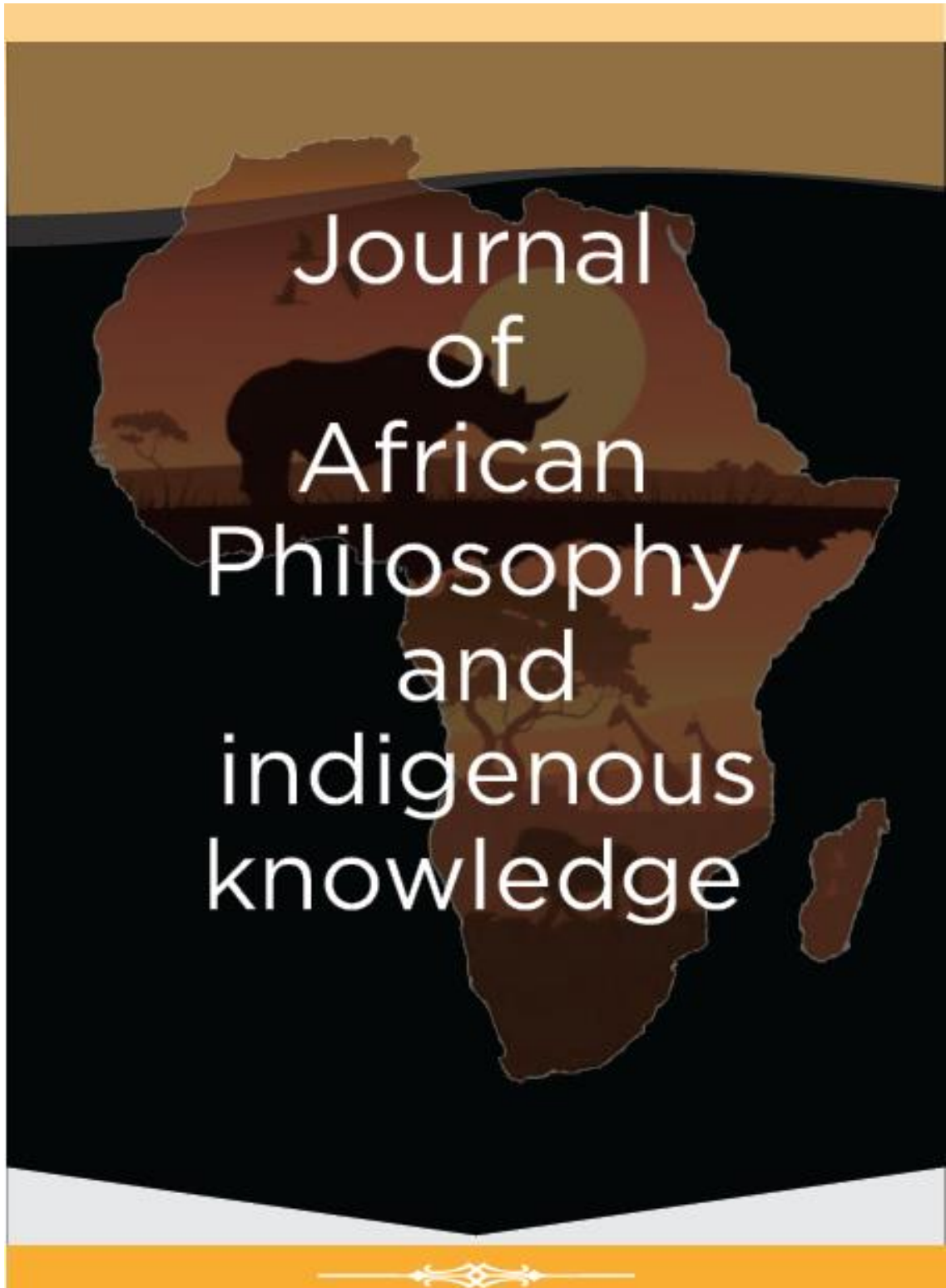




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EDITORIAL NOTE

The articles assembled in this issue collectively advance a compelling argument: that sustainable development in Africa requires a fundamental re-centering of indigenous knowledge systems, cultural practices, and philosophical traditions. While the contexts range from disaster risk reduction in Zimbabwe to digital pedagogy in Yorubaland, from inclusive education in Nigeria to agricultural trade resilience across East and West Africa, a unifying thread runs through each contribution the necessity of culturally grounded, context-specific solutions to African challenges.

Esther Ogunwole and colleagues open this issue with a critical examination of culturally responsive inclusive education in Ado-Ekiti, Nigeria. Their study reveals that while teachers demonstrate some familiarity with inclusive practices, significant gaps remain in pedagogical confidence, classroom management, and cultural sensitivity toward learners with practical needs. The findings underscore a vital insight: inclusivity cannot be achieved through Western-derived models alone; it demands teacher training that is both culturally grounded and responsive to local realities.

Complementing this work, Funmilayo Olu-Ajayi makes a persuasive case for integrating indigenous knowledge into Nigeria's science curriculum. Her argument that traditional practices herbal medicine, local farming techniques, ecological wisdom can enrich scientific education challenges the lingering colonial assumption that indigenous knowledge is antithetical to modern science. Instead, she envisions a blended pedagogy that honours both knowledge systems, fostering environmental awareness and community engagement among learners.

The geopolitical dimensions of indigenous resilience are explored in Charles Apokhume and Olileanya Ezugwu's examination of tariff vulnerability in Kenya, Ethiopia, and Nigeria. Their findings challenge conventional narratives of African agricultural vulnerability by demonstrating that external trade shocks, rather than merely destabilising, can catalyse indigenous-led value chain development. This reframing from sites of perpetual dependency to spaces of creative resilience offers a powerful counter-narrative to dependency theory's more deterministic conclusions.

From Zimbabwe, Owen Mafongoya and colleagues interrogate the cosmological approaches to disaster risk reduction among the Ndaue people of Chimanimani. Their documentation of indigenous forecasting indicators, sacred rituals, and cultural practices reveals sophisticated systems of anticipatory action that have sustained communities across generations. Yet these systems face existential threats from climate change, Christianity, and modern science threats that the authors argue must be addressed through genuine integration rather than mere acknowledgement.

This issue presents a groundbreaking study on Másòyínbò (Olálékàn Fábílólá) and the architectures of a decentralised Yoruba knowledge economy. The study reveals how digital technologies, often viewed as instruments of cultural homogenisation, can be

strategically indigenised to foster linguistic consciousness, economic sovereignty, and epistemic repair. Másòyínbò's model transforming Western technological platforms into spaces of Yoruba cultural affirmation offers a replicable framework for African scholars seeking to bridge tradition and innovation in the digital age.

Extending this conversation on epistemic repair, Agbegbedian Anthony Oghenevwoke offers a critical evaluation of the concept of man in Urhobo traditional philosophy. His study directly refutes lingering colonial notions of the "irrational" preliterate African society, demonstrating that the Urhobo, like other African peoples, possess a coherent logical system through which man is understood as both a historical and metaphysical being. This philosophical grounding, the study shows, is not abstract speculation but the very foundation upon which Urhobo norms, values, and survival as a people rest.

Complementing this philosophical inquiry, David O. Ovuede and Agbegbedian Oghenevwoke Anthony examine the impact of modernity on marital dispute resolution within Benin Kingdom, Nigeria. Their research unmask how the imposition of Native court systems and British morality displaced the traditional Ọkaegbẹe (patriarch) institution, fundamentally altering the power dynamics of conjugal conflict management. By revealing the nexus between modernity and the diminution of indigenous governance structures, the authors demonstrate that contemporary marital discord cannot be fully understood nor effectively addressed without reckoning with the colonial erosion of culturally anchored resolution frameworks.

Together, these articles issue an urgent call: the decolonisation of African knowledge systems is not merely an intellectual exercise but a practical imperative for sustainable development. Whether in education, agriculture, disaster management, or digital economies, the contributors to this issue demonstrate that Africa's future lies not in abandoning indigenous traditions but in creatively reimagining them for contemporary challenges.

We invite our readers to engage deeply with these contributions and to join the ongoing conversation about how African philosophy and indigenous knowledge systems can shape more just, resilient, and culturally affirmed futures across the continent.

Editor,
Timothy Chibuike Anyanwu
Alex Ekwueme Federal University, Ndufu Alike,
Ebonyi State Nigeria
Anyanwu.timothy@funaail.edu.ng

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**THE NEXUS BETWEEN INDIGENOUS KNOWLEDGE SYSTEMS (IKS),
SPIRITUALITY AND CULTURE IN DRR IN CHIMANIMANI DISTRICT**

Maifongoya Owen,

Department of Sociology and Social Anthropology
Great Zimbabwe University,
Box 1235, Masvingo, Zimbabwe

omafongoya@gzu.ac.zw

omafongoya@gmail.com

ORCID ID: <https://orcid.org/0000-0003-1710-4175>

Maipisi Albert &

Department of Development Studies,
Women's University in Africa, 549 Arcturus
Road, Manresa Park, Harare.
Zimbabwe

Maroveke McCreynald

Department of Sociology and Social Anthropology,
Great Zimbabwe University,
Box 1235, Masvingo,
Zimbabwe

Abstract

Indigenous knowledge systems (IKS), culture and spirituality are at the core of the Ndaup people of Chimanimani district's coping, adaptation, resilience and mitigating disasters. Traditionally, the IKS based cultural and spiritual practices were critical in providing them short term and long-term forecasting which influences their anticipatory action (AA) for early action (EA) to disasters. Apart from relying on IKS based forecasting indicators, they also perform culturally and spiritually sacred rituals with critical purposes and outcomes. Central to the rituals was appeasing them in order to evade punishments or appealing for forgiveness in wrong doings which will come in form of disasters which affects lives, livelihoods, livestock, property and the environment. However, the recurring of severe disasters which hard-hit Chimanimani lately influenced ideas reviving traditional ways of DRR management. Against this background, this study focused on interrogating the cosmological approaches which existed before and at the same time finding pathways of incorporating them in DRR roadmap in the district. The study identified diverse IKS indicators and the existing cultural and spiritual rituals like rain appealing ceremonies and related sacred practices at the core of DRR management. Successful execution of the rituals have saved them in managing disasters over generations. Unfortunately, the cultural and spiritual beliefs have suffered onslaught attacks from Christianity, climate change, increasing young traditional leadership and modern sciences which threatened its existence. Nevertheless, IKS remain a possible option disasters management and we recommend its integration in the DRR policy consideration for inclusivity and sustainability.

Keywords: IKS, cultural rituals, DRR, Climate change, anticipatory action,

1.0 Introduction

Indigenous knowledge (IKS) is steadily gaining traction in the climate change, health, agriculture, development (El-Hani et al., 2022; IPCC, 2022a), and DRR discourses (Iloka, 2016). It is considered as a viable social capital tool for the coping and adaptation resource poor residing in remote and hard-patched communities (Mafongoya and Ajayi, 2017, Agrawal, 2008). This credit stems from its accessibility and easy to use at local levels. Arguably, it is rated as the best usable and fit for purpose ethno-science generated through the cosmological interaction between the indigenes (indigenous people) and their natural environmental surroundings. This ethno-science is mastered through longtime of interaction, and observation of the ecosystems and the atmosphere (Mapara, 2009; Okonya and Kroschel, 2013; Jiri, et al, 2016). The elderly indigenes are its custodians. They are responsible for its preservation, regeneration and continuity as they pass it to future generations (Chanza, 2014; Shoko, 2012; Risiro, et al, 2012; Kolawole, et al, 2014).

Importantly, vibrant culture and spiritual beliefs are the bedrock of its existence. In this context, the elders and spiritual individuals receive insights on IKS through dreams and visions (Berkes, 2009; Machoko, 2013). The generated knowledge is organic and orally passed from generation to generation through folk stories, proverbs and idioms, narratives, music and dances, and sacred rituals and ceremonies (Nzenza, 2014,

Machoko, 2013). Thus, IKS is pivotal for indigenous communities' existence and livelihoods strategies. It is used to predict and interpret signs and symbols which informs decision making in socioeconomic, political and religious spheres of everyday life. Critical predictions and decisions are made in times of impending disasters and they inform anticipatory action which gears them for early action in disasters and in maximizing opportunities during good times (Shoko, 2012). It is against this background that, this study interrogates an interplay connection between cultural and spiritually generated IKS and DRR in Chimanimani district. It unpacks how culture and spirituality have informed the forecasting, beliefs, values and ritual practices which are important in DRR. The study also shows the challenges and threats to IKS in the DRR domain. Lastly, it proffers possible recommendation of integrating the practices into the mainstream DRR management and policies.

1.1 Normative understanding of IKS

In academic and development discourses, IKS is referred to by wide ranging names such as, local knowledge (LK), traditional ecological knowledge (TEK), organic knowledge (OK), and ethno-science, *inter alia*. In spite of the diverse names, however, there is general consensus on its definition derived from its anatomy and functions. The simplified definitions for IK by UN agencies are showed in Table 1 below.

Table 1

<i>Defining institution</i>	<i>Definitions</i>
United Nations, Educational, Scientific, and Cultural Organization	Local and IKS refer to the understandings, skills and philosophies developed by societies with long histories of interaction with their natural surroundings. This knowledge is integral to a cultural complex that also encompasses language, systems of classification, resource use practices, social interactions, rituals and spirituality.
World Intellectual Property Organization	Traditional knowledge is the knowledge, know-how, skills, innovations or practices that are passed between generations in a traditional context and that form part of the traditional lifestyle of indigenous and local communities who act as their guardian or custodian.

Based on the above definitions, it is agreeable that IKS is a science with important functions to local ethnic and cultural groups around the world (Mafongoya, et al, 2017; Kolawole, et al, 2014; Chang’a, et al, 2010). This science has maintained the wellbeing and livelihoods of local communities’ generations over the years. Albeit potentials of IKS in climate change, development and DRR, it has been suffering onslaught attacks from different angles and sources (Mogomotsi et al., 2020, Ngongondo et al., 2021, Vilakazi et al., 2019, Ubisi et al., 2020,). The threats come from modern science and education, Christian based religious teachings, and mostly notable is climate change and absence of adequate research and documentation (Mafongoya et al., 2021). Although research and documentation are essential, other scholars have argued that it has its own shortcomings which needs to be considered (Trisos, et al., 2022). The cited challenges particularly in research are that, the writing and translations may alter the original meanings, contexts and

in some cases lacking the sacredness imbedded in rituals and ceremonies. Thus, reading alone is not enough to portray the dramatized IKS teachings, skills practices and belief systems. As a result, it is greatly encouraged that, research and recordings should be translated mostly through practice and direct observation to ensure correct interpretation to maintain its continuity and sacredness.

1.2 IKS, climate change and DRR

IKS is gaining traction in the climate change adaptation, resilience and mitigation efforts in developing world (Shoko, 2012, Nzenza, 2014). It is recommended for most indigenous communities which are less technologized and lacking adequate climate information and services (Africa Adaptation Initiative, 2018, Singh et al., 2018, Trisos et al., 2022). Studies revealed that, the projected potentials of IKS can be achieved through incorporating it in the climate change DRR policies (Jiri, et al., 2015). The assessments and evidence based reports

by UNFCCC and IPCC have noted the importance of IKS in developing strategies and tools for adaptation, resilience and mitigating climate change impacts. The IPCC's 32nd Session in 2010 highlighted the need for incorporating IKS in adaptation as the most readily available, cost-effective and sustainable tool amongst indigenous communities. Its sustainability is guaranteed by the locals' participation in the co-creation of context-specific techniques which generate weather and climate information and services (Machingura, et al, 2018). Furthermore, there is a less complex interplay between the maker and user of IKS in generating climate information and services.

Researches have proved that, for centuries, indigenous farming communities have been wholly relying on IKS in weather and seasonal forecasting and DRR management (Machoko, 2012). In Zimbabwe, various studies in Chimanimani (Risiro, et al. 2012), Muzarabani (Chanza, 2014), Bikita (Mafongoya, et al., 2021), Chiredzi (Jiri, et al, 2016) and others revealed the existence and importance of IK in climate change and DRR. Through IKS, communities observe and interpret behaviors of various indicators ranging from tree phenology, birds and insects, astronomical and riverine, among others. The indicators and their meanings are not uninform across different societies. Importantly, they are good at providing people and community-centered predictions for geo-spatial contexts (Kolawole, et al, 2014, Chang'a, et al, 2012). Local communities identify the indicators, study them and utilize them for making impact assessments of short-

term and long-term seasonal outlook for disaster management. Thus, IKS indicators are critical in decision making on why, how and when to act to reduce vulnerability to disasters (Chanza, 2014; Risiro, et al, 2012). Availability of IKS predictions informs those in farming to co-create planting calendars, managing moisture before harvesting and post-harvesting phases (Mubaya, et al., 2017). The preparedness and early action reduce their vulnerability to slow-onset and rapid onset disasters such as droughts, ambient heat, dry spells, pests outbreaks and invasion by quealea birds, flooding and disease outbreaks. Furthermore, availability of weather and seasonal forecast information is utilized for maximizing their gains during favorable seasonal conditions (Okonya and Kroschel, 2013).

In noting the importance of IKS, some researchers and development actors are calling for its integration with scientific seasonal forecasting (SSF)/meteorological forecasting and into climate change and DRR policies (UNISDR, 2015). Albeit the perceived benefits of integrating IKS into the mainstream climate change and DRR, there is still a mammoth task for this to come full operation (Trogrić et al. 2018). The growing calls are suggesting for the co-creation of vibrant multi-stakeholder partnerships and hubs in order to sustain this union (UNISDR, 2015). For this move to be robust, actors such as the government, development practitioners (including donors) and local communities needs to actively participate in the all the processes. The government should open up space for policy considerations through

embracing multi-stakeholder's contribution. Such efforts are sublime in the creation of acceptable, sustainable and fit-for-purpose policies for climate change adaptation, resilience, mitigation and DRR. Also, development agencies should also embrace a community-led programming and monitoring so as to avoid resistance and possible withdrawal by community members in the initiatives. Integrating the two is highly projected to provide broadly-based weather and seasonal information which facilitate robust adaptation, resilience and mitigation of climate change risk and hazards and other disasters (Hiwasaki, 2014).

1.3 A cosmological introspection of culture, spirituality and IK

Culture is defined as a combination of morals, norms, beliefs, values and practices shared by groups, tribes and ethnics groups, *inter alia* (Jahoda, 2012). It also includes tangible (food, dressing and music instruments, *inter alia*) and intangible cultural artefacts (language, music, songs, idioms, and dances, *inter alia*) (Raeff, 2020). Culture is shared and transmitted from generation to generation through primary and secondary socialisation. On the other hand, spirituality is understood as an embodiment of divine spirit which connects people to deities and other symbolic artefacts (Takuva, 2021). It involves worshipping, performing of rituals of appeasement and symbolic thanksgiving. In Zimbabwe and in Africa at large, most indigenous communities have largely inclined into African Traditional Religion (ATR) before the coming of the dominant

Christianity and Islam. In ATR, indigenous communities, ancestral worship is a common practice. The ancestors are considered as the intercessors between them and the creator of the universe (Cox, 2010).

Studies on cultural anthropology revealed that culture and spirituality are inextricably intertwined aspects (Matsuhira, 2015; Ngara, 2014). The interchangeable relationship shows that, culture can influence spirituality and the vice-versa. Culture is hailed for its sublime role in providing roadmaps and well-calculated frameworks which drives individuals, households and communities' belonging, and understanding of themselves and spiritual ways. The culture assimilated through primary socialisation has a direct bearing in shaping an individual or groups to develop particular knowledge and understanding of divine and other spiritual beliefs and practices (Matsuhira, 2015). For example, the rain appealing ceremonies amongst the Shangwe people of Gokwe (Ngara, 2014; Maravanyika, 2012) is a cultural practice which helps them to spiritually connect to their ancestors when asking for rains before the beginning of the farming season. Like elsewhere in Zimbabwe, these appealing ceremonies are commonly referred to as '*mukwerera*' or '*bira rekukumbira mvura*' in local Shona language (Matsuhira, 2015). The rituals were/are systematic and would start with rituals of purification which could sanitize all the wrongdoings which were done by the community members (Ngara, 2014). Rituals promotes a life of purity. In the following sessions, the local

communities would beg for the rains. The ritual celebration involves drinking of traditional beer and eating which reinforces ‘*ubuntu*’ (Mbiti, 2002) and spiritual satisfaction. These rituals signifies the strong cultural and spiritual allegiance to their ancestors.

Ideally, it’s important to note that, the rainmaking rituals were not only meant for asking for rains from *Musikavanhu/Mwari* (a super deity), but, also perform other many socioeconomic, political and religious functions, *inter alia* (Matsuhira, 2015). In most cases, the rituals were critical in the selection and coronation of chiefs, fighting wars, ritual cleansing and peace building (Maravanyika, 2012, Ngara, 2014). The other mentioned functions are also part of the solution to impending community disasters. Importantly, the rain appealing rituals were critical in evading and managing disasters such as droughts, flooding, pests outbreak and possible invasion by wild animals (Shoko, 2012). Amongst the Shangwe, the spiritual medium *Nevana* would perform rituals of controlling rains when they are going above normal levels to avoid flooding, water logging on crops, destruction of properties, environment, and human lives and to sustain the livestock (Ngara, 2014).

1.3.1 Cultural gender roles, spirituality and rituals

The rain appealing ceremonies amongst the indigenous people’s rituals in Zimbabwe are a common cultural practice (Machoko, 2012). Recorded evidence revealed that, majority of powerful spiritual mediums are women (Ngara, 2014). On record, Mbuya

Nehanda is amongst the powerful spiritual woman recorded in history of Zimbabwe. The study on rain appealing rituals in Mbwerengwa (Takuva, 2021), Chimanimani (Marango, et al, 2016) Mashonaland (Ranger, 2003) and elsewhere revealed that they were centrally coordinated by women. In practice, the preparation process was led by women and most of the tasks require their attention (Risiro, etal, 2014). The ritual process starts from the role allocation before the actual ceremony. Elderly women past the menopause stage were/are selected to do the ritual preparations involving sorting of malt, beer brewing and singing songs in the selected sacred ritual sights (Maravanyika, 2012). The existing culture–nature relationship with women showed that they are the ones closely connected to nature and the environment. In this accord, women were highly valued for important roles as givers of life and sustainers of humanity.

2.0 Conceptual Framework

This study was informed by Twigg (2015) and Lassa, et al. 2018’s Community-Based Disaster Risk Reduction (CBDRR) conceptual framework. This framework draws it strengths from its building blocks which emphasize the importance of considering a needs-based approach before embracing the community’s participation in DRR planning, programming and responses. Thus, for this study, prioritizing IKS, culture and spirituality at the centre of adaptation, resilience building and mitigation is a sublime point of departure. This consideration is paramount in ensuring

acceptability and sustainability of the proposed and implemented DRR interventions.

Important to note is also the fact that CBDRR considers external intervention as critical on the success of DRR initiatives. The external interventions are inclusive of the government line departments, civil society organizations (CSOs) and other private actors. These actors are applauded for bringing social capital which is always a missing in kick-starting resilience and adaptation to DRR. (Mafongoya, et al, 2022). The social capital will bring in technology, financial capital and human capital which are all important in resilience. Importantly, the CBDRR is mindful of the local members' participation and inclusion of their locally available solutions and preferences. In this regard, the interventions would be tailor-made to suit what people know and wish to achieve. Thus, bringing external help which supports the revival and incorporation of their IKS is appreciated. Integration of both the local and external solutions supports the common adage in the development discourses which says, 'nothing for us, without us'.

3.0 Materials and methods

This case study on IKS, culture and spirituality conducted in Chimanimani district was premised on a qualitative paradigm. Participants were selected using purposive sampling techniques. The anthropological nature of the issues under research influenced the adoption of the pragmatic longitudinal approach.

This approach to interrogate the intersectionality of IKS indicators, culture and spirituality on DRR was conducted in two phases between October and December, 2023. We structured it that way in order for us make comparison on IKS indicators and rituals involved before commencement of rainfall season. The study covered 11 wards out of the total of 23. The selected wards included 1, 2, 3, 5, 8, 9, 13, 14, 20, 21 and 22. The data collection process utilized focus group discussion (FGDs), key informant interviews (KIIs) and comprehensive desktop review of related literature. Triangulation of these research tools in households, individuals, and stakeholders allowed us to intersect IKS, cultural and spirituality issues in the district. Our highly, participatory approach permitted us to identify and interrogate an interplay between the three variables on how the locals can improvise pragmatic strategies in the DRR. We were also guided by gender mainstreaming and inclusion principles. Herein, we included women (in all their diverse age groups), disabled and the vulnerable and resource poor community members.

3.1 Data Collection Instruments

i. Key Informant Interviews (KIIs)

In this study, key informants were critical participants. The selected participants were considered based on their knowledge and experience on IKS indicators, culture and spirituality and DRR in Chimanimani district. Table 2 below shows the selected key informants and the justification.

Table 2

Key informants	Justification for selection
Spirit mediums	They were selected because they are the custodians of rain making ceremonies. Their roles in ritual processes, and capability in foretelling and forth-telling disasters and managing them influenced their inclusion in this study. They provided critical information on current disasters and possibilities of handling them.
Chiefs and headmen	These are the traditional leaders and the custodians of culture and spirituality. They are responsible for the maintenance of culture in line with traditional practices of their forefathers. They are also responsible for coordinating community members on decisions to take during rituals, farming and all other important socioeconomic and political spheres of life.
DRR representatives from the Civil Protection Unit (CPU)	These involved representatives from the responsible government line departments, rural district council, and police. They provided critical information on their involvement in DRR processes.
Civil Society Organizations (CSOs) representatives	The selected key informants were from the locally based NGOs which are directly involved in DRR and IKS in Chimanimani. They provided critical information on the important role of IK and DRR in the district.
Church leaders	They offered their opinion and beliefs on the role of IKS, culture and spirituality in DRR. Their views offers and alternative thought about local spirituality and its effects on DRR.

ii. Focus Group Discussions (FGDs)

We conducted 22 focus group discussions in each selected ward. The FGDs were critical in providing diverse but balanced responses on the subject under discussion. We mixed people of different age groups, sex and religious inclinations. We purposively did this in order to harness complex and dynamic experiences and mindsets on the issues under the study. Importantly, different ideas were shared, discussed and validated and point of conclusions were reached.

iii. Desk/Literature Review:

We also comprehensively reviewed secondary data sources. The reviewed sources also comprised of the peer reviewed documents (journal articles and book chapters), and published online grey literature. The secondary data provided the needed insights on DRR issues in the district, cultural and spiritual practices in the area and recorded IKS. The sources also shared some important information on ritual performance which gave us a cutting age comparison between the past and the current and inquiry for the future. This information added more understanding

to the other received from the KIIs and FGDs.

4 Delimitation

This study was carried in Chimanimani district which is located in Manicaland province. The district spread over any area estimated to be cover around of 3,450.14 km². This district is characterized by a mountainous terrain in most of its parts. The mountains are characterized by high peaks and deep valleys. It also borders Mozambique on the eastern side, Chipinge district in the southern side and Buhera district in the western side. The district has all the five natural agro-ecological zones from I to V. The natural agro-ecological zone I, II and III have abundant rainfall amounts whilst the remaining IV and V are characterized by semi-arid and arid conditions. The arid and semi-arid agro-ecological zones receive an average rainfall of below 450mm per year. Also, the district is prone to recurring disasters such as flooding and veld fires. This district is also prone to multiple hazards, dominated by hydro-meteorological hazards such as floods, droughts and dry spells. Other dangerous hazard in this area are veld fires which breaks out between August and October before the rains. Weather and seasonal forecasting in this district come from two main sources which are, official weather and seasonal information from MSD and IKS. The MSD forecasting has some limitations on adequate and most appropriate forecasting information. The area is characterized by rich cultural rituals and practices and spiritual beliefs which are critical in seasonal forecasting and DRR. The community-based

cultural rituals and spiritual beliefs are however, not considered in the mainstream forecasting information and services. However, there are ongoing researches and attempts to integrate the IKS, culture and spirituality and MSD forecasting in boosting the community's resilience against natural hazards which affects the area.

5.0 Findings and discussions

The study discovered that the selected wards in Chimanimani district are rich in cultural and spiritually based IKS Early Warning Systems indicators. These wide ranging indicators have been used over successive generations. The IKS indicators were drawn from their surrounding geographical features. The features included the pools, aquifers, springs, caves, mountains, sacred forests (*magwasha*), trees, insects and other sacred birds species (eg. cuckoo) and others. In accordance with the cultural and spiritual inclination of Ndau people of Chimanimani, the geographical features were not as ordinary as we may consider them. To them, they are considered as 'moral geography' which is defined and understood in the cultural and spiritual contexts. It is the moral geography which they rely on making weather and seasonal forecasts and performing sacred rituals which improves their wellbeing and DRR strategies.

In summary the IKS EWS, included the following:

- (a) Ecological: these includes tree phenology, relating to different species of trees and other wild and domestic plants. In these

plant species, they observe different patterns such as, dropping of leaves, profuse flowering and fruiting, and shooting of new leaves. In interpreting these behaviors, they would make assessments on the quality of rainfall amounts, distribution and potential disasters to be experienced throughout the season. The used plant species were not ordinary but, they comprises of some sacred trees and other plant species.

- (b) Mountains: the mountains in the area have moral and spiritual significance in Chimanimani district. Mountain behaviors such as, high sounding, mist and burning during dry seasons were important forecasting indicators. They largely indicate the approaching of the rain season.
- (c) Riverine: these include observations made from waters in the rivers and other sources. The behaviors of waters includes drying up, flooding, and changing color and others. Some of these water sources are also habitat for water and marine spirits like mermaids. These spirits are appeased from time to time in inducing falling of rains or calming excessive rainfall amounts which may threaten lives, livestock and property.
- (d) Celestial: these include astronomical bodies and their terrestrial behaviors inclusive of the sun, moon, stars, winds

(direction and types of which). For example, '*chamupupuri*' (whirlwind) is considered important for the locals. It shows that the local spirits are visiting them and, its presents is believed to signify presents of the mermaids and other gift-giving spirits. These winds can be manipulated to bring good gifts like rains and peace in various areas.

- (e) Small insects and birds: the behaviors, presence or absence of some types of small insects/creatures such as ants, frogs and birds have strong cultural and spiritual significance. There are strong beliefs that some are sent by their ancestors as sources of food and sometimes warnings to disasters to prepare them for early action.

A combination of all these IKS EWS is considered critical in the EWS for anticipatory action. Overtime, the locals have stayed in harmony with them as a way of preserving their environment, their livelihoods and reducing their susceptibility to disasters. The Chimanimani people's preservation of the beliefs and practices to IKS EWS is not unique to them. Studies in Mberengwa (Shoko and Shoko, 2012), Bikita (Mafongoya, et al, 2021), Gokwe (Ngara, 2014) and elsewhere has shown how indigenous communities value their tradition and spiritual way of life. Although there are some emerging threats to IKS, *eg.* from Christianity, majority are yearning to return to sacred

times embedded in their norms, value and spiritual wellbeing.

5.1 The cosmology of ‘mukweverera’ (rain appealing ceremonies)

In this ethnographic study, we engaged traditional leaders who shared their deep knowledge and beliefs in cultural and spiritual rituals. The following chiefs namely, Muusha, Ngorima, Chikuwa and Ndimba narrated their traditional ways of performing rain appealing ceremonies in the month of October just before the commencing of the rain season. The rain appealing ceremonies are locally referred to as, *mukwerera/mukweverera*, *makoto* or *bira*. In spite of the chiefs’ differences in narrations and practices, however, they all agree to the same code of conduct when performing rain appealing prayers and rituals. All these chiefs unanimously agreed that, they seek advice from a spiritual medium known as, *svikiro*, *mhondoro* or *homwe* which resides in Mutema area, Chipinge. The spiritual medium would advise the chiefs to perform the ceremonies or to wait until he/she visits high spiritual mediums known as *mahiza* or *dima* who stays in Mozambique. The visits were prevalent mostly in times of impending disasters such as droughts and flooding. The high spirit mediums would beg to *Musikavanhu/Mwari* (God) for the blessings and being spared from the looming dangers.

Having done the preliminary processes, the chiefs were ordered to mobilize their people to brew beer within the confines

of tradition. The traditional beer was brewed using *zviyo* (finger millet - *eleusine coracana*). In this process, women who were in the menopause stage and those of trusted moral standards were allowed to brew the beer. All women who are still sexually active are not allowed to avoid contaminating the ritual process. Failure to observe that would result in punishment or rejection of the ritual process. Sanity was a prerequisite for sacred rain appealing ceremonies which could ensure blessings and protection from dangers. On the day on the ritual/s, the spiritual medium, the chief and his people would perform them on sacred sights such mountains and thick sacred forests known as ‘*magwasha*’. In chief Ngorima’s area, they would perform them either near the sacred pool named ‘*Chisuko*’, or a waterfall named *Pera* or in the ‘*Mugwasha*’.

The rain appealing ceremonies were full of events which were performed from the start to the end. The elderly and the chief under the leadership of a spiritual medium would perform first rain making prayer. After that, they would open to the public for people to start singing traditional spiritual songs, dancing and drinking of beer. The dancing and singing comprise deep and expressive sexual innuendos. They culturally believe that explicit sexual dances and singing would induce the ancestors to bless them with fertility on the land. Box 1 below shows an expression by a spirit mediums on why they use vulgar language during the rituals.

Box 1

When we sing these songs, we are appealing to the ancestors to bless us with rains which makes this land fertile. Fertility in human beings happen when there is sexual engagements and here now we appeal to the mother earth by behaving in a sexual way so as to appeal and appease them. After doing that, we are definitely going to be blessed by abundant rains for everyone and guaranteed protection by the ancestors.

Studies conducted elsewhere have also revealed that singing vulgar language and dancing in sexually provoking way during rituals is not a unique practice in Chimanimani. Studies by Shoko (2012) in Mberengwa, and Ngara (2014) and Maravanyika (2012) among the Shangwe in Gokwe confirmed similar practices. It is a cultural and spiritual way of appeasing the ancestors when appealing for rains and other blessings. Whilst singing vulgar language and sexual dances was/is a universal standard, however, a part of the ritual practice in chief Chikukwa’s area provides a unique and furore condition. We gathered that, after the prayers outside the *Gwasha*, the next step was that, all the women in the menopause stages were allowed to get inside the thickets of the forests and all present men interested were to also join them. They would engage in engaging sexual

escapades until they are satisfied or tired. They would interchange partners during the ritual ceremony. The justification for such practices are more spiritual than secular engagements in sexual consummation acts. These acts were only for one day on each year when performing the rain appealing rituals. In all other normal days, sex outside marriage is highly prohibited and a punishable offense under cultural norms and values.

Whilst this sounded noble to the cultural way of appeasing ancestors and avoidance of disasters, this did not go well with some members from the Christian background and academic standing. Some have criticized it as sinful acts before God. Box 2 below shows the sentiments from one of the local pastors we encountered during the research.

Box 2

Some of these practices are unholy, how can we allow one women to sleep with a man who is not her husband? To make matters worse, there is no use of protection and hence this may lead to the spread of venereal diseases. These acts needs to be banned that why rain is no longer falling and also disasters are increasing in our areas because God is angry.

Whilst these sentiments attracts an intellectual scrutiny, however, the traditionalists in the area defends it as the

best actions of adhering to their culture and tradition. Their defense is largely backed by their strong belief in culture

and spirituality. They expressed that, failure to perform them would lead to, secularization of their practices and would cause a lot of spiritual and social disequilibrium. Some key informants from the CSOs also offered their varying responses to the practices. Though some respect the tradition as the major breakthrough to DRR, however, they expressed fears especially on the explicit sexual acts. They suggested for a revised approach which could not endanger majority to other disasters like sexually transmitted diseases which could add more pressure on the ones they are already fighting with in their area.

5.2 Women's role in traditional practices

The study revealed that women play significant roles in the observation and

performance of cultural and spiritual rituals in Chimanimani district. Firstly, they are the primary observers of time and the trends in weather and seasonal outlook. As primary producers in the fields, when the farming season is fast approaching, but with no indication of rains and action from the chiefs, they would take the initiatives. As noted in the study, a group of elderly women would congregate and directly approach their traditional leaders and provoke them to act. In chief Ngorima's area, we observed that, the elderly women won't hesitate to register their anxiety over the delaying rains and rain making ceremonies. Box 3 below shows one of the spiritual mediums' sentiments on how angry women acts and express their discontentment in the area.

Women can spent 4 to 5 days without bathing and as a group they would visit the chief and cover him with their dresses and skirts. They would be shouting that, ' <i>aNgorima woye mvura inonaya nepi imi makatsamire gongo</i> ' (Chief how can we have rain when you are ignoring your duties of having sex). Also refusing to bath would attract a bad bodily odor signaling unavailability of water to bath and this would provoke the chief to act in organizing the ritual processes.

This act have two meanings to the chief. Firstly, the vulgar language would not go well with him considering his status as a chief. Secondly, the smell from unbathed women would again reveal the intensity of the impending disaster. As a result, he was left with no option but to act fast to save himself and the rest of his people. In no time, all necessary consultations and rituals would be performed to save people from the threats of impending disasters like droughts. More importantly, women will continue to guide and actively participate in all the sacred acts before,

during and after the rainmaking rituals. It can be deduced that, women are highly valued for their roles as mothers, care providers, and givers of life. As noted in Chimanimani, some studies conducted elsewhere have confirmed the significance of women in traditional practices and spirituality. Matsuhira, (2015)'s studies showed that in Matopos shrines' rain appealing ceremonies, women have been in direct control and would ensure the success. Therefore, it is important always consider women as the bedrock of IKS and DRR.

5.3 Cosmology in turmoil

This ethnographic study revealed that, IKS, culture and spirituality in Chimanimani are facing challenges like elsewhere. The reasons for that are many and wide ranging. The first pointed factor is Christianity. As noted, majority of community members who are converts are shunning away all the practices to do with tradition and spirituality. They consider the practices as sinful and unholy. As a result, this thwarts their contribution and participation in the acts. Their non-participation in rainmaking ceremonies and related rituals puts the whole process in chaos. And, to the contrary, they are also heavily criticized by the traditionalists as responsible for the recurring disasters in the district. They are blamed for disregarding important and sacred days like *Chisi* (a day of resting) by going to church or working in fields since it doesn't make sense to them. It was noted that, such acts have desecrated the area from sacredness to the profane. These practices are believed to have angered the ancestors and resulting in unending disasters such as, droughts, flooding and dry spells affecting their area.

Another noted fact which is pointed for exposing their district to disasters is the young generation and westernization. On this note, the youth are fast swept away by westernization and disregarding their cultural values, norms and practices. Some educated youth are hardly convinced and believe that all the cultural and ritual practices are mythical and superstitious. Their beliefs are supported by the increasing technology

and scientific education. For instance, they are easily convinced that, weather and seasonal forecasting and disaster prediction can best be obtained using advanced technology. Thus, the undocumented knowledge and traditional indicators are fast losing their value and purpose. Related herein, was also the fact of the current traditional leadership in Chimanimani. It was expressed that, some of the current traditional leadership is now in the hands of the young generations. These young leaders have no direct connection with tradition and it is leading to the fast disappearance and secularization of the once important cultural and spiritual beliefs which used to sustain community members from 'known and unknown' disasters. In most cases, the young traditional leaders needs to be pushed into acting and adhering to the cultural practices which can save the people. Furthermore, though they are pushed to act, some believe that the results may not be fruitful since they are not acting out of their strong commitment. In many cases, all the laid procedures may not be followed properly due to the differences in belief orientation and preferences.

Lastly, the other noted fact on the threats of IKS, culture, spirituality and DRR is climate change. We noted that, the multi-dimensional impacts and effects of climate change are largely affecting the significance of IKS. The adverse effects are thus, causing some formerly reliable forecasting indicators to lose their effectiveness and casting doubts on everything which follows including the rituals. It emerged that, the local people are finding it difficult to understand the prevailing conditions which are largely

characterized by high impact flooding, droughts and other emerging disasters. A key informant interviewee from the CSOs expressed that, the ever increasing food insecurities and flooding are confusing people. As a result, relying on their traditional ways is fast fading away as they are perennial dependents to the government and donors. Thus, the lost trust is also crippling their adaptation and resilience potential without the help from outsiders. In such contexts, it is prudent to accept that adaptation, resilience and mitigation of disasters calls for multi-stakeholder participation. In line with these views, it is agreeable that integration of IKS and SSF becomes the better option of inclusion to reduce the vulnerability of community members to trending disasters (Mogomotsi et al., 2020, Ngongondo et al., 2021).

Conclusion

DRR is a common call which attracts a big attention in the climate change and disaster ridden world. Importantly, it's prudent to note that there is no a 'one size fit-all' solution in addressing disasters. Depending on variables such as agro-ecological location, topographic characteristics, level of economic

development and technological advancement, among others, there is need for context specific considerations. In lieu of these approach, CBDRR is important in addressing the recurring disasters in Chimanimani district. Embracing their IKS is a rational move which adds value, ownership and desires for participation in disaster reduction and management. Prioritizing their culture and spirituality boosts the confidence and the need for continuity amongst the indigenes and the traditional leadership. The approval by the vanguard of the Ndau people of Chimanimani will guarantee a possible smooth approaches to the DRR. Albeit the positives on grounding CBDRR, some cultural beliefs and cultural practices such as rainmaking ceremonies and other symbolic beliefs are under severe scrutiny and rejection by some members. Factors such as the growing of modern technology and sciences, losing of elderly leadership, climate change and Christianity are threatening the robust revival of the cultural and spiritual based IKS which is important in the DRR. It is noted that embracing the CBDRR which promotes the integration of IK and MSD would provide a balancing of possibilities in the DRR management.

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