THE ROLE OF TRADITIONAL AUTHORITIES IN PROMOTING SUSTAINABLE CLIMATE STRATEGIES IN NAMIBIA

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Keywords: Climate change, climate change mitigation, climate strategies, land administration, Traditional Authorities

SUMMARY

Traditional Authority is a form of leadership in which the selected elders of a community receive their decision-making powers through a regime tied to indigenous laws and customs. The available literature on indigenous and local knowledge has provided ample arguments and evidence on how local communities have adapted for generations to climate-induced hazards. Traditional Authorities are the custodians of indigenous knowledge systems and the governance of people in various rural communities (incl. their land rights). In most communal areas, Traditional Authorities are fully involved in the land-use planning and development of the area. They have been mandated with the primary powers and functions to allocate rights to communal land and ensure that the members within their traditional community use the natural resources on a sustainable basis and in a manner that conserves the environment and maintains the ecosystems for the benefit of all persons in Namibia.

While the devastating vagaries of climate change are ravaging communities all over the world, especially in Africa, the pivotal role of Traditional Authorities is often overlooked. Traditional authorities have the power to manage grassroots communities and promote the implementation of both modern and traditional climate change adaptation strategies within their communities. Local perceptions and knowledge provide a crucial foundation for community-based climate change adaptation measures and natural resource conservation. The paper is specifically focused on assessing the role of traditional authorities in promoting sustainable climate change adaptation in Namibia. The paper underscores the dire need for traditional authorities and their governing institutions to be capacitated and strengthened so that their knowledge base is improved to integrate both indigenous and modern knowledge within climate change strategies.

1. INTRODUCTION

"Before Namibia's political independence, land rights in communal areas were exclusively managed by the Traditional Authorities" (Mazambani & Chigbu, 2023). In the postindependent Namibia, communal lands are facing various problems, including land conflicts, land grabbing, and climate change, to mention a few. Climate change poses a serious threat to the livelihoods of humanity and the security of people and states (Ani, Anyika, & Mutambara, 2022). The adverse impacts of climate change are affecting all countries around the world, developed and developing, alike. As is often the case, the most vulnerable countries are particularly the ones in the least developed countries that find themselves in the worst situations. Some people (especially those in rural areas) are even more vulnerable to climate change impacts than others. Climate change has intensified agricultural droughts, which has altered rural areas in ways that threaten food security and implicate global sustainability (Atkinson & Atkinson, 2023). Local communities have been especially vulnerable, given that reliance on agriculture is based on rain-fed agriculture and natural resources (Dasgupta & Morton, 2014). Existing vulnerabilities caused by poverty, isolation, low-level education, and neglect by policymakers have aggravated climate change impacts in so many ways. In the wake of disasters, emergency responses tend to be challenging to reach and take longer for the local communities (Milofsky, 2023). Issues concerning local communities are handled poorly which then leads to maladaptive behaviors. Conversely, rural people in many parts of the world, have over time learned to adapt to climate variability or at least learned to cope with it (Milofsky, 2023). However, the continuously changing weather patterns (i.e. floods and droughts) will increase the exposure of millions of people in these vulnerable countries.

1.1 Climate Change in Africa: A Focus on Namibia

Climate change is not typically a Namibian thing. It is global and affects the entire African countries in various ways. In fact, the African Union, in response to climate change, has developed a strategy for action. The African Union's identifies climate change "as an existential threat to Africa's development because of its negative impacts on the continent's ecosystems and socioeconomic development" (Chigbu, 2023). The strategy report recognizes the importance of climate change linkages to land on the continent. It also identifies Namibia as one of the largest and driest countries in Sub-Saharan Africa. Namibia is a country characterized by high climatic variabilities through persistent droughts and unpredictable rainfall patterns (World Bank, 2021). Ninety-two percent of the land is defined as hyper-arid, arid, or semi-arid and ranks second in aridity after the Saharan Desert (Republic of Namibia, 2011). The high reliance of the Namibian population on the natural environment for their livelihood and the existing fragility of our environment makes Namibia one of the most vulnerable countries to climate change impacts (Kamwi, 2015). To cite a few examples of the impacts, climate change has led to livestock losses, reduced grain/crop production, severe water scarcity due to droughts, and increased temperatures (Republic of Namibia, 2011). Climate change and its impacts could potentially become one of the most significant and costly issues that affect national development in Namibia. As a response to these challenges, the Namibian

Constitution in terms of article 95(1) requires the state to actively promote and adopt policies that maintain ecosystems, ecological processes, and biological diversities for the benefit of the present and future populations (Republic of Namibia, 1990). The state through its various government agencies and departments and its full partnerships with the private sector and NGOs has sought to develop and adopt pre-emptive and corrective actions and activities to address the predicted and actual impacts of climate change (Ministry of Environment and Tourism, 2002). As a benchmark, a study on climate change in Namibia was done in 1998 which was used as a foundation on which the Initial National Communication was built. To date, Namibia has put in place an appropriate policy framework, the National Climate Change Policy which was approved by the Namibian Government in 2011. The National Climate Change Strategy and Action Plan followed which was approved and launched in 2014 for the period, 2013 to 2020 (Kamwi, 2015). A disaster risk Management action plan was also launched to cover amongst others, droughts, and flood events. Lastly, Namibia has committed to the Paris Agreement and has been releasing its commitments through its Nationally Determined Contribution on how the country plans to reduce its greenhouse gas emissions and climate strategies to adapt to the impacts of climate change. All these policies and activities put in place by the state of Namibia have constituted the very definition of what sustainable climate strategies are. However, what is often overlooked in the discourse of climate action strategies is the role of the Traditional Authorities in promoting climate solutions. Climate strategies are often agreed upon at international and national levels, however, it is at the local level where local communities have to overcome climate change impacts that affect their livelihood and environment. For years, local communities with a long history of interaction with the environment have overcome many changes and extreme weather events and developed a knowledge system that allowed them to adapt and mitigate their daily activities to the changing climatic conditions (Garcia del Amo, Mortyn, & Reyes-Garcia, 2020) Based on the foregoing argument, applying a complementarity of both modern and traditionally oriented solution could provide a working solution to tackle the deadly climate change phenomenon.

Traditional Authorities are the custodians of indigenous and local knowledge systems and the governance of people in various rural communities. (Chigbu, 2015). Traditional Authorities receive their decision-making powers through a regime tied to indigenous laws and customs as well as the Government of Namibia which recognizes them as a governing structure in Namibia. They have been mandated with the primary powers and functions to allocate rights to communal land and ensure that the members within their traditional community use the natural resources on a sustainable basis and in a manner that conserves the environment and maintains the ecosystems for the benefit of all persons in Namibia. It is important to note that traditional climate change adaptation strategies are more compatible with local realities. Therefore, their roles in promoting climate strategies are of the essence when developing climate strategies for the local communities. This paper does three things. (1) It provides a critique of the theoretical framework of the role of Traditional authorities in the climate change discourse with an exemplified case study of Namibia; (2) It presents an understanding of Traditional Authorities and indigenous knowledge system; and (3), It recommends how traditional authorities can contribute towards sustainable climate strategies.

2. TRADITIONAL AUTHORITIES AS AGENTS OF LAND GOVERNANCE

An important factor in land administration is to foster good governance of land, natural resources and processes of land use change. Land governance, as defined by the Framework and Guidelines on Land Policy in Africa refers to land governance as the political and administrative structures and processes through which decisions concerning access to and use of land resources are made and implemented including how conflicts over land are resolved (AUC-ECA-AfDB Consortium, 2010). Land governance is thus a techno-legal, procedural and political exercise because of the allocation and enjoyment of land rights which is linked to the civil, political and human rights of the citizens (AUC-ECA-AfDB Consortium, 2010). This definition suggests then that the state has a central role to play in the overall governance of a country's economic, social, and environmental resources. While the central state is mandated to provide for the overall policy and legal framework for land governance, the actual process of governing involves both formal and informal institutions (Werner, 2021). Ownership of freehold land is private, while communal land is held in trust by the state of Namibia with traditional communities having customary rights on the occupation and use of the land. The Communal Land Reform Act of 2002 allows for the residents to register individual land rights through their perspective traditional authorities (De Villiers, et al., 2019). Concerning land governance and management, traditional authorities are responsible for the allocation and cancelation of customary land rights in communal areas. Within the framework provided, traditional authorities also determine the land use and management of communal land. Traditional authorities have the power to give consent or revoke a right given on land not used for its intended purpose. On commonage land, traditional authorities have also the mandate to allocate grazing rights to outsiders (Republic of Namibia, 2002). Therefore, it is important for institutions responsible for land governance, including land held by the state to operate in a transparent, accountable, and efficient manner, so that they are able to harmonize and their respective mandates rationalized. Furthermore, experience has shown that where such institutions are decentralized, the devolution of decision-making power and authority to local communities and other stakeholders is likely to be more productively used and preserved (AUC-ECA-AfDB Consortium, 2010).

2.1 Traditional Authorities as Custodians of Indigenous and Local Knowledge

For centuries, before the advent of colonial rules, governance in different parts of Africa was mostly administered by traditional institutions and their rulers (Olaopa & Ogundare, 2024). Local administration was generally centered on the traditional rulers who were considered the guardians and symbols of cultural values and religious practices that enforced laws within their communities. As custodians of indigenous and local knowledge systems, Traditional Authorities had a big role in ensuring that traditions were respected and maintained for the benefit of their prosperity. Indigenous knowledge is the basis for local-level decision-making in many rural communities and is used to describe the knowledge systems developed by a community (Muthee, Goudian, & Masinde, 2019). It refers to the understanding, skills, and philosophies developed by societies with a long history of interaction with their natural surroundings (Zhang & Nakagawa, 2018). As the closest governance structure to their people, Traditional Authority institutions had the overall commitment to protecting the local

communities within their jurisdiction. They had their own complex and dynamic methods of developing and asserting leadership in tribal society. Traditional Leaders had the important tasks of managing the allocation of communal land held in their custody, managing other natural resources, preserving law and order, and dealing with conflicts amongst other functions. Their strength in providing these functions lies in their age-long experience, knowledge, and strict adherence to the dictates of traditions, socio-cultural values, and norms entrenched in the traditional institutions (Olaopa & Ogundare, 2024).

Namibia's recent past as a colony of South Africa had however created a formal negative attitude towards Indigenous Knowledge by the state (Jauhiainen & Hooli, 2017). The Witchcraft Suppression Act of 1970, which was still in effect by then forbade the use of traditional medicines and many other practices related to Indigenous knowledge (Meincke, 2018). It was argued that the Indigenous knowledge system had been lost and relegated to the political and social doldrums of history due to the Western education systems. With the arrival of the Western philosophy of development, indigenous knowledge was haltered, suppressed, outlawed, and neglected. This knowledge was thus not further developed though the knowledge amongst the elders remained (Jauhiainen & Hooli, 2017). The situation however soon changed after Namibia's independence in 1990. Indigenous knowledge had become an inherent part of the national building process. It is formally appreciated in several developments and innovative related documents. Additionally, the National policy of climate change in Namibia advocated for indigenous adaptation mechanisms and strategies to be researched to determine their effectiveness and replicability (Republic of Namibia, 2011). Evidence-based research on indigenous knowledge and documentation of such knowledge is essential for improvement in adaptation and mitigation actions for the well-being of the intended persons. Therefore, Indigenous knowledge not only has the potential of being a politically loaded notion echoing the nostalgic history of the people and their traditional knowledge but can help in developing and promoting the role of indigenous knowledge and technology in climate strategies as well as development and educational advise (Jauhiainen & Hooli, 2017).

To date, several community members still have little access and interpretive skills to make use of modern climate solutions transmitted through print and electronic media (Shoko & Shoko, 2013). Such communities are left with no choice except to utilize their easily comprehensible indigenous knowledge. Traditionally, local communities had for years relied on practical observations accumulated over extended periods to inform their decision-making (Smith, Chowenga, & Karsters, 2024). They have amassed a wealth of knowledge about their local environment and have developed a deep relationship with the land (Kimmerer, 2000). Local communities have learned to take care of the land because the land has taken care of them. The local communities have been practicing a relationship-based approach to sustainable land stewardship with the inclusion of culture, spirituality, and elder generational knowledge (Gordon, et al., 2023). The local communities draw on their indigenous and local knowledge which is based on the rich history of observation, practices, and beliefs between humans and their local landscapes and ecological systems. This knowledge includes oral traditions that have been passed down through generations on how to manage local resources respectfully and responsibly and how to manage the land and resources through sovereignty. The Indigenous and local knowledge have proven to be far more accurate and reliable when applied locally (Williams, Sikutshwa, & Shackleton, 2020). This knowledge has long been used to guide

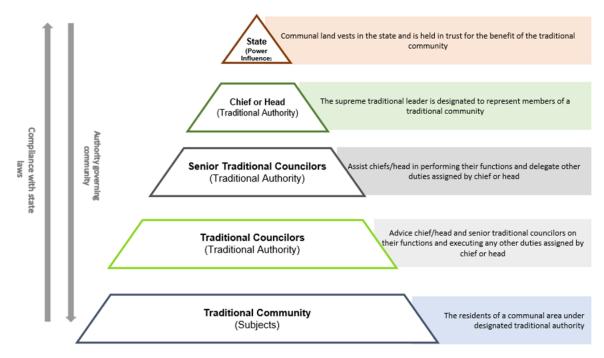
people in their quest to address climate change and live harmoniously with their environment. Incorporating indigenous knowledge into climate change adaptive and mitigation efforts would not only increase resilience within the communities, but it will foster a holistic and sustainable approach to addressing climate change in these vulnerable communities (Drolet & Sampson, 2017). However, despite the growing importance of bridging indigenous and scientific knowledge into meeting contemporary sustainable climate issues both locally and globally, this remains a challenge. Traditional Authorities as custodians of this knowledge system have the advantage of closing this bridge as communities have always had a strong trust in the traditional leadership system due to the role that traditional leaders have played in their societies over the years. Therefore, Traditional Authorities should be at the frontline and center in the fight against climate change.

2.1.1 The Structure of Traditional Authorities in Namibia

The Council of Traditional Leaders Act was enacted in 1997 by Parliament. The Act established the Council of Traditional Leaders which is referred to in Article 102 (5) of the Namibian Constitution (Republic of Namibia, 1990). The Act of Traditional Leaders provided for the powers and functions of the council which was to advise the president on matters about the control and utilization of communal land and also any other matter as may be referred to by the president for advice (Republic of Namibia, 1997). The act required that any draft legislation about communal land must be laid before the council before it is introduced in the National Assembly. Over the years, this Act has been amended however no provisions for regulations were made.

The Traditional Authority Act 25 of 2000 provided for the establishment of Traditional authorities and the designation, election, and recognition of traditional authorities (Republic of Namibia, 2000). The act of 2000 replaced the Traditional Authority Act of 1995 which repealed all provisions of the Native Administration Proclamation except for sections 17, 18, 23, 24, 25, 26, and 27 (Republic of Namibia, 1995). The Traditional Authority Act also provided for the specific powers and functions of the Traditional Leaders which was to first and foremost be the custodian of the customary law (section 7 (1) of the Act) of the traditional community he or she leads and to promote peace and welfare amongst the members of the community, supervise and ensure the observance of the customary law by its members (Republic of Namibia, 2000). The diagram depicted in Figure 1 outlines the hierarchical structure of Traditional Authorities in Namibia and the power relationship that exist within this framework. At the apex of the diagram is the state, followed by the chief or head of the traditional authority, senior traditional councilors, traditional councilors, and finally, the traditional community. The diagram, illustrates power flowing from the top down, governing the community, while compliance with state laws can be observed from the bottom up. Land ownership resides with the state, held in trust for the benefit of the traditional community. The supreme traditional leader serves as the representative of the traditional community, assisting chiefs or heads in their duties and delegating tasks as necessary. Additionally, traditional councilors provide advice to chiefs/heads and senior traditional councilors, on their functions and fulfilling any additional responsibilities assigned by the chief or head. Overall, the traditional authority structure governs the residents of communal areas under designated traditional authority, ensuring the maintenance of order and adherence to cultural norms within the community.

Figure.1 Structure of the Traditional Authority (TA) in Namibia



Source: Author (based on the traditional authority's act no.25 of 2000)

As custodians of the customary laws in Namibia, Traditional Authorities have an important responsibility of ensuring communal areas and their communities are well represented and taken care of. Traditional Leaders have remained powerful and relevant and have a much bigger part to play in the fight against climate change. However, more actions are critically still needed to meet the climate targets.

2.2 Traditional Authorities as Constitutionally Mandated Leaders

Customary law has since pre-colonial times played a central role in the protection of Namibia's environment and communally shared natural resources (Massyn, 2007). Customary law is based on the traditions, norms, laws, and rules of procedure of the community concerned (Republic of Namibia, 2000). Common law has been developed over the years in different communities and is often not written down but the people within their communities are aware of how things are done. The constitution of Namibia, under Article 66 recognizes the presence of common law within the Namibian communities for as long as it does not contravene the constitution or any other status. Traditional Authorities are the custodians of customary law of the traditional community that he or she leads. At Independence, the Namibian Constitution

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FIG Working Week 2024 Your World, Our World: Resilient Environment and Sustainable Resource Management for all Accra, Ghana, 19–24 May 2024 through article 95 (l) placed a duty on the government and its relevant departments to develop an appropriate legal framework to protect the environment and to promote the sustainable utilization of the country's natural resources. The duty to protect the country's natural resources not only remained the government's responsibility but extended to all Traditional Authorities in aiding the government in achieving these goals. Namibia's current legal framework outlines the responsibilities of Traditional Authorities in promoting sustainable utilization of its natural resources.

- I. Traditional Authority Act of 2000: The act states that Traditional Authorities must ensure that the members within their traditional communities are using the natural resources at their disposal on a sustainable basis and in a manner that conserves the environment and maintains the ecosystem for the benefit of all persons in Namibia (Republic of Namibia, 2000). The act also states that the Traditional Authorities must assist the Namibian police and any other law enforcement agencies with investigations concerning wildlife crimes (i.e. pouching of rhinos) or any other illegal logging of protected indigenous wood species (i.e. rosewood)
- II. Communal Land Reform Act 5 of 2002 9 (CLRA): The act provides for the powers of Chiefs and Traditional Authorities in the allocation of rights in respect of communal land within their jurisdiction (Republic of Namibia, 2002). This act also describes Traditional Authorities' roles in matters regarding grazing (section 29 of the Act), soil protection (regulation 31 under the Act), and mining (regulation 30 under the Act).
- III. Forest Act of 2001, as amended by the Forest Amendment Act 13 of 2005: For any community forest or state forest rights to be declared on communal land, the consent and agreement of the Traditional Authority is required. This shows Traditional Authorities have the responsibility to ensure sustainable use of land (or forest) in achieving sustainable use of natural resources on communal land
- IV. Nature Conservation Amendment Act of 1996- The nature conservation act allows for the establishment of conservations which is economically based on a system of sustainable management and utilization of game in communal areas (Republic of Namibia, 1996). Although Traditional Authorities are not directly mentioned in the operationalization of the communal conservancies, they do influence the success of conservancies. The active involvement of traditional authority representatives ensures a positive relationship is formed and maintained. Traditional authorities together with conservancies have a shared responsibility over land management. This means there exists a strong sense of cooperation between the various parties to ensure sustainable use of the natural resources on communal land.

From the above legal legislation, it is clear that Traditional Authorities are tasked with a great responsibility of protecting the Namibian environment and the sustainable use of its natural resources. On the local level (i.e. grassroots level), Traditional Authorities are the eyes and ears of the government and have a crucial role to play in assisting the government with the enforcement of its laws.

3. DRAWBACKS AND DIFFICULTIES IN TRADITIONAL AUTHORITIES ADDRESSING CLIMATE CHANGE

During the pre-colonial periods, Traditional authorities were the locus of political power for the various communities living within their jurisdiction. Traditional Authorities allocated almost all economic resources including land for grazing, crop farming, and housing (Holm & Botlhale, 2008). They were the ultimate decision-makers on all judicial and political matters. This however changed during the colonial period as traditional authorities were captured and reorganized under colonial control (Miyamoto, 2022). With independence, traditional authorities came to be seen as obstacles to the formation of the modern nation. The roles of traditional authorities such as influencing land negotiations virtually disappeared with the government and related external authorities taking over these rights. Although they remained in charge of the governance of agricultural villages and retained their informal influence, they were rapidly losing power (Miyamoto, 2022). Traditional leaders were unsure about their continued role in land administration. Enforcing decisions taken by Traditional Authorities was difficult if not impossible which increased the vulnerability of customary land rights holders. In some instances, Traditional Authorities were also manipulated by colonial governments and by modern countries as well. They were used to solicit support from the rural communities and push the political agendas of the ruling parties rather than the development agendas of their communities which mattered most.

However, in other instances, some Traditional Authorities seemed to have lost their obligations to uphold the laws and policies of the Namibia Government (LAC, nd). Some indeed undermined the efforts of the Government and lawmakers by unlawfully aiding and abetting illegal settlement, environmental predators, and natural resource capture at the expense of local communities (LAC, nd). Traditional Authorities that undermined government initiatives would mean also undermining climate change efforts being implemented through the top-down approach by the government. Traditional Authorities had a lot of control over their communities so they could influence community members not to utilize climate strategies put in place by the government.

Moreover, in recent decades, most efforts for adaptation and mitigation frameworks have also concentrated on top-down approaches (Karim & Thiel, 2017). Often, the voices of indigenous and local communities are ignored with top-down decision-making being imposed on marginalized communities. As a result, the outcomes are ill-informed and without reference to the direct needs of the vulnerable communities who are affected by climate-induced effects. The top-down approach also limits the influence that Traditional Authorities have in the development of adaptation and mitigation climate strategies. Top-down approaches involved minimal participation from the most vulnerable communities and reduced the possibilities of integrating indigenous knowledge into climate strategies.

4. THE ROLE OF TRADITIONAL AUTHORITIES IN CLIMATE CHANGE MITIGATION

Land governance entails making and implementing land policies so that land and natural resources are managed efficiently to influence the living conditions of people and the resilience of their livelihoods and the environment (Chigbu, 2022). Land governance is a role assigned to traditional authorities in Namibia. This assignment has been given to them, by law, to enable them to advance rights and justice agendas which has often been viewed with skepticism by many. This is because traditional leadership has been perceived as backward thinkers and relics of the past that may impede democratic development (Logan, 2008). However, the institution of traditional leadership has evolved in most parts of Namibia. Traditional Authorities have a clear development agenda at heart and are willing to advance it (Mugochi, 2022). To this end, Traditional Authorities can play a broader role in localizing the development agenda. Specifically, climate climate-related agendas, traditional leaders can promote the local voices that can be further amplified at the global level. Chiefs and headmen are looked upon in their communities as respected persons. They are still believed to speak for their community in several regards. Traditional authorities can advise members of the community on the best practices for climate change strategies. Traditional authorities can mobilize the community to conduct activities believed to satisfy popular needs arising from global, national, and even local initiatives.

As custodians of indigenous and local knowledge, Traditional Authorities also bear the potential to oversee its utilization by the villages as part of their local area climate change adaptation initiatives (Musarandega, Chingombe, & Pillay, 2018). Local communities have been for years adapting for generations to climate-induced hazards and risks so by adopting these practices, communities can become resilient to the effects of climate change. For us to genuinely localize climate change strategies, we will need to allow local communities to interpret developmental agendas on and responses to climate change based on traditional knowledge systems and belief systems. Because this local knowledge is developed from situations based in different communities, Traditional Authorities can help in documenting this knowledge within their communities. Access to relevant information has been documented as crucial to the political, economic, and social well-being of any community. Furthermore, as climate change continues to take its toll on local communities, conflicts in the wake of natural resources are only likely to worsen with competing conflicts over shared resources within communities. Traditional authorities form an immediate institution for resolving conflicts within a community because they are the custodian of communal land. Even in cases where the government has put in place climate change strategies, the possibility of loopholes exists. Traditional authorities with effective training can assist the government in better managing the loopholes better Combining local knowledge and other scientific expertise can strengthen the fight against climate change and help preserve and protect the wildlife and biodiversity of communities living on communal land.

5. CONCLUSION

Traditional Authorities have over the years proved to be highly resilient, remaining just as much a part of the modern political landscape as any constitution, legislature, or local council (Logan, 2013). They still exercise public authority and play a leading role in spearheading the mobilizing of communities in cooperating and partaking in sustainable climate strategies that

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FIG Working Week 2024 Your World, Our World: Resilient Environment and Sustainable Resource Management for all Accra, Ghana, 19–24 May 2024 benefit the community and the entire global community. Although flaws in the roles of Traditional Authority and the use of indigenous knowledge systems have been highlighted, traditional forms of governance (i.e. customs, practices & tradition) cannot simply be wished away given their continued relevance in modern Africa. Traditional Authorities still have the potential to harmonize the allocation and sustainable management of land and the natural resources. They are both, through tradition and constitutionally recognized as possible change agents in combating the negative effects of climate change.

REFERENCES

- Ani, K. J., Anyika, V. O., & Mutambara, E. (2022). The impact of climate change on food and human security in Nigeria. *International Journal of Climate Strategies and Management* 14 (9), 148-167.
- Atkinson, C., & Atkinson, A. (2023). Impacts of Climate Change on Rural Communities: Vulnerability and Adaptation in the Global South. *Encyclopedia*, 721-729.
- AUC-ECA-AfDB Consortium. (2010). Framework and guidelines on land policy in Africa. Addis Ababa, Ethiopia: UN Economic Commission for Africa.
- Chigbu, U. E. (2015). Repositioning culture for development: women and development in a Nigerian rural community. *Community, Work & Family, 18*(3), 336-352. Retrieved from https://doi.org/10.1080/13668803.2014.981506
- Chigbu, U. E. (2022). Land governance and gender: the tenure-gender nexus in land management and land policy. United Kingdom: CAB International. Retrieved from https://www.cabidigitallibrary.org/doi/book/10.1079/9781789247664.0000
- Chigbu, U. E. (2022). Land governance and gender: the tenure-gender nexus in land management and land policy. United Kingdom: CABI. Retrieved from https://www.cabidigitallibrary.org/doi/book/10.1079/9781789247664.0000
- Chigbu, U. E. (2023). Governing climate change mitigation in Africa: the land tenure linkages, evidence and framework. *Conference on land policy in Africa* (pp. 1-19). Addis Ababa: Land Policy Centre.
- Dasgupta, P., & Morton, J. (2014). Rural areas. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and. New York: Cambridge University Press.

- De Villiers, S., Christensen, Å., Tjipetekera, C., Delgado, G., Mwando, S., Nghitevelekwa, R., . . . Katjiua, M. (2019). *Land governance in Namibia*. Windhoek, Namibia: 2019 Land governance in Southern Africa Symposium.
- Drolet, J. L., & Sampson, T. (2017). Addressing climate change from a social development approach: Small cities and rural communities' adaptation and response to climate change in British Columbia, Canada. *International Social Work*, 60(1), 61-73.
- Garcia del Amo, D., Mortyn, G. P., & Reyes-Garcia, V. (2020). Including Indigenous and local knowledge in climate research. An assessment of the opinion of Spanish climate change researchers. *Climate Change 160 (1)*, 67-88.
- Gordon, H., Ross, J. A., Bauer-Armstrong, C., Moreno, M., Byington, R., & Bowman, N. (2023). Integrating Indigenous Traditional Ecological Knowledge into Land Management through Indigenous-Academic Partnerships. *Land use policy 125*, 106469.
- Holm, J., & Botlhale, E. (2008). Persistence and Decline of Traditional Authority in Modern Botswana Politics. *Botswana Notes & Records*, 74-87.
- Jauhiainen, J., & Hooli, L. (2017). Indigenous Knowledge and Developing Countries' Innovation Systems: The Case of Namibia. *International Journal of Innovation Studies 1*(1), 89-106.
- Kamwi, J. M. (2015). Climate change adaptation and mitigation; Milestones in Namibia's climate change response. Windhoek: Hanns Seidel Foundation Namibia.
- Karim, R., & Thiel, A. (2017). Role of community based local institution for climate change adaptation in the Teesta riverine area of Bangladesh. *Climate Risk Management*, 92-103.
- Kimmerer, W. (2000). Native Knowledge for Native Ecosystems. *Journal of Forestry* 98, 4-9.
- LAC. (nd). Adminstrative bodies that govern communal land use: Are they working torwards the same goal. Windhoek: Legal Assistance Centre.
- Logan, C. (2008). Traditional Leaders in Modern Africa: Can democracy and the chief coexist? Cape Town: Afrobarometer Working Papers.
- Logan, C. (2013). The roots of resilience: Exploring popular support for African Traditional Authorities. *African Affairs*, 353-376.
- Massyn, P. J. (2007). Communal land reform and tourism investment in Namibia's communal areas: a question of unfinished business? *Development Southern Africa*, 381-392.
- Mathonsi, N., & Sithole, S. (2017). The incompatibility of traditional leadership and democratic experimentation in South Africa. *African Journal of Public Affairs*.
- Mazambani, M. L., & Chigbu, U. E. (2023). Insecurity-generating features in the communal land system in Namibia: Interventions for good governance of tenure. *Conference on Land Policy in Africa* (pp. 1-17). Addis Ababa: African Land Policy Centre.

- Meincke, M. (2018). Public health and traditional medicine in Namibia. *Nordic Journal of African Studies* 27(1).
- Milofsky, C. (2023). Resilient Communities in Disasters and Emergencies: Exploring their Characteristics . *Societies*, 2.
- Ministry of Environment and Tourism. (2002). *Namibia Initial National Communication to the United National Framework Convention on Climate Change*. Windhoek: Ministry of Environment and Tourism.
- Miyamoto, K. (2022). Traditional authorities, legal power and land disputes in north-west Namibia. *Anthropology Southern Africa* 45 (1), 16-29.
- More, M. (2021). The institution of traditional authority in Okombahe, Erongo Region of Namibia: can the institution be reconciled with democratic values of justice? *Law, Democracy and Development*.
- Mugochi, K. (2022, July 19). Localizing the climate justice agenda lessons from traditional leaders in Zambia. Retrieved from Hivos Southern Africa: https://hivos.org/opinion/localizing-the-climate-justice-agenda-lessons-from-traditional-leaders-in-zambia/
- Musarandega, H., Chingombe, W., & Pillay, R. (2018). Harnessing local traditional authorities as a potential strategy to combat the vagaries of climate change in Zimbabwe. *Journal of Disaster Risk Studies* 10(1), 651.
- Muthee, D., Goudian, K., & Masinde, J. (2019). The Role of Indigenous Knowledge Systems in Enhancing Agricultural Productivity in Kenya Article information: For Authors. *Eastern Africa Journal of Contemporary Research*.
- Olaopa, O., & Ogundare, S. (2024). Traditional Leadership, Indigenous Knowledge, and Local Governance: Implications for Good Governance and Sustainable Development Agenda. In S. Kumar, & M. B. Lakshminarayana, *Indigenous People Traditional Practices and Modern Development* (p. 142). IntechOpen.
- Republic of Namibia. (1990). Namibian Constitution. Windhoek: Government Gazette.
- Republic of Namibia. (1995). *Traditional Authorities Act Act 17, 1995*. Windhoek: Government Gazette.
- Republic of Namibia. (1996). *Nature Conservation Amendment Act, 1996.* Windhoek: Government Gazette.
- Republic of Namibia. (1997). *Council of Traditional Leaders Act 13 of 1997*. Windhoek: Government Gazette.
- Republic of Namibia. (2000). *Traditional Authorities Act 25 of 2000*. Windhoek: Government Gazette.
- Republic of Namibia. (2002). *Communal Land Reform Act 5 of 2002*. Windhoek: Government of Namibia.

- Republic of Namibia. (2011). *National Policy on Climate Change for Namibia*. Windhoek: Ministry of Enviornment and Tourism.
- Shoko, K., & Shoko, N. (2013). Indigenous Weather Forecasting Systems: A Case Study of the Abiotic Weather Forecasting Indicators for Wards 12 and 13 in Mberengwa District Zimbabwe. *Asian Social Science* 9(5).
- Smith, G., Chowenga, M., & Karsters, J. (2024). Local knowledge matters: understanding the decision-making processes of communities under climate change in Suriname. *Frontiers in Climate*.
- Werner, W. (2021). *Land governance on communal land in Namibia*. Windhoek, Namibia: Legal Assistance Centre.
- Williams, P. A., Sikutshwa, L., & Shackleton, S. (2020). Acknowledging Indigenous and Local Knowledge to Facilitate Collaboration in Landscape Approaches—Lessons from a Systematic Review. *Land* 9 (9), 331.
- World Bank. (2021). *Climate risk country profile: Namibia*. Washington, DC: The World Bank Group.
- Yu, R., & Mu, Q. (2023). Integration of Indigenous and Local Knowledge in Policy and Practice of Nature-Based Solutions in China: Progress and Highlights. *Sustainability*.
- Zhang, H., & Nakagawa, H. (2018). Validation of indigenous knowledge for disaster resilience against river flooding and bank erosion. *Science and Technology in Disaster Risk Reduction in Asia*, 57-76.

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The role of Traditional Authorities in promoting Sustainable Climate Strategies in Namibia (12637) Mario Siukuta, Penehafo Ricardo, Laina Alexander, Cathrine Marenga, Ntwala Vanessa Simataa and Uchendu Eugene Chigbu (Namibia)

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