International Journal of Humanities Social Science and Management (IJHSSM)
Volume 3, Issue 5, Sep.-Oct., 2023, pp: 168-179 www.ijhssm.org

Impacts of Cultural Values Erosion on the Health of the Natural Ecosystems in Malawi: *A Case Study of Chewa and Ngoni Cultural Tribes*

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Date of Submission: 01-09-2023 Date of Acceptance: 08-09-2023

ABSTRACT
Culture acts as a timeless bridge connecting humanity to its natural habitat, shaping our pro-environmental conduct and our relationship with the environment. However, the often-underestimated erosion of cultural values carries profound consequences for our environment, much like the degradation of ecosystems affects our cultural heritage.
This study explores the intricate relationship between culture and nature, focusing on Malawi's Chewa and Ngoni tribes in Dedza and Kasungu Districts. We gathered quantitative data from 271 randomly selected individuals, complemented by qualitative insights from key informants, engaging focus group discussions, and an illuminating ethno-survey within the Nyau Secret Society.
Our findings resound with clarity. Cultural values form the lifeblood of communities, intricately linked to the health of natural ecosystems. As ecosystems falter under the weight of degradation, community values lose their vitality. Chiefs, the custodians of these values, witness their influence diminish, affecting their ability to guide communities in the sustainable management of natural resources.
This research calls for a renewal of dialogue, emphasizing the preservation of cultural values as guardians of our environment. Simultaneously, it advocates for the restoration and conservation of our ailing ecosystems, recognizing their pivotal role in revitalizing cultural traditions.

KEYWORDS: Keywords: cultural values, health natural ecosystems, pro-environmental behaviours, cultural values erosion, natural ecosystems degradation.

I. INTRODUCTION
The intricate connection between cultural values and natural ecosystems has a long history deeply embedded in human societies. Across millennia, cultures have evolved in tandem with their changing environments, shaping values, beliefs, norms, practices, livelihoods, knowledge systems, and languages (J. Pretty & S. Pilgrim, 2008). This interplay between nature and culture forms a complex web of mutual influence, where changes in one realm often trigger changes in the other. Strong cultural values are closely tied to the health of natural ecosystems and biodiversity, and these ecosystems, in turn, are essential for community resilience.

Human Evolution and the Natural Environment
Human evolution is intricately linked to the natural environment. Our ancestors relied on the resources provided by nature, which significantly influenced their lifestyles and survival (Fr. Claude Boucher Chisale, 2002). Gathering food from the wilderness, tracking animal movements, and seeking water sources dictated their nomadic existence. This period of environmental instability, as explained by Dr. Rick Potts of the Smithsonian's Human Origins Program, highlighted that natural selection favoured those who could adapt effectively to changing environments.

Indigenous Communities in Malawi
Malawi's history introduces us to indigenous communities like the Abathwa or the Akafula people (Fr. Claude Boucher Chisale, 2002). These communities were deeply connected to the forests and woodlands that surrounded their seasonal migrations. Their homes, made from natural materials like leaves and mud, reflected their close ties to the environment. Their daily lives revolved around hunting and gathering, activities integral to their cultural and ecological identity. Women crafted garments and ornaments from animal skins,

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embodying the concept of ecosystem services as they directly benefited from their natural surroundings. The abundance of biodiversity and fertile soils in their territories contributed to their prosperity. Migration not only sustained the forests and biodiversity they depended on but also led to conflicts over access to these invaluable resources.

The Industrial Revolution and Societal Transformation

The last 150 years have witnessed profound transformations in the world's environment due to human activities (McNeill, 2000). The Industrial Revolution, which began in the 18th century, marked a shift from agrarian to industrialized societies, bringing about significant social and economic changes. Technological innovations, such as iron and steel production, machines, factories, transportation systems, and scientific principles applied to industry, led to increased natural resource use and mass production.

The Emergence of Ecosystem Services

The concept of ecosystem services (ES) emerged in the 1970s as a framework to understand the interdependence between societies and their natural environments. It reshaped the relationship between cultural values and the environment by defining the values communities placed on the benefits derived from nature. It became evident that the degradation of natural ecosystems had direct consequences for life on Earth, affecting the provision of essentials like food, water, medicines, and energy.

The Fourfold Nature of Ecosystem Services

Ecosystem services can be categorized into four groups: provisioning services (direct benefits like food and raw materials), supporting services (fundamental ecological processes), regulating services (moderation of environmental conditions), and cultural services (intangible benefits like spiritual experiences and cultural identity). Cultural services are closely tied to the values, beliefs, and norms defining a community's identity.

The Ongoing Loss of Cultural Values and Ecosystems

Climate change highlights the link between the degradation of cultural values and natural ecosystems (Smith, J. et al., 2021). Human activities, such as deforestation, fossil fuel use, and livestock farming, are primary drivers of climate change, disrupting crucial ecosystem services and increasing vulnerability to its effects.

Africa's Vulnerability to Climate Change

Africa, especially sub-Saharan Africa, is particularly vulnerable to climate change (IPCC, 2023). The continent's economies rely heavily on rain-fed agriculture, and seven of the ten most vulnerable countries to climate change are in Africa. The destruction of natural ecosystems exacerbates this vulnerability.

The Role of Indigenous Knowledge in Climate Resilience

Recognizing the urgency of climate change, the Intergovernmental Panel on Climate Change (IPCC) emphasized the importance of incorporating indigenous knowledge (IK) into climate mitigation and adaptation strategies. Indigenous knowledge, rooted in culture, is a valuable resource in the fight against climate change.

Our research focuses on the impacts of cultural values on the health of natural ecosystems in Malawi, with a case study on the Chewa and Ngoni cultures. Malawi's vulnerability to climate change intensifies with the degradation of natural ecosystems, making the conservation of these ecosystems crucial for resilience.

In essence, our work seeks to illuminate the vital role cultural values play in shaping the fate of our natural world and, by extension, our well-being. This research contributes to the preservation of Indigenous Knowledge and promotes cultural values as guardians of our environment in the face of climate challenges.

1.1. *STATEMENT OF THE PROBLEM*

This study addresses a critical environmental problem in Malawi, characterized by the continuous loss of natural ecosystems due to factors like deforestation, unsustainable agricultural practices, wetland mismanagement, and land clearance. Deforestation, driven primarily by cash crop farming and biomass use, results in the loss of 33,000 hectares of forested land annually and leads to ecological consequences such as soil erosion, habitat loss, climate pattern disruptions, and reduced ecosystem services. Deforestation, in particular, is recognized as a major driver of biodiversity loss and a disruptor of crucial natural processes, such as biogeochemical, hydrological, and ecological cycles (Ngwira & Watanabe, 2019).

The study highlights the less-explored relationship between cultural values and environmental sustainability in Malawi. It argues that as communities lose their cultural values tied to nature, they become disconnected from the land, leading to unsustainable practices. This research aims

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to bridge this gap by investigating how the loss of cultural values contributes to environmental degradation and how degraded natural ecosystems impact cultural values in various tribes in Malawi.

II. LITERITURE REVIEW

The Evolution of Humankind's Relationship with the Natural World

In their comprehensive study, Bargaoui and Nauri (2021) undertake an illuminating exploration of the intricate evolution of the relationship between humanity and the natural world over the course of history. This enduring and intricate association between humans and the environment has served a dual role: offering protection from environmental threats while also providing humans the opportunity to exert their influence on the environment.

Throughout millennia, humans have relied on the environment for sustenance, shelter, and resources for cultural and economic development. Traditional societies had a profound understanding of the interdependence between nature and culture. They recognized that their well-being was intricately tied to the health of the ecosystems surrounding them. This symbiotic relationship allowed these societies to flourish, as they maintained a delicate balance between utilizing natural resources and preserving their ecological surroundings.

However, as societies transitioned from agrarian-based economies to industrialized ones, a concerning trend emerged. In recent times, there has been a disconcerting breakdown in this once harmonious and symbiotic connection between humans and their environment. This deterioration can be attributed to a series of interconnected factors, including the excessive exploitation of natural resources, unchecked discharges of pollutants, and the unsustainable generation of waste, which has led to the widespread pollution of the environment.

The Climate Change Crisis and its Impact on Vulnerable Communities

Bargaoui and Nauri's (2021) research casts a spotlight on the evolving dynamics of this critical relationship, particularly within the context of the growing awareness of the climate change crisis. The scholarly paper adeptly presents the historical trajectory of how human activities, with a particular emphasis on the emission of greenhouse gases, have played a significant role in the global predicament of climate change. The goal is to promote discussions on the role of cultural values in maintaining natural ecosystem health and vice versa.

The consequences of climate change, with its far-reaching impacts, are now acutely felt by communities around the world. Regrettably, these effects are often disproportionately borne by the most vulnerable among us. Vulnerable communities, particularly those in low-income regions, often lack the resources and infrastructure to withstand the environmental and socio-economic shocks caused by climate change. For these communities, climate-related disruptions wreak havoc on both their livelihoods and the delicate ecosystems upon which they depend.

The increasing frequency and intensity of extreme weather events, such as hurricanes, droughts, and floods, have devastating consequences for these communities. Displaced populations, disrupted agricultural cycles, and the loss of vital ecosystem services further compound their struggles. As a result, efforts aimed at restoring and preserving these fragile ecosystems are often undermined by the relentless forces of climate change.

Culture and Environmental Determinism

Culture, an integral facet of human societies, is deeply intertwined with the natural environment. The theory of environmental determinism, as posited by Wehab E.O. et al. (2012), underscores the profound influence of natural surroundings on the culture of a society. According to this theory, people adapt to the environments that sustain their lives, and in doing so, they shape their unique cultures. For instance, those residing near lakes or rivers cultivate distinct lifestyles and customs compared to those dwelling in mountainous regions. This underscores the inextricable connection between culture and the environments in which it thrives.

Therefore, any form of environmental degradation, including the deterioration of natural ecosystems, can have a direct and profound impact on the richness and quality of culture. Conversely, the degradation of cultural values can affect how people interact with their environment—either as stewards or exploiters. This intricate relationship between culture and the environment is a dynamic and evolving one, shaped by centuries of coexistence and adaptation.

The Historical Roots of Ecosystem Services

The concept of ecosystem services, although formally recognized in the 1970s, has deep

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historical roots. Plato, as early as 400 BCE, documented the relationship between deforestation and its impact on water supply, recognizing the value of natural systems to human well-being. This historical insight underscores the long-standing awareness of the services provided by ecosystems.
In the 18th and 19th centuries, economists began to acknowledge the productive value of land and other natural resources. George Perkins Marsh, in his seminal work "Man and Nature" published in 1864, provided a comprehensive exploration of the intricate interplay between natural and social systems. Marsh's work was a prescient warning about the dire consequences of extensive damage to natural systems on human welfare. His insights from the 19th century are now fully realized in the 21st century, as humanity grapples with the consequences of environmental degradation.

The Modern Development of Ecological Concepts and Ecosystem Services

The foundations of modern ecological concepts, models, and methods were laid during and after the 20th century. The quantification of ecosystem service values now relies on formal economic methods for non-market valuation, a field that has evolved considerably since its inception by environmental and resource economists in the 1940s. By the early 21st century, ecosystem services analyses had extended their focus to encompass complex relationships between ecological and socioeconomic systems. This expansion included an examination of the ramifications of changes in these relationships on human well-being, the extent to which various service values can and should be expressed in monetary terms, and the most suitable approaches to quantify these diverse services (Robert J. Johnston, 2018).

Categorizing Ecosystem Services

Ecosystem services encompass a wide array of benefits derived from both biotic (living) and abiotic (non-living) components of ecosystems, upon which life and biodiversity on Earth depend. These services can be categorized into four main groups:

Provisioning services: These encompass all products, raw materials, or energy outputs directly obtained from ecosystems, such as food, water, medicines, wood, and biofuel. Ecosystems not only supply these resources but also create conditions for their growth and availability.

Regulating services: These include ecological functions that maintain the balance of natural systems, such as air and water purification, soil erosion prevention, and the control of greenhouse gases. Biotic components, such as birds, rats, frogs, and snakes, serve as natural regulators, contributing to pest and disease control and ecological equilibrium.

Supporting services: Forming the foundation for other services, supporting services provide critical functions like habitat provision, biodiversity retention, and nutrient cycling, which sustain life on Earth.

Cultural services: These encompass the benefits derived from recreation, cultural, and spiritual engagement with nature. Natural elements like landscapes, mountains, and caves are not only places of cultural and artistic significance but also contribute substantially to tourism and the economy.

The State of Ecosystem Services and Human Well-Being

Alarming statistics from the Millennium Ecosystem Assessment (MA) in 2005 reveal that approximately 60% of the ecosystem services provided by natural ecosystems to humanity are currently in a state of degradation or unsustainable use. This degradation profoundly impacts human health, a paramount dimension of well-being emphasized by the MA. In light of this, it is becoming increasingly evident that, from a long-term societal perspective, preserving or restoring ecosystems may prove more beneficial than relying solely on technological solutions.

This paradigm shift can yield greater human well-being while reducing overall costs. Healthy ecosystems provide essential services that directly contribute to human health and quality of life. For example, clean air and water, fertile soil, and natural pest control are all products of ecosystem functions. When these functions are compromised, the health and well-being of communities are put at risk.

The Complex Relationship Between Ecosystems and Human Health

The relationship between ecosystems and human health is multifaceted and complex. It is characterized by intricate cause-and-effect chains with long-term consequences, intertwined socio-economic processes, and both positive and negative impacts of ecosystems on human health. Consequently, research into the effects of ecosystem alterations on human health and cultural values stands to benefit various stakeholder groups, communities, and practitioners alike.

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Ecosystem Degradation and Its Implications for Health and Culture

The global discourse on ecosystem health has gained momentum due to the relentless degradation of ecosystems over time. Ecosystem degradation, defined as the process or activities that diminish the viability of ecosystem processes and biodiversity (Dunster and Dunster, 1996), encompasses traditional forms of land degradation and alterations in non-physical patterns within ecosystems. Essentially, any human intervention in nature that reduces the development potential of nature and its ability to thrive, such as land use changes, is considered detrimental to ecosystem health. Therefore, assessing the status of ecosystems, determining whether they are degraded or not, provides crucial insights into their overall health and well-being.

Ecosystem degradation has profound implications for both human health and culture. As ecosystems decline, so too can the provisioning of essential services. Impacts on provisioning services can lead to food and water shortages, increased disease transmission, and compromised nutrition. This can disproportionately affect vulnerable communities that rely heavily on these services for their livelihoods.

Moreover, cultural values tied to the land and nature are eroded as ecosystems degrade. For many indigenous and traditional societies, the environment is intricately linked to cultural practices, spirituality, and identity. As ecosystems degrade, these cultural values are threatened, leading to a loss of cultural richness and heritage.

The intricate relationship between humanity, ecosystems, culture, and well-being underscores the importance of understanding and preserving this delicate balance. The research conducted by Bargaoui and Nauri (2021) sheds light on the historical evolution of this relationship and highlights the pressing need to address the challenges posed by climate change and ecosystem degradation. As we confront these challenges, it is essential to recognize the profound interconnections between nature, culture, and human well-being and to seek sustainable solutions that promote the health of both ecosystems and societies.

1.2. Theoretical and Conceptual Review

In this section, we will embark on an extensive exploration of theoretical and conceptual frameworks that provide the foundation for understanding and contextualizing the research topic. These frameworks, drawn from the works of various researchers and practitioners, are pivotal in guiding our investigation into the intricate interplay between culture, ecology, and sustainable practices. The following concepts are particularly relevant:

Cultural Heritage

Cultural heritage serves as a vital conduit linking the past, present, and future. It encompasses both tangible remnants, often referred to as cultural property, and the intangible aspects of a group's or society's inheritance from previous generations. This heritage not only embodies the essence of a culture but also reflects its intrinsic connection to the natural environment. These cultural artifacts carry profound symbolic value, representing the identity of communities. This interplay between culture and nature is instrumental, as the stability of one facet can profoundly impact the other. This dynamic relationship holds profound implications for the research, emphasizing the inseparable bond between culture and the environment.

Cultural heritage is a multidimensional concept that encompasses diverse forms, including historic buildings, artifacts, traditions, oral histories, and indigenous knowledge systems. It provides a lens through which societies view their history, values, and identity. The preservation of cultural heritage is not only a matter of conserving physical structures but also safeguarding the intangible aspects that define a community's unique identity and its relationship with the natural world (Smith, 2006).

Ecovillages

Ecovillages are intentional settlements designed with a profound understanding of the symbiotic relationship between society and the environment. These villages encompass diverse elements, including permaculture, renewable energy generation, and environmentally friendly community infrastructure. The concept of ecovillages yields tangible benefits for the community, such as increased livelihood opportunities and improved well-being through elevated living standards. Crucially, the development of ecovillages is guided by a participatory process that leverages indigenous knowledge and local practices, emphasizing the importance of community engagement and sustainable living practices (Dawson, 2006).

Ecovillages represent a proactive response to the challenges posed by unsustainable urbanization and resource depletion. They emphasize holistic approaches to community development, where ecological sustainability is intertwined with social cohesion and cultural preservation. By examining

the principles and practices of ecovillages, we can gain valuable insights into how intentional communities are reimagining human settlements in harmony with nature.

Community Ecology (Synecology)

Community ecology, also known as synecology, is the study of the intricate organization and functioning of ecological communities. These communities consist of interacting populations of species residing in specific habitats or regions. This theory examines how these populations interact with each other and respond to their surroundings. Synecology provides insights into the factors influencing biodiversity, community structure, species distribution, and abundance. Central to this theory are the myriad interactions between species, encompassing competition, predation, herbivory, parasitism, and mutualism, forming the foundation for extensive research in community ecology (Krebs, 2014).

Understanding the principles of community ecology is essential for unraveling the complexities of ecosystems and their role in shaping communities. The interactions among species within ecosystems have cascading effects on ecological processes and functions. By delving into community ecology, we can explore how changes in ecological communities, driven by human activities, reverberate through ecosystems and impact the cultural heritage and practices of communities reliant on these ecosystems.

Food Webs

Food webs serve as intricate graphical representations of the interconnectedness among species, rooted in their feeding relationships. These webs elucidate the complex relationships that underlie the flow of energy within ecosystems. By studying food webs, researchers gain a comprehensive understanding of energy dynamics and the interdependencies among organisms in specific environments. Beyond energy flow, food webs offer critical insights into relationships between species, including those involving invasive species (Paine, 1980).

Food webs provide a holistic perspective on ecosystems, highlighting the intricate dependencies between species. They illustrate the transfer of energy from primary producers (e.g., plants) to herbivores and subsequently to carnivores. These relationships underscore the interwoven nature of ecosystems, where the well-being of one species can impact others down the food chain. This interconnectedness has direct relevance to our research as we explore how changes in ecosystems influence cultural heritage and practices.

Agroecology

Agroecology represents the application of ecological principles to agricultural production systems. It encompasses a broad spectrum of practices and techniques that prioritize environmental friendliness and ecological harmony within agricultural endeavours. This multifaceted concept draws upon various disciplines, including agronomy, scientific ecology, economics, and social sciences. Agroecology integrates practices such as organic farming, climate-smart agriculture, permaculture, conservation farming, and natural farming, among others. Significantly, this approach leverages the natural features of ecosystems to amplify agricultural productivity while alleviating environmental pressures (Altieri, 1995).

Agroecology plays a pivotal role in preserving the regenerative capacity of ecosystem services. By mimicking natural processes and harnessing biodiversity within agricultural systems, it enhances soil fertility, minimizes the use of synthetic inputs, and promotes resilience in the face of environmental challenges. This approach aligns with our research's focus on sustainable practices that respect cultural heritage and the environment.

Ecosystem-Based Disaster Risk Reduction

Ecosystem-Based Disaster Risk Reduction (EBDRR) advocates for the utilization of nature-based solutions to enhance resilience in the face of disasters. The underlying theory posits that ecosystems serve as buffers against hazards, mitigating disasters and reducing their impact on people, critical infrastructure, and essential services (CBD, 2017). EBDRR hinges on the conservation, restoration, and sustainable management of natural resources, reinforcing disaster and climate risk management. Vulnerable populations often rely on ecosystems for their livelihoods and resilience, emphasizing the interdependence between people, ecosystems, and shifting risk patterns. This concept also recognizes that degraded ecosystems contribute significantly to disaster risk, exacerbating disaster impacts and impeding recovery and livelihood regeneration in the aftermath of disasters. Consequently, EBDRR underscores the need to optimize ecosystem services for effective disaster risk reduction and climate change adaptation (UNEP, 2020).

By incorporating EBDRR principles into our research, we acknowledge the critical role that ecosystems play in safeguarding communities and cultural heritage from the impacts of disasters. The

conservation and restoration of ecosystems align with sustainable practices that prioritize both ecological and cultural preservation.

Pro-Environmental Behavior

Pro-environmental behaviour encompasses conscious actions undertaken by individuals to mitigate the adverse impacts of human activities on the environment or enhance environmental quality. This includes actions such as environmental activism and personal initiatives aimed at reducing one's ecological footprint. Understanding and promoting pro-environmental behaviour is pivotal in fostering sustainable practices and mitigating environmental degradation (Steg & Vlek, 2009).
Pro-environmental behaviour is closely tied to the cultural norms and values of societies. It reflects the willingness of individuals and communities to adopt practices that align with ecological sustainability. Examining pro-environmental behaviour within the context of our research allows us to explore how cultural heritage and community values influence sustainable practices and environmental stewardship.

Moreover, within the realm of environmental determinism, the theories of probabilism and possibilism are relevant. Environmental determinism posits that the environment primarily dictates human behaviour and societal development. Probabilism extends this theory by acknowledging that while the environment exerts influence, human agency and choice can also shape outcomes. Possibilism takes a more nuanced approach, suggesting that while environmental conditions provide constraints, human innovation and adaptability can lead to diverse possibilities (Blaut, 1979).

These theoretical underpinnings, when synthesized and applied to the research, offer a comprehensive framework for investigating the intricate interplay between culture, ecology, and sustainable practices within the context of the research objectives. They provide a lens through which we can analyse the dynamic relationship between cultural heritage, community ecology, agroecology, food webs, EBDRR, and pro-environmental behaviour, shedding light on how these concepts intersect and influence one another in the pursuit of sustainable and resilient communities.

Significance of the study

The significance of this study is multifaceted and of paramount importance. Firstly, it aims to unearth and document the wealth of indigenous knowledge embedded within Chewa and Ngoni cultures, knowledge that has historically played a vital role in conserving and restoring natural ecosystems in Malawi. By preserving these cultural practices and insights, the research ensures that this indigenous wisdom is passed on to future generations. This knowledge will be a valuable resource for communities and policymakers involved in ecosystem restoration efforts.

Furthermore, the study contributes to our understanding of the intricate link between cultural values and the health of natural ecosystems. It aligns with the environmental connectedness perspective, which suggests that direct interactions with nature foster pro-environmental behaviour. By elucidating these connections, the research equips individuals and organizations with the knowledge and tools to integrate cultural values into ecosystem restoration efforts and promote pro-environmental behaviours.

The impact of this research extends to a wide range of stakeholders, including researchers, environmental activists, community members, community leaders, cultural heritage groups, government authorities, and various other individuals and organizations. Researchers can use the case studies of Chewa and Ngoni cultures as a foundation for further studies, potentially exploring similar dynamics with other cultural tribes in Malawi.

Practitioners and environmental activists can leverage the knowledge generated by this research to advocate for critical cultural values that are instrumental in environmental conservation and the restoration of degraded natural ecosystems. This knowledge can serve as a catalyst for cultural heritage leadership to emphasize and prioritize cultural values that play a pivotal role in environmental stewardship.

Moreover, the improved understanding of the interplay between cultural values and natural ecosystems will have profound implications for policy formulation and alignment. As pro-environmental behaviours are promoted through cultural values, the perceptions of communities towards restoration interventions can be positively influenced. This, in turn, can lead to greater acceptance and cooperation with policies aimed at safeguarding the environment.

In summary, this research not only explores the connection between cultural values and natural ecosystems in Malawi but also provides a practical guide for harnessing indigenous wisdom to address pressing environmental challenges. It underscores the importance of preserving cultural heritage while advocating for a more sustainable and harmonious

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relationship between humanity and the natural world (T.H. Beery and D. Wolf-Watz, 2014).

III. SCOPE OF THE STUDY

The scope of this research project involves a comprehensive examination of the complex relationship between cultural values and the conservation of ecosystems, with a specific focus on the significant impact of cultural values on the health and sustainability of natural ecosystems. The study adopted a case study approach, centering on the Chewa and Ngoni cultures, two carefully chosen ethnic groups among Malawi's ten major ethnic groups. The research involved a diverse set of participants and data sources to gain a holistic and deep understanding of the cultural values-ecosystems connection. Members of Chewa and Ngoni Communities, Traditional Leaders, Cultural Heritage Leadership, Key Focus Areas, Understanding Cultural Values-Ecosystem Linkages, Impact of Cultural Values Erosion, Comparative Analysis, Recommendations for Cultural Heritages.

The research was primarily conducted in the Kasungu and Dedza districts of Malawi, chosen to represent the Chewa and Ngoni communities.

IV. OBJECTIVES OF THE STUDY

1. To explore the interlinkages between cultural values and local ecosystem perspectives.
2. To ascertain the extent to which erosion of cultural values has influenced the degradation of natural ecosystems.
3. To conduct a comparative assessment of natural ecosystem health between communities with strong cultural values and those with weaker cultural values.
4. To propose and advocate for the adoption of cultural values that endorse ecosystem restoration and conservation within select Malawian cultures, engaging key cultural heritages in Malawi.

V. RESEARCH QUESTIONS

1. What connections exist between cultural values and local ecosystem perspectives?
2. To what extent has cultural values erosion contributed to natural ecosystem degradation?
3. What distinguishes the health of natural ecosystems in communities with strong cultural values from those with weaker cultural values?
4. How can we advocate for the promotion of cultural values that endorse ecosystem restoration and conservation, involving key cultural heritages in Malawi?

VI. RESEARCH METHODOLOGY

The research employed an exploratory research design, combining primary and secondary data sources to address the research questions effectively. Primary sources encompassed direct interactions with members of the Chewa and Ngoni cultural communities, leaders, and experts affiliated with the Kungoni Centre of Culture and Arts. In parallel, secondary data sources included comprehensive reviews of past research, historical accounts of the Chewa and Ngoni communities in Malawi, and pertinent documentation.

The study's population consisted of households located in Dedza and Kasungu Districts, specifically within Traditional Authority Kachindamoto (TA Kachindamoto) and Traditional Authority Kaomba (TA Kaomba). The research focused on members of the Chewa and Ngoni cultural tribes. Additionally, the study involved interviews with chiefs and leaders from the Nyau Secret Society, as their insights were deemed invaluable in explaining cultural values. Data collection efforts were further extended to the Kungoni Centre for Culture and Arts, where experts in the field were engaged.

This research adopted a mixed-methods approach, incorporating both qualitative and quantitative data collection methods. Various data collection techniques were employed, including surveys, on-site observations, key informant interviews, focus group discussions, ethno-surveys, and checklists, among others.

To ensure the representation of Chewa and Ngoni cultural members, a stratified random sampling method was utilized. This method allowed for the balanced selection of respondents from various communities within the chosen areas. In total, data was collected from 271 households, determined by a formula suitable for an unknown population size. For key informants, a purposive sampling technique was employed to target individuals possessing a wealth of knowledge, such as chiefs and experts in the field.

To facilitate data collection, the researcher developed and employed a variety of tools. These included structured questionnaires, ethno-survey checklists, focus group discussion guides, photography for documentation purposes, and structured interview questions. Notably, questionnaires were digitally prepared using the Kobo Collect platform, a versatile data collection and analysis tool, which streamlined the data collection process.

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The data analysis process commenced with the utilization of Kobo Collect, which automatically generated preliminary graphs and tables. Subsequently, the data was exported to Excel for further cleaning and processing to ensure data quality. Following this, the cleaned dataset was transferred to the Statistical Package for the Social Sciences (SPSS) for in-depth analysis, enabling the research team to draw meaningful insights from the gathered data.

This comprehensive research design allowed for a robust investigation into the intricate relationship between cultural values and natural ecosystems among the Chewa and Ngoni communities, ensuring both qualitative and quantitative perspectives were considered.

VII. RESULTS AND DISCUSSION OF THE FINDINGS

7.1. Awareness and Appreciation of Natural Elements in Culture

The findings reveal that a substantial majority, approximately 83.09% of respondents, possess awareness of the various elements within natural ecosystems that have played pivotal roles in their cultural knowledge and practices. These elements encompass a wide spectrum of resources, including plants, animals, and non-living components, all of which have contributed significantly to the cultural fabric. Notable examples include the use of these natural resources in language development and communication, the incorporation of plants and animals into songs and artistic expressions, the utilization of specific trees for medicinal purposes, the crafting of charms, and the designation of natural settings as hiding places for the Nyau secret society, among other culturally significant applications.

7.1.1. Ngoni Culture: Nature as a Symbolic Language

In Ngoni cultures, clothing serves as a form of communication that embodies the essence of being Ngoni. Elements like bull horns, cattle, reeds, and calabashes intricately interwoven into their cultural narrative signify their identity as skilled hunters and warriors. This symbiotic relationship between culture and nature profoundly influences their interactions with the environment, highlighting the depth of their cultural connection to the natural world.

7.1.2. Chewa Culture: Gule Wamkulu and Creation Narratives

Within Chewa culture, the deep connection between their cultural practices and the natural environment is particularly pronounced, with Gule Wamkulu playing a central role. Gule Wamkulu serves as a conduit through which ancestors communicate with the living, imparting instructions on how to adhere to a moral code known as "mwambo." This grand dance serves as a window into the perspectives of the Chewa people, shedding light on their profound relationship with the natural world.

The Chewa creation story is intrinsically tied to the natural environment, narrating a tale of divine creation and the blessings of rainfall. However, it also highlights how human actions, including those that disrupt the environment, are perceived within the Chewa worldview, resonating with contemporary concerns about climate change.

7.1.3. Songs and Arts: A Decline in Ecological Significance

Songs and arts hold a significant place in both Chewa and Ngoni cultures, serving as powerful mediums for conveying messages deeply intertwined with the natural environment. These cultural expressions often incorporate elements from the natural ecosystems, providing a rich tapestry of symbolism and meaning. However, a concerning trend is emerging as some of these songs are losing their cultural and ecological significance in the eyes of the younger generation.

The cultural songs of the Chewa and Ngoni, rooted in their historical connection to the natural world, utilize elements from the environment to communicate messages. When the natural environment undergoes changes, and certain species become scarce or unfamiliar to the current generation, the songs lose their intrinsic value as carriers of cultural and ecological knowledge.

One factor contributing to this erosion of indigenous songs is the pervasive influence of international music, particularly from Western cultures. Government support and recognition play a crucial role in preserving and revitalizing indigenous songs and local arts. Government initiatives could include cultural festivals, educational programs, and funding for traditional artists and musicians.

7.1.4. Herbal Medicine and Charms: Nature's Role in Healing

The cultural practices of the Chewa and Ngoni cultures are deeply entwined with the rich biodiversity of their natural environment,

particularly in the realm of herbal medicine and the use of charms. These cultures have a profound reliance on various herbs and plants for medicinal purposes and charms. The connection between herbs and cultural practices underscores the interplay between cultural values and the natural environment.

7.1.5. Chiefs: Guardians of Culture and Nature

Chiefs, esteemed and influential figures within the Chewa and Ngoni communities, assume a paramount role in guiding their people and upholding the cultural values that form the bedrock of environmental conservation. The respondents consistently underscored the pivotal role that chiefs play in leading their communities towards the preservation of natural ecosystems.

7.1.6. Promotion of Tree Planting: Cultivating a Sustainable Future

Culture plays a pivotal role in encouraging tree planting and the conservation of trees within their homes and fields, serving a multitude of purposes. Trees serve as invaluable assets, contributing to household nutrition, building materials, cooking energy, and the preservation of medicinal herbs. The significance of culture in forest conservation extends to the preservation of forests within graveyards, disaster risk reduction, agricultural practices, and weather forecasting.

7.2. Understanding and Acceptance of Cultural Values

Approximately 50% of the respondents expressed a solid grasp of their cultural values, while 45.22% conveyed a sense of familiarity with these values. Remarkably, 81.62% expressed their comfort with these cultural values and practices, particularly in the context of conserving the natural environment. Moreover, a significant 93.01% of those comfortable with these values actively participated in various cultural practices aligned with environmental conservation.

7.3. Cultural Values and Ecosystem Degradation:

The study reveals that certain cultural practices contribute to the degradation of natural ecosystems:
Funeral Tree Cutting: Traditional tree-cutting during funeral ceremonies, while culturally significant, has led to excessive deforestation.
Gule Wamkulu: The cultural practice of using tree branches during performances and crafting Nyau masks contributes to habitat disruption and increased demand for natural resources.
Ngoni Hunting Traditions: The emphasis on hunting wild animals for consumption has led to a decline in biodiversity.
Economic Livelihoods and Destructive Practices: Cultural values sometimes tolerate environmentally harmful activities for economic purposes, such as bushfires for mouse-catching businesses.
Charcoal Production: Cultural tolerance for charcoal production has led to deforestation and habitat loss.
Brick Making: Certain cultural practices permit environmentally destructive brick-making businesses.
Poor Farming Practices: Cultural farming practices demanding tree stump removal result in the loss of natural trees within farms.

7.4. Strength and Influence of Cultural Values

The research indicates that cultural values significantly influence the Chewa and Ngoni communities, albeit with varying impact among individuals and communities. Approximately 56.62% of respondents affirm the robustness of their cultural values, with indicators such as adaptability and respect for graveyards reinforcing cultural strength.

However, some respondent's express concerns about weakening cultural values, citing evidence such as deforestation, diminished respect for authorities, and loss of natural resources. This dynamic relationship between cultural values and environmental governance emphasizes the need to actively promote adherence to values that align with conservation efforts.

7.5. Support of Cultural Values in Decision Making

Approximately 64.34% of respondents acknowledged the active support of cultural values in decision-making processes related to ecosystem conservation. Chiefs play a pivotal role in guiding their communities toward practices that align with cultural values and environmental stewardship. They disseminate information, participate in policy formulation, and oversee local governance, reinforcing their influence in conservation efforts.

7.6. Ecosystem Health in Relation to Cultural Values

Respondents reported a shift from strong to weak cultural values, with 84.56% agreeing that eroding cultural values have adversely affected natural ecosystems. Diminished respect for ancestors, chiefs, and elders leads to a lack of moral guidance,

International Journal of Humanities Social Science and Management (IJHSSM)
Volume 3, Issue 5, Sep.-Oct., 2023, pp: 168-179 www.ijhssm.org

resulting in unsustainable resource utilization and environmental degradation.

Communities with strong cultural values, exemplified in Dedza, demonstrate effective leadership and community cohesion, contributing positively to ecosystem health. Conversely, communities with weak cultural values, primarily in Kasungu, face disunity and ineffective leadership, negatively impacting natural resource management.

7.7. Connections of Cultural Values and Natural Ecosystems

The study identifies a range of cultural practices deeply connected to natural ecosystems, including initiation ceremonies, funeral processes, graveyards, hunting, the use of herbs and charms, traditional doctors, Nyau religion, chief installations, traditional dances, and musical instrument crafting. Approximately 53.31% of respondents report strong community connections with natural ecosystems, highlighting the enduring influence of cultural values on how communities interact with their environment.

7.8. Community Connections to Natural Ecosystems

Respondents emphasized the multifaceted role of natural ecosystems in their communities, including:
Food Source: Trees and vegetation provide fruits, nuts, and other edible products.
Shelter: Natural materials are used for construction, ensuring protection and comfort.
Wetland Protection: These ecosystems safeguard wetlands and critical habitats.
Water Purification: Vegetation helps purify water, ensuring a clean and reliable supply.
Air Quality: Trees produce oxygen and filter pollutants, enhancing air quality.
Aesthetic Value: Natural landscapes contribute to the environment's beauty.
Wildlife Habitat: Trees and vegetation support biodiversity by providing habitats.
Cultural Significance: Cultural practices often depend on the natural environment.

7.9. Challenges of Disconnection

On the flip side, respondents acknowledging disconnection between their communities and natural ecosystems highlighted numerous challenges:
Land Degradation: Unsustainable practices like deforestation have led to significant land degradation.
Pollution: Environmental pollution has impacted soil, water, and air quality.
Biodiversity Loss: Unsustainable resource extraction has contributed to declining biodiversity.
Soil Erosion: Erosion has eroded topsoil and reduced fertility.

Cultural Erosion: Loss of cultural values parallels environmental degradation.
Resource Conflicts: Disputes over dwindling natural resources.

Traditional Medicine Depletion: Depletion of certain plants and resources affects healthcare practices.

Climate Change Effects: Communities may face adverse climate change effects and natural disasters.
These challenges underscore the need for holistic conservation efforts and sustainable practices to reestablish the connection between communities and natural ecosystems.

7.10. Impact on Cultural Tribes

A significant portion of respondents (62.5%) reported that the degradation of natural ecosystems has noticeably impacted their cultural tribes. Challenges included:
Scarcity of Forest Products and Herbs: Depletion of resources essential for traditional medicines.
Poor Climatic Conditions: Adverse weather patterns affecting their way of life.
Destructive Floods: Increased vulnerability to destructive floods.
Food Insecurity and Poverty: Reduced agricultural productivity leading to food insecurity and poverty.
Resource Conflicts: Diminished access to natural resources triggering conflicts.
Loss of Biodiversity: Erosion of unique cultural identity tied to specific plants and animals.
Impact on Cultural Identity: Erosion of cultural identity and heritage.
Chewa Culture: Significant impacts on the Chewa culture, particularly the Gule Wamkulu tradition.

7.11. Erosion of Cultural Values and Environmental Degradation

The study found that 66.91% of respondents believed that the degradation of natural ecosystems has contributed to the erosion of cultural values. This interdependence between environmental degradation and cultural erosion highlights the need for simultaneous efforts in preserving both aspects to maintain the fabric of society.

7.12. Reciprocal Relationship

Additionally, nearly 70% of respondents recognized the reciprocal relationship between the loss of cultural values and the degradation of natural resources. They emphasized how strong cultural values guide sustainable environmental practices, and the absence of these values can lead to harmful practices.

7.13. Role of Cultural Heritage Events

A significant portion (72.79%) of respondents reported witnessing cultural heritage events taking steps to promote cultural values that contribute to the conservation of natural ecosystems. However, these efforts are not consistently integrated into cultural heritage agendas.

7.14. Inspiration for Action

Despite the challenges, 71.32% of respondents indicated that they have been inspired to take action. These actions include tree planting, protecting graveyards, and honouring cultural traditions, showcasing the potential of cultural heritage events to influence positive environmental behaviour.

VIII. SUGGESTIONS AND RECOMMENDATIONS

The study's findings suggested several recommendations:

Raise Awareness of Indigenous Cultural Values: Launch awareness campaigns emphasizing the significance of indigenous cultural values and their role in supporting environmental conservation.

Promote Cultural Services of Natural Ecosystems: Increase awareness of the cultural benefits provided by natural ecosystems to align cultural heritage preservation with ecological restoration efforts.

Empower Local Cultural Leaders: Provide resources and training to local cultural leaders to effectively champion and safeguard cultural values and resources.

Conduct Further Quantitative Research: Quantify the erosion of cultural values and its impact to shape policies and targeted interventions effectively.

These recommendations aim to foster a harmonious coexistence between cultural heritage and environmental preservation, acknowledging their interdependence in shaping the nation's future.

IX. CONCLUSION

This research gave light on the intricate interplay between cultural values and the health of natural ecosystems, exemplified by the Chewa and Ngoni cultural tribes. It underscored the critical role cultural values play in shaping ecosystems' well-being and vice versa, highlighting the consequences of cultural values erosion and ecosystem degradation on both domains.

The study emphasized the need for a deeper understanding of this relationship, as changes in one realm significantly impact the other. This insight is pivotal for informing policies related to natural resource management and cultural development in Malawi. The research advocates for integrating cultural dimensions into various policies, such as Forestry, Agriculture, Environment, Water, and Energy, to enhance policy effectiveness at the community level. Such policies not only champions cultural heritage but also contributes to the conservation of natural resources, fostering a harmonious and sustainable coexistence between culture and the environment.

In essence, this research has laid the groundwork for further exploration of these intricate linkages, providing a roadmap toward a more integrated and holistic approach to preserving cultural heritage and conserving ecosystems.

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