

IMPACT OF CLIMATE CHANGE ON BEROM CULTURE IN JOS SOUTH LOCAL GOVERNMENT AREA OF PLATEAU STATE, NIGERIA

By

SAMSON DANIEL

Department of Surveying and Geo Informatics
Federal College of Land Resources Technology
Kuru, Jos South LGA, Plateau State Nigeria
danielsamson8@gmail.com
+2348067387710

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MWANGWOK DAVOU GANDUNG

(College Librarian)
TCNN College of Education
Bukuru, Jos South LGA, Plateau State, Nigeria
gmdavou@gmail.com
+2348031311532

Abstract

Climate change is a global phenomenon that has far-reaching consequences for various aspects of human life, including culture. This research aims to explore the impact of climate change on culture, highlighting the interconnectedness between environmental changes and cultural practices. The effects of climate change, such as rising temperatures, extreme weather events, and sea level rise, have significant implications for cultural traditions, social dynamics, and the preservation of cultural heritage. Traditional practices and rituals tied to agriculture, fishing, and hunting are being disrupted as changing weather pattern and ecological imbalances alter the availability of natural resources. This study used both primary and secondary data. Population of the study covered an estimated and approximate population of Jos South Local Government of Plateau State which is 306,716 people include both indigenes and none indigenes. Systematic Random Sampling was used as a technique to get the target population of 176 respondents of the Berom ethnic group who are the predominant and the first settlers on the Plateau. Data was analysed using statistical tool SPSS version 23. From the analysis, it can be deduced that with severe changes in storm, heightened poverty and displacement, the most practiced skill of the people including farming and hunting can be affected negatively while health risk can also be affected significantly. It can be concluded that climate change is not only an environmental issue but also a cultural one, as it threatens the diversity and richness of cultures around the world; that the impact of climate change is interconnected and can lead to the erosion of cultural practices, languages, and traditions. While urgent actions are needed to mitigate and adapt to climate change to protect cultural heritage and ensure the continuity of cultural practices.

Keywords: Impact, Berom Culture, Climate Change, Festival.

Introduction

The term “climate change” refers to change in longer term pattern of behavior of the atmosphere over millennia or, more recently, as a result of natural processes or human activity. Climate is distinguished from weather, which is specific behavior of the climate at a particular time. Weather is made up of specific events, for example, a particular storm, the rainfall over a particular period, the temperature at a particular time. Climate is about expectation; weather is about events and condition. Climate is what you expect, weather is what you get.

Climate change includes both global warming driven by human-induced emissions of greenhouse gases and the resulting large-scale shifts in weather patterns. Though there have been previous periods of climatic change, since the mid-20th century humans have had an unprecedented impact on Earth's climate system and caused change on a global scale. The largest driver of warming is the emission of gases that create a greenhouse effect, of which more than 90% are carbon dioxide (CO₂) and methane.

The term: “climate” refers to the general weather conditions of a place over many years. In Climate change is a significant variation of average weather conditions say, conditions becoming warmer, wetter, or drier over several decades or more. It's that longer-term trend that differentiates climate change from natural weather variability. And while “climate change” and “global warming” are often used interchangeably, global warming, the recent rise in the global average temperature near the earth's surface is just one aspect of climate change.

The mechanics of the earth's climate system are simple. When energy from the sun is reflected off the earth and back into space (mostly by clouds and ice), or when the earth's atmosphere releases energy, the planet cools. When the earth absorbs the sun's energy, or when atmospheric gases prevent heat released by the earth from radiating into space (the greenhouse effect), the planet warms. A variety of factors, both natural and human, can influence the earth's climate system.

Climate change can impact the health and well-being of the indigenous tribes in many ways; in this case most indigenous communities are into mining activities and agricultural practice. Climate change will also make it harder for tribes to access safe and nutritious food, including traditional food important to the tribes, cultural practices. Most communities or tribes already lack access to safe drinking water.

Statement of the Problem

Climate change also affects the cultural identities of indigenous people of Jos South LGA, as plants and animals used in traditional practices or sacred ceremonies becomes less available, cultural ways of life can be greatly affected by climate change. Impacts of climate change can also affect farming duration and traditional activities. In few years back we experiences increases on frequency and intensity of extreme weather events such as heat wave, floods in parts of Jos South LGA of Plateau State. Changing climate on culture can also look at the direct material loses as well as mobility and also language element in Jos South local government area.

Gwom (1992) mention that Climate change can also affect activities in Berom culture which can be related to climate change such as, the Nzem Berom which is the popular of all the festivals and it comprises of others such as, the Mandyeng, Nshok, Worom Chun, Vwana, Nzem Berom which are held within the first week of April annually. The period of Nzem Berom is no longer sitting due to climate change is mostly move. Mandyeng is a festival to usher in the rainy season but in the past it was a festival which ensured good farming, hunting period and harvest though not all Berom land celebrate Mandyeng even in the past. Nshok is a festival of hunting, in Berom land is associated with burning of bush which can also let to climate change, Nshok was not the only hunting festival in Berom land. Festival such as Mado, and Behwol existed but not as important as Nshok. Presently these festivals don't exist any longer because of impact of climate change most animals have migrated or disappear from the environment originated.

Most Berom names given to male children come from the animals name traditionally given most importantly duiker, due to their perceived beauty. The Berom culture does celebrate hunting of dangerous animal like the lion, hyenas, and tigers. This is part of their social life and smoking of tobacco is common with the bowl of a pipe is made of special clay, the clay has disappeared as a result of climate change impact (Gwom, 1992).

Festival of Berom people is related to agriculture, they eat more of vegetables that are natural and highly nutritional in tere or gwote such (Hwonong) vegetable like Jeil (abanacha) kanakatag, kanociro, engire, cheninate among others. Due to climate change these vegetables have disappeared completely. Hworop is a plant use for treatment of heart burn; this plant has disappeared as a result of climate change impact too (Gwom, 1992).

The raining season falls between mid-April to late August and sometimes early September. Dry season set in around late September and end of March, the pattern of rainfall has changed completely the rain comes in around end of May with much heat to almost 28 degrees with less rainfall, this occurrences continue and rain stop around September with no drought. This occurrence is as a result of climate change (Gwom, 1992).

According to Dung (2005), the Wusal Berom is a festival of prayers, which is monthly in the past but presently impact of climate change has change the practice of Wusal Berom. Most of the festival is put together in Nzem Berom festival.

Music life, instrument such as Yom Nshi a two-string banjo, made from calabash, skin and skin resonators. Yom which is a strew string instrument, kwang or gwashak from cactus, played with two sticks slid. Xylophone called kundung from animal horns and cob webs. This instruments are beginning to fest out because of the materials scarcity due to climate change, Ju is a flute us during festivals has also disappear as a result of climate change, because the special grassed use for producing the flute has disappear completely(Dung, 2005). With these, this research uncovers the impact of climate change on Berom culture of Jos South LGA of Plateau State, Nigeria.

Purpose of the study

The purpose of this study is to assess the impact of climate change on Beromculture of Jos South Local Government of Plateau State. Below are the objectives:

1. Identify nature dependent cultural identities and practices among the people of Berom
2. Investigate the impact of climate change on these identities and practices
3. Investigate how the people adapted and responded to the new realities

Literature Review

There have been different definitions of the concept of environment proffered by different scholars and organized bodies/agencies. However, from whatever angle one perceives the term environment simply depicts what surrounds us. To Hagget (1975), cited in Anijah-Obi (2001), environment refers to the “sum total of all conditions that surround man at any point in time on the earth’s surface”. This means that, the term “environment” comprises land, air, water and all the physical structures surrounding us. In this case therefore, the concept “environment” refers to the totality of space, time and socio-cultural settings of man and other living organisms therein.

The health of the citizens of any nation depends on a conducive environment. This was clearly -pointed out at the Istanbul Declaration and The Habitat Agenda for 1998. It was stated that "sustainable human settlements depend on the creation of better environment for human health and well-being, which will improve the living conditions of people and of their lives (Michael, 2008).

Climate change can impact the health and well-being of indigenous people in many ways. It can also be difficult to the poor in terms of coping with the changes and also the older adults are the least to cope with the impacts and children because they are sensitive age group in terms of health. Climate change will make it harder for tribes to access safe and nutritious food, including traditional foods important to cultural practices. Many tribes already lack access to safe drinking water. Human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history. Recent climate changes have had widespread impacts on human and natural systems” (IPCC, 2014). Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, and sea level has risen.

In recent decades, changes in climate have caused impacts on natural and human systems on all continents and across the oceans. Impacts are due to observed climate change, irrespective of its cause, indicating the sensitivity of natural and human systems to changing climate (IPCC, 2014). Many aspects of climate change and associated impacts will continue for centuries, even if anthropogenic emissions of greenhouse gases are stopped. The risks of abrupt or irreversible changes increase as the magnitude of the warming increases.

Climate change is projected to increase displacement of people (medium evidence, high agreement). Populations that lack the resources for planned migration experience higher exposure to extreme weather events, particularly in developing countries with low income. Climate change can indirectly increase risks of violent conflicts by amplifying well-documented drivers of these conflicts such as poverty and economic shocks (medium confidence) (IPCC, 2014).

A report by the World Health Organization (WHO) (Semenov, 1994) shows that about 50% of the benefits that the ecosystem provides globally to support life on earth e.g fresh water, clean air and relatively sustainable climatic conditions are being degraded or used unsustainably. In the report, scientists working on Millennium Ecosystem Assessment (MEA) warned that harmful consequences of this degradation to human health are already being felt and could grow significantly worse over the next 50 years.

A solution, cross-cultural communication will be 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 been expressed (Shadid, 2007). The aim of this research was to find out in what way the content of the message is influenced by the cultural differences of people.

Climate Change

It has been stated that the cultural background of people, which can be evaluated by the cultural dimensions, influences the way of life of the people. It is important to know if besides the influence of culture on the style of life, it also influences the content of the message.

Cohen (2000) says that scholars working within the field of comparative environmental policy regularly noted the disparity between the reactions of different countries to ecological threats. International climate change politics can therefore provide a clear example of how cultural differences, conflicts of interest and scientific assessments interact to shape environmental policy-making (Wurff, 2009). There are several climate change definitions available, one factor that they have in common is, the fact that there is a change in the climate. The term global warming often is been used as a synonym of climate change. Wurff (2009) stressed that it refers to possible climatological consequences of increasing greenhouse gas emissions. The climatological changes that will occur because of the enhanced greenhouse effect can only be predicted in general terms. Predictions for specific regions of countries cannot yet be made and the social-economic and health effects of climate change are even more unclear. Then uncertainties about changes in regional climates are reinforced by the unpredictability of social-economic developments (Glantz, 1995).

The potential effects of climate change are: lack of clean water, rising sea levels, global warming – an upward trend in global mean temperature – and a probable increase in the frequency of some extreme weather events (IPCC, 2007). To prevent these potentially costly socio-economic and health effects government can either aim to reduce greenhouse gas emissions (mitigation policies) or prepared for coming changes in climate (adaptation policies) (Klein, Schipper&Dessai, 2005).

However, even when the policy choice is made, formulating and implementing these policies is complicated, due to the long and international character. Policy, Negotiations on climate change. Climate change policymaking requires dealing with uncertainties, because numerous interests are involved and often affected in partly unknown ways. The reason for the widespread disagreement on how much and in what amount of time, emissions should be reduced and by whom (Klein, Schipper&Dessai, 2005).

Perceptions on climate change according to Hindess (1993) was, climate change interests are relative stable properties of individuals or collectivities which provide them with actual or potential reasons to support or oppose climate change policies. The United States, the United Kingdom and Germany are important and influential players on the international stage in the context of climate change negotiations. From the start of the negotiations, they have taken very different positions and favored different policies.

Anderson (2002) describes the actions of local women successfully digging a new well for freshwater during a drought, because of their familiarity with the land and hydrology. Traditional knowledge and practices are an important component of climate-related planning and of the response following climate events and natural disasters (Fletcher, 2013, Charan, 2017, Plotz, 2017).

Traditional knowledge is not recognition of these patterns but can help to design interventions or to understand a community's choice to avoid extreme-event preparations. Some elements of religious practice or spirituality align with resilience planning objectives, while others may appear to conflict, but in both cases, management planning is assisted by an understanding of these social elements. Despite their value, traditional and cultural knowledge and practices face key threats today. Climate change may be altering the processes and conditions that drive local natural indicators, altering associated practices.

Culture

There are many definitions describing the term culture. 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 (Shadid, 2007). 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.

Culture determines how people 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. Hofstede (1994) even speaks about mental programming. He defines culture as the collective mental programming which separates members of one group from the other.

Culture includes all physical artifacts, social structures and functions, belief and value orientations exhibited and utilized by identifiable groups of people in specific geographic locations around the world. The diversity of cultures is based on variations in the patterns by which peoples assemble a living society from the elements above. The author's assumptions are that cultural diversity is a positive social good for humanity and that it is an aspect of human values that cannot be reduced to an economic measure (Pasikowska-Schnass, 2024).

According to Pasikowska-Schnass (2024) the impact of climate change on cultural heritage is determined not only by the physical parameters of climate change but also by the type of heritage involved: tangible or intangible. Tangible cultural heritage can be movable (e.g. artifacts) or immovable (e.g. buildings). Intangible cultural heritage – traditions and local knowledge – is also at risk from climate change. As this very knowledge can help protect tangible cultural heritage, preserving it is all the more important. Pre-existing vulnerabilities

deriving from physical, social and cultural features increase the potential for cultural heritage to be adversely affected by climate change. Additionally, responses to climate change can themselves constitute a hazard when badly conceived or implemented. Such circumstances can lead to damage or, in extreme cases, loss of tangible heritage. Climate change-related displacements of populations and disbanding of communities can lead to loss of intangible heritage, with detrimental knock-on effects for tangible heritage.

Adaptation and implementation face several barriers including lack of up-to-date and locally relevant information, lack of finance and technology, social values and attitudes, and institutional constraints (*high confidence*) (IPCC, 2018). The global transformation that would be needed to limit warming to 1.5°C requires enabling conditions that reflect the links, synergies and trade-offs between mitigation, adaptation and sustainable development.

These enabling conditions are assessed across many dimensions of feasibility – geophysical, environmental-ecological, technological, economic, socio-cultural and institutional that may be considered through the unifying lens of the Anthropocene, acknowledging profound, differential but increasingly geologically significant human influences on the Earth system as a whole. This framing also emphasizes the global interconnectivity of past, present and future human-environment relations, highlighting the need and opportunities for integrated responses to achieve the goals of the Paris Agreement” (IPCC, 2018).

As culture and community are frequently rooted in place - from metropolitan areas through to marginal rural settlements - climate change impacts in these places may also change cultures and communities, often in ways that people find undesirable and perceive as loss. Mishra and colleagues observe that people with high levels of place attachment were more likely to be motivated to prepare for climate change events such as flooding because of their social and economic investments within their region. Several other researchers have also suggested that attachment to place is more likely to result in pro-environmental behavior. These observations suggest that citizens to develop or participate in climate adaptation planning processes” (Adger, Barnett, Brown, Marshall & O'Brien, 2013).

According to Schmidt & Wolfe (2008) why the earth climate changed in a past, before humans had any measurable impact on it. The changes are driven slow movements of the continents that change the ocean current, asteroid impacts that filled the atmosphere with smoke and dust. And also, human civilizations also contribute the change in climate over 10,000 years ago. The change is due to greenhouse gases complicated, absorbs the energy it warms up. The earth radiates the energy to space, because it is now warmer than its surroundings. It radiates energy, some of which goes back down to earth.

The Berom People

According to Dung (2005) Berom sometimes spelt as Birom, are found in present day Plateau State and Southern part of Kaduna. They speak the Berom language and are part of the Niger Congo family. The Berom are the largest ethnic group in Plateau State with a population of over 2 million people.

The Berom have been linked to the Nok civilisation, a civilisation that dates back between 200BC to 1000AD. The Berom are believed to have migrated from as far as Ethiopia, moving

to Sudan, Chad then to Niger where they settled for a while before moving down to the Jos Plateau. They were the first to settle on the Jos Plateau (Dung, 2005).

Social Stratification

The Beroms are a mixture of Christians and Muslims and most of them are farmers. Hunting is said to have been a major activity and names in Berom reflect the hunting heritage. Names such as: Bot (frog), Tok (fish), Tsok (toad) among others. The Beroms were ruled in their villages by council of elders who were led by a Chief Priest 'GwomKwit'. The council of elders settled marital issues, matters concerning land and inheritance among other disputes. Around 1916, the stool of GbongGwom Jos was established by the colonial office in order to monitor and control the activities of indigenous people (Dung, 2005).

Festivals

The Beroms have festivals that dated from pre-colonial times. The festivals were meant to celebrate farming and hunting. The Madyeng Festival takes place in March/April and it's celebrated to usher in the rainy season. This is to ensure a good farming season (Dung 2005). Berom socio-cultural festivals and ceremonies from the pre-colonial times to date include the NzemBerom which is the popular of all the festivals and it comprises of others such as, the Mandyeng, Nshok, Worom Chun, Vwana, Nzem Berom which are held within the first week of April annually. Mandyeng is a festival to usher in the rainy season and this ensure good farming, hunting period and harvest. Nshok is a festival of hunting, in Berom land is associated with burning of bush, Nshok was not the only hunting festival in Berom land. Festival such as Mado, and Behwol existed but not as important as Nshok (Dung 2005).

Methodology

Two major types of data were collected for the purpose of this study. They are primary and secondary data.

Primary Source of Data: these included:

- i. Oral Interview: This has to do with the researcher going to the site or related area and asking the respondents questions or engaging in verbal discussions to extract necessary information. In the course of this work, the researcher interviewed the inhabitants of Jos South Local Government of Plateau State (Berom).
- ii. Questionnaire Administration: Prepared questions relative to the researcher field of research were asked from printed pages. In the course of this work questionnaires were prepared as an additional source of data collection.
- iii. Direct Personal Observation: This is a method by which the reseacher makes observation or take measurements on the field or by going on a site survey. In the course of this work, the area was visited on several occasions, for obtaining relevant information about the area under study.

Secondary data: In the course of this research work, other relivant information such as maps and statistical data were sourced from the appropriate agencies such as the Plateau State Ministries of Lands and Surveying, and Town Planning Development and equally their websites. Journals, seminar papers, text books, lecture notes, etc were consulted too. All these were combined with the field work conducted and the review of relivant literature to prepare this work.

Population

Population is a yardstick for physical planning and planning for the impact of climate change on culture and the need in physical environment. It is defined as the total number of people living in a defined geographical area over a given period of time. As at present, the estimated and approximate population of Jos South Local Government of Plateau State is 306,716 people include but indigenes and none indigenes (National Population Commission, 2006).

Instruments

Location maps: Location maps were used to describe the area under study. The essence of these maps is to direct a person who is not familiar with the site to locate the place. The maps range from that of Nigeria showing plateau State. Base map is significant in terms of providing a yardstick for the study.

Questionnaire:

A set of predetermined questions written in conformity with set objectives, and aimed at extracting vital information on subject to be researched upon. This was administered to Berom residents of Jos South Local Government Area.

Sampling Technique

Sampling technique used is the Systematic Random Sampling. This is done to access the opinion of people living within the area of study. It is used to collect the impact of climate change on Berom culture in the study area. Questionnaire administration began at random and questionnaires were administered at an interval of two(2) days. The Data collected was analysed using statistical tool that is Statistical Package for the Social Sciences (SPSS) 23 edition and the resulting information presented in tables, charts and graphs. Pictorial data were presented in plates and figure.

Results and Discussion

Table 1: Social Identity, Religion, Cultural Role and Cultural Identity, Changes in Berom Culture

	Frequency	Percent	Valid Percent	Cumulative Percent
Medyeng	20	11.4	11.4	11.4
Nshoxk	148	84.1	84.1	100.0
Others	8	4.5	4.5	15.9
Christianity	113	64.2	64.2	64.4
Islam	57	32.4	32.4	96.6
Traditional	6	3.4	3.4	100
Hunting	46	26.1	26.1	26.1
Farming	130	73.9	73.9	100
Food	78	44.3	44.3	44.3
Language	74	42	42	86.4
Music	15	8.5	8.5	94.9
Others	9	5.1	5.1	100
Total	176 per Group			

Table 1 shows the social identity, religious and cultural role, distribution of respondents, of each group in 176 Total respondent, 20 respondent corresponding to (11.4%) are medyeng, 8

respondent corresponding to (4.5%) are others, and 148 respondent corresponding to (84.1%) are Nshok. Religion, of 176 respondent, 113 respondent corresponding to (64.2%) are Christian, 57 respondent corresponding to (32.4%) are Muslim, and 6 respondent corresponding to (3.4%) are traditionalist. In the same vial 46 (26.1%) are hunters and 130 (73.9%) are farmers. Also of 176, 78 (44.3%) are food 74 (42.0%) are language 15 (5.1%) are music 9 (5.1%) are others.

Table 2: Response to changes in Berom Culture

	Frequency	Percent	Valid Percent	Cumulative Percent
Food	109	61.9	69.9	69.9
Dressing	52	29.5	29.5	29.5
Language	14	8.0	8.0	30.1
Others	1	5.6	5.6	100
Total	176	100.0	100.0	

Table 2 shows the total respondents for changes in Berom Culture, of the 176 total respondent, 106 respondents corresponding to (69.9%) chose food, 52 respondents corresponding to (29.5%) choose dressing, 14 respondents corresponding to (8.0%) choose language while 1 respondent corresponding to (5.6%) choose others.

Impacts of climate change on the most practised skill of the Berom people

Table 3: Output for most practice skill of the Berom people Vs the Impacts of climate change

	Severe Changes in Storm	Hotter Tempt	Increase Health Risk	Heightened Poverty & Displacement	Decrease Crop Production
Persons Correlation	-.245**	.119	.189*	-.299**	-.095
Sig (2-tailed)	.001	.116	0.012	0.000	.209
N	176	176	176	176	176

To find out how climate change impacts has affected the most practiced skills of the Berom people, i.e. Farming, Hunting and Mining, a person's correlation analysis was performed from the retrieved questionnaire responses, Table 8 using SPSS version 23. The Significant 2 tailed indicates whether climate change impacts has effect on the most practiced skills of Berom people or not, while the persons correlation tells us the direction of the effect (positive or negative) and the degree of the impact, indicated by the double or single asterisks at a particular confidence level.

At 0.001, 0.012, 0.000, returned P-values for severe changes in storm, increase health risk, and heightened poverty and displacement respectively, been lower than α 0.05 test value, indicating a significant relationship. Accordingly, persons correlation values of -.245** and -.299** shows that at α 0.01 i.e. 99% confidence level there is high degree of negative impact on most practiced skills of the Berom's attributed to severe storms and heightened poverty and displacement. While at α 0.05 i.e. 95% confidence level, increase health risks with .189* shows a significant effect on the most practiced skill of the Berom's.

But for hotter temperatures and decrease crop production been impacts of climate change, returning P-values of .116 and .209, been greater than α 0.05, indicates they exert no significant effect on the most practiced skills of the Berom people.

Thus, it can be deduced that with severe changes in storm, heightened poverty and displacement, the most practiced skill of the people including farming and hunting is affected negatively while health risk will also be affected significantly.

Impacts of Climate Change on Berom Culture

Table 4: Output of Changes in Berom Culture Vs the Impacts of Climate Change

	Severe Changes in Storm	Hotter Temperatures	Increase Health Risk	Heightened Poverty & Displacement	Decrease Crop Production
Persons Correlation	-.189*	-.252**	.155	.018	.122
Sig (2-tailed)	.012	.001	.128	.815	.108
N	176	176	176	176	176

Food, Language and Dressing were used as cultural indicators. Returning a P-value of 0.12 and 0.001 for severe changes in storm and hotter temperatures, relative to α 0.05 test value showing they have impacts on changes in these Berom cultures, with corresponding Persons correlation values of -.188* and -.252** telling us that direction of impact is negative, while at 95% confidence level severe changes in storm has massive effect, at 99% confidence level hotter temperatures exerts massive effect on the changing cultures, as shown in Table 9.

The remaining impacts of climate change such as increased health risk, heightened poverty and displacement, and decrease crop production, returned respective P-value of .128, .815 and .108 which is all greater than the test α 0.05, indicating that they don't affect changes in Berom Culture based on the retrieved questionnaire responses.

Impacts of Climate Change on the Social Identities of the Berom People

Table 5: Output of Social Identities of the Berom People Vs the Impacts of Climate Change

	Severe Changes in Storm	Hotter Temperatures	Increase Health Risk	Heightened Poverty & Displacement	Decrease Production
Crop Correlation	-.057	.122	.070	-.216**	-.414**
Sig (2-tailed)	.450	.106	.358	.004	.000
N	176	176	176	176	176

From Table 5 SPSS output, The Madyeng, Nsock and Nzem been the understudied social identities was correlated against the Climate change impacts understudied, heightened poverty and displacement and decrease crop production, returned P-values of 0.004 and .000 respectively, while the persons correlation values of -.216** and -.414** shows a negative correlation and massive effect at 99.9% confidence level.

While Severe changes in storm, hotter temperature, and increases health risk as impacts of climate change, has no significant effect of the social identities of people, with P-values of 0.450, 0.106, and 0.358 respectively been greater than α 0.05.

Impacts of Climate Change on Means of Cultural Identities of the Berom People
Table 6: Output of Means of Cultural Identities of the Berom People Vs Impacts of Climate Change

	Severe Changes	Hotter	Increase	Heightened Poverty	Decrease
Crop	in Storm	Temperatures	Health Risk	& Displacement	Production
Persons	-.306**	-.092	-.021	.236**	0.78
Correlation					
Sig (2-tailed)	.000	.227	.784	.002	.303
N	176	176	176	176	176

Source: Researcher Analysis (2023)

As deduced from the SPSS output on Table 6 with food, language and music as the understudied means of cultural identities of the Berom's among the climate change impacts, only severe changes in storm and heightened poverty/displacement with P-values of 0.000 and 0.002 respectively been lower than the test value α 0.05 has significant effect of these cultural identities, while the latter shows positive impact the former is of negative dimension, both been massive at 99% confidence level.

But, hotter temperatures, increase health risk and decrease crop production as impacts of climate change has no significant effect on the means of cultural identities, with P-values of .227, .784 and .303 all been greater than the test value α 0.05.

Impacts of Climate Change on Roles of Men in Berom Culture
Table 7: Output of Roles in Berom Culture Vs Impacts of Climate Change

	Severe Changes	Hotter	Increase	Heightened Poverty	Decrease
Crop	in Storm	Temperatures	Health Risk	& Displacement	Production
Persons	-.198**	.297**	.103	.023	.181*
Correlation					
Sig (2-tailed)	.008	.000	.172	.762	.016
N	176	176	176	176	176

Analysis output labeled Table7 for Hunting and Farming as the Roles in Berom culture, the climate change impacts showing affects this roles includes, severe changes in storm, hotter temperature and decreases crop production, with respective P-values of 0.008, 0.000 and 0.016 been lower than α 0.05 value indicates that these impacts has effect on Hunting and Farming as roles in Berom Culture. The direction of this impact is negative for severe changes in storm, but positive for hotter temperature and decrease crop production.

The double asterisks for severe changes in storm and hotter temperatures, points to the high degree of effects this climate change impacts have on the roles in Berom culture at 99% confidence level i.e. for Farming and Hunting. While decrease crop production with a single asterisk shows that the impact is massive at 95% confidence level.

Increase health risk and heightened poverty and displacement with P-values of 0.172 and 0.762 been greater than α 0.05 test value shows no significant impact on the identified cultural roles.

Table 8: Paired Sample T-test Response to Climate Change Reality by the Berom People

	Sig (2-tailed)	N	Decision
Pair 1. Beroms have adjusted to climate change - Beroms have adapted and responded to the Reality	.182	176	Inadequate
Pair 2. Beroms have stopped bush burning Beroms have adjusted to climate change	.000	176	Adequate
Pair 3. Hunting and destruction of animal and plant Have been stopped by the Berom people- Beroms have adjusted to climate change	.001	176	Adequate
Pair 4. Initiation of conservation of traditional material- Beroms have adjusted to climate change	.076	176	Inadequate

Using SPSS version 23, the paired sample T test was implemented against each of the above measures and response on adjustment to climate change reality, Table 8 accordingly.

It is deduced from Table 8. That stopping of bush burning by the Beroms and the stopping of animal and plant destruction, has been adequate as measures of adjusting to climate change reality, with Sig value of .000 and 0.001 respectively, been lower than the referenced value α 0.05.

But for adapting and responding to climate change realities and the initiation of conservation of traditional materials as measures by the Berom's towards adjusting to climate change realities, it has proven to be inadequate, as the P-values returned of 0.182 and 0.076 are respectively higher than the test value α 0.05.

Conclusion

This research has critically observed and discussed issues concerning the causes and impacts of climate change on culture in Berom of Plateau State, Nigeria. From the analysis and facts obtained, we need no effort to know that most of our traditional cities are facing impact of climate change. It is on the basis of the above conclusion that the following are put forward.

That Climate change is not only an environmental issue but also a cultural one, as it threatens the diversity and richness of cultures around the world. That the impact of climate change is interconnected and can lead to the erosion of cultural practices, languages, and traditions. While urgent actions are needed to mitigate and adapt to climate change to protect cultural heritage and ensure the continuity of cultural practices.

Recommendations

1. With the problems identified in the study area, there is need for relevant and achievable recommendations to tackle the problems to achieve a well-developed and well planned human cultural activity.
2. Raise awareness about the cultural impacts of climate change and the need for collective action.
3. Support and empower the indigenous communities to adapt to climate change while preserving their cultural heritage.
4. Invest in research and documentation of cultural practices and traditional knowledge that are at risk due to climate change.
5. Strengthen policies and regulations to protect cultural heritage sites from climate change-related threats.
6. Promote sustainable practices and alternative livelihoods that are resilient to climate change, while also preserving cultural traditions.
7. Foster international cooperation and collaboration to address the cultural impacts of climate change on a global scale.

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