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Impact of Climate Change on Indigenous Farming Practices in Namibia

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Abstract

The fact that the Global South has contributed far less to climate change, yet is considered the most vulnerable to its effects, is unwavering. Due to its geographical location, Namibia, a country with a semi-arid climate, falls into this vulnerable category. Consequently, subsistence and communal farmers, whose livelihoods and sustenance are highly dependent on their agricultural produce, must adapt to harsh weather patterns. To explore how climate change impacts communal farmers, this study adopted an explorative research approach to understand how 8 communal farmers from 7 different communities within 5 regions, classified as arid or semi-arid in Namibia, apply indigenous farming techniques as an adaptive approach to climate change. This study uses a narrative research approach, presenting the communal farmers' experiences with indigenous farming practices through storytelling. The findings from this study provide a tapestry of indigenous farming knowledge and practices, offering insights into how farming communities can thrive and ensure the sustainability of their agricultural produce in the future.

Keywords:

Agriculture, Climate change, Communal farming, Indigenous farming, Sustainability

Introduction

Amidst the vast, arid landscapes of Namibia, a silent crisis unfolds, threatening millennia of agricultural traditions. Namibia, a country characterized by its harsh deserts and fragile ecosystems, faces an unprecedented challenge: climate change. Rising temperatures, low humidity, and reduced precipitation, which are unsuitable for farming, are becoming more frequent during the summer months because of climate change. In retrospect, when we consider that most countries in the Global South contribute less to global emissions yet are more vulnerable to the adverse effects of climate change, the situation becomes even more concerning (Hickel, 2020) national fair shares of a safe global carbon budget consistent with the planetary boundary of 350 ppm were derived. These fair shares were then subtracted from countries' actual historical emissions (territorial emissions from 1850 to 1969, and consumption-based emissions from 1970 to 2015. Figure 1 below maps out areas with projected higher temperatures in Namibia by 2060. According to the Paris Agreement target set by the Intergovernmental Panel on Climate Change (IPCC), the goal is to limit global warming to below 1.5 degrees Celsius by the end of the century, which is considered a safer limit. However, the projected increase in Namibia's average temperature to 3 degrees Celsius by 2060 indicates a significant deviation from this target, underscoring the urgent need for effective climate action and adaptation strategies. (Environmental Information Service Namibia, 2023). Figure 1 below maps out areas with projected higher temperatures in Namibia by 2060. If we are to go by the Paris Agreement target by the Intergovernmental Panel on Climate Change (IPCC) to limit warming below 1.5 degrees Celsius at the end of the century, as caution on the safer limit (IPCC, 2022), then Namibia would have doubled this target by 2060. Thus, it is empirical to explore the challenges posed to communal farmers in Namibia. Adeyanju (2023), suggests that some of these challenges faced by livestock communal farmers in Namibia such as; decreased rainfall and poor grazing conditions, create the need for climate-smart farming practices embedded with traditional methods to cope with climate variability within communal farming settlements. Whilst the study exploring the challenges faced by livestock communal farmers by (Adeyanju, 2023) was confined to the Okei settlement in the Omaheke region, Namibia, it is worth exploring other settlements and villages prone to climate change's impact on traditional farming practices.

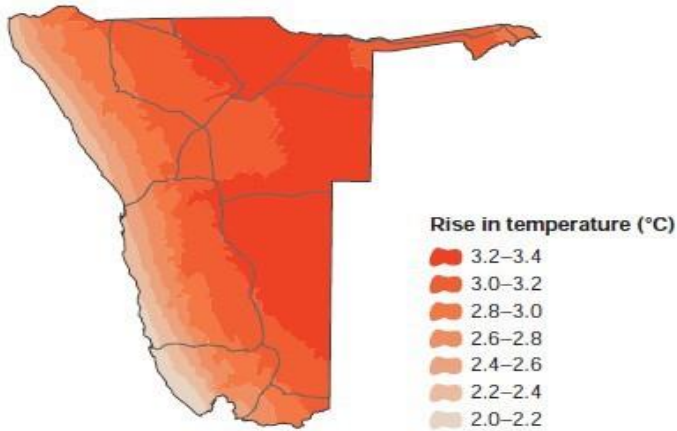


Figure 1: A projected average rise in temperature by 2060
 Source: (Environmental Information Service Namibia, 2023)

To provide context on how some indigenous and communal farmers can withstand the adverse effects of climate change and adapt over the years, this study offers a narrative of how indigenous farming techniques are used by different communal farmers from various regions based on Namibia's aridity index (see Figure 2 below). The study aims to preserve the indigenous knowledge, culture, and traditions of these selected communal farmers while providing sustainable agricultural practices to help them persevere and adapt to adverse climate conditions.

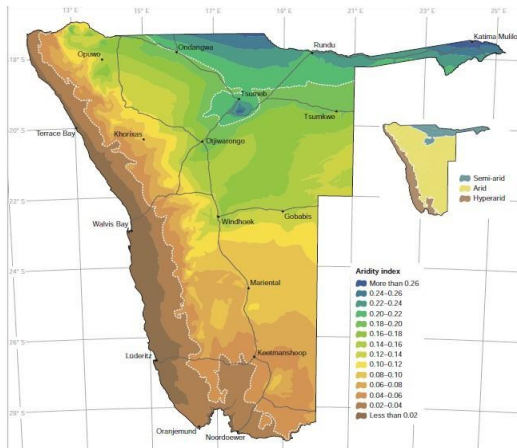


Figure 2: Namibia Aridity index
 Source: (Environmental Information Service Namibia, 2023)

Climate change overview

Climate change is a long-term shift in average temperature which could be caused naturally or through human actions. In comparison, human actions have significantly contributed to climate change since the 1800s (the age of the first industrial revolution) as opposed to natural phenomena. To put this in context, as stated by Eyring et al., (2021), “the likely range of human-induced warming in global-mean surface air temperature (GSAT) in 2010–2019 relative to 1850–1900 is 0.8°C–1.3°C, encompassing the observed warming of 0.9°C–1.2°C, while the change attributable to natural forcing is only –0.1°C to +0.1°C” (p.425). This supports that climate change is anthropogenic and the major contributor stems from burning fossil fuel. The release of greenhouse gas emissions such as carbon dioxide (CO₂) and methane (CH₄) to the atmosphere, contributes significantly to the average rise in temperature. In response to address the global rise in average temperature, 196 member countries that attended the UN Climate Change Conference (COP21) in France, signed an internationally binding treaty to address climate change, famously known as the ‘Paris Agreement’ to stabilise global average temperature below 1.5°C above pre-industrial levels (United Nations, 2015). While some countries may contribute lesser emissions, it is a collective international effort to achieve net zero by 2050 and net-negative carbon emissions by the end of the century. However, going by current trends, it is very unlikely that these targets can be achieved (Cointe & Guillemont, 2023; Deprez et al., 2024). While the global target of stabilizing the average temperature below 1.5°C target is explicit, countries can overshoot their annual temperature target while adopting carbon management technologies such as carbon capture and storage (CCS) technology (Deprez et al., 2024). It is noteworthy to state that over a decade CCS technological approach was relatively new and the general perception was reluctantly accepted (L’Orange Seigo, Dohle, & Siegrist, 2014). Alternatively, Bioenergy with carbon capture and storage (BECCS) has shown promising carbon emission technological approaches within the sphere of agricultural farm practice (Hanssen et al., 2020). While the debate on the relevance and adaptability of CCS technology is ongoing it will be intuitive to address the current climate change impact on livelihood and food security.

Climate change and the agricultural sector in Namibia

The agricultural sector is one key sector directly affected by climate change. It contributes about 10% to Namibia's GDP and directly supports 70% of the population through rain-fed crop production, with 48% representing rural communities (World Bank, 2021). Considering Namibia's semi-arid climate, nature poses a challenging and daunting obstacle to addressing food security and ensuring sustenance and well-being. The most impacted by these natural challenges are communal and subsistence farmers, who rely solely on agricultural produce for their livelihoods, yet significantly contribute to national food security (Siyambango, Togarepi, Mudamburi, Mupambwa, & Awala, 2022).

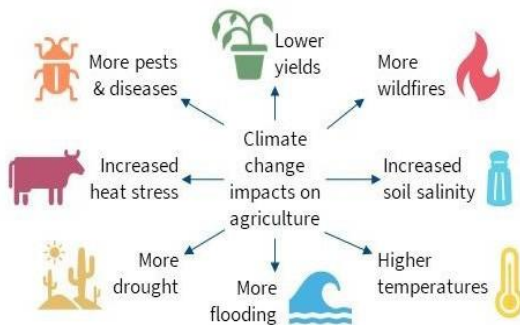


Figure 3: Climate Change Impact on Agriculture

Source: (USDA, 2021) adapted from (Karavolias, Horner, Abugu, & Evanega, 2021)

Negligence in addressing the impact of climate change can compound the issue of food insecurity in Namibia. To tackle some of these challenges, during COP28, pledges worth over \$85 billion were made to the Green Climate Fund (GCF) as a source of climate financing to mitigate the impact of climate change on developing countries (United Nations Climate Change, 2023). In the same vein, the Bank of Namibia (BON) joined the Network for Greening the Financial System (NGFS) in 2023, a network of 134 central banks committed to financing climate risk initiatives. By joining this financial network, the BON can support Namibia's policies in addressing climate change within the agricultural sector. The expected commitment and policies aimed at combating climate change and supporting livelihoods are all in line with Namibia's efforts to achieve the Sustainable Development Goals (SDGs).

Climate change and indigenous farming practices

Studies have shown that indigenous knowledge of farming practices can mitigate the impact of climate change and support food security (Balasha et al., 2023; Imoro, Imoro, Duwiejuah, & Abukari, 2021; Rankoana, 2022). Unbeknownst to many communal and subsistence farmers, studies have shown that livestock farming has a significant anthropogenic contribution to greenhouse gas (GHG) emission, particularly through methane (CH₄) and nitrous oxide (N₂O) emission (Musa, 2020; Scoones, 2023). Whilst statistics can be misleading and the debate on livestock farming's impact on climate change is ongoing, indigenous livestock farming practices, however, have been embedded in cultures and traditions of communal and subsistence farmers in Namibia over centuries. These indigenous farming practices are also crucial for ensuring food security and sustenance and arguably have low carbon footprints. So, what are the kinds of indigenous farming practices adopted in Namibia to combat climate change while ensuring food security? A study on communal farmers in the Okei settlement in Namibia by Adeyanju (2023), shows that indigenous knowledge on rain prediction such as understanding the direction of the wind "*ozombepo*" is essential for Herero livestock communal farmers "*oututa wa ngombe*" to adapt to climate change. The dependence on green water (rainwater) reflects dependence on nature as a provider but requires indigenous knowledge to predict and migrate to areas of

sufficient rainfall. This nomadic farming system is synonymous with the Herero ethnic group in Namibia where the study was conducted (Adeyanju, 2023). Nomadic farming is common within the semi-arid and arid regions in Namibia. However, other indigenous farming practices within climate-vulnerable regions in Namibia also require exploration. The arable agricultural regions in Namibia categorised as vulnerable regions to climate change due to their semi-arid and arid climate according to the Environmental Information Service Namibia (2023), are; Omaheke, Otjozondjupa, Ohangwena, Kavango East, Kavango West, and Zambezi. Thus, to address the challenges of food insecurity in Namibia because of climate change, support for indigenous farming techniques and practices needs to be promoted. Nevertheless, in adopting modern technology to address the challenges posed by climate change on communal farmers, Namibia has made a significant effort to promote climate-smart agriculture (CSA), especially in the arid geographic region of Namibia (Siyambango et al., 2022).

Methods

This study adopts a narrative research analysis approach through a story realm to explore how communal farmers in Namibia apply indigenous and traditional farming techniques amidst the adverse effects of climate change. This research approach narrates the stories of indigenous communal farmers in their natural settings and explores how the farmers adapt to climate change in Namibia.

The study purposely selected communities, settlements, or villages where communal farmers could be approached to narrate their stories on how they have adapted to climate change while preserving their traditional farming practices. The criteria for selecting the communal farmers include over 10 years of experience in farming (livestock or crop), knowledge of traditional farming methods, belonging to a communal farming settlement or village, and the communal farm being located within the semi-arid region of Namibia. Before the interview, a permission letter was read, and consent was provided by each interviewee. The interviews were conducted and recorded in the local languages of each interviewee and transcribed into the English language to preserve and ensure that the indigenous and traditional farming techniques of different ethnic groups are understood in a common lingua franca. Volunteers with local language understanding of the communal farmers were also employed to conduct some of the interviews to ensure that the context of the indigenous knowledge is not diluted over time.

The interviews were conducted with farmers within communities identified to be geographically located within the semi-arid and arid regions of Namibia. The narrative research analysis approach used in this study employs a thematic coding strategy, dissecting the transcribed interviews to unearth recurring themes such as climate impact, adaptation strategies, and the role of indigenous knowledge. Comparative analysis across narratives enables the identification of common and unique adaptation practices, while triangulation with existing literature validates the findings. Table 1 below presents the geographical locations where the communal farmers included in the study were conducted.

Table 1: Geographical location of the communal farmers

Regions included in the study (semi-arid/arid regions in Namibia)	Town/Village/Community included in the study	Communal farmers interviewed
Zambezi	Ishubu village Lizauli village	2
Otjozondjupa	Tsumkwe town	1
Ohangwena	Okahenge village Okongo village	2
Kavango East	Mayana village	2
Kunene	Opuwo town	1

The purposive selection of communal farmers within the identified regions, as shown in Table 1 above, provides diverse narratives of how different communal farmers from various ethnic groups within Namibia are adapting to climate change.

Discussions

The narrative of each indigenous and traditional farming technique is discussed under their respective regions in Namibia where the interviews were conducted.

Narratives from the Zambezi Region

The narrative from two communal farmers in the Zambezi region of Namibia is discussed below. We used the Silozi-translated pseudonyms Farmer Mucaziba wa Njimo (the experienced farmer) and Farmer Mulili wa Pula (One who cries for rain) respectively to represent the farmers based on their overarching thematic responses. Farmer Mucaziba wa Njimo was interviewed at Ishubu village, Kabe North Constituency, Zambezi Region, while Farmer Mulili wa Pula was interviewed at Lizauli village, Mashi Constituency, Zambezi Region. The average farming experience for both farmers is 60 years, while their average age is 80 years.

Both Mucaziba wa Njimo and Mulili wa Pula have witnessed significant climatic changes over their extensive farming careers. They recount a time when climate variability was less extreme and more manageable compared to the current conditions of severe droughts, intense heat, and unpredictable rainfall.

Mucaziba wa Njimo speaks of the drastic weather shifts, with extreme hot and cold temperatures and unprecedented strong winds, contrasting with the historical norm of predictable seasonal changes. Mucaziba wa Njimo narrates "Floods came every year but not like the flood that we experienced in 1958 when Masubia land was flooded, and canoes passed here when people had to travel to Ngweze for supplies. I have never experienced extreme climate as I am experiencing it today". Mulili wa Pula adds to this by describing how such harsh conditions have led to environmental and wildlife crises, "in recent years, we have seen harsh weather that dries rivers. I have seen Crocodiles and Hippos die because they could not survive in muddy water".

Both farmers emphasise their reliance on traditional farming methods as a means of survival. Mucaziba wa Njimo discusses using small gardens for manageable cultivation due to the inability to water large fields, reflecting a practice of micro-scale farming to mitigate the risks of crop failure.

Mucaziba wa Njimo stated that “we grow food in our gardens because it is possible to water a garden. That is how we survive with little produce from our gardens, we can have food to eat” Mulili wa pula echoes this, “we have little or no rain, we dig wells for water, we also grow food in small gardens because we can water them... We do not have machines to do so for large fields. This highlights the practice of digging wells and growing food in small plots as a strategy to counteract the lack of rain and the unavailability of modern irrigation systems. While traditional practices offer some respite, both farmers acknowledge the limitations they face without access to modern agricultural technologies. Mucaziba wa Njimo mentions the potential benefits of irrigation systems, which could alleviate the dependency on erratic rainfall. Mulili wa pula points out the success of those who have managed to integrate modern methods, indicating a clear need for water systems that can support larger-scale farming. Mulili wa pula states that “The Kwando River is here but we need water systems to get that water to our fields”.

The narratives converge on the necessity for external support. Mucaziba wa Njimo suggests government intervention to provide water pumps and irrigation systems, Mucaziba wa Njimo stated that “water is abundant in the river and underground if the government can drill blowholes for us or provide us with water systems, that will be good... drought relief is not enough to feed our people”. Mulili wa pula stresses the need for affordable agricultural resources and inputs, like seeds and machinery, to enhance their farming capabilities and ensure food security. Mulili wa pula states, “We still use our traditional ways for cultivating because the tractors are expensive, and we cannot afford them”. This implies that the adoption of traditional farming addresses the concern of food insecurity amongst the communal farmers.

Narratives from the Otjozondjupa Region

Indigenous farming practices are peculiar to the San community and as such, we reached out to one communal farmer in the town of Tsumkwe, to provide an overview perspective of how farmers within the San community have adapted to climate change. We used the Khoekhoegowab-translated pseudonym //kha//khasen #ûiha #ari aob (the knowledgeable farmer) to project the view of the San communal farmer.

As stated by //kha//khasen #ûiha #ari aob the communal farmer, climate change has profoundly impacted traditional lifestyles and agricultural practices. “Over the past decade, there has been a significant decrease in rainfall from an average of 500 millilitres annually to just 150 millilitres. This drastic reduction has shortened the rainy season, which now spans from November to April, adversely affecting the community’s gardens, food yield, bush medicine, and the harvesting of ||xamatci||hoqroh (devil’s claw) a vital source of income for the locals”. Thus, the scarcity of rainfall is an uphill environmental challenge for the communal farmers to ensure livelihood and sustainability. To combat these environmental challenges, the San community has turned to traditional knowledge and innovative solutions to adapt. //kha//khasen #ûiha #ari aob stated that “by recognising the seasonal nature of our environment, the community has historically gathered specific roots and other natural resources according to the time of year. However, the current scarcity has made this traditional practice increasingly difficult”. In response to maintaining the traditional farming practices, //kha//khasen #ûiha #ari aob alluded to the support from the Nyae Nyae Development Foundation of Namibia (NNDFN) who have initiated projects to educate and assist the villagers in establishing water gardens. These gardens are designed to sustain the community through the dry seasons by promoting efficient water use and enabling the transplantation of resources from one village to another.

Despite these efforts, water scarcity remains a significant hurdle due to the persistent dry conditions and inadequate infrastructure. The existing boreholes, which are essential for collecting and storing rainwater, are insufficient to meet the community's needs. This has led to a continuous struggle to maintain a reliable water supply for both personal use and agricultural purposes, which is critical for the community's survival and economic stability.

//kha//khasen #ûiha #ari aob suggested that enhancing the water infrastructure could greatly alleviate the hardships faced by the San community. This proposal includes the installation of at least two boreholes per village, with one dedicated to domestic use and the other designated for irrigation purposes. This setup would help mitigate the effects of dryness and support more robust agricultural activities. Additionally, providing more seeds for planting would encourage the expansion of farming, thus promoting food security and economic resilience against the backdrop of changing climatic conditions. Considering the adverse climatic conditions in Tsumkwe, //kha//khasen #ûiha #ari aob provided a desirable solution to mitigate the impact of climate change on the San community.

Narratives from the Ohangwena Region

The narrative from the Ohangwena region presents the view of two farmers from Okahenge village and Okongo village. We use the pseudonyms "ombili ongandjera oshikwete" (in Oshiwambo language translated to the proactive farmer), which represents the farmer from Okahenge village, and "Ondjaba yomukwambi" (in Oshiwambo language translated to the traditional farmer) which represent the farmer from Okongo village, both from the Ohangwena region. Ombili ongandjera oshikwete has about 29 years of farming experience while Ondjaba yomukwambi has about 23 years of farming experience.

Both farmers narrate significant alterations in climate conditions, emphasising irregular rainfall patterns and extreme weather conditions. Ombili ongandjera oshikwete "We experience tremendous changes in climatic conditions over the years, such as irregular rainfall patterns, too many hot weather patterns, and when it rains there are too many storms and hail". Similarly, Ondjaba yomukwambi emphasises changes in monthly weather patterns; "rainy season has been shifted from early October to late December and January". Both farmers' observations highlight a common perception of changing weather patterns, impacting agricultural practices in the Ohangwena region. To provide further insight into the adverse effect of climate change on farming practices, ombili ongandjera oshikwete described the detrimental impact on grazing lands, with insufficient vegetation and water leading to animal diseases. Conversely, Ondjaba yomukwambi stated that the timing of rainfall affects crop production and animal reproduction, leading to poor harvests and increased maintenance costs. These experiences illustrate the direct consequences of climatic shifts on traditional farming practices, necessitating adaptive measures to sustain agricultural productivity.

Now, how have these farmers been able to adapt to climate change? Both farmers provided similar adaptive techniques. Ombili ongandjera oshikwete "early planting is a way adapted and this was done traditionally". Ondjaba yomukwambi stated that; "we have shifted our crop production season from early October to January during which rain increases from late January to May, for a length of time, unlike early October/December time. One also has to consider the mating cycle to avoid lambing, and calving during the dry season as this will result in a high cost of feeding animals all year round". These strategies indicate a proactive approach to managing the risks associated with climate variability, reflecting a blend of traditional insights and adaptive innovations. Both farmers

also acknowledged the potential of modern agricultural techniques to enhance resilience against climate change. More importantly, Ondjaba yomukwambi stated that “old days farming practices are not reliable much more as a result of climate change which affects all living and non-living including the land itself which is the source of production to start with external support and collaboration”. The need for external support was a common thread in both interviews, highlighting the role of governmental, non-governmental, and academic institutions in facilitating the transition to climate-resilient farming practices. Both farmers called for financial assistance, training, and educational campaigns to enable farmers to adopt modern agricultural practices while preserving indigenous knowledge. Ombili ongandjera oshikwete states that “financial assistance to fund farmers who may wish to buy scientifically proven seeds and also to train farmers to adapt to the new trends of climate changes so they can practice modern agricultural practices”. Echoing similar connotation, Ondjaba yomukwambi states that “more funding and training is needed to help those that are struggling with modern techniques due to the high cost of machinery and applications methods available at their disposal to use. Additionally, communities must be encouraged not to abandon their traditional way of farming but rather adjust and include modern farming practices too”. This suggests that a collective effort is required to equip local farmers with the tools and knowledge necessary to navigate the complexities of climate change and ensure the sustainability of their agricultural practices.

Narratives from the Kavango East Region

The narratives of two communal farmers from Mayana village provided insight into how the local community has experienced and adapted to climate change. We narrate from the perception of the “ndimi wamukoli” (pseudonym in Rumanyo language – the resilient farmer) and “mbuto yaku tinta” (pseudonym in Rumanyo language - the adaptive cultivator) whose respective farming experiences are about 30 years and 40 years respectively.

Both farmers narrate the adverse effects of climate change on farming in Mayana village. The resilient harvester narrates that the unpredictability of the rainfall patterns has a major impact on the schedule of agricultural activities “The months of August, September, and October were for preparing and cleaning the fields because we were certain that we would receive rainfall around November...The rainfall patterns these years have become very unpredictable. We don't even know when to get our fields ready and when to start ploughing because sometimes we receive rain very late. This year (2024) in particular was very shocking as rainfall was received around March”. The adaptive cultivator echoed a similar opinion, “there have been changes in climate over the years. I have observed notable changes in the rainfall patterns over time. For example; some years back we would start receiving good rainfall in October and ploughing would start then and continue through November to December. In recent years, however, we have received rainfall late. This year 2024, we only received good rainfall in March”. These narratives support the evidence that the ENSO exacerbates the impact of climate change on communal farmers in Namibia.

As an adaptive measure to combat climate change, ndimi wamukoli suggested that using climate-resilient seeds is an adaptive measure for the communal farmers in Mayana village “We have changed the types of seeds we use, for example with pearl millet, people have now opted to use the Okashana seeds instead of the traditional pearl millet seeds. This is because the Okashana seeds are resilient and adaptable to harsh environmental conditions”. An alternative adaptive measure was suggested by mbuto yaku tinta, “to adapt to changes in rainfall patterns, we have also changed our ploughing seasons. After observing that rainfall comes around March, some people have delayed their ploughing so they also start around Feb/March. Others have divided their fields

in half so that one half is used for early ploughing while the other half is used for March ploughing. Some community members have also resorted to irrigating crops with river water. This way we are assured of our harvest even if it's a drought year".

To ensure that these adaptive measures are sustainable, both farmers provided their narratives. ndimi wamukoli requested governmental training assistance for communal farmers, production of resilient seeds, fertilizers, and insecticides amidst climatic challenges. Whilst, mbuto yaku tinta alluded to the governmental intervention in support of small-scale farming, emphasis was also made on the encouragement and training of young farmers to protect the indigenous farming practices.

Narratives from the Kunene Region

The Kunene region can be classified as an arid region in Namibia. Hence, communal farming has a higher risk of climate change. We gather our narrative from a communal farmer (pseudonym Ombambeiri which translates to an innovative farmer in Otjiherero) from the town of Opuwo. Ombambeiri has over 15 years of farming experience. Ombambeiri narrates how many communal farmers just like him have adapted over the years to climate change in Opuwo.

Characterised by the arid nature of Opuwo, Ombambeiri narrates that the 1980's, and 2007 had significant low rainfall and severe droughts. "It was only around 1980 to 1983 that we had a severe drought. Thereafter, we continued to receive good rain until 2007. That is when things started changing. In 2007-2008 we lost many cattle due to drought. Thereafter, sometimes we receive good rains, other years we receive little. This year (2024) is worse, we are suffering". The severe drought led to the loss of livestock and negatively affected the traditional farming practice of the communal farmers.

In response to these adversities, the community has remained resilient and leveraged indigenous knowledge to adapt to the changing environment. Ombambeiri states that "we have adapted by farming with small livestock as opposed to large livestock because large livestock feed on grass and grass is hard to find in the dry climate. Small stock on the other hand can eat shrubs and leaves so it is easier to feed and not die of hunger". Despite these adaptations, the community faces logistical issues, such as the inaccessibility of boreholes drilled by the government, which are often located far from grazing areas.

A long-lasting solution that protects the indigenous farming practice and adaptability to modern farming practices is necessary for communal farmers in Opuwo. Ombambeiri articulates that "we see that in the northern regions, they have a canal that comes from the river in Ruacana to the four regions. This canal provides water for the animals and people. If the government can also construct a canal for us here, by bringing water from the Kunene River, our animals will be better taken care of". This is a clear indication of enhanced support from external entities, including the government, NGOs, and academic institutions, to sustain and promote indigenous farming practices in Opuwo.

Conclusion

Agriculture is highly regarded as the mainstay of livelihood and sustenance for many communities in Namibia, especially within rural settlements. Considering Namibia's classification as a semi-arid climate, it is inevitable that climate change could exacerbate weather conditions and patterns. Thus, this study provides an extensive view of how communal farmers within different settlements, considered prone to climate change in Namibia, have adapted while preserving their traditional farming techniques.

By adopting a narrative research approach, the views of communal farmers are portrayed in their natural settings. The overarching findings suggest that most communal farmers are willing to preserve their traditional and cultural farming practices embedded in their ways of life. However, the impact of climate change has resulted in less reliance on traditional farming practices. Indigenous knowledge and its application to farming practices ought to be protected and passed on, but this is not the case in the Namibian agricultural sector, as extensive financial support for modern agriculture is required for communal farming sustainability.

However, hope is not lost, as organizations such as the NNDFN have provided support to preserve indigenous farming knowledge and practices across Namibia. Although we cannot ignore the climatic phenomena of El Niño and La Niña's impact on communal farming, traditional farming techniques have persevered and adapted to nature's climatic phenomena. It is also imperative to state that a decline in global anthropogenic contributing factors will seamlessly reduce global warming and somewhat benefit in preserving indigenous farming practices.

In a retrospective approach to promoting communal farming practice, this study recommends a blend of traditional wisdom and necessary innovation in response to ongoing climatic shifts.

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