastoralists worldwide;*
- *the traditional agricultural activities of indigenous peoples living in mountainous regions;*
- *the cultural and ritual practices that are not only related to specific species or specific annual cycles, but also to specific places and spiritual sites, etc.;*
- *the health of indigenous communities (vector-borne diseases, hunger, etc.); and*
- *the revenues from tourism among many others.*

Climate change is inherently unfair. The countries and communities that are most at risk from its impacts, and are least able to adapt, are those that have contributed least to the problem. If poorer nations pursue economic growth by the same means from which the industrialized nations have benefitted – such as by burning coal and clearing forests – they will only add to the climate change problem. Indeed, the richest nations insist that all nations – including the poorest ones –

should act to limit climate change, but when the poorest nations ask the richer ones for help to do so, they don't get the finance and technology they need in return.

The international negotiations on climate change are themselves unfair, as some countries wield considerable power while others have little to bring to the table other than moral arguments. The more vulnerable nations can do little when industrialized nations fail to act to limit climate change, or even break promises they have made in the past. And when the richer nations provide 'climate finance' in the form of loans not grants, they are in effect asking poorer nations to pay to fix a problem the richer nations created. There is also inequity within countries, as it is the poorest communities that are most vulnerable to climate change. Again, these tend to be the people who have done least to contribute to the problem.

These ethical and moral aspects of climate change have prompted the concept of "climate justice", which civil society organizations from across Africa have used to call upon governments and others to recognize the rights and needs of the climate-vulnerable poor. Climate justice calls for the equitable distribution of resources to tackle climate change and for climate-vulnerable people to take part in decisions about how the money gets spent. These ethical conundrums, of how to ensure fair opportunities for all people and how to ensure that nations and people act according to their responsibilities and capabilities, are at the core of the climate change story at local, national and international stages.

Although climate change is one of the major problems facing the African Continent, it can also create opportunities for African politicians, business leaders and communities to act in ways that bring benefits for all. It can create opportunities for new business models and innovations, new routes to sustainable development and new ways for ancient cultural knowledge to have an impact at home and in the wider world.

4.0 Relationship between Culture and Climate Change

Though the scientific community largely agrees that climate change is underway, debates about this issue remain fiercely polarized. These conversations have become a rhetorical contest, one where opposing sides try to achieve victory through playing on fear, distrust, and intolerance. At its heart, this split no longer concerns greenhouse gases, or climate modeling; rather, it is the product of contrasting, deeply entrenched worldviews.

Synthesizing evidence from sociology, psychology, and political science, Andrew J. Hoffman lays bare the opposing cultural lenses through which science is interpreted. He then extracts lessons from major cultural shifts in the past to engender a better understanding of the problem and motivate the public to take action. His book titled "*How Culture Shapes the Climate Change Debate"* makes a powerful case for a more scientifically literate public, a more socially engaged scientific community, and a more thoughtful mode of public discourse.

The way in which people perceive climate change risk is informed by their social interactions and cultural worldviews comprising fundamental beliefs about society and nature. Therefore, perceptions of climate change risk and vulnerability along with people's "myths of nature"—that is how groups of people conceptualize the way nature functions—influence the feasibility and acceptability of climate adaptation planning, policy making, and implementation.

For years, climate change studies tended to rely on numbers-heavy charts and complex models to report on phenomena such as shrinking polar ice caps; melting glaciers and permafrost; caribou, reindeer and seal populations declining; and rising sea levels from Nigeria to the Maldives to the South Pacific. But in the recent years, ethnographers, sociologists and think tanks have begun looking more closely at the social and cultural impacts of climate change on indigenous communities.

Studies have been published on subjects including the Wauja people in Brazil, who are impacted by the shrinking Amazon rain forest; Sami reindeer-herding communities across a warmer northern Finland, Sweden and Norway; Bantu- and Khoisan-speaking tribes in the bone-white Kalahari Basin in Sub-Saharan Africa; and subsistence communities in Bangladesh and Malaysia whose coastal settlements are at risk of flooding from typhoons, monsoons and higher sea levels. Such research reflects a growing realization in academic and policy circles that cultures and societies tied to nature have multigenerational knowledge that gives them special insight into changes in nature.

The role that culture plays in contemporary climate change adaptation is not a well understood or studied area. Yet, culture, the full range of learned ideas and behavior patterns that are acquired, shared, and modified by people as members of a society, is ever present, guiding and lending meaning to perceptions of climate risk, decisions about whether to address climate change, and if deciding to take action, what it will be. Culture is present at many levels, and institutional cultures also carry significance for addressing climate adaptation, for example, informing how priorities and metrics for success are set and evaluated.

While still understudied, climate researchers are increasingly recognizing that culture is critical to understand in order to address climate change through adaptation (and mitigation) policy and planning measures. Understanding the role of culture in risk perception, decision making, and behavior has been investigated in related contexts, including environmental risks such as pollution, nuclear power, and greenhouse gas reductions.

One important stream of research in the anthropology of climate change shows very clearly that indigenous cultures are quite resilient in the face of environmental change. Anthropologist Sarah Strauss of the University of Wyoming has cautioned that, if we only focus on cultural extinction from climate change as a threat, we may miss the role of culture in allowing people to *accommodate* wide variation in the environment.

Strauss notes that, people are extraordinarily resilient. She contends that our cultures have allowed human groups to colonize the most extreme reaches of the planet Earth, and no matter where we have gone, we have contended with both environmental and social change.

Strauss further explains that, the problem for many indigenous cultures is not climate change *alone* or in isolation, but the potential speed of that change and how it interacts with other factors, many human-induced: introduced diseases, environmental degradation, deforestation and resource depletion, social problems such as substance abuse and domestic violence, and legal systems imposed upon them, including forced settlement and forms of property that prevent movement.

A number of ethnographic cases show how indigenous groups can adapt to severe climatic shifts. According to Crate (2008) for example, the Sakha adapted to a major migration northward,

transforming a Turkic culture born in moderate climates to suit their new home. Kalaugher (2010) also discusses the Yamal Nenets, another group of Siberian nomads, who adapted to both climate change and industrial encroachment, including the arrival of oil and gas companies that fouled waterways and degraded their land.

A team led by Bruce Forbes of the University of Lapland, Finland, found out that our cultures are not innate, and they are not individual; humans are, and always have been, part of complex social-ecological systems. Culture is indeed the *primary adaptation* of the human species, and its value lies in its ability to connect generations of people over time, while remaining flexible enough to interact with changing environmental and social conditions.

Boas and his students; - Alfred Kroeber and Julian Steward were among those whose research has clearly demonstrated the dynamic interactions across cultures and their environments. It is this adaptive capacity that has allowed our species to colonize the entire planet. Until about 10,000 years ago, all human populations subsisted by foraging, a lifestyle that exploited food resources available in their particular corner of the world. This meant attending to seasonal and geographical differences in food resource availability, as well as responding to short-term weather impacts and longer term climate variability.

Treating cultures solely as fragile victims of climate change misrepresents how humans will *adapt* to climate change. Culture is not merely a fixed tradition, calcified 'customs' at risk from warming; culture is also out adaptive tool, the primary way in which our ancestors adapted to such a great range of ecological niches in the first place and we will continue to adapt into the future. And this is not the first time that indigenous groups have confronted climate change.

Human populations have always been moving and changing their subsistence strategies in response to changing climatic conditions. Encroachments by other populations, or other kinds of changes in the subsistence base, have also forced groups to migrate without facing the 'death' of their culture. For instance, while many tribes did not survive the epidemics and other impacts of colonialism, those that did, such as the Navajo or Inuit, were able to change and thrive with their cultural identities relatively intact.

At the World Congress of Environmental History, panelists observed that culture is inextricable from the material influence of climate change. This simply means that, we cannot comprehend the human consequences of climate change, past, present, and future, without understanding culture. Panelists discussed how climate change can upend delicate relationships between humans and local environments, in ways that ultimately influence.

We learn from each other and from our environment, and we make changes to our cultures accordingly, though the choices we make do not always produce ideal solutions, and the structural conditions that we create in one context, or find ourselves subject to, may constrain options for the next set of decisions.

In some sense, climate change is providing a concrete framework for increasing cultural awareness, and allowing groups to take steps to address destructive forces of overpopulation, pollution, economic inequities, political oppression, malnutrition, deforestation, and other grave problems about which in many cases, little was being done, because of minimal funding, lack of political will, or active heads-in-the-sand.

This awareness has in turn created a context (highly polarized in the United States, but less so elsewhere in the world) that invites communities to reframe their problems, including climate change, and thus, take a fresh look at potential ways to engage and shift their relationship with these problems—though not necessarily to 'solve 'them. The resurgence of the sustainability movement is one such demonstration.

Climate change will affect all cultures, many in severe and dramatic ways—there is really no question about the truth of this statement, nor lack of evidence that these impacts are already well underway especially on the African cultures.

The culture of Africa is varied and manifold, consisting of a mixture of tribes that each have their own unique characteristics. It is a product of the diverse populations that today inhabit the continent of Africa and the African Diaspora. African culture is expressed in its arts and crafts, folklore and religion, clothing, cuisine, music and languages.

Africa is so full of culture, with it not only changing from one country to another, but within a single country, many cultures can be discovered. Even though African cultures are widely diverse, it is also, when closely studied, seen to have many similarities. For example, the morals they uphold, their love and respect for their culture as well as the strong respect they hold for the aged and the important i.e. Kings and Chiefs.

The continent's cultural regeneration has also been an integral aspect of post-independence nation-building on the continent, with the recognition of the need to harness the cultural resources of Africa to enrich the process of education, requiring the creation of an enabling environment in a number of ways. In recent times, the call for a much greater emphasis on the cultural dimension in all aspects of development has become increasingly vocal.

5.0 Alternative Positions and Practical implications

A substantial body of research has addressed the inter-related cognitive, affective and behavioural dimensions of climate change engagement at the individual level, and has shown that collective human experience with climate change is highly varied.

For many, climate change is a distant, intractable problem. It is also a contested problem: Research in developed countries shows that climate change views of public citizens often (and increasingly) diverge from scientific consensus and highlight that the journalistic norms of mass media have wedged apart scientific and popular discourse on the issue. In the developing world, a contrast is more often drawn between western scientific epistemologies of climate change and local perspectives. Yet none of these discourses is homogenous, with divergence of views evident among sub-groups of society.

Because climate change cannot always be directly or immediately sensed, individuals are especially reliant on social and cultural cues to inform them about climate change, the risks it poses, and how to respond. Accordingly, several strands of scientific research have focused on social and cultural influences on climate engagement.

In my view, there are climate beliefs through the lens of cultural cognition, whereby individuals adopt views aligned with those of one's cultural community. This explains cognitive biases in individuals' own beliefs about climate change as well as their opinions of what others believe.

Before average temperatures climbed or sea levels rose, indigenous groups were already at risk and have been for a while. By nearly every available measure, indigenous peoples' distinctive lifeways and the globe's cultural diversity are threatened, not so much by climate, but by their wealthier, more technologically advanced neighbours, who often exercise sovereignty over them.

When each behavioral or cultural change (e.g., improving public transportation) addresses multiple problems (e.g., reducing greenhouse gases, reducing asthma and obesity, and increasing community engagement), the implementation of that change becomes easier. But this is not a call for a reductionist approach to the vast complexity of the climate change problem— rather; it is a call for an anthropological recognition of the holistic nature of climate change, and for greater attention to local level integrated solutions.

Climate change discourses generate awareness of the interrelated nature of many of our most critical problems, such as the limits of fossil fuel energy—which gives us another reason besides forcing to consider mitigation strategies—and resource depletion/pollution (especially water).

6.0 Conclusion

Addressing climate change will require action at all levels of society, including individuals, organizations, businesses, local, state, and national governments and international bodies. It cannot be addressed by a few individuals with privileged access to information, but rather requires transfer of knowledge, both intellectually and affectively, to decision-makers and their constituents at all levels.

Perhaps, the major lesson about the impacts of climate change on cultures is that, local communities make their own rules, and need to make their own decisions. We cannot say which decisions are 'right' for everyone, but people in local areas need to take charge of their own communities and reclaim the right to share food, entertainment, and care of each other through what British permaculturist and advocate for the 'Transition Movement' Rob Hopkins calls re-localization.

All cultures are learned and shared across generations, and one of the most effective strategies for conveying our knowledge and experiences is storytelling. By connecting the broad scale as well as local ecosystem changes that are currently being experienced around the globe with stories of real people in specific places engaging with and adapting to these changes, we can use all the tools of our varied disciplines to help communities use their cultural strengths to cope with new ways of being in the world.

People need reliable, up-to-date information to be able to make important decisions about their future. To address climate change, cross-cultural communication is very necessary. People from various countries, with various backgrounds, have to exchange their ideas and opinions about how to solve this problem. The cultural differences between these people influence both the content of their message as well as the way it's expressed.

There is a need to continue refining the science of climate change, to be sure and also a need to recognize that it is not an isolated problem, and that by calling it a global issue, we cannot lose sight of the fact that our decisions, as individuals and as members of cultures, are the driving force behind our ability to adapt to environmental changes.

By working from the level of local culture on up, we might find ways to reframe and engage with climate change as part of a broader form of cultural change. To do this, we need to create partnerships between local communities, scientists, and wider political institutions that will allow people living across the planet to take the steps most relevant to securing their own futures in a changing climate.

There is a need for an African Program and or Project which will use methodologies such as actor-system mapping, scenario building and citizen panels to construct a framework for engaging with people about climate change adaptation and mitigation that puts culture at its centre, to find out what people already know about climate change, and to work on a range of strategies to prepare for climate change events.

Preserving Africa's rich forests and incredibly biodiverse ecosystems are critical to the solution. So is getting people to buy into new, more sustainable practices. Therefore, there is a need to continuously advocate for improved conservation planning, resource management, and livelihood strategies to strengthen the resilience of Africa's people, its ecosystems, and its wildlife to climate change.

In many parts of the world, research attention has focused on the engagement of the general public. Henceforth, studies need to focus on key stakeholders in the government and non-governmental sectors who participate in climate change adaptation and mitigation planning processes, so that a better understanding may be achieved of the distinct knowledge cultures that influence their engagement with climate change.

Funding for climate change adaptation must be increased and consolidated. Also, facilities for financing mitigation and supporting low-carbon development – notably the Clean Technology Fund and the Scaling Up Renewable Energy in Low Income Countries Programme – should be restructured to be more responsive to Africa's needs and opportunities.

Responses to climate change currently fall far short of the level of ambition needed to effectively tackle the challenge. But this same inadequacy of response can be seen in approaches to meeting other problems, for example, global poverty or biodiversity loss. Evidence from social psychology highlights the importance of cultural values in shaping our collective responses to challenges such as these.

"Extrinsic" values (those preoccupied with image, social status, and financial success) are associated with lower levels of concern about such problems and lower commitment to addressing them. But "Intrinsic" values (including closeness to friends and family and commitment to the wider community) are associated with behavior that helps to tackle a wide range of social and environmental challenges.

We are faced with the challenge of galvanizing international momentum for ambitious action on climate change. Working to strengthen particular cultural values is a prerequisite for the emergence of the necessary public demand for ambitious governments' action on climate change and adequate consumer pressure on businesses to reduce their greenhouse gas emissions. Strengthening these values will also encourage greater commitment on the part of individuals to reduce their own environmental impacts.

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