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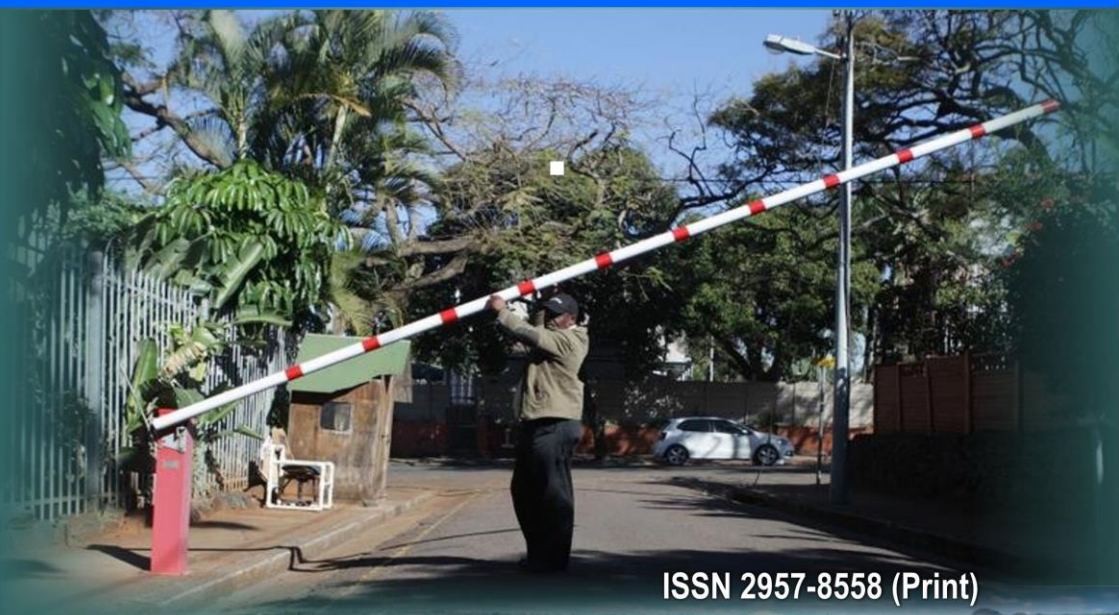

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About the Journal

JOURNAL PURPOSE

The purpose of the *Ngenani - Zimbabwe Ezekiel Guti University Journal of Community Engagement and Societal Transformation Review and Advancement is* to provide a forum for community engagement and outreach.

CONTRIBUTION AND READERSHIP

Sociologists, demographers, psychologists, development experts, planners, social workers, social engineers and economists, among others whose focus is on community development.

JOURNAL SPECIFICATIONS

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SCOPE AND FOCUS

The journal is a forum for the discussion of ideas, scholarly opinions and case studies of community outreach and engagement. Communities are both defined in terms of people found in a given locale as well as defined cohorts, like the children, the youth, the elderly, and those living with a disability. The strongest view is that getting to know each community or sub-community is a function of their deliberate participation in matters affecting them by the community itself. The journal is produced bi-annually.

Guidelines for Authors for the *Ngenani* Journal

Articles must be original contributions, not previously published and should not be under consideration for publishing elsewhere.

Manuscript Submission: Articles submitted to the *Ngenani - Zimbabwe Ezekiel Guti University Journal of Community Engagement and Societal Transformation Review and Advancement* were reviewed using the double-blind peer review system. The author's name(s) must not be included in the main text or running heads and footers.

A total number of words: 5000-7000 words and set in 12-point font size width with 1.5-line spacing.
Language: British/UK English
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Contents

PHILOSOPHICAL REFLECTIONS ON THE ENVIRONMENT AND THE IMPACT OF AFRICAN INDIGENOUS RELIGION ON FOOD SECURITY AMONG THE NDAU PEOPLE OF SOUTH-EAST ZIMBABWE

ELISHAH MUTIGWE[1] AND FAITH CHIPFAKACHA[2]

Abstract

This article focuses on the role of the African indigenous religion(s) (AIRs) in compacting environmental degradation and affirming the stability of food security among the Ndau people of Chipinge,south-east Zimbabwe. The study interrogates religious taboos, considering the divine punishment embedded in the essence of the AIR in the protection and preservation of the environment. Drawing examples from Chief Mapungwana's and Chief Musikavanhu's structural organisation in public rituals and mushandirapamwe *(working together projects) and* doro remakoto *(rain-making ceremony) in the Ndau society, the study shows that the religion fosters mutuality, reciprocity, togetherness and positive attitudes towards the environment. Premising the entire argument on the foregoing insights, the study envisages that the tripartite cosmology of the Africans immensely contributes to the conservation of the ecosystem. The study focuses on the perpetual divine food provision through reliable rains, good harvests and ubiquitous existence of both domestic and wild fruits in the vicinity and thereby ensuring food security to the Ndau people. In cognisance of the food abundance, the AIR, through some divine restrictions, ensures equal sharing and shuns the notion of* mbau *(greed). The study recommends that the recent interface between AIRs and Christianity should not disturb the Ndau people's cosmological stability.*

Keywords*:* ancestors, religious rituals, cosmology, ecosystem, food sustainability

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INTRODUCTION

The African continent is perceived to be the ideal field of play for all sorts of food donors. The land is deprived of its pride of feeding its children, especially under the banners 'dark continent', 'poor continent', 'the needy continent' and 'black magic infested land'. These and others culminate in challenges surrounding the notion of food security among Africans. The term 'food security' can be defined as the ever-availability of food with adequate nutritional value. Chirimuuta and Mapolisa (2011) define food security as "a situation where all people at all times have access to nutritionally adequate food and safe water". Nevertheless, this study incorporates the concept of water availability at some stage as a prime factor for sustainable food production and storage, but not as an integral part of the food. To this effect, the article notes that for food security to be attained, a complement of factors interplay. The World Food Forum, as cited in Chirimuuta and Mapolisa (*ibid.*), outlines the factors as the availability of food, access to food, stability of supplies and utilisation of food. Given the possible factors captured by the immediate last proposition, it is important for the article to bring to the fore the fact that these are to be examined in the spirit of religious taboos to maintain the main argument of the research. However, the paradox surrounding all such derogative labelling is the definition of religion by Karl Marx as cited by Pedersen (2015), which perceives religion as the "opium of the oppressed", or "the opium of the mind". Oppressed by whom? Whose mind? These questions rewind the most controversial debate on the study of African indigenous religion(s). The research seeks to unravel the nature of the Ndau traditional religion. The study explores the existential arguments of the taboos among the Ndau and their understanding of the environment and its significance to their religious and dietary mindsets.

METHODOLOGY

The study employs the ethnographic approach in obtaining the original data on the religious and environmental coalition in food security. Hoey (2020) avers that ethnography has been equated with virtually any qualitative research project where the intent is to provide a detailed, in-depth description of everyday life and practice. The use of this method helps the research to tap into inner feelings and inclinations from an *emic* perspective, thereby capturing the insiders' point of view. In this regard, the researcher becomes a participant but still maintains the observational role to describe and experience with a degree of detachment. The research also made use of interviews as a research technique to tap into the empathic and pertinent information about the religiosity of the Ndau. Twenty interviewees across the district were selected through the purposive sampling method. Key informants were chiefs, kraal heads, *nduna dzamambo* (messengers), *mapurisa amambo* (police officers) and other elderly people who are the custodians of cultural and religious values and norms.

LITERATURE REVIEW: AFRICAN INDIGENOUS RELIGION AND TABOO

Luyaluka (2017) alludes that defining the AIR has always been a concern in the studies of Africa. He posits that, in general, most African writers subscribe to the recognition of the AIR as a single and collective notion. Thus, despite being incubated in a milieu of different cultures, the AIR is still one, and afrocentricises all dimensions of the notion to pronounce people across the entire continent. Accordingly, Mbiti (1991) states that the African religion comprises five important aspects, with each functioning as a building block to attain the notion. The concept of African religion is construed through the various beliefs, practices, ceremonies, festivals, religious objects and places, values and morals, and religious officials and leaders. Awolalu and Dopamu as cited by Omotoye (2011), defined African indigenous religions as religions that have been handed down from generation to generation of Africans. The two further assert that the AIR is a fossil religion (a thing of the past), but a religion that Africans today have made theirs by living and practising it. The aspects of generically living and practising it entail that there is nothing written about them as is the case with other religions, but still play an integral part in the African conception of ontology. The Ndau, just like any other African society, have their own systematised set of beliefs in ancestors, rituals, sacrifices, values and norms, among others, but all culminating into their native religion. These notions all contribute to the well-being of the people in African communities. Drawing from this conceptualisation, the African people have a tripartite understanding of cosmological stratification.

The Ndau people believe in the ontological existence of spirits/ancestors that are more or less the divinities of each family and clan. Among the Ndau of Zimbabwe, ancestors or the living dead, as Mbiti (1991) labels them, are the incorporeal spirits of the late morally excelled mature males and females. These should have experienced a 'good' death and not death by suicide or murder in uncalled-for wrangles.

Against this backdrop, the people of Chipinge hold that the ancestry mystery is *axis-mundi* between the present living and the environment. Thus, the divine efforts by the Ndau ancestors/gods play an integral role in protecting and fostering the welfare of their brood. This study prefers to term the interconnectedness between the "living timeless" (Banana 1991), the physically living humans and the ecosystems the building blocks of the Ndau people's worldview about participation. The Ndau participation implies that every component of the cosmos plays an integral role in the up-keep of the members of the society, either as a *homwe* (host/mediums) of a spirit or as a direct source of food or protection. The Ndau traditional society comprehends the entirety of their world's experience, including the physical surroundings as well as the spirit beings. One of the key informants said, *'Makomo, mifuya, nemakandwa ese amwaningira eshe aya akagarwa ngevadzimu dzemhuri dzemuganga unouyu kuti vantu veshe vangwarirwe nekuhinwa kur'a kwakakwana'* (The mountains, rivers and

dams you are looking at are all infested by both clan and territorial ancestry spirits for the well-being of the community in terms of protection and divine provision of balanced and nutritious food). In response, the Ndau people respect and care for the environment to the extent of harnessing it in a non-abusive manner for future generations' continued existence and providence. Theybelieve that their ancestors are the dependable link between the physical world, the spiritual world and God. The people of south-east Zimbabwe believe that being the closest link, the living timeless negotiate with God for rains and removal of plagues from the land on behalf of the physically living. To this effect, Ejizu (2013) commends the ancestors as he argues that, 'Africans believe that the ancestors are essentially benevolent spirits."

Within the realm of African religion, the Ndau hold that divine punishment is unwavering in maintaining a state of equilibrium between natural resources and humanity. Thus, the divinities extrapolate a good measure of punishment to the degree of evil perpetuated on nature significantly to curb the tendency of denigrating the ecosystems. In the same vein of argument, Leonard (1905) as cited by Ejizu says, "Among the Ibo, religion and law are so closely interwoven that many of the most powerful legal sanctions are derived directly from the gods."

The most striking idea from the above proposition is that if one breaches religious values and norms, the entirety of the African community suffers the punitive reward. Religious values and norms that should be kept sacred are called taboos. Taboos are social or religious customs exerting some prohibition on a particular object or place. Usually, a breach of such customs warrants punishment to the individual or family or the entire community from which the perpetrator of the evil comes. Taboos are fully explored in a section to follow.

STRUCTURAL ORGANISATION OF THE NDAU SOCIETY

The Ndau people, like others in different parts of the continent, tend to have some political, social and religious structural organisations for the general good. Deeply embedded in these organisations, is the notion of structural functionalism where each part plays its integral role to see the continued prosperity of the community. However, it is worth mentioning that, unlike the modern state, some offices among the Ndau serve a plethora of duties and obligations. The variant practitioners sometimes overlap each other's scope of operation as complements for the best results. For purposes of uncovering the secret underlying how the people under study, care and extract the riches of their environment without grossly depleting the levels of food security and sustainability, this article presents a cursory description of its structural organisation. Special mention is accorded to *Ishe* (Chief) who happens to be at the helm of the entire *duntu* (territory). However, it is important to note that the Ndau do not frequently use the term *Ishe*. Instead, they use the terms *mutape* or *mambo* for chief.

The district of Chipinge is divided into five chieftainships, namely *Mutape* Mapungwana, *Mutape* Mutema, *Mutape* Musikavanhu, *Mutape* Garahwa and *Mutape* Mahenye. As heeded earlier, the name *mutape* denotes a chief. However, first three chiefs of the district are looked at because they have beliefs and practices almost divorced from the other two. The Mahenye and Garahwa chieftainship share the southern boundaries and other religious aspects with the Tshangani people of Chiredzi District. The chief performs both traditional roles and religious obligations. In that respect, he acts as the rainimaker or "asker for the rain", to use Mbiti's terminology, but at a higher level. Chief Mutema controls the lower north and part of the north-east of the district, while Chief*e* Mapungwana reigns the north-eastern part. Chief Musikavanhu is the man in charge of the lower south territory of Chipinge and he too serves as both religious and political social arbitrator in case of social injustices. Chiefs also preside over court cases involving the trial of environmental denigration perpetrators in their respective territories but, in full consultation with the 'living dead'. To this end, it is evident that ancestors are constantly in touch with the living as the life-givers and moral prescribers. Just below the *mutape* there is a *mambo* (local kraal heads responsible for reigning over a small area but in full consultation with the chief. Bourdillon (1982) argues that:

> Sometimes the chiefdom is divided into wards each of which is ruled by a branch of the chiefly family, in which case the chiefship is likely to alternate between the wards. Wards may also be assigned to branches of the chiefly family excluded from succession to the chiefship….

In this regard, those in charge of the wards are lower-level *mambos*. The *mambo* reigns with the aid of a council of *ndunas*, and these are the watchdogs of the kraal head as well as advisors. At the bottom, there are *mapurisa amambo* (chief's police officers), mostly responsible for arrests and summoning the culprits to *dare* (court). Notably, all these assume religious roles.

DORO REMAKOTO (RAIN-MAKING CEREMONY)

Across the African continent, it is widely held that only the gods are the owners and providers of rain. In the same context, the Ndau people venerate their ancestors within their main African indigenous religion via a rain-making ceremony referred to as *doro remakoto*. *Doro remakoto* is a simple game of semantics with no direct translation into literal meaning. The underlying fact is, the ceremony does not entail the pure magical making of some rains by the "rain-makers". Rather, it is a mere mode of communication by the living to the departed forefathers who subsequently inform *Mwari/Musikavanhu* (God) who is the sole and ultimate divine responsible for the rains. The study notes that the ceremony usually takes place before the commencement of the rainy season. It was also unravelled in this study that such gatherings are held at different levels. Thus, *mambo/mutape* (kraal head) may preside over a small one while

the *ishe* (chief) does that at a higher level with full consultation with the *magwasha endau* (territorial spirits).

Before the beer brewing, the *mutape* or *ishe* who acts as the presiding officer over *makoto*, *anohamba kuti we zvinodiwa ngevaripashi* (consults the *n'anga* to get instructions from the divinities). After the consultation with *vadzimu (ancestors)*, the preliminary preparations for beer brewing commence with malt making. One of the key informants said that only *zvikosha/chembere* (very old women who are past menstruation) and virgin girls from the royal family are tasked to make malt for the beer, using either *magwere*/*mabonere* (maize) or *mafunde* (sorghum). Mapuranga (2010), describes women as occupants of very vital offices in the Ndau religion as *zendere* (virgin girls) and *mbonga* (old women who have reached menopause) participate in religious ceremonies. After the beer has matured, *mutape* or *ishe* sends an invitation to the *makoto* ceremony to his subjects via his *nduna* or *purisa ramambo*. For the success of the ritual, every family is compelled to bring one or two *huku* (chicken) to braai on the eve of the day in a sacred forest called *marombo*. Culturally, chicken is a valuable type of meat so much that it is used to appease the ancestors for a quick answer for the coming of rains.

Participants at the *makoto* ceremonies are dressed traditionally (Ndlovu, 2011:92). Depending on one's choice, both females and males can be dressed in *nhembe neshashiko* (animal skin pieces covering the front and back). Also, some women wear *zvichakati*/*zvikisa* (heavily plotted skirts in traditional colours of are red, black and white). Contextually, the attire is meant to enable the people to partake in some traditional dance in the ritual's procedures. The dances performed during the ceremony will be in line with some vulgar rich songs. Only the elderly are sanctioned to attend. To that effect, *zvikosha*/*chembere* takes up the duty of singing vulgar songs.
Coupled with vulgar lyrics are poetic utterances by the *mutape* or *nduna yamambo* or the rain-maker to provoke the ancestors and *Mwari* to trigger the rains instantly for the good of their families. In concurrence with this view, Bourdillon (1982) says the ancestors are responsible for providing the rain and caring for their crops. Invariably, the ceremony normally comes to an end graced by plenty of rainfall – an event which is anticipated by the Ndau as evidence that the gods have responded to their plea. Thus, the ubiquitous prevalence of food for the Ndau is guaranteed.

ZUNDE RAMAMBO

Zunderamambo (chief's field or granary) is very important among all African people, especially the Ndau. It is where and when almost every family sends a representative to practise what the Ndau people call *mushandirapamwe* (working together) in a communally-owned field under the custodian of the kraal head or the chief himself. The proceeds of such a field are kept in the chief's granary to feed the disadvantaged

of the society or *vaini* (travellers/visitors). As argued by Gudhlanga and Makaudze (2012), the produce is meant to help the poor or the generality of the population in times of drought, famine or war. *Zunderamambo* signifies one of the fundamental properties of *untu/Ubuntu/unhu* (ethics)*;* sharing. It has been discovered that this sort of *mushandirapamwe* takes different forms and has a diversified course of activities depending on the times of the season within which it is performed. The *zunde* activities usually commence one or two weeks after the reception of the first rains of the season. This is to capacitate the villagers to sow their fields first. If it is the summer season when the villagers are supposed to sow in the field, some family representative may take *chipani chem'ombe negeja* (an ox-drawn plough) or *tsvanda yekuisa mbeu yekosima* (a weaved container for carrying the seed to the field), *badza rekunoparadzira munxuba* (hoe for spreading manure), while some would donate the seed according to the families' capability. The seed would be the staple food of the area which is *mafunde* or *mabonere*/*magwere,* especially in the *gowa* (low veld) area. In a bid to further the spirit of sharing, women of the village prepare common food and traditional beer for the workers. After the germination of the *mbeu dzakasimwa* (the sown seeds), another activity-centred ceremony follows, this time for weeding. The end of the season is marked by two more *mushandirapamwe* at *zunde ramambo* activities, the first one meant for *kukukura* (harvesting), then the other for *kupura, kurudza zviyo zvacho nekuzvibeka mumatura* (shelling and winnowing and storing). Closely related to this concept is the notion of *humwe*, where members of society help each other in weeding or ploughing the fields. In this regard, several *zvipani nemageja* (several teams using ox-drawn ploughs) flood the targeted fields and in no time the job would be accomplished. The *humwe* organiser simply provides food. The concept of *humwe* also ensures that families assist each other with food sustenance. According to one of the informants, *Mbuya* (grandmother) Donono from Manzvire Village, all these ceremonies are graced with a beer-drinking party designed to *"kutambisa kana kutontodza pahuro pevadzimu vedu, asi chikurusa kuri kuvabonga ngemvura yavanotihina"* ("the beer is for pleasing the thirsty ancestors and thanking them for the rains"). The study, therefore, avers that the Ndau place their faith and hope in the spiritual world for welfare, with all the necessities; chiefly, food, being divinely provided

FOOD SECURITY: EQUITY AT PLAY

The heavy rains given to the Ndau people via the *doro remakoto* discussed above, nature provides abundantly. The variant agricultural activities prosper under these rains to meet the food sustainability for the Ndau. These range from crop production to animal rearing. They grow cereal crops like *mafunde, emutode,muchayane nechimukadzi usaenda* (different cultivars of sorghum), *mhunga* (millet), *mungoza* (rapoko), *magwere*/*mabonere* (maize). These are usually meant for their staple food *sadza* (thick porridge). Apart from cereals, they grow *matikiti* (pumpkins), *bhochisi*

(beans), *manduwi* (groundnuts), *magaka* (cucumbers), *matanga* (squash), *ife* (native sugarcane), *mujumbuya* (cassava), *madima* (sweat potatoes), *makebe* (watermelons), *mashamba* (sour watermelons), *nyimo* (round nuts), *nyemba* (runner beans) and *madhumbe* (yams). These crops can be grown in separate fields but they are mostly intercropped with the cereals to save space and labour. Intercropping also helps in weed, pest and insect control and nutrient fixing. The article also found out that these crops are not just grown, but there are some religious restrictions placed on certain crops like *mhunga* and *mungoza* from place to place, depending on the territorial spirits' decrees. For instance, the Ndau people under the reign of *Ishe* Musikavanhu of the Mafuse/Muyambo/Dziya (crocodile) totem, are not allowed to grow *mhunga* since it is believed to be taboo in their ancestral cosmology. On the other hand, those under *Ishe* Mutema of the Chirandu/Sithole/M'ombe (heart of cow) are restricted to grow *mungoza* for mysterious religious reasons.

Concerning animal husbandry, the Ndau keep many animal types. They keep the animals for two main reasons, ornamental, and for meat. However, for the rationale of this study, meat production is of vital relevance. The palatable vegetation grows very well under the heavy dependable rains to sustain the rearing of animals like *mbudzi* (goats), *mombe* (cattle), *hochi/nguruwe* (pigs), *makwai* (sheep), *mbira* and *tsuro* (rabbits). Also, birds such as *huku* (chickens), *hanga* (guinea fowl) and *njiya* (pigeons) are kept for human consumption. Meat is a source of protein that balances the dietary equation for the people of south-east Zimbabwe. It is important, however, to state that a few animals are usually harnessed for draught power, say for ploughing and pulling farm carts. Normally, donkeys and some cattle assume the duty. To this effect, the study notes that donkeys occupy a special space in the puzzle to meet the food demands of the Ndau people. Further, the research also established that animals like *m'ombe yekusvipa* (black beast) and *jongwe rokusvipa* (black cock) are integral parts of the religious mystery since they are often used in rituals and sometimes assume the position of a *zitateguru* (a forefather). Therefore, the religious personification of non-human life shows that the environment, spiritual realm and living together make up the worldview of the Ndau.

There are immense types of both domestic and wild fruits found in the vast forests due to reliable rains in the eastern part of Chipinge. However, the entire territory benefits from these fruits because they have a strong spirit of sharing inculcated in them by the ethics of *untu/Ubuntu/unhu*. Domestic or exotic fruits include the likes of oranges, bananas, guavas, avocado pears and mangoes. Forests are endowed with the wild fruits, *maongororo, nhengeni, makwakwa, matokorotyiyo, nzvinda, matamba, hubvu, nzviru, hacha* and *mazhanje emushango,* among others. In the middle of such richness, some unscrupulous members of the community tend to knowingly or unwittingly cut down such trees for timber, firewood or just deforest with no apparent

motive. Confronted with such a lack of a modicum of virtue, the gods/ancestors impose arbitrative fines on such ethical-religious flouters. In some cases, a deforester might face or witness the enigma of snakes, a swarm of bees, or the disappearance of an axe, machete, or any tool in use. As a harsher punitive measure, the culprit may disappear forever. In a case resembling these forms of punishment, Matambanadzo (2014) reported in the *The Herald* that a white tourist disappeared in Nyanga Mountains. *The Herald* (2014) also reported that a young boy was beaten to death by a mysterious troop of baboons following his over-harvesting of mushrooms from the Bindura Mountains for sale. Following the Ndau religion, such mysteries have reprisal effects as well as fostering a culture of respecting nature in resemblance of a symbol and embodiment of the cosmological essence of the people in that the trees are imbued with spiritual realities. As such, religious taboos have a daunting task in inculcating non-malicious behaviour towards food resources, thereby ensuring food security for the people of south-east Zimbabwe.

In a quest to fully deal with the interface between the Ndau religion and the environment in an argumentation seeking to ensure food security, this study uses the environment in a generic logic, pointing to both animate and inanimate furniture of the universe. In this regard, water bodies in the form of seas, oceans, rivers, lakes, pools and dams also make an integral part of the tripartite orderliness of Ndau existentialism. Muyambo and Maposa (2014) lament that,

> the Ndau link water bodies with the concept of kuyera (sacredness) and the people should approach them with a sense of awe and unquestioned homage.

Water does not only meet the equilibrium of gaseous water molecules in the atmosphere for rain making but is also a source of fish; a protein-rich aquatic life. For dietary specification and requirements, the Ndau do fishing in the vast water bodies dotted all over the geographical boundaries of their territory, namely Save, Musirizwi, Nyagadza, Tanganda, and Changazi rivers. However, as a remedy to *mbau,* fishers overfishing using *mambure* (nets), a religious punishment would befall them, say, through a mysterious catch of an army of frogs or snakes or tortoises. Only a catch enough for family consumption and a bit of a surplus for sale to meet other basic needs would be allowed by the spirits. To substantiate this claim, Taringa (2010), explains that, "the water bodies/wetlands are sacred because they are the abode of animals associated with spirits". Apart from the divine wrath, greedy fishers, if caught by the *mapurisa amambo,* pay expiation tokens like a *m'ombe nemwana wayo* (a cow and its calf) or face social banishment to *umbwa* community (a concept to be explored below). It is against this backdrop that the article values and venerates the role played by water bodies by accommodating the divinities and supplementing the food needs of the people.

Closely related to the issue of wild fruits bestowed by nature to the Ndau people is *bvipfa* (an underground tuber). It has some broad leaves but does not grow more than 30 centimetres in height. The tuber is cream in colour, watery and very sweet. This tuber is usually found in mountains. Mostly, it serves as food for cattle herders. The mystery around this plant is that it is usually harvested by digging, but not using any iron-made tool. It is believed that when iron-made tools such as a machete, digging bar or hoe are used, it mysteriously disappears or turns into a stone. The awe about the *bvipfa* turning into something else is based on the belief that the rust associated with any iron-made tool would upset the gods of fertility. However, such a taboo is very important in the sense that the use of a digging stick is an arduous process resulting in few tubers being harvested at a time. By so doing, a portion would have been saved and conserved for future utilisation, thereby ensuring the presence of food all the time for a people. The study observes that this religious taboo functions as a measure to curb the notion of *mbau* among the Ndau herd boys, because it prohibits the extraction of more than necessary at any given time.

Another mode of guaranteeing the availability of food to the Ndau people is the concept of *nhiya* (underground storage). *Nhiya* is a pit dug, grooved laterally, and traditionally plastered using cow dung. On top of the cow dung plastering, some ashes are sprinkled as a traditional insecticide. It is used to preserve farm produce such as *makebe* (watermelons), *madima* (sweet potatoes) and *mashamba* (sour watermelons) for future utilisation during their off-season. After the placing of these products in, it is covered with some small pieces of wood and mud to make sure that all air spaces are closed. However, for the sake of aeration, a breather is left strategically, big enough for the purpose but small enough to avoid any rain water from leaking in. The construction of *hiya* is done strictly by *chambere dzaguma ura* (very old women whose menstruating cycles have ceased) and *ndombi dzechidoko dzisati dange* (young girls who are not yet menstruating and are sexually inactive). The research has established that only these people are allowed to partake in such an exercise for some religious reasons. It has been noted that the Ndau religiously believe that these old and spent women and tender girls are clean before the divinities and ancestors since they are said to be watching over the stored food stuffs to avoid any decay or any malicious activity meant to poison or steal. Despite the centrality of religion in this method of preservation, the Ndau prove to be well-versed in resources recycling and sustainable utilisation of the environment, thereby augmenting the idea of ecological justice.

Closely linked to the notion of resource recycling is the making of *mufushwa* (boiled and dried or merely dried vegetables such as rape, *mutikiti* (leaves of a pumpkin plant), *munyemba* (leaves of runner-bean), *gugu* (black jack), *chowa chakaomeswa*, (mushroom), *bangarara,* and *linda* (a runner plant with thorny fruits, but only the leaves are taken as food) mostly eaten around Madhuku area under Chief Musikavanhu. The

article notes that these make a delicious option for relish during some spells of drought and famine. To enrich the nutritional value of the aforestated, the Ndau roast the dried seeds of *makebe*, *matikiti* (pumpkins), and *matanga* (squash), grind and boil them to make a thick porridge almost similar to peanut butter called *mata*. *Mata* can be added to any type of *mufushwa* or served separately as a relish seasoned with salt. The study also observed that these people preserve some wild fruits like *makwakwa* (a round yellow fruit with small sweet seeds). Just like in the pre-colonial community, women are responsible for fruit gathering also taking part in the preservation duties to ensure that their children are well-fed all year round. It was established that they dry the fruit in the sun, and then remove the flesh coating from the seeds through *kutswamuduri* (pounding). The flesh coating is further dried and ground into a powder called *hakwa*. The *hakwa* is even sweeter than the fresh fruit, which makes it delicious especially for young children when the elderly are busy working in the fields. The ability to recycle and preserve these divine provisions glues the Ndau to their religious practices and beliefs, thereby inculcating in them that the tripartite co-existence of the living dead, the living and the environment are a complete unity.

Mbiti (1969), noted that "Africans are notoriously religious", and by extension, implied the Ndau. To that effect, they harness their religious and ethical norms, values and standards to safeguard their food security for the well-being of the community. Within the circumstances of religiosity and ethos, the Ndau denoted, profaned and labelled one certain mountain *Umbwa*. The mountain and its surrounding areas have since been used to settle some social misfits who would have breached the *zviyerara* (religious and ethical restrictions/taboos) as a punitive measure. These social outcasts would be guilty of *makunakuna* (incest), *uroyi* (witchcraft), *kuhura* (prostitution), and *umhondi* (murder), leading to their banishment from the community to curb some divine atonement from the Musikavanhu (God). Generally speaking, the area of *Umbwa* is infested with morally repugnant people. Therefore, the name of the area, *Umbwa,* is a term derived from the native noun *imbwa* (dog) depicting bad behaviour likened to that of a female dog, a bitch.

To meet all the vitality of a balanced diet, the Ndau territory is blessed with the prevalence of *munyuwebare* (natural salt) deposits dotted around Masimbe and Mutema, along the Save Valley. The people from these two communities make sure that the whole village is fed with salt through barter trade for other commodities. This type of salt is cheaply available to both the rich and the poor. The Ndau women are the experts in the extraction of this salt. Usually, they dig and collect salty samples of soil found around the deposits referred to as *zvirumu*. The soil is mixed with water to produce a suspension from which the salty water is obtained through the process of infiltration. Through evaporation, crystallisation of the salt is achieved. The salt is brown in colour and is rich in other minerals needed by the human body. It is also used

in traditional rituals such as *kufumura mabvuri* (cleansing evil spirits). To this end, the study appropriates the naturalistic providence of the ecosystems to augment their life and religious artefacts.

A TRAGEDY: AIR 'MARRIES' CHRISTIANITY

Villagisation through modernity and the Christianisation of Africa have seen the uniqueness of the ecological balances within the Ndau community dwindling with each day that passes. Much of the Chipinge enclosure was imperialistically stratified by American patronisation. To that effect, the then American Board of Foreign Missions, now United Church of Christ in Zimbabwe (UCCZ) established major mission stations at Mount Selinda and Chikore in 1893 and 1895, respectively. The establishments saw the profaning of sacred places and objects among the Ndau. For instance, Muyambo and Maposa (2013) argue that:

> the Ndau were told to observe the social don'ts like drinking beer, polygamy, smoking, consulting *na'ngas* (traditional healers) and venerating *vadzimu* (ancestors).

Mutimukuru (a sacred big tree) in the Chikore area was struck by lightning; a mystery believed to be a punishment from the African gods in respect of the intrusion of western religion, culture and practices. To some measure, the tragedy was followed by years of drought, thereby negatively affecting the food security of the Ndau people.

The coming of Christianity also welcomed cash crops like cotton and sugarcane in the Sabi Valley, and tea, coffee, macadamia nuts and sunflower, at the expense of staple food crops. The new dawn did not made it easy for the Ndau people to be well nourished again. In addition, cash crops heightened the rate of industrialisation with emission of toxic gases into the atmosphere, causing global warming. The advent of global warming instigated some sporadic and cyclonic rainfalls like the 2000 *Cyclone El Nino* which drastically resulted in floods. To this end, the topsoil containing the all-important fertility was swept away. Droughts have proved to be the norm of the climate to this day though traditional technologies of preserving food stuffs still have a hand in mitigating the catastrophe of hunger among the Ndau. Coupled with the effects of global warming, religious breaches also saw the drying up of vital natural wells and pools. Overpowered by emotions, the locals of Manzvire Village under Chief Musikavanhu lamented the drying up of *zvekwa Tombe* (natural wells found in Tombe Mountain). Muyambo and Maposa (*ibid.*) concur with this observation as they argue that the Chisurudza Pool in the same village dried up following the artificial fencing of the sacred source of water.

The establishment of white Christian-owned farms in the highlands of Chipinge District led the the forceful removals of the natives down into the Sabi (Save) Valley, resulting in the overpopulation of area . Resultantly, the over-population brought with it the

construction of *maeka* (portions of irrigated lands) in Mutema and Masimbe areas in a bid to ease the high demand for agricultural land. However, the *maeka* project neutralised the natural deposits of *bare* salt through the application of lime. As evidence of disapproval of the modern agricultural mode of operations, workers in the companies responsible for *maeka* construction witnessed a multifarious of mysterious obstacles like being chased by too-long snakes or attacked by swarms of bees. In line with this, Maposa and Mhaka (2013) put it that no major project is allowed to take place without full authorisation by the traditional leader of the area to curtail the risk of provoking the territorial spirits. The study was also informed by the local people that the use of chemical sprays and artificial fertilizers damaged other components of the environment like certain insects which would be consumed during some hard times of drought. The fertilizers also nitrified the water bodies only to destroy aquatic life and led to the disappearance of *njuzu* (mermaid spirits) responsible for safeguarding the natural resources.

The mushrooming of African-initiated churches like *Masowe Echishanu, Masowe Enyenyedzi* and pentecostal churches has deeply eroded the pride of the Ndau people in their environment through massive deforestation. The *masowe* churches randomly clear the forest to erect their religious shrines. They hold services throughout the night, during which they use firewood for lighting and warmth. The research noted with great dismay that these activities have greatly robbed the locals of their sources of food in the form of wild fruits and tubers, and the sacred trees which play an integral aspect in their religion. In complement, pentecostal churches alter the face of the environment as they construct huge artificial church buildings. These spiritual churches have gone too far in breaching the sacred places, objects and pools, and further disfranchising the native religious beliefs and practices generally kept for the well-being of the Ndau. They heavily harvest the firewood for their annual conferences like ZAOGA FIF and AFM Easter conferences and the popular Johanne Marange annual conference known as *Gungano* (gathering) normally held at Tanganda Township.

CONCLUSION

The study has noted that indigenous religions among the Ndau bear the most powerful and instrumental significance in shaping and road mapping the route to the Ndau pleasure and prosperity. Thus, the interconnectedness of the departed forefathers, the ecosystem and the living define their peoplehood, livelihood and worldview. According to the article, a people is when religion promotes their livelihood. In this matter, the livelihood is entrenched in the religious providence guaranteed by the timeless veneration and strict observance of religious restrictions, meant to avoid ecological injustices. As noted by Maposa and Mhaka (*ibid.*), the Ndau "people depend on flora and fauna in their environment for economic, artistic, medical and religious practice and survival". Against such a backdrop, environmental equilibrium is the vitality to the

ubiquitous prevalence of food among the Ndau; not just food, but enough food, and nutritionally-laden food; ideal for upbringing healthy Ndau people.

It is sad to note that the interface between AIRs and Christianity has a lot bad to offer to the people in south-east Zimbabwe. For example, the naturalistic environment for abundant food production to meet the demand of the Ndau has been negated.

In as much as the study has observed that Christianity is a menace regarding the traditional way of living, traditional leaders are encouraged to revert and remain focused on the religious nitty gritties of the indigenous religion for the mitigation of these environmental catastrophes. It must be noted that adhering to one's own religious and cultural dictates, yields good as depicted in a song by the prolific musician Oliver Mutukudzi (1999), *Pembedza rurimi rwako, chimiro nedzinza rako, pwere dzigotevera"* (Be proud of your language, structure and clan so that the young ones can follow suit). The musician goes on to remind fellow Africans about their traditional vegetables, which have since faced extinction due to climate change as he says, *"Nyevhe yedu iya yakaendepiko?"* (Where will we get our now-extinct traditional relishes?).

The problem of hunger is fast growing in the Ndau society due to the damage to the ecosystem. In an attempt to circumvent this, the Ndau people now have donor syndrome and heavily rely on Western Christian donors. It is, therefore, worth noting that the donor strategy is being instrumental in manipulating the locals and destroy their self-reliance motives, thereby putting a seal on the supremacy of religious acculturation. Zvarevashe (1978) reviles the wave of modernity for creating a new *gonawapotera* (a mysterious pool where the sons and daughters of the Mhazi could disappear forever); the urban settlement swallowing all the young and energetic youth who were formerly valued as the task force for the agrarian economy of the native Ndau people. The researcher noted that the young no longer value or cherish the traditions observed in farming, especially in the countryside due to the effects of modernity.

Nevertheless, the Ndau people are encouraged to consider the following remedies to the already evident threat to their food security:

- The Ndau should stick to their indigenous knowledge systems in full interplay with the AIR to restore resources through the recycling ; that is, all the traditional vegetables and wild fruits should be preserved, the same way it was done in the past.
- The indigenous religious ceremonies involving ancestor veneration and observance of the taboos ought to be upheld for the good of the people. The ceremonies and rituals include the consultation of the territorial ancestors

(*mhondoro)*, the first fruit festival, rain-making ceremony, bringing back ceremony for the traditional leaders and rain-makers (*makoto)*, *kurova guwa remadzishe)*. Such observance would invoke the divinities to feel and cherish their unquestioned vitality in the fertility productivity of the land. Hence adequate rains, protection of the farm products from diseases, pests, insects and thieves or any bad premonition by the enemies of the community will be guaranteed.

- Due to the fact that global villagisation is wheeled by technological advancements, acculturation and religious pluralism are enviable; a warm welcome to these is mandatory, just for the sake of a hybrid society with the ability to feed its people. So, the Ndau people need to blend their farming techniques with those from the west and the east such as the green revolution to improve the yields and sustainability of the environment.

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THE EFFICACY OF COUNSELLING PROGRAMMES IN REDUCING WORK-RELATED STRESS AMONG POLICE OFFICERS: A CASE STUDY OF ZRP WATERFALLS

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Abstract

The article is based on a study that sought to make an investigation into the efficacy of counselling in reducing occupational stress among police officers. The research was inspired by the continued trend of poor performance, depression, anxiety and mood swings by police officers at the Zimbabwe Republic Police (ZRP) Waterfalls. The research's objectives were to investigate the sources of stress among members of the police service, to determine the effects of stress on police officers and the efficacy of counselling on stress. A sample size of 60 police officers was used which was determined using the Yamane 1967 approach. Stratified random sampling was used for quantitative data and convenience sampling for qualitative data. The study also sought to proffer ways in which work-related stress can be reduced. The study adopted a pragmatism research philosophy and incorporated both quantitative and qualitative research designs that ensured triangulation. The study employed a questionnaire and interview guide as instruments to gather empirical data, presented in the form of tables and charts produced using the Statistical Package for the Social Sciences (SPSS). Qualitative data was presented thematically and saturation was used to determine sample size. Data was collected from police officers stationed at ZRP Waterfalls.

Keywords:Burnout, Zimbabwe Republic Police, employee performance

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INTRODUCTION

Stress is increasingly becoming a common phenomenon among employees, including police officers across the globe (Gaidhane *et.al.,* 2020). Most police organisations have adopted counselling as an intervention mechanism to deal with work-related stress. Pueba and Demou (2019) found that occupational stressors such as role conflict, job demands, poor management practices and poor work relations exacerbate the susceptibility of police officers to mental illnesses. Queiros *et al.* (2020) established that policing is a stressful profession and that work stress diminishes the psychological and physical health of members of the police service, their performance and their interactions with citizens. Queiros *et. al.* (*ibid*.) also concluded that mental health at workplaces has become a cause for concern, resulting in depression, anxiety, burnout and even suicide, which is prevalent among police officers. The growing levels of obligations have resulted in employees working for long hours and also requiring them to exert more effort and energy to meet the expected performance requirements (Mark and Smith, 2012). Kamalakumati (2013) propounded that stress is dynamic and complex and undesirable levels of stress negatively influence the total performance of an individual and the organisation at large. Organisationally, stress affects performance, and counterproductive work behaviour and results in antagonism between citizens and their police for excessive use of force (Queiros *et. al.,* 2020). Therefore, the organisation's managers should endeavour to properly manage stress levels so that work is done efficiently. Dakasku and Musa (2020) posit that counselling is resorted to in such cases to assist individuals in solving problems that arise in assisting various aspects of their lives or in assisting them to maximise their overall personal development so that they can be more useful to the society in which they live.

At the Zimbabwe Republic Police (ZRP) Waterfalls, personnel are divided into Administration, Crime and Operations sections. Operations consists of 12 members who are augmented by members from other sections who from time to time leave their sectionss to beef up personnel in Operations. The station's duty roster and deployment register depict that members' time off is often forfeited and uncommitted working hours are a common phenomenon. Members are often seconded to the Traffic Section whilst work is piling in their offices. Some police officers are failing to cope with the pressure of work against a background of diminishing personnel levels and rising demands. Poor performance has been the result as demonstrated in Table 1.

Table 1: Police Performance (ZRP Waterfalls 2019 and 2020 Annual Crime Reports**)**

Year	Cr	Detected	Total Arrests
2019	4 929	1 209	1 209
2020	5 078	1 501	1 501

Table 1 depicts an increase in crime by 3% from 4 929 cases in 2019 to 5 078 cases in 2020. Detection and arrests were very low.

CONCEPTUAL FRAMEWORK

The research determined the relationship between counselling and work-related stress. Counselling and stress reduction strategies are the independent variables that will be manipulated using the control variables (Psychotherapy and Pastoral care/Chaplaincy) to determine the behaviour of the dependent variable (stress). Figure 1 presents the conceptual framework of the study.

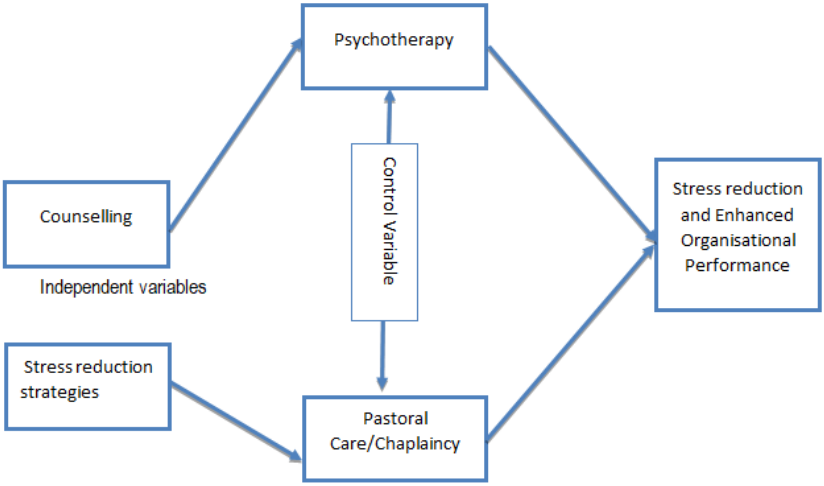

Figure 1: *Conceptual Framework* (Researcher, 2022)

THEORETICAL FRAMEWORK

PERSON-ENVIRONMENT FIT THEORY

This theory is of much importance in amplifying the causes of work-related stress. The theory sets prominence on the interface and analogy between the person and the environment (Manhema, 2017). In simpler terms, this model entails that the interface between an employee and his work setting controls whether or not a situation is stressful for that person. It assumes that human behaviour is a function of the person and the environment and if the fit between the person and the environment is incompatible, the outcome is stress (Vianen, 2018). This theory requires the ZRP to measure individual officers' competencies which are matched with the environment that the individual officer operates in. Therefore, the objective measurement of the person's skills, abilities and needs and of the environment's demands and resources

negatively impact the implementation of the Person-environment Fit theory. The theory not take into account instances where individual officers perform more than one different duty in different environments, a common phenomenon in the police.

CAUSES OF STRESS

Many authors vary on the causes of work-related stress. Chikwem (2017) asserts that some of the causes of work-related stress among police officers include paramilitary structures, responsibilities associated with tasks such as protecting people, rescuing traumatised people, role conflicts and dangerous work demands. Critical incidents defined as adverse events that result in a range of symptoms from exhaustion to progressive mental illness have also been identified as sources of police stress. According to Mushwana *et. al.* (2019), failure by management to support their subordinates, perceived biased promotion chances, poor working conditions, alleged unfair disciplinary processes, poor interactive relationships with colleagues and low salaries, are among the organisational causes of stress in the South African Police Services (SAPS). Inadequate counselling was also cited as being related to stress.

Other organisational stressors may include organisational policies and strategies, working conditions, job stability, organisational structure, design and culture, management styles and lack of opportunities for personal growth and advancement, physical environment, rewards, job security, time pressure, long working hours, inadequate staffing, exposure to noxious hazardous substances, lack of supervision, inadequate training and misuse of power (Anbazhagan *et al.,* 2013; Trivellasaet *et.al.,* 2013; ILO, 2016).

EFFICACY OF COUNSELLING ON STRESSED POLICE OFFICERS

Counselling theories provide a roadmap for the counsellor to use as a guide when conceptualising client problems, deciding on effective interventions and measuring progress (Fall *et. al.,* 2017). A personal guiding theory (Barth *et. al.,* 2019) involves the use of the counsellor's own experience and observation. Counsellor professional identity development includes an array of components, knowledge and skills (Bernard and Goodyear, 2019). Barth *et. al.* (2019) believe that a personal guiding theory is a counsellor's foundation philosophy that guides therapeutic work with clients and consists of personal values and beliefs, worldview and personality.

The theory enables the counsellor to approach counselling from a wider spectrum. The use of previous experiences, worldview on problems and counselling and personality traits, increases the chances of success in counselling. The theory encompasses the counsellor's values and beliefs which are subjective and may conflict with those of the client. The beliefs and values of police officers, just like any other groups of people, vary and the results of counselling may not be achieved as intended.

Research by Wango *et. al.* (2018) on counselling interventions and the use of counselling skills in the Kenyan Police Service, used a hermeneutic phenomenological approach and adopted a metaphysical stance on methodology. The concept of phenomenology is an umbrella term encompassing both a philosophical movement and a range of research approaches.

Wango *et.al.* (*ibid.)*studied the significance of counselling on police officers using the grounded theory hierarchy. He distinguished formal counselling from the use of counselling skills. Counselling was defined as a process in which an expert with the requisite knowledge and skills is involved in a formal relationship of assisting a client who is in a situational difficulty while counselling skills are a collection of techniques and strategies used to enhance communication in the counselling process and relationship.

The grounded theory hierarchy allows police officers to communicate their concerns to a person they can identify with or their superiors. The concerns include fears, frustrations, disappointments, anxieties and worries. Police officers may alternatively seek help from professional counsellors, psychologists or chaplains. However, the theory poses a potential conflict when a person who is a police officer is a counsellor at the same time. The dual relationship does not promote confidentiality and autonomy which is key in counselling. In the context of Zimbabwe, a developing country, resources are a constraint to engaging professional counsellors and psychologists to provide counselling services to police officers. It will also be expensive to train counsellors for the organisation.

EMPIRICAL REVIEW

Globally, police officers are exposed to work-related stress, which might lead to them being at risk of cardiovascular diseases, exceeding that of the general population (Magnavita *et. al.,* 2018). However, there is evidence to suggest that police officers use fewer counselling services than the general population which harms their health in the long term (Mushwana, 2019). On the other hand (Faulkner, 2018) asserts that there appears to be a trend towards the use of mental health counselling services among police officers. In the United Kingdom, Sheard *et. Al.* (2019) found that a high proportion of police personnel (15% to 83%) reported having experienced mental health issues, believing their work has an adverse impact on their psychological health and also believing that not enough support is available for mental health. The study was consistent with Houdmont and Davis (2016) who found that 58% of officers reported their job was very or extremely stressful and 63% of the respondents had sought professional help regarding their mental health.

In Scotland, counselling and environmental workplace changes are among the potential interventions which could further mitigate rising mental health issues with police cultures (Evangelia *et. al.,* 2020). This suggests that a lot still needs to be done concerning counselling as an intervention mechanism in reducing stress. Wango *et al*. (2018) posits that counselling and other interventions must be tailormade to meet the requirements of police officers because policing is unique and counselling in the police ois a distinctive service. Sefotho (2020) asserts that in Lesotho, the Lesotho Mounted Police Service (LMPS), managed by the Commissioner of Police, has a Counselling Unit to provide psychosocial support to officers needing relief from work-related stress and trauma. The unit also provides counselling support to officers with mood disorders and with work-family conflict issues that would impact work performance. Manhema (2014) has opined that in Zimbabwe, work-related stress is frequent and its impacts on the performance of police officers cannot be borne, hence the need to devise strategies to manage stress across the entire organisation. The ZRP has placed counselling under the purview of phaplains who are seconded to police institutions. The Chaplains Department falls under ZRP Support Sections and is mandated to provide spiritual guidance and welfare services to police officers and their families (ZRP Chaplaincy, 2016).

A survey was conducted in Hong Kong on the impact of job and family factors on work stress and engagement among Hong Kong police officers (Faulkner, 2018). The survey was based on a random sample of 514 male and female police officers and multi-variety regression was employed to assess the effects of demand and resources on work stress and work engagement. It was found that family-work conflicts, and organisational and operational factors, affected work stress and work engagement among police officers. Constructive coping was found to be positively related to work and negatively associated with work engagement. The study was conducted in a developed country with working conditions for police officers different from those in Zimbabwe, a developing nation. Therefore, the present study will be carried out in Zimbabwe where stress causes might be different . This necessitates the need to conduct the present study to see if the results may be replicated.

Lily Chi-Fang Tsai *et. al.* (2018) conducted a study in New York on modelling job stress among police officers, the interplay of work environment, counselling, support and family discussion with co-workers. The study comprised 594 sworn police officers from 21 agencies in New York City. Results indicated that sex, race, education and tenure do not have a direct influence on job stress. In addition, both undesirable working environments and counselling support directly influence police total job stress.

However, this study was based on secondary data from the National Institute of Justice which examined only one time period (1995). Many changes have occurred since then and the study falls short of longitudinal studies to provide a more reliable understanding of the factors that influence job stress. The current study will use primary data gathered from the sample population. The research will also narrow down to the direct effects of counselling.

Sefotho and Seema (2020) conducted an exploratory study on utilising counselling services by police officers in the Lesotho MPS. The study investigated police officers' inclination to utilise counselling services. A descriptive survey method was used and the results were that officers perceived their workplace counselling services inaccessible due to lack of privacy as well as risks of stigmatisation for poor career prospects. However, the results cannot be generalised as it was carried out in a specialised section (the Lesotho Mounted Unit). Different results miight be achieved if a mixed methodological approach is used instead of only the descriptive survey.

On the other hand, Diphoorn, (2020) conducted a study in Kenya to examine the availability and effectiveness of counselling programmes in the Kenyan Police Service. A descriptive research approach was adopted in the study by Sefotho and Seema (2020). The target were police officers who had served 10 years or more in different police stations in Nairobi. The results indicated that accessibility of employee counselling programmes in the Kenya National Police Service was minimal and the attitudes of police officers towards counselling are principally negative.

Manhema (2014) carried out a study on the effects of occupational stress on the performance of members of the police service in Bulawayo West Police District. The researcher utilised questionnaires to gather data. The study established that the police job is highly stressful and counselling was proffered as an intervention to reduce work-related stress. The research does not determine the direct relationship between stress and counselling which the current study seeks to address.

METHODOLOGY

The study adopted a mixed research approach. Questionnaires were distributed to police officers of rank of inspector and below nd interviews conducted with members at ZRP Waterfalls. A sample size of 60 police officers was used which was determined using the Yamane 1967 approach. Stratified random sampling was used for quantitative data and convenience sampling for qualitative data.

RESULTS AND DISCUSSION

CAUSES OF WORK-RELATED STRESS (N-60)

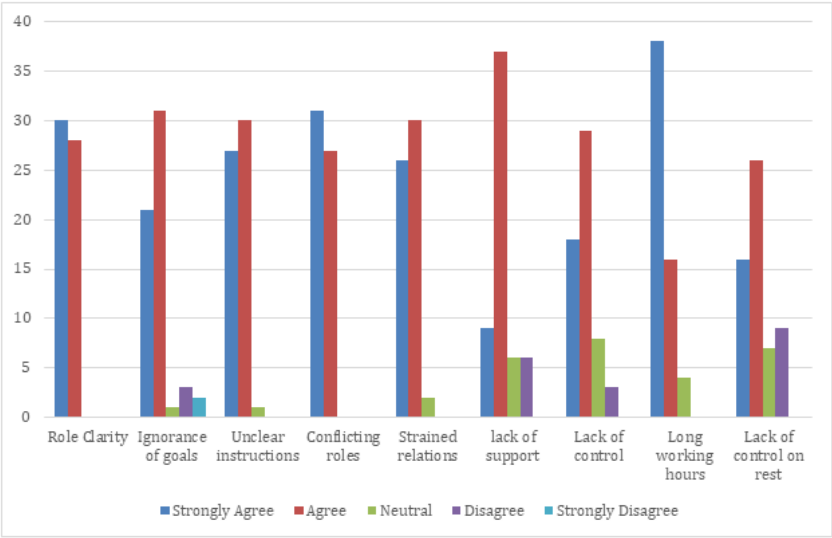

Figure 2: Responses on causes of work-related stress (Researchers, 2022)

ROLE CLARITY

The majority of respondents concurred on the view that lack of role clarity causes work-related stress. This points to the fact that lack of clarity on how to get the work done is among the leading causes of stress on police officers. The results are in sync with the view by Chikwem (2017), who postulated that some causes of operational stress among police officers include operational assignments to protect life, rescuing accident victims, performing conflicting roles and risky duties.

IGNORANCE OF GOALS

Figure 2 depicts that respondents agree and strongly agree that ignorance of work-related goals causes stress in workplaces. A smaller fraction of the respondents were in disagreement. The results show that if an employee is not aware of goals and yet he is expected to achieve the goals, the result is stress since he will be working towards an unknown objective. He cannot plan his work and may not know the priorities of his work. This view was supported by Hunters *et al*. (2017) who observed that supervisor behaviours such as lack of structure and unclear goals produce stress and strain among employees.

UNCLEAR INSTRUCTIONS

The research gathered that most of the respondents were in agreement with the view that ambiguous instructions can result in stress. Almost all (98%) of respondents concurred with this view and only 2% disagreed. Michie (2002) also found that performing blurred tasks or incompatible roles can result in stress. The results thus depict that if the instructions are not clear, work may be done wrongly. This may require the employee to redo the task thereby increasing the pressure of work.

CONFLICTING ROLES

All the respondents agree and strongly agree with the idea that conflicting roles contribute to work-related stress. The fact that 100% of respondents agreed that assigning conflicting roles to police officers causes stress makes it one of the leading causes. Generally, police work is stressful but the stress increases when one is assigned conflicting roles. Due to lack of personnel at the station, members may be required to do investigations, operations as well as patrols which are all demanding tasks. The police officer will get stressed as he tries to balance the tasks. The view is in sync with the proposition by Setda (2019) ,who said that the existence of role conflict causes work stress and hinders the performance of employees.

STRAINED WORK RELATIONS

of the Respondents agreed that strained work relations result in work-related stress (97%). However, only two respondents were neutral. The results show that if employee relations are strained, the work environment is also tense. They may not share their work challenges. The result will be stress and burnout. In support of this view, Mushwana *et al.* (2019) postulated that poor interpersonal relationships was among the organisational causes of stress.

LACK OF SUPPORT FROM COLLEAGUES

A major fraction of the respondents agreed and strongly agreed that lack of support from colleagues causes work-related stress. There were a notable number of those who disagreed with the idea that lack of support from colleagues caused stress and 11% were indifferent. The data collected depicted that police officers' perception of the connection between lack of support and stress varied by individuals, with the majority agreeing that lack of support causes stress. Harmsen *et al.* (2018) on the same note posited that highly demanding jobs, absence of support, inadequate opportunities for learning and poor employee working environments contribute to stress.

LONG WORKING HOURS

It was gathered that 93% of the respondents were in agreement with the idea that long working hours result in work-related stress. The findings are in sync with Anbazhagan *et.al.,* (2013), Trivellasaet *et.al.* (2013); and the ILO (2016) who perceived that job

security, time pressure, long working hours, inadequate training and misuse of power causes stress.

LACK OF CONTROL OVER REST AND PACE OF WORK

Most of the respondents agree and strongly agree that lack of control over rest and pace of work contribute to work-related stress. A smaller population of the respondents were either neutral or in disagreement with the idea. To buttress these findings, the ILO (2016) viewed that time pressure was among the causes of stress among employees.

EFFECTS =OF WORK-RELATED STRESS

Table 2: Effects of work-related stress (n-60) (Researchers, 2022)

Effects	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Failure to meet targets	20	29	5	4	-
Neglect some tasks due to pressure	15	34	3	6	
Anger/Friction with colleagues	30	26	2	-	-
Poor quality results	18	40	-	-	-
High error rate	33	25	-	-	-
Anti-social personality disorder	13	39	4	2	-
Depression	41	17	-	-	-

FAILURE TO MEET TARGETS

Table 2 depicts that most of the respondents had a view that work-related stress leads to employees failing to meet targets. This means that when employees are stressed, their performance decreases and targets are not met.

NEGLECT SOME TASKS DUE TO PRESSURE

More than half of the sampled population positively considers that neglect of some tasks due to pressure is a result of stress at workplaces. However, an insignificant proportion was either neutral or disagreed with the same view.

ANGER/FRICTION WITH COLLEAGUES

Most of the respondents concurred with the view that anger or friction amongst colleagues is caused by work-related stress.

POOR QUALITY RESULTS

All the respondents perceived that work-related stress leads to poor results. This shows that it is a leading cause of stress among police officers at ZRP Waterfalls.

HIGH ERROR RATE

More than 50% of the respondents concurred that a high error rate is the effect of work-related stress. The rest agreed to the same phenomenon and none had neutral, disagree or strongly disagree ideas.

ANTI-SOCIAL PERSONALITY DISORDER

The majority of the respondents agreed, with some strongly agreeing, that anti-social personality disorder is the effect of work-related stress. However, a marginal proportion had either a neutral view or disagreed.

DEPRESSION

NONE of the respondents had different views.

WAYS TO REDUCE WORK-RELATED STRESS (N-60)

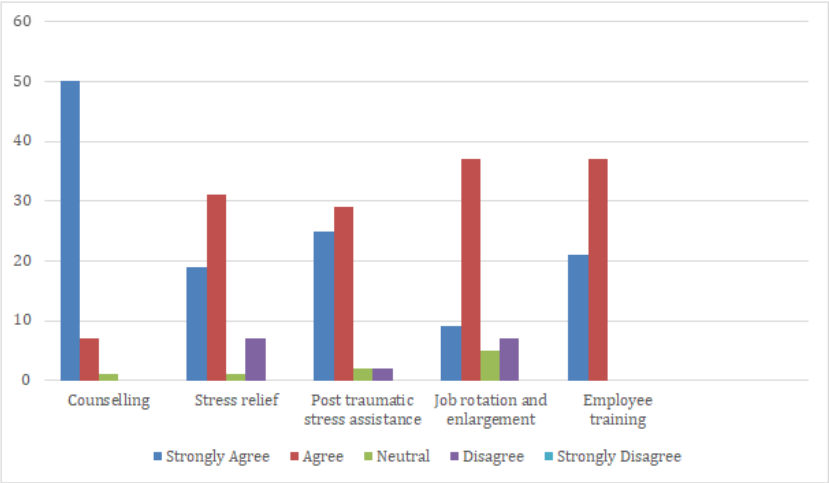

Figure 3: *Ways to reduce work-related stress* (Researcher, 2022)

COUNSELLING

The majority of respondents agreed that counselling can remedy work-related stress. Holman *et al*. (2018) classified Stress Management Interventions following the focus of stress management and the level at which the intervention takes place. He cited counselling as a tertiary intervention to stress as it seeks to re-orient or revamp those

who have already been affected by stress and are reeling from psychological frailty. The results thus show that counselling stressed police officers should be prioritised to minimise the impact of stress on members.

STRESS RELIEF PROGRAMMES (LEAVE AND TIME OFF)

Most of the respondents either agreed or strongly agreed that stress relief programmes such as leave and time off can help to solve stress among employees. However, a marginal figure had a neutral view or disagreed with the above as a remedy to work-related stress. The results of this study are supported by Greeshman *et al.* (2018) who postulate that it is important for organisations to conduct some stress relief programmes such as providing employees with adequate breaks from work as a means to reduce fatigue. Giving time off to employees may help to refresh their minds.

POST-TRAUMATIC STRESS ASSISTANCE

The majority of respondents agreed and strongly agreed that post-traumatic stress assistance can contribute to mitigating work-related stress. A few had either neutral or disagreed with the same idea. Sanchez (2021) noted that police officers are required to encounter traumatic events daily due to the nature of their profession, hence the need for post-traumatic stress assistance.

JOB ROTATION AND ENLARGEMENT

Almost two-thirds of the sampled population agreed that job rotation and enlargement is another way of reducing work-related stress while several strongly agreed. Very few had a neutral view or disagreed. This view was supported by Kempkotter *et al.* (2018) who found that working can be made more interesting by adopting job rotation. Boredom, wearisomeness or exhaustion associated with higher stress levels are reduced.

EMPLOYEE TRAINING

The respondents either agreed or strongly agreed that employment training reduces work-related stress. None had other views. This shows the importance of training in reducing stress. Stogner *et al*. (2020) agree that police training has the potential to promote resilience to reduce stress.

CONCLUSIONS AND RECOMMENDATIONS

Based on these findings, it can be concluded that work-related stress is a common phenomenon among police officers. The major causes of police work stress emanate from the nature of police work and lack of clarity on how the work should be accomplished. It can also be concluded that apart from counselling, allowing employees to take time off or leave and equipping them with the requisite knowledge about their work are necessary stress management interventions. The research

concluded that lack of role clarity, long working hours, unclear instructions, ignorance of work goals, conflicting roles and lack of support and control over work are all causes of work-related stress. As such, the leading causes were lack of role clarity and conflicting roles to which all respondents agreed.

In light of these conclusions, it is recommended that the ZRP needs to train more counsellors that must be posted in all police stations to offer quality counselling services. The police can also consider outsourcing counselling services to professional counsellors to reduce current levels of stress among police officers. Also, it is recommended that regular training be carried out for all police officers, particularly supervisors so that they give unambiguous instructions which have been identified as a source of stress. The current research has not been exhaustive in all aspects of employee motivation through counselling. Further research on how to improve the morale of ZRP members in times of distress such as COVID-19 pandemic, which claimed the lives of several police officers, must be carried. Also, further research must be conducted at the provincial level or national level to avoid generalised results as those gotten from a specific police station, in this instance, ZRP Waterfalls.

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COPING STRATEGIES BY PERI-URBAN DWELLERS IN RESPONSE TO PRESSURES INDUCED BY CLIMATE CHANGE IN HARARE PERI-URBAN EAST, ZIMBABWE

NYASHA NDEMO[1]

Abstract

The article explores and discusses coping strategies that dwellers in Harare's peri-urban areas are adopting to respond to pressures that are being induced on them by climate change. It is against the background that peri-urban areas in cities in developing countries, predominantly those in Sub-Saharan Africa, have experienced a rapid economic, social and ecological transformation in recent times. The article plugs the gap in the literature that there has been proportionally sparse scientific work on climate change adaptation done in other sub-regions of the African continent, primarily those that are somewhat less developed and more susceptible. It is a critical challenge for decision-makers to adopt strategies that are suitable concerning climate change adaptation in African cities. There is limited in-depth analysis of what Southern African cities are doing to cope with the impacts of climate change. For peri-urban areas to adapt to climate change, they need to get access to weather forecasts, education and training and embrace new technologies that must be available. It is, therefore, recommended that preparedness for life threatening events like violent storms, floods and droughts is critical in reducing the vulnerability of the peri-urban inhabitants.

Keywords: Technology, Sub-Sahara, weather forecast, transformation

INTRODUCTION

Cities all around the world are increasingly experiencing a rapid transformation socially, economically and ecologically, primarily in developing economies (Watson, 2009). Peri-urban areas have gained momentum in these transformations in recent times (Chirisa *et al*., 2016). The urban community is seen as having a very important role in the works of addressing problems that are targeted under the climate agenda. Filho *et al*. (2018) highlight that it is currently a critical challenge for decision-makers to adopt strategies that are suitable concerning climate change adaptation. The United Nations (2015) set climate change as one of the Sustainable Development Goals

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(SDGs). The SDG suggests that Climate Action has to reinforce flexibility and adaptive capacity to dangers and natural disasters that are related to climate change (*ibid*.).

The scientific work that has currently been going on provided evidence that global weather patterns are changing.), Herring *et al*. (2014), Hulme (2014), IPCC *et a*l. (2012) and Wilson, (2014) concur that these changes have particularly increased in extreme events since 1950. Epule *et al*. (2017) identify Africa as the most vulnerable region to climate change. The pressure across the continent has been largely due to economic and social problems haunting the continent, accompanied by multiple stressors that exacerbate the exposure of the continent to weather and climate changes. Urban areas are known to be principally susceptible to external shocks and stresses (Fihlo *et al.*, 2018). Cities are anticipated to progressively experience the impacts of climatic change in the form of more powerful and frequent extreme weather events. UN-Habitat (2015) asserts that, if Africa continues to experience extreme weather patterns, millions of people will be put at risk, particularly the poor, who are more vulnerable.

Many governments are working hands-on across the continent in complicated political contexts, stressed with the task to meet service delivery to communities within the lingering peri-urban areas. Poverty has been dominant in Africa, especially in Sub-Saharan countries, worsening the effects of climate change on the continent (Fihlo *et al*., 2018; Adenle *et al*., 2017). This might not be necessarily true due to the relative complexities of urban livelihoods, which ultimately influence the adaptation strategies that are adopted (Murambadoro, 2007). Due to a combination of insufficient governance systems and economic hardships, many local authorities across African cities struggle to cope with the intensive rural-urban migration.

CONCEPTUAL FRAMEWORK

Boundaries of peri-urban areas have different environmental, social and institutional characteristics and vary from one peri-urban area to another. From an environmental perspective, these peri-urban boundaries, are a heterogeneous mixture of ecosystems in their natural state, agricultural systems and urban ecosystems that are affected by energy flows required by urban and rural ecosystems. From another view, the environmental perspective represents an interface of natural resources with agriculture and urban production systems. There is a circular system that is established when these interact. Each system benefits from another. Various pressures drive the use of peri-urban environmental resources and biological services that affect the climate.

This might be motivated by local competition for land for agriculture and residential places amongst residents. At the national level, industrialisation policies might also affect climate negatively or positively. Allan (2006) argues that international pressures

that come in the form of prices of exports like tobacco in Zimbabwe, may cause the migration of poor farmers to peri-urban areas in search of work. All these pressures have an impact on the environment that may result in climate change problems or, at times, environmental opportunities. These come in form of changes in the use of renewable and non-renewable resources, changes in the environment, land-use and the generation of waste and absorptive capacity.

LITERATURE REVIEW

The review of the literature shows that there is limited in-depth analysis of what Southern African cities are doing to cope with the impacts of climate change (Cabral *et al*., 2017; Nkhonjera, 2017), making it complicated to assess the currently existing strategies being used. The lack of scientific work that is focused on the effects of the shift in weather patterns and climate change in African cities (Nkhonjera, 2017) has aggravated the problem. The effects of these shifts in climatic patterns are being felt at various spatial scales across the region, but it is becoming more complicated to respond to climate change, particularly in Sub-Sahara. However, much work was done in sub-regions of the developed Southern African part (Novellie *et al*., 2016; England *et al*., 2018). There has been proportionally thin scientific work done in other sub-regions of the African continent, primarily those that are somewhat less developed and more susceptible. This article addresses this gap focusing on studies done in Africa and the developing world. This work is chronicled at city-level initiatives focusing on Harare peri-urban areas in Zimbabwe. This article aims at reviewing climate change impacts in Harare's peri-urban areas andidentifying adaptation measures and strategies being used in other cities in Zimbabwe, the region and the world at large and to draw lessons learned and recommendations that will help to improve current trends.

Climate change is one of the major problems currently facing cities globally (Fihlo *et al*., 2018). In a global survey of 401 cities, only 73 cities (18%) had documented plans aimed at initiating adaptation policy (Araos *et al*., 2016). Regardless of the high levels of vulnerability in African countries, there is a serious dearth of research in the region, particularly in the field of finding the best adaptation strategies as found in Cabral *et al*. (2017) and Nkhonjera (2017). There are diverse climate change challenges across the African region (Simon and Leck, 2015; Henderson *et al*., 2017; Moyo and Nangombe, 2015. The West African region is more vulnerable to these climate related effects such as drought, floods, erosion, storms, heat waves, a rise in the sea level and cyclones that are projected to increase in future alongside economic consequences (UN-Habitat, 2014). IPCC *et al*. (2007b) and UN-Habitat (2014) assert that the Southern African sub-region is experiencing warming and disparities in weather that have a potential to increase droughts. Precipitation is particularly expected to decrease within the range of 01% to 20% (Christoph *et al*., 2010), with the result that many of the cities in the sub-region are expected to face scarcity of water as groundwater sources

deplete (UN-Habitat, 2014). Rakgase and Norris (2015) documented the increased incidence and sternness of droughts as the conditions of weather extremes are projected to increase (*ibid*.). These weather extremes are expected to cause havoc, particularly in the eastern parts of the continent (Birhanu *et al*., 2016). In landlocked countries like Zimbabwe, cities experience regular water shortages coupled with recurring droughts (Ogola *et al*., 2012) that have directly impacted around 13 million people between 2008 and 2010 (Fihlo *et al*., 2018). The East African sub-region has been riddled with floods and drought occurrences, resulting in the death of people, livestock, and loss in productivity in agricultural produce (Ng'ang'a *et al*., 2016). Lack of food security has led to outbreaks ofviolence, leading to the displacement of residents and the explosion of built-ups in peri-urban areas (UN-Habitat, 2014). This setting was further worsened by then by the decrease in the water availability index by 2015 in several East African cities as documented by Nkhonjera (2017). The Northern parts of Africa have also been threatened by the frequency of droughts and increased desertification due to a decrease in precipitation and increased temperatures that harm agriculture, spiking the demand for food importation (UN-Habitat, 2014). Henderson *et al*. (2017) assert that the decrease in moisture has not only affected the eastern parts of Africa, but the agricultural sector in different cities of the continent for the past 50 years. Not less than 40% of the population in urban areas has been affected as this proportion practises urban agriculture (Dutt, 2016). Intense rural-urban migration, the establishment of settlements in peri-urban areas and the high possibility of international migration, exacerbated by desperation for survival, will continue, unless these devastating challenges are addressed (Marchiori *et al*., 2012).

Some house owners rent out part of their houses while other poor people collect and sell used bottles. Further, some dwellers cleani sewers in better-off housing areas, undertake piece-work like laundry, housework, slashing grass, pruning trees, carrying water and even small-scale quarrying, involving crushing stones for the burgeoning construction industry. Simatele *et al*. (*ibid.*) assert that within the context of peri-urban settlements in terms of agriculture, there is a steady shift in the types of crops that are being grown by the urban farmers, from exotic (e.g. cabbage and exotic varieties of maize) to more drought resistant crops such as sorghum, millet and various types of traditional vegetables.

A study by Mudombi and Nhamo (2014) indicated that rain-fed agriculture is the dominant source of food production and the livelihood foundation of the majority of peri-urban people (Hope, 2009). Agriculture is one of the sectors that is solidly hit by climate variability and change in the peri-urban areas of Harare and other close rural areas (Vogel, 2005; Nhamo, 20009). Weather forecast and early warning information in agricultural communities have become very important. Respondents in a survey *ibid.)* for the peri-urban areas of Seke and Murehwa areas in) say forecasts provide

them with advanced information. This information serves in such a manner that farmers can adjust to life-threatening agricultural decisions, hence improving efficiency, and permitting them to accept the most suitable coping strategies (World Bank, 2012). The Early Warning System (EWS) provides timely and effective information through identified rules of the game known as institutions that permit individuals who are exposed to risks to take action that will avoid or minimise their risk and prepare for effective response (UN/ISDR, 2010). Literature has emphasised the importance of early warning systems in attracting effective responses to climate change in these peri-urban areas (Houghton, 2009; Okusu, 2009;; Karanasios, 2011; World Bank 2012). The major sources of information were found to be the media, through the use of radio and television through which the information is disseminated by the Meteorological department in weather forecasts.

Harare peri-urban dwellers of Domboshawa are generally venturing into horticultural production since the area is located near the major urban centre that is well-serviced by a road network for ease of supply of inputs and extension services and easy transportation and marketing. They join hands with other prominent small-scale horticultural farmers who live close to Harare, particularly those in the Mashonaland region (Mahusekwa, Marondera, Murehwa, Mutoko and Uzumba Maramba Pfungwe) (Rukuni *et al*., 2006). Empirical research on rainfall suggests that there were decreasing rainfall trends between 1920 and 2017. Rainfall tends to decrease in Domboshawa in drought years. For example, it fell to 405mm in the drought of 1991 to 1992. Horticulture is very important to the peri-urban area of Domboshawa since it helps to improve their general welfare.

To cope with the impacts of drought, measures to address climate change and variability have been adopted in Domboshava (Tanyanyiwa, 2019). Crop diversification, soil and water conservation practices, off-farm income activities and integrated crop and livestock diversification are among these survival coping strategies. More adaptation strategies include community-based adaptation, irrigation, migration rainwater harvesting, use of drought-resistant crop varieties, water-conserving techniques and water storage (*ibid*.). Peri-urban farmers have taken heed of climate as they now cultivate local varieties, such as *rugare* and *viscose*, that can withstand moisture stress more than rape which is expensive.

Trends have shifted and currently are focused on the cultivation of neglected and under-utilised crops as climate change causes havoc in the peri-urban settlements. They are also known as the forgotten crops, minor crops, neglected crops, orphan crops and under-utilised (Chivenge *et al*., 2015). These include *nyevhe, chembere dzagumana*, *tsung*a, wild mustard and sweet potatoes, among others. To minimise soil erosion, peri-urban communities are now using hedges along contours as the soil area

is left bare due to rainfall and wind. Farmers also use potholing as a conservation farming technique that involves making holes in the field. USAID (2000) says farmers usually use this strategy when applying fertilizers and organic manure, simultaneously reducing the rate of soil erosion. Winter ploughing has also become an adaptation strategy as peri-urban farmers grow peas and lettuce which grow well under cold conditions. Further, crop rotation is being done to reduce the chances of spreading diseases (Muchuru and Nhamo, 2019). For water conservation, farmers use drip irrigation (Tanyanyiwa, 2019). To cope with the post-harvesting period vegetables are dried *(mufushwa* in Shona) so that they are available for relish off-season.

Embracing modern technologies, some of the main key adaptations of the farmer to climate change is education and training and management know-how. Farmers need basic education to aid their embracing of new technologies and technical, managerial and indigenous knowledge systems peculiar to a defined community (Makwara, 2013; Muchuru and Nhamo, 2019). Based on the empirical evidence from the study by Simatele *et al*. (2012), it is recommended that local government in Lusaka, and Zambia in general, should adopt pro-poor urban planning policies that will help reduce the vulnerability of poor households and enhance the resilience of the urban poor.

Water is constantly re-used; soils are kept moist through mulching. Due to changes in the water table, 42% of the farmers have moved to a new site looking for a garden that is well watered, along wetlands and some have even moved from horticulture production to small livestock production such as chicken, ducks and rabbits. These are relatively easy to farm as they are not capital-intensive.

RESEARCH METHODOLOGY

Content analysis of literature was predominantly based on desk review. Qualitative methods were adopted primarily through visiting literature in books, publications and journal articles. For data analysis, the study engaged in textual analysis. A review of secondary literature on studies that were previously done on climate patterns and variability in Sub-Saharan and other developing countries was done. This was supplemented as well by direct interviews that were carried out to gather information from experts in the Meteorological Department. Policy and statutory documents have were visited to assess the standing and provisions of the government on climate change in African countries.

RESULTS

Identifying appropriate responses to climate change should be a key element of the sustainable development strategies adopted by affected countries. In many parts of sub-Saharan Africa, the challenges of climate change are by no means a new

phenomenon, and there is a wealth of literature on how local people have developed a wide range of strategies to manage the environment sustainably.

The country's New Economic Recovery Programme (1989-1993), argued that "…there is a need to promote agriculture and other small-scale income generating projects in urban and peri-urban areas.'

More than 60% of the farmers in Harare's peri-urban settlement of Domboshava said that they use potholing regardless of whether the season is good or not and this tends to concentrate inputs in one place. They usually use maize stalks to encourage a circular farming system than a linear model.

There is constant re-use of water and soils are kept moist through the mulching method. Changing water tables have forced farmers to shift to well-watered areas. Almost half (42%) of the farmers in the peri-urban areas of Harare have shifted to new gardens, mostly along wetlands, that have better soil moisture,. Amongst these, some have moved from horticulture production to small livestock production such as chicken, ducks and rabbits. These are comparatively easy to keep as they are not capital-intensive (Tanyanyiwa, 2019). In 20% of the cases, water is conserved through the use of drip irrigation.

THE CASE STUDY

The problem of rainfall changes, rising sea levels, increased storm surges and flooding were witnessed in Douala, Cameroon. The rainy season used to experience heavy precipitation from June to October and rising temperatures associated with droughts during dry seasons (Dapi *et al*., 2010; Fiho *et al*. (2017)). On top of this, the city's incidences of heat-related health problems like fainting were increasing. The National Centre for Climate Change established disaster risk reduction. The Community-based Disaster Management guidelines support threatened communities to enhance the response to disaster risk reduction (Tosam and Mbih, 2015; Fiho *et al*., 2017; Yengoh *et al*., 2017).

Adaptation to similar climate change problems in the city of Lagos, Nigeria was observed to be very poor due to the absence of strong institutions and governance to boost adaptive capacity (Komolafe *et al*., 2014; ND-Gain Index, 2016). Poor measures were being taken against the reported rise in the sea level in the West African state. Further threats were witnessed in the form of increased intensity of storm surges and flooding, increased heavy rainfall and increased temperatures as reported by various scholars in literature (Oshodi, 2013; Elias and Omojola, 2015; Neumann *et al*., 2015). The low-lying areas in the cities, and primarily the coastal areas, were considered to be the most vulnerable regions to climate change which has been exacerbated by high

population densities in urban cities. Warming affects human health, in addition to the poor drainage system, which breeds harmful disease vectors.

In Accra, Ghana, flooding has been made worse by structural challenges associated with high-density, low-infrastructure areas (peri-urban areas) where poor residents face climate-related threats due to the lack of adequate floodwater protection infrastructure, education and health facilities (Codjoe *et al*., 2014; Codjoe and Issah, 2016). The adaptation goals were set in the National Climate Change Adaptation Strategy that focused on reducing vulnerability among the population and ecosystems (UNDP, 2012; Codjoe *et al*., 2014).

Climate change has also affected the southern part of Africa, with literature documenting its impact in the Tanzanian city of Dar-es-Salaam. As in many other cities across the continent, issues of the rising of the sea-level, coupled with increased flooding, have been recorded to have been caused by heavy rains that are associated with the El Niño-Southern Oscillation (ENSO) events. Issues of droughts in the city were also documented by Boamah *et al*. (2015). The changes in climatic patterns have caused increased vulnerability in the lives of many inhabitants, particularly those who live in the peri-urban unplanned settlements. Baker (2012) and Sakijegeje (2017) assert that people in these peri-urban areas have suffered from water-borne and vector-borne diseases. However, initiatives have been put in place to deal with some of these problems. At the residential level, place-specific engagements have been taken to reduce the development deficit against flooding. The government has formalised infrastructure development projects that are focused on reducing vulnerability and improving resilience against storm surges and the rise in sea level (Gore, 2015; Kiunsi, 2013; Armah *et al*., 2015;).

In East Africa, climate change has also caused havoc in the Kenyan coastal city of Mombasa. The city has experienced a rise in sea level and storm surges (Kebede *et al*., 2012). People living in informal settlements are at risk, and there are problems associated with waste management and also disease both water-borne and vector-borne (*ibid*.). In response to these climate change-related problems, n Integrated Coastal Zone Management Action Plan (2011-2015) was implemented to control coastal developments in the coastal city (Awuor *et al*., 2008; Bichnell *et al*., 2009; Puthucherril, 2014).

In Ethiopia, Addis Ababa has not been spared. Projections are that heavy rainfall and flooding are expected to rise. Bewket and Conway (2007) note that increases in temperatures in the city creates an urban heat island. This island affects human health intensely. Local warming has been an effect of the change in vegetation cover due to deforestation. There have been damages to property lying along streams that flow

down the nearby hills (Kahsay, 2016). To adapt to these problems, an urban and infrastructure flood protection scheme including structural and non-structural adaptation actions have to be implemented over 15 years (Dubbale *et al*., 2010; Kahsay, 2016).

DISCUSSION

Peri-urban dwellers are and will continue to be vulnerable to climate-related risks such as dry spells, droughts and violent storms. These life-threatening events may cause devastating effects on the incomes of the peri-urban people. This, therefore, calls for the need to be prepared for such events before being experienced. A significant percentage of peri-urban dwellers have no access to timely weather forecasting and early warning information. A survey by Gwimbi (2009), disclosed that approximately 70% of the people surveyed said they had no access to timely weather forecasts.

Harare can learn from Kenya where extension officers work with farmers by fusing scientific knowledge from meteorological services and indigenous knowledge systems to repackage weather information that can be used easily by farmers. CropMon provides service to small-scale farmers in Kenya via text short message services (sms) on weather forecasts, e.g. rainfall, temperature; real condition of crops in the fields, limiting factors when crop development is lower than expected and how to reduce these limitations (Onyango *et al*., 2014).

Another development within the context of peri-urban settlements in terms of agriculture is a steady shift in the types of crops that are being grown by the urban farmers from exotic (e.g. cabbage and exotic varieties of maize) to more drought-resistant crops such as sorghum, millet and various types of traditional vegetables. This development has been accompanied by the adoption of traditional farming methods such as zero tillage, minimum tillage and conservation tillage, involving cultivation and planting of food crops on raised beds, mulching, use of legume cover crops, erosion control and, to a limited extent, agroforestry.

CONCLUSION AND POLICY OPTIONS

The government needs to learn from other African cities that there is a strong correlation between climate change and city development. Therefore, there is a need for town planners to understand the socioeconomic drivers of risks associated with climate change. As Harare continues to grow through the expansion of the peri-urban areas, it city needs to integrate the current plans and future developments with climate mitigation strategies whilst, at the same time, improving the level of adaptation of urban societies, and the adaptation capacity of the population in peri-urban areas who are vulnerable to the impacts of climate change. The dearth of an established

governance system is associated with the urban population's low adaptive capacity to climate change.

City authorities should leverage the experiences of other countries both in the developed and the developing world. This may help to give the city a valid framework for the resilience of the city in building its efforts at minimum costs. Concrete steps can be developed in policy-making by looking at some African case studies to holistically address the peculiar challenges being faced by the city. For example, there is need for strong city-level policies that widely address its unique challenges. Climate adaptation initiatives also require policy interventions for water policies to succeed (Okpara *et al*., 2018).

To make its existing city-level climate change policy more effective, there is need for Harare to invest heavily in infrastructural development, predominantly around the many slums located in the peri-urban areas of the city. The city has a large population of poor residents living in several unplanned informal settlements that are highly vulnerable to the impacts of climate change. Providing a good drainage system and piped water through sustained urban renewal may as well minimise the effects of flooding and water-borne diseases, thus enhancing resilience to climate change effects.

There is need to strengthen Harare City administrations' financial capacity to invest more in climate resilience, and enable them to implement climate-related policies. Local authorities should improve their skill and knowledge of the impacts of climate change to guide them in designing preventive action against the impacts of climate change. There is dire need to foster partnerships among public and private stakeholders in implementing climate change adaptation policies and strategies.

The other option is to facilitate the adoption of practicable, it is possible, indigenous technologies and further come up with green infrastructure that may help to reduce the impacts of climate change. Further, there is need to integrate climate change adaptation initiatives with the urban development plan and disaster risk management within the city.

Preparedness for life-threatening events like violent storms, floods and droughts, is critical in reducing the vulnerability of peri-urban inhabitants. For peri-urban dwellers to be prepared, early warning systems should be put in place to distribute information so that inhabitants take necessary advance action.

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VOICES OF SCHOOL DEVELOPMENT COMMITTEE MEMBERS ON SCHOOL GOVERNANCE AND DIGITALISATION OF EDUCATION IN ZIMBABWE

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Abstract

The outbreak of COVID-19 in 2019 and the subsequent travel restrictions instituted by the World Health Organisation to curtail the spread of the virus saw the disruption of educational activities and the management thereof, affecting the role of the School Development Committees (SDCs). The number of SDC meetings to approve procurement and purchase of educational materials was decimated, henceforth school heads made sole decisions in contrast to the requirements of fiscal policies. This qualitative case study investigates how the work of SDCs in eight Zimbabwean schools is affected during COVID-19 and the transition to the fourth industrial revolution (4IR), and then establishes tenable alternatives to the conditions. To gather information, document analysis and semi-structured interviews were used. Schools are far from embracing the 4IR despite that SDCs must conduct all school governance online, just like any other business. The study suggests that educational institutions should spend money on developing digital infrastructures and educating SDC members on digital capabilities. This study adds conversation to scholarship on the use of the Internet of Things {IoT) in school governance.

Keywords: fourth industrial revolution, COVID-19

INTRODUCTION

The disruption of educational activities and their administration caused by the COVID-19 outbreak in 2019 and the World Health Organisation's ensuing travel bans to stop the spread of the virus' had an impact on the role of School Development Committee

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(SDCs). By implementing online educational techniques, the education system has been redesigned and reconfigured to embrace the Fourth Industrial Revolution (4IR). Additionally, school administrators had done a remarkable job of digitising and digitalising student registration, revenue collection, and daily operations. Even though SDCs represent the parent body with the authority to approve the spending of school funds, not much has been done to train committee members on the digitalisation of the school management system. Neither reports on how COVID-19 affects the school governing body's work nor training sessions for SDC members on the digitisation of the school administration system are accessible as scholarships.

Given that the 4IR is currently gaining popularity across the globe, this study is timely. It adds to the body of knowledge on 4IR, advances the discussion on the digitalisation of education, and offers insights into how the work of SDCs was impacted by COVID-19 and intervention strategies that can be implemented to help them become effective members of the school team as specified in the statutory instruments that defined them, thus enhancing school governance.

THE ESTABLISHMENT OF THE SDCS

There is a model of school governance that progressively gains acceptance in various nations, where parents are seen as partners in the education process (Wing Ng, 2013). A majority of countries require direct parental involvement in school governance through the use of statutory instruments. In Hong Kong, for instance, the government has, since 2000, advocated several steps to increase parental participation in school governance (*ibid*.). The South African Schools Act stipulates that the governance of public schools is entrusted to the governing body that holds a position of responsibility towards the school (Mestry, 2018; Aina and Bipath, 2020) and it also provides instructions on how SDCs should be run. Mafa and Nyathi (2013) note that in Zimbabwe, the 1991 Education Act of contains provisions that encourage the establishment of SDCs in non-governmental schools and School Development Associations (SDAs) in government schools to manage the affairs of these establishments (GoZ, 1996). Acts were taken in several nations to make schools democratic while also addressing two very important issues: inclusion and decentralisation in education. Decentralisation suggests that choices should be made by those who are closest to the situation, whereas inclusivity refers to the engagement of parents, educators, non-teaching staff, students, and other persons who are willing and able to contribute to the school (Motimele, 2005). In the case of this study, parents are in charge of making decisions regarding school governance that are appropriate for the circumstances of their schools rather than obtaining guidance from the federal government. In other words, the SDC/SDA is the body of the school that is in charge of formulating, enforcing, monitoring and assessing the laws and regulations that direct and control the conduct of the school and its constituents.

SDCs IN ZIMBABWE

In the past, immediately after attaining independence in 1980, the Government of Zimbabwe (Goz) adopted a centralised strategy for financing education, subsidising education from pre-primary to adult education (Dzimiri, 2018). During the period, Government money went toward building new schools, paying teachers' salaries and benefits, and providing per-person grants for the purchase of instructional materials (Nyandoro, Mapfumo and Makoni, 2013). But by the end of the first decade of independence, the massive government investment in education was no longer viable (Chikoko, 2008). Using the Education Amendment Act of 1991, the government created the idea of SDCs to decrease and share the cost (GoZ, 1992). Government-funded schools are allowed to create SDCs under that regulation. The Goz established Statutory Instrument Number 87 of 1992 for non-government schools and Statutory Instrument Number 378 of 1998 for government schools to make community involvement in education through SDCs necessary (Dzvimbo, Zimhondi, Masimba & Zhanda, 2020). An SDC must be made up of five chosen parents of students registered in the school, the head and deputy head of that school, one teacher and a representative of the responsible authority (GoZ, 1992). In essence, SDCs have opened the door for community participation in school management and funding. To guide the growth of the schools, this group of parents was then formed. As a result, the government, schools, parents, neighbourhoods, and other interested parties would work together as a community.

SDCs are intended to support government initiatives to develop schools (Mafa and Nyathi, 2013). The idea behind involving parents in school governance is to decentralise decision-making regarding the sourcing and use of resources to empower SDCs to create school-based policies that more effectively fulfil the requirements of students (Chikoko, 2008). Education decentralisation is anticipated to increase the quality of instruction and hold schools accountable for educational achievements by delegating decision-making to local stakeholders who are presumptively more familiar with their children's educational needs and local education system than the central government is (UNESCO, 2015; Sakamoto, 2021). The SDC is in charge of billing parents for contributions, collecting those funds, building and maintaining the school's physical plant, supplying educational materials and looking after the welfare of students (GoZ, 1992; MoESAC, 2010). The work of Nyandoro *et al*. (2013) shows that the SDC's responsibility is to raise money for the school and use it wisely. Taken together, the SDC operates and supports the growth of public schools; advances the moral, cultural, physical, and intellectual welfare of students; and promotes the well-being of the school for the benefit of its current and future students, and those of their parents and teachers. According to Duma, Kapueja and Khanyile (2011), additional explanations of what SDC participation entails include: organising, leading, supervising, formulating policies, making decisions, controlling, and

coordinating, which are some of the management responsibilities of the school governance structures. The SDCs' duty implicitly includes mobilising and overseeing the management of the resources required for the development of schools in the best interests of students, parents, and teachers.

Notably, the creation of SDCs is not new in school governance around the globe because parental involvement in school administration is widely hailed as a way to enhance the calibre and scope of education in both developing and developed states (Chung, 2008). As a result, a committee of parents and educators is established at each school to supervise the growth of that institution by approving plans and sanctioning the acquisition of educational resources and other costs related to the well-being of the students. Therefore, the committee's primary responsibilities include resource mobilisation, decision-making and management of school-related activities. The SDCs' responsibilities include developing the school's infrastructure, maintaining its assets, keeping track of money collected for the school and investing any spare monies there. Additional duties of SDCs include organising community festivals, raising money, generating cash for the school and informing parents about school programmes (Dzvimbo *et al*., 2020).

According to Statutory Instrument 70 of 1993, the SDC must hold two meetings per academic term to carry out its duties, which include planning, budgeting, conducting reviews and evaluating its programmes and operations (Mafa and Nyathi, 2013). As a result, SDC members gather to decide the destiny of the proposed project or perceived spending before any money is made. That was the standard up until December 2019, when COVID-19 restricted SDC members' movements and meetings. SDC operations were thus disrupted, which contrasted with the provisions of the statutory instruments that first created the committee. The only viable alternative was to stop holding in-person meetings and switch to virtual ones, just like other educational activities. That action was in line with the present global trend of governments accepting the digitalisation of the education sector (Langthaler and Bazafkan, 2020). Even though it has been a work in progress for some time, it is remarkable that the adoption of the 4IR in education was accelerated by the COVID-19 outbreak in 2019 (Fullan *et al*., 2020; Langthaler and Bazafkan, 2020; Ndung'u and Signé, 2020). As a result, the study was worried about whether switching from physical to online SDC meetings would be feasible.

THE FOURTH INDUSTRIAL REVOLUTION AND THE SCHOOL DEVELOPMENT COMMITTEE

The 4IR, also known as Industry 4.0, is the transition to novel systems that integrate physical and digital technology for a community of active users that are more

networked (Tripathi and Gupta, 2021). This definition allows us to succinctly define 4IR as the crucial interaction between humans and machines, characterised by the blending of digital, biological and physical worlds, and the growing use of new technologies like artificial intelligence, cloud computing, robotics, 3D printing, the Internet of Things (IoT), advanced wireless technologies, big data, cybersecurity, blockchain and robots. As a result, the 4IR is frequently used to conceptualise digitalisation, which includes automation, advanced digital technologies and artificial intelligence. It might also be seen as a universal tale that holds out many opportunities for every industry, including education. This because technological change calls for new accomplishments and managerial skills that were not necessary (Dzvimbo *et al*., 2020). The ability to alter and be flexible in the job are a requirement in every area as a result of technological advancement. SDC members' fields of work in education must also embrace technological change, not just other industries. Globally, the education sector is undergoing significant change as a result of factors including new technological advancements and the steadily rising usage of mobile devices, which present both potential and serious difficulties for the sector. Internet banking and e-commerce are recent phenomena that are unavoidable for schools, even as they struggle to incorporate technology. Schools gain from internet banking in that they can transfer money, pay bills, check balances, monitor their accounts, print account statements and download them all without physically visiting the banks.

Numerous studies have highlighted the significance of adopting the 4IR in education, and Fullan, Quinn, Drummy, and Gardner (2020:1-2) justify technology use in the classroom by claiming that it can hasten the transition "to a more interactive, flexible, student-centred educational model". This perspective demonstrates that the 4IR's engrained use of technologies in education focuses primarily on areas that are specifically linked to learning and teaching, notably: curricula, pedagogy and assessment, leaving the work of the SDC in school governance still restricted to the conventional face-to-face fashion. However, Dzvimbo *et al*. (2020) contend that because technology is now the norm, the issue of accepting it now affects all parties involved in the education system, not only students and teachers. According to that idea, SDCs ought to possess digital literacy as well to meet the needs of the modern world. They are significant stakeholders because they participated in school governance. However, very little was written about the difficulties the committees had in the face of global technological transformation taking place, even though numerous studies (Fullan, 1991; Dzvimbo *et al*., 2020) recognise SDCs as necessary component of the educational system because they increase transparency and accountability in schools. The SDC's traditional methods of educational governance and practice are being fundamentally challenged by the numerous changes and re-alignments in the use of cyberspace in education, particularly the institutionalised methods of face-to-face meetings when they want to approve school projects, goods, and services.

Much research on school governance (Dzimiri, 2018; Mes-try, 2018;; Aina and Bipath, 2020; Dzvimbo *et al*., 2020) focused on the duties of SDCs in financial management, neglecting the concerns related to the digital difficulties and opportunities that either hinder or enhance school governance and management. Although it is acknowledged here that there is a body of research (Fullan *et al*., 2020; Langthaler and Bazafkan, 2020; Ndung'u and Signé, 2020) that aids in our understanding of the efforts to digitalise and enhance the curriculum, teaching, and learning process. Very few research studies, if any, have focused on either the deficiencies or efficacy of SDC members in school governance during the digitalisation and digitisation of the education sector.

THEORETICAL FRAMEWORK

The framework for this study comes from van Dijk's Resources and Appropriation Theory (RAT), which focuses on a person's access to digital technology. According to van Dijk (2005), the term "access" refers to the entire process of implementing and using digital technology in school administration. The three successive types of access to digital technology identified by Van Dijk (*ibid.*) are physical, digital skills,and consumer access. SDCs can appropriate and use school management tools due to these progressive forms of digital access.

Dijk (*ibid.*) asserts tha physical access to digital technology refers to either having access to or ownership of it, and this is contingent upon the availability of financial resources. As a result, it appears that SDC members must possess or have access to digital devices to accept and use technology in school management. Examples of digital gadgets that SDCs must have are computers, tablets and/or smartphones, along with ancillary devices like printers and scanners, software, ink, paper, subscriptions, power sources and internet access (van Dijk, 2012). Once people have physical access, the next form of access is through their ability to control and use digital technology, known as having digital skills (van Dijk, 2017). Operational and significant talents are further separated into these. Operating and navigating digital devices are operational skills (van Dijk, 2005), but information retrieval, content creation, and conveyance of digital information are substantial skills. Adopting digitalisation in school administration is challenging due to a lack of operational and substantive capabilities. This is in line with van Dijk's (2012) assertion that one is better able to utilise digital technologies when they have more in-depth abilities. Here, it is implied that members of SDCs may find it challenging to use digital technology productively due to a lack of operational and significant abilities. The next step is usage access after gaining physical and digital access. Usage access includes one's level of digital technology use, the variety of digital devices, and the applications one employs (van Dijk, 2005; 2012). Digital gaps in school management are a result of the difficulties SDCs have using digital tools and platforms. RAT was used in this study

because it was thought to be the most suitable theoretical framework for constructing a comprehensive picture of SDCs' digital needs.

METHODOLOGY

The 24 participants in this case study, which used a qualitative methodology, were chosen from eight high schools in the Zimbabwean capital city, Harare, and included SDC chairpersons, school heads, and deputy heads. The participants were chosen for the study because they were situated close to the location where policies are created and then spread out to surrounding areas, providing rich data. It was possible to see how far the schools had progressed in adopting the Internet of Things from their location in the urban core. A true picture of the topics under research was presented by the participants as a result of their proximity to the education head office, which also means that information about the digitalisation of education in schools was received first in those schools with little or little distortion from the centre.

A case study was used because it offered several viewpoints from different participants (Creswell and Creswell, 2018). The study relied on school records since they are passive data sources that may be read and reviewed numerous times without changing as a result of the researcher's influence (Cohen, Morison and Manion, 2018). To gather data for the study, semi-structured interviews and school records were used. Semi-structured interviews supplemented the data that the study's document analysis produced, improving the triangulation of data generation techniques (Cohen *et al*., 2018). The thematic analysis technique created by Braun and Clarke in 2006 was used to analyze the data that was obtained via semi-structured interviews and document analysis.

RESULTS

SDC MEETINGS AND THEIR IMPACT ON SCHOOL PROJECTS

It was clear from the school records provided by the school heads that SDC meetings had been completely decimated. The inability of SDC members to travel from their homes to their schools may have been caused by COVID-19 travel restrictions enforced by the Zimbabwean government. COVID-19 regulations forbade any physical meetings, hence most members could not make it. Several school heads indicated that SDCs were unable to attend meetings as frequently as they once did, which had an impact on the execution of specific initiatives. The sentiments demonstrate that due to SDCs' limited authorisation given, schools were unable to carry out significant undertakings and had to postpone some educational plans. Additionally, it reaffirms SDCs crucial roles in school governance as infrastructure builders and consultants to schools. It is also conceivable that the school heads made independent decisions in defiance of the requirements of the finance policies when the number of SDC meetings

to approve the procurement and purchase of educational supplies were drastically reduced.

Interviews with school heads and deputy heads revealed that after the COVID-19 outbreak, schools gave significant thought to moving their operations online, but SDC members were not included. This demonstrates that despite being on the agenda for a while, online education was underutilised before the COVID-19 pandemic. As a result, it appears COVID-19 increased schools' motivation to adopt the 4IR, which demanded the digitalisation and digitalisation of education. School Head C provided evidence for that claim by stating,

> We embraced the fourth industrial revolution by embracing online education. The SDC's lacking digital abilities were not taken into account during that change, nevertheless." School Head G continued, "... due to the switch to online, SDC meetings were significantly decreased. We worked without the full complement of the entire house.

Due to SDC members' lack of digital proficiency, no decisions, therefore, were made, which impeded the progress of the school and other obligations. School Head C bemoaned that, *"our projects' progress was stopped. I could not decide on my own without the blessing of the SDC*". In this study, a case is made that SDCs might use tools like cell phones, emails, newsletters and school websites to manage schools in the 4IR era (Mafa and Nyathi, 2013). The resources appropriation theory, which contends that access to digital technology dictates the usage of that technology (van Dijk, 2005), confirms that such use is dependent on the accessibility of digital tools and digital infrastructure.

DIGITAL ACCESS AND SDC AMID THE FOURTH INDUSTRIAL REVOLUTION

Regarding the availability of smartphones, SDC members who were interviewed expressed conflicting opinions. SDC Member 5 reported,"*I have an outdated, broken smartphone*", while SDC Member 3 remarked, "*I don't have a smartphone at all*." According to sentiments gathered, SDCs at various schools have varying degrees of physical access to digital technology. It isinferred from these sentiments that SDC members have different privileges and that, despite the 4IR's revolutionary advancements, information and technology communication (ICT) penetration is quite low in some schools. This supports Kapurubandara's (2009) finding that the adoption of online commerce was hindered by a lack of digital infrastructure, a lack of consumer expertise, a delayed uptake of ICT, and a paucity of the legal and regulatory framework. According to UNESCO (2015), many schools are not equipped for the age of digitalisation in terms of their infrastructure, structural underfunding lack of skills, and educators' level of readiness. Physical access, according to RAT, relates to using or possessing digital technology (van Dijk, 2005), and that depends on the availability of financial resources. As a result, for SDC members to access and/or own digital tools

that enable them to embrace and use technology in school management, they must have the financial resources to build digital infrastructure and buy digital tools.

Those who acknowledged using smartphones were asked a follow-up question to find out if they used any online platforms for doing routine tasks for schools. The results demonstrate that SDCs lacked significant expertise in the use of online platforms. As SDC Member 6 said: "*I have a smartphone, but I'm not familiar with how to use its applications."* Interviews with the majority of SDC members revealed that the only online platform they were familiar with was WhatsApp. They also admitted that they had no prior experience with using email and the internet for administrative purposes in schools. SDC Member 8 affirms that "*despite the introduction of e-banking and the request for virtual meetings amid COVID-19, we lack digital capabilities to use the internet for school governance*". Therefore, it became clear from interviews with SDC members that SDCs lacked advanced knowledge and abilities regarding how to employ digital technology in school governance. The COVID-19 outbreak and the rapid shift to the 4IR, exposed this digital gap. Inferentially, the results demonstrate that the SDCs had to deal with difficulties brought on by global and emerging technological trends that required a paradigm shift in the way they could manage their school business.

The study claims, using the RAT lens, that the three sequential categories of access to digital technology — physical, digital skills and usage access — are present in schools as evidenced by the opinions of some of the study's participants. Additionally, it is contended that the lack of internet access hinders SDCs' ability to use online platforms for school governance. Therefore, the 4IR has created digital technology access gaps that must be rectified for efficient school governance due to deficiencies in one or more of these forms of access. Dzvimbo *et al*. (2020), who contend that there is need to adjust to the change brought about by technological advancement since it always brings with it new dimensions that need to be upheld, lend weight to the thesis. The 4IR is going to be a game-changing mark for the education industry in general and school governance in particular because of its enormous potential and the boundless opportunities it would provide. For instance, the SDCs must be skilled in the use of technology since schools benefit from being able to transfer money, pay bills, check balances, monitor their accounts, print and download account statements without being constrained by the physical restrictions of the actual world. This is true even though some of the investigated schools have not adopted technology or online banking.

TRAINING FOR SDCS

After the difficulties SDC members faced in switching to the 4IR were revealed, the study looked for suggestions to ameliorate those challenges. The analysis of

educational records and data generated from semi-structured interviews revealed that SDC members never received digital skills training. SDC Member 2 notes that:

> *We did not receive any digital skills training to help us with online school management tasks. We lack digital literacy. We are unfamiliar with the internet systems used for doing school business.*

SDC Member 5 stated that "*we need to be trained on how to transact business online, how to do virtual meetings and how to use the school website".* The findings are in line with Dzvimbo *et al*. (2020)'s report, which contends that to safely put SDC in charge, the government must make sure that all their members are trained in ICT use and internet banking. When considered collectively, the findings demonstrate that training for SDC members is required throughout the transition to the 4IR if digital usage is to be realised as suggested by the resource appropriation theory, which contends that once people have obtained physical access, the second mode of access becomes the digital skills required to command and utilise digital technology (van Dijk, 2017). The internet of things will enable school governance to take place whenever, anywhere, and at any pace with the help of such training in digital skills. Using RAT, it is contended that the difficulties SDCs had in using digital tools and platforms, resulted in digital gaps in school management, necessitating the necessity to equip SDC members. The study concurs with some literature that emphasize the need for fundamental digital skills to include analytical abilities like coding, in addition to user and informational skills to enhance school governance practises (Chryssou, 2017).

CONCLUSION

The study shows that the COVID-19 outbreak in 2019 has shown the complexities schools have in implementing the digitalisation of school governance and are far from embracing the 4IR given the lack of digital proficiency visible in SDCs. It has been shown that, rather than depending on conventional approaches, the education sector is creating and disseminating ideas on re-imagining school governance based on corporate educational technology solutions during the present 4IR. The report advocates replacing the old methods of remote governance for schools that depend on physical presence and interpersonal connection with new ones that depend on digital technologies.

Schools must make investments in developing digital infrastructures and in the education of SDC members for this to take place. The 4IR aims at modifying how schools are governed in many settings, and heads of schools must accept the changes that come along with it. To enable SDC members to function successfully in school governance, they must be retrained in digital skills. If this is not done, money will be mismanaged in schools, which would undermine the decentralisation and devolution objective in the educational system.

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SLUM DWELLERS SURVIVAL STRATEGIES OF MAGAMBA IN HATCLIFFE EXTENSION, HARARE

TINASHE CHANZA, SHAMISO MAFUKU AND RUMBIDZAI MPAHLO

Abstract

Housing for low-income people has been a big issue in many countries and Zimbabwe is not an exception. This challenge has been a major contributor to Zimbabwe's expanding slum population, with thousands of people living in slum areas. This study draws on the experiences of Magamba in Hatcliffe Extension, Harare, to understand the origins, demographics and survival strategies of slum dwellers. A quantitative research approach was employed. Household surveys were conducted as part of the data collection process in that semi-structured questionnaires were used. Observations using photographic or pictorial aids were done. The study suggests that impressions of poverty in Magamba correspond to a lack of access to fundamental requirements such as adequate shelter, water, sanitation, security of tenure, jobs and foodstuffs. The community's coping strategies emphasize that, despite the problems they face, residents are strong and have skills that they use to improve their livelihoods. In addition to creating a multi-stakeholder platform for resolving the housing delivery challenges, the study suggests slum transformation and political will where politics is not above institutions. These could be solutions to the rising number of slums that are developing and growing in the country.

Keywords:sustainable livelihoods, sustainable communities, politics, slum transformation

INTRODUCTION

Slum development and growth continue to be a global problem with planners and legislators unable to address the issues (Zanganeh *et al*., 2013). Globally, the urban population is rapidly increasing unevenly resulting in the development and growth of slums. Growth in towns and cities of Third World countries has been accelerating at an average rate of 2% compared to the 0.5% rate in developed countries (Mahabir, 2016). This pattern is predicted to persist with most Third World countries having problems absorbing future population growth (United Nations, 2015a). Better opportunities and social facilities in urban areas attract masses from rural areas (Zinyama *et al*., 1993). In the global south, rapid urbanisation poses a significant issue due to a lack of infrastructure and services (water, housing, healthcare, and sanitation) required to support the growing number of people flocking to towns and cities (Cohen, 2006).

Rapid urbanisation caused noticeable gaps in housing supply and demand in Zimbabwean cities during the post-independence era as large numbers of people moved to towns from rural areas. Zimbabwean cities were relatively unscathed by the exponential growth of slum settlements common in other African cities (Tibaijuka, 2005). Since then, measures have been established by the Ministry of Housing and Local Government to address the issue of housing shortages. A coordinated housing sector was created through the national housing policy that considers the demands and interests of all stakeholders for maximum performance and implements plans to create housing for the impoverished (Ministry of National Housing and Social Amenities, 2012). Considering these achievements, Zimbabwe still faces a severe housing crisis and struggles to provide appropriate homes for low-income members of society (Muchadenyika, 2015). Ademiluyi (2010) proposed that the housing crisis is faced universally despite it being a universal right, recognised at the global level in most constitutions.

Slums have been in existence for a long time, and their presence has been reported in writing for quite some time, (Mahabir *et al*., 2016). Alliance (2006) defines slums as rejected zones in urban areas where housing and living circumstances are inadequate. Kuffer *et al*. (2019) note that one to 10 people across the globe live in squalid environments (slums). Khayelitsha slum in Cape Town, South Africa, with a slum population of 400 000 and Kibera in Kenya with a populace of 700 000 the biggest and most impoverished slums in the African region (Aboulnaga *et al*., 2021).

CONCEPTUAL FRAMEWORK

The urban poor engage in a variety of survival strategies to lessen the impact of poverty. Chambers and Conway (1992) defined survival strategies as the assortment of actions people select to carry out to meet their livelihood objectives. Sustainable livelihoods focus on people's abilities to create and sustain their means of subsistence while enhancing their own and future generations' quality of life. Scoones (1998) argues that a variety of concerns, including the much larger discussion of the connections between poverty and the environment, are related to sustainable livelihoods. Livelihoods are sustainable, if they can withstand stresses and shocks, recover from them, and retain or improve their capacities and resources both today and in the future, without compromising the natural resource base (Chambers and Conway, 1992). Figure 1 shows the conceptual framework diagram adopted by this research.

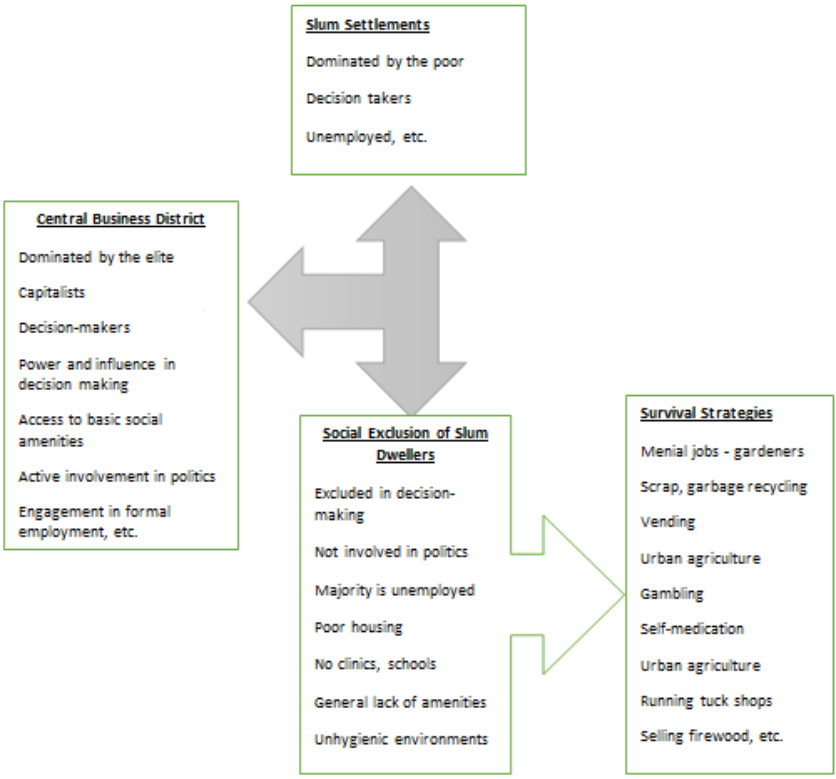

Figure 1: *Conceptual Framework Diagram* (Author's creativity - Chanza, 2022)

Figure 1 demonstrates that the city is seen by the wealthy as a location where they may increase their riches and exert control over the underprivileged neighbourhoods (slums), then as a place where people live, work to support themselves, attend school, and raise their standards of living. Logan and Molotch (2007) referred to that situation as a "development machine mentality" in the cities in which the political and economic elite use laws and economic dominance to control the less fortunate through the commercialisation and exchange of values.

LITERATURE REVIEW

Slum dwellers make up most of the population and are one of the most vulnerable. They are more disproportionately affected by poverty than any other urban citizen (Mwabu *et al*., 2001). There are social, economic and cultural issues that slum dwellers face: vulnerability to rights violations, lack of enough water, poor education, poor sanitation, limited access to justice and lack of security (GoK, 1999). This makes

their living difficult and expensive, necessitating the use of survival strategies as coping mechanisms. They perform activities like corn roasting, prostitution, drug peddling, hawking, greasing, tailoring, domestic helpers, recycling garbage, and street vending (Syagga, 1989). Most slum residents survive by working in the informal sector, which maintains impoverishment and lowers family strength. Slum-dwellers lack the specialised skills needed to enter the more competitive formal sectors of urban employment. They spend most of their time working in low-paying, labour-intensive jobs in the informal economy. Although the urban poor are employed in a variety of industries and services, their financial contributions to the local and national economies are rarely acknowledged (UNHSP, 2003). Slum dwellers provide services that may not be as easily accessible through the formal sector since they make their living from informal but essential activities.

According to a survey done in 2006 in Dhaka among 500 households in slum settlements, 29% of male slum dwellers pushed rickshaws (three-wheeled cycle-type vehicles) throughout the city (Hossain, 2006). Most rickshaw drivers are typically illiterate and lack proper employee training. Another 23% of men were engaged in minor trading and street selling, such as selling fruits and vegetables, towels, cheap goods, etc. They also worked in other professions like construction (6%), driving and transportation (5%), clothing and industrial work (5%) and domestic help (4%). Those who worked in low-level government and semi-government organisations and had access to some schooling, made a significantly small percentage (Hossain, 2006). Male workers are preferred for most employment in the city. Domestic help and back-breaking jobs, which are exceeding low status and badly compensated, are some other employment options for women to earn a living in their homes.

To thrive, dwellers in the Jika Joe's slum in Pietermaritzburg, South Africa, used a variety of survival techniques. These included working in the food industry, social grants, roadside shops or informal economy, housing rents, and micro-enterprises. Renting out of rooms is another method (survival strategy) adopted by these slum dwellers. Some residents preferred (sacrificed) to let their rooms (rent out) in their dwellings, while others build shacks on their places and rent them out as the place attracts more people because it has schools, social amenities and near employment places of many and services (Mkhize, 2018).

The socioeconomic status of slum dwellers is significantly influenced by occupation. It has an impact on other factors, including people's socioeconomic status, development, progress and living standards. The socioeconomic standing of a person is influenced by their style of life. The family's income has an impact on living conditions. It contributes to a better quality of life. Jobs rely on a person's skill set, education level, family history and nearby career opportunities. Slum residents engaged in illicit

activities such as the herding of goats, lambs, and poultry, as well as jobs like tailoring, retail shopkeeping, domestic help, construction work, catering and alcohol vending (Pawar and Mane, 2013).

Fundamentally, slums are seen as problematic zones for urban development in third-world countries. They are homes that are occupied unlawfully, aggravating environmental pollutants and degrading urban living conditions. According to Goswami and Manna (2013), residents of slums endure the worst living circumstances, lack of access to clean water and lack of sanitary services. Souza (1978) opines that approximately 67%of the huts in Kolkata's slums in India had insufficient windows and no ventilation, contributing to the darkness. Of the buildings, 60%were *katchas* with tile or tin roofs and bamboo beams. (Sajjad, 2014) proposed that registered slums of Mumbai have better household environmental conditions than non-notified slums of the districts. All the slum dwellers' homes are overcrowded and inadequately ventilated, an invitation to a variety of illnesses and infections. The sanitation issues in Mumbai's urban slums were examined (Risbud, 2003). Sanitation in slums is extremely bad because 73% of slums rely on public restrooms provided by the government, 28% urinate in the open, 0.7% pay to use restrooms run by NGOs and only 1% use private restrooms.

Social amenities represent the living standard of the slum dwellers. Some examples of social amenities include the availability of drinking water facilities at the household level, the different types of latrines and where they are about whether they are on the property, the different kinds of lighting sources, such as solar energy, electricity, kerosene and other oils and the different types of cooking fuels, such as cow dung charcoal, wood, coals, charcoals and grass.

The quality of life of residents living in slums has been a matter of significant interest to scholars of numerous disciplines. Due to the lack of basic amenities for their daily lives, the living conditions of slum dwellers are appalling. They are socio-economically and politically impoverished elements of urban society. They suffer from harmful environmental circumstances and, as a result, they are labelled vulnerable populations or at-risk populations. Most slum residents experience a subpar and miserable life (McAuslan, 2016; Singh and Sinha, 2019).

Phulbari slum settlement had almost 3,400 homes but just one tiny public clinic. This circumstance is characteristic of Bangladesh's slum settlements. The situation of urban residents living in slum settlements is tense and are neglected by the state and forced to rely on services from NGOs and the private sector that are not well-regulated and offer care of varying quality. Some of the slum dwellers depend on self-medication due to the lack of clinics (Rashid, 2009).

RESEARCH METHODOLOGY

The study used a quantitative methodology and a simple random sampling technique. The study is based on first-hand information from household surveys that were conducted in Magamba. Household surveys were conducted as part of the data collection process in that semi-structured questionnaires were used. The questionnaires were designed in sections with the first section geared towards harnessing information on the background of the respondents and the second designed towards gathering answers to the specific questions of the study. Observations using photographic or pictorial aids were done.

DESCRIPTION OF THE STUDY AREA

The insights of this study are from Magamba, a slum that developed and is still growing in Hatcliffe Extension, 21 kilometres north of Harare. Magamba slum falls under Ward 42 of Harare North Constituency, along Alpes Road, close to a newly developed community of University of Zimbabwe lecturers (Plate 1). Hatcliffe Extension was previously a detention centre for urban migrants from across Harare. Magamba community has an estimated population of 2 000 people. Magamba is a community with a mixed composition in terms of age groups. Young persons aged 15 to 35 account for a larger proportion of the community's population. Water, sewer systems, proper roads and other urban facilities were typically lacking in these newly formed settlements (Chitekwe-Biti, 2009).

Plate 1. Study area map of Magamba slum (Google Earth)

RESULTS

Many of the participants in this research were women. Researchers found out that most of the men will be at their places of work fetching firewood for business as a survival strategy. Most questionnaires were answered by 47 (72%) females out of the 65 participated in the study. Fewer males (28%) participated in the exercise since more of them were said to be out hustling for family survival (*kungwavha-ngwavha*) as they call it. This indicates that more men in the Magamba slum are are striving for the survival of their family, going out to different places to earn a living as a survival strategy.

The socioeconomic makeup of the household is thought to be significantly influenced by the level of education. There are no educational facilities in the Magamba community. Children travel long distances to access basic, primary and secondary education. Parents may not have the privilege to go to school during their time, but the youth must be afforded the opportunity. The level of education is inversely connected with the poverty level. The lower the education level, the higher the poverty of a household. About a quarter (26%) had had primary education, 51% had gone up to the secondary level, 8% indicated that they have gone up to higher education (tertiary level) and 15% indicated that they had never gone to school. It is interesting to note that among the respondents, those who reached secondary and tertiary education had an advantage in responding to the questionnaires than those who did not go to school. The literacy level is perceived as adequate as most people can read and write. Therefore, the need to improve building schools within or near the community improves the level of education of the children in the community.

The bulk of Magamba residents works in construction companies, farms, Pomona Stone Quarries (Pvt) Ltd as part-time workers and informal trade (recycling scrap they pick at Pomona Dumpsite), with only a few holding formal jobs. Those who work in farms, construction and low-density suburbs of Vinona, Mt Pleasant and Borrowdale, etc. as gardeners fall under the category of fully employed constituting 15% of the respondents. Vendors and tuckshop owners and scrap recyclers were all classified under the category of self-employed, being the largest at 44.2 and unemployed residents constituted 30.8%. The area faces social and economic issues and young people frequently engage in illicit activities to survive. The money people make depends largely on what they do as survival strategies. Income is significantly influenced by overall education levels, which can also improve overall access to chances in a certain sector (employment opportunities).

Table 1: Monthly income levels of respondents (Field survey, 2022)

Income group	Number	Percentage
Up to 50 US$	37	60
51-100 US$	19	29.2
Over 100 US#	9	13.8
Total	**65**	**100**

The results illustrated in Table 1 indicate that 60% of slum households make no more than US$50 per month in income. About 29.2%of the households make between US$51 and 100 each month. On the other hand, only 13.8%of households fall into the category of those with monthly incomes of over US$100 which is a better group within the community, within which are tuckshop owners and those who work in construction companies. This then indicates that dwellers typically work in low-paying jobs and cannot afford to buy necessities for daily life, to send children to school, to buy proper building materials to build sustainable houses. A greater proportion (60%) survive by selling firewood and vending which does not bring much income. As a result, their social and economic situation is terrible. They continue to live in poverty as their incomes are from hand to mouth. Their living conditions must be improved so that they can meet daily demands.

Magamba started developing in the 2012-13 period and now the population is over 2 000 with more than 250 households. The settlement is getting bigger every year that passes. A large proportion (53.8%) are households that have three to five persons living under one roof and 26.2%, of households indicated that there are more than five persons living under a single roof, yet most of the houses consists of one or two rooms. Households that have single persons account for 7.7% and households of two persons account for 12.3%. As evidenced by these statistics, the area is overcrowded, thus there is an inverse relation between houses and people. This is an indication that there is a serious housing challenge.

The growth and development of Magamba can be traced back to 2012 when there was political madness and functionalism in the ruling party ZANU PF where land was given to their youthss by the aspiring Member of Parliament candidate. A period of stay of over 10 years accounts for a substantial number of respondents 36 (55.4%), followed by those who stayed in the area for 5 years and under, the newcomers (27.7%). Respondents who have been here for of 6 to 10 years make 16.9%. This then indicates that the slum has beenin existence for 11 years as the majority indicated that the year 2022 is their 11th year. That means most of the dwellers came to the place in 2012.

WATER FACILITIES IN MAGAMBA

In general, the community lacks all urban services, for example, wate,r as the area is not serviced by the Harare City Council. Since municipal tap water is unavailable, the households dug shallow wells for their survival and these are the sources of water used by most residents. The community borehole is struggling to meet the increased demand for water, resulting in long lines for water collection at the piped water scheme initiative done by Oxfam Zimbabwe (Plate 2). Residents, therefore, rely on water from unprotected wells they have dug in their homes (Plate 2). The wells are not protected underneath, thus the water is susceptible to pollution from surrounding pit latrines, although they covered on the surface. Furthermore, because some households do not have wells, they store water in plastic or metal containers, exposing the water to contamination.

Plate 2: *Water facilities in Magamba, Hatcliffe Extension* (Field survey, 2022)

Shown in the Plate 2 are sources of water found in the community. The picture on the right shows a recent initiative to help the community with portable and safe water. The initiative is called Hatcliffe Magamba Piped Water Scheme installed in 2020. Social distancing at water points remains theoretical in most communities as residents stampede for the precious liquid. T water scheme reduced the potential risk of contracting and spreading the COVID-19 as it decongested the one borehole that was serving the majority of the community. It was done by Oxfam Zimbabwe in partnership with the City of Harare with the core objective of easing water challenges that were being faced by the community. Residents welcomed and appreciated this project as it provides them with safe, portable and reliable water. The initiative is said to have eased pressure or decongested some water points to a limited extent as water has some limits of three buckets (60 litres) per family or household a day as the scheme is

affected by the weather. The availability of water depends on solar energy as water is pumped using solar pumps.

SANITATION FACILITIES IN MAGAMBA

The community's sanitation situation is terrible, with residents living like animals. Water and sewer pipes are not available in the community. Residents relieve themselves in blair toilets or pit latrines and also in the surrounding bushes. This practice increases the risk of diseases, including cholera and typhoid. Slum residents have constructed structures on unserviced land, resulting in development without proper water and sanitary infrastructure. Pit latrines are the most common form of sanitation found throughout the settlement. The current situation in Magamba is that some households (18) indicated that they use bush toilets, whereas the rest (47) pointed out that they use blair toilets or pit latrines. On assessing the condition of certain toilets, it was noticed that most of them are shallow pits, and to make matters worse, the toilets are dug near wells as the space for these two is limited per household (approximately 100-150 square metres) (Plate 3). The situation as noticed is tense as diseases like cholera are looming, it is just a matter of time before they manifest.

Plate 3: *Sanitary facilities (toilets) are being used by residents* (Field survey, 2022)

Plate 3 depicts blair toilets. In the first picture, the toilet is currently under use and is encircled by white tents or plastic sheets for the privacy. The second picture is a new blair toilet of a newcomer under construction. It interesting to point out that new residents are coming and flocking into the place and can build wherever they wish. Magamba slum is growing every year that passes by.

HEALTH FACILITIES IN MAGAMBA

This slum settlement is one of a few in Harare where human health is negatively affected. There is no nearby clinic where residents can get basic medical care. This raises many questions regarding where the growing population might acquire healthcare services. Residents either travel to Hatcliffe 1 clinic for maternity and basic health services or travel to Glenforest clinic, situated a distance far away from the community. Some of the residents survive through self-treatment.

There are no restrictions to reside in Magamba as evidenced by newcomers flocking in and erecting their new structures. Residents are not allowed to erect permanent structures, raising concerns about their future. The residents in Magamba have no land rights and there is no clear land administration and management structure making their future uncertain. Because the community is unorganised and without stand pegs, anyone can take up residence anywhere. Residents expressed their fear of eviction because the council does not recognise them and their neighbours (the UZ Association of University Teachers community) are always fighting for their eviction.

NATURE OF HOUSING IN MAGAMBA SLUM

Plate 4: *Nature of houses in Magamba, Hatcliffe Extension* (Field survey, 2022)

The first picture on Plate 4 shows how houses look from a distance and the second one shows one of the houses in the community. In general, houses as shown in Plate 4 are made of plastic shhets, boards and wood tents indicating poverty. Most poor people have access to housing through cooperatives. Plastic sheets, wood boards, metal scraps and grass shacks are the materials that were used to construct most houses as shown in the pictures. The settlement depicts typical slum or squatter or informal settlements in Zimbabwe. Most families have a one-roomed house. The area is limited for any form of expansion (100-150 square metres per household), hence

overcrowding is an issue. Parents and children share a single room, hence moral and cultural ethics have been compromised.

SURVIVAL STRATEGIES OF MAGAMBA SLUM DWELLERS

Several respondents stated that they do not have decent or formal jobs because they lack the necessary qualifications for good opportunities. The only way they can provide for their families is to open tuckshops, although this enterprise is not always a dependable source of revenue.

Plate 5: *Economic survival strategies* (Field survey, 2022)

The photographs in Plate 5 show a tuckshop structure and urban agriculture (vegetable and sweet potato garden) that are employed for survival. Informal business activities are the most congested by residents in Magamba such as vegetable selling, corner tuck shops and fetching and selling firewood. A significant number also work as part-time general hands or contract employees in adjacent suburbs of Vainona, Mt. Pleasant and Borrowdale and on farms such as Art and Sun Valley. The community also engages in urban agriculture. In the main, vegetables, sweet potatoes and maize are grown for sale within the community. A substantial number of residents are dependent on scavenging rubbish, selling re-cyclable scrap and making soap from the garbage they pick at Pomona Dumpsite, a walkable distance from the community according to residents.

FACTORS THAT LED TO THE DEVELOPMENT AND GROWTH OF MAGAMBA SLUM

The development of Magamba can be traced back to around 2012 and 2013 as the residents indicated that these were the dates they came to this place. Magamba presents a unique case in its development and growth. Its development is largely related to politics.

Table 2: Factors that led to the development and growth of Magamba (Field survey, 2022)

Reasons	Number of respondents	Percentage
Poverty/ unemployment/ high rentals	6	9.3
Rural-urban migration	9	13.8
Politics	34	52.3
Informal economy (attracted by Pomona scrap industry)	16	24.6
Total	**65**	**100**

Table 2 indicates that politics is the chief promoter of the Magamba community with 52.3% of the households confirming that they had been blessed with land by one Zvandasara, a ZANU PF aspiring MP candidate for the area. Zvandasara's objective was to elbow out Mudambo, another ZANU PF aspirant in an internal fighting or functionalism where the same party members competed for votes in the same constituency. However, the Pomona scrap industry (informal sector) is another factor with 24.6% flocking to the community, attracted by the dumpsite. Residents indicated that they walk for 40 to 50 minutes to the dumpsite where they pick scrap for recycling. Rural to-urban migration {13.8%) is another reason that contributed to the development and growth of Magamba which is a clear indication that those from the countryside came looking for greener pastures.

ORIGIN OF SLUM DWELLERS IN MAGAMBA IN HATCLIFFE EXTENSION

Residents of Magamba have different source regions. The origin of the residents in Magamba is related to the factors that led to its development as there is push and pull factors behind it. Some were brought in by politicians, It was found and concluded that a 60% of the residents in the Magamba community in Hatcliffe Extension were people who used to live in Hatcliffe with their parents orn extended families. Most of them indicated that when people were given a place to stay as youths of the ruling party ZANU PF, they left their families to start their own as they found it unacceptable to continue staying with parents as they were oldenough to live on their own. Some respondents indicated that the places or houses they used to live in were overcrowded. Only a few (13.8%) indicated that they came from the countryside in search of greener pastures. The other proportion (26.2%) came from greater Harare - to avoid high rentals and others attracted by the Pomona dumpsite.

DISCUSSION

The findings of this study collaborate with the study by Mkhize (2018) who observed that to thrive, dwellers in the Jika Joe slum n Pietermaritzburg, South Afruca, use a variety of survival ways, including tuck shops, engaging in the informal economy and doing construction jobs (technical services) Thus, the findings of this study improve the

current body of knowledge on slum dwellers survival strategies. On the contrary, Mkhize (2018) noted that Jika Joe slum dwellers use housing rents (renting out rooms), engage in the food industry and get social grants for survival methods they adopted. Some residents preferred (sacrificed) to give up their rooms and rented them out, while others build shacks on their stands and rent them out as the place attracts people because it has schools and social amenities and is near to employment places of many and has services. These differences in survival strategies in Zimbabwe and South Africa are mainly because ofunlike economic environments in two countries(). In South Africa, they are given grants and, to some extent, unemployment benefits, not like in Zimbabwe. On the contrary, Pawar and Mane (2013) observed that slum dwellers survive by herding goats, lambs and chickens as well as engaging in the tailoring industry which is not common in Magamba.

On the contrary, Rashid (2009) noted that open sewers frequently overflow in the Phulbari slum community on rainy days since there was little drainage, showing that the Phulbari slum has some urban services, including sewer and health care though it is not sufficient (one clinic accessed by over 3 400 residents), unlike in Magamba slum in Hatcliffe Extension where there are no such services. Some slum communities in South Africa have access to energy (electricity), provided unlawfully at extortionate rates that are consistently greater than those for legal connections (*ibid.*).

The findings from the Magamba slum show lack of urban services - sewer, water, power and sanitation - collaborate with Goswami and Manna (2013), who noted that residents of slums endure the worst living conditions, lack of access to clean water and lack of sanitary services. Consequently, the research's findings add to the general understanding of slums.

CONCLUSION

There is a proliferation of new settlements in Magamba as newcomers continue to flock in and the problem of housing in the slum communities continues to worsen. This study concludes that the poorest and vulnerable households in the Magamba slum are forced to adopt strategies that enable them to survive and improve their overall welfare. Among all the survival strategies discussed in this article, the variables that significantly affect their choices are age, gender level of education and income levels. Residents have the general view that the government will intervene by offering services and solutions to reduce potential health hazards from improper sanitation practices and transform slum settlements.

RECOMMENDATIONS

Private-public partnerships (PPPs) infrastructure is well acknowledged to be best provided by the private sector with a profit motive. The Zimbabwean government

(public sector) should work with private players to construct infrastructure, such as housing affordable to those living in slum conditions, schools, roads, clinics and so on. The public sector can do this by subsidising private players, giving them tax relief and working to create favourable economic and political environments, as opposed to the current ones, that do not attract donors (well-wishers) or foreign direct investments, both that can help fund infrastructure development.

Political will by national and local governments goes a long way in dealing with the development and growth of slums. In Zimbabwe**,** Magamba slum and Hopely are a true reflection of political madness and misrule and plundering by ruling ZANU PF party. To address the vast number of slum problems that many cities in Zimbabwe face today, for example, the Magamba slum and those that will persist in the future, far more political will is required at both the national and local levels of government. For example, Magamba is a political issue that needs a political solution. Thus, politics must not be above local authorities, in this case Harare City Council (HCC). Therefore, doing things legally creates spaces for regulators (HCC) to make their own well-informed decisions without any political interference (partisan party politics).

Slum transformation is another important way to deal with slums. It is a multi-stakeholder strategy that the this study recommends in dealing with the urban menace of slums. It comprises citizens, companies and local governments working together to improve physical, social, economic, organisational and environmental conditions. Slum transformation involves different stakeholders in installing and improving infrastructures, such as access roads, street lighting, supply of water, sanitation and drainage, preventing flooding and restoration of open green spaces; enhancing small enterprises and supporting local economic development, all examples of public policy strategies.

Policies and initiatives for urban development that focus on slum dwellers' livelihoods and urban poverty, in general, are other initiatives that can go a long way in providing sustainable livelihoods for slum dwellers. Slums are, to a considerable extent, a geographical and physical reflection of urban poverty and prior efforts to either physically eliminate or rehabilitate slums have not always acknowledged the significance of this fact. Future strategies should address the factors that underpin urban poverty, rather than the physical characteristics of slums only. Slum policies should aim to improve the livelihoods of the urban poor by promoting the informal economy's growth, tying low-income housing development to income production and providing easy access to jobs via pro-poor transportation and low-income settlement site rules. Slum policies, in general, should be linked to broader, people-centred urban poverty reduction strategies that target the multiple components of poverty, such as

jobs and incomes, food, health and education, housing and access to essential urban infrastructure and services.

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Reflection on the During and Post -COVID-19 Experiences, Response Strategies: The Case of Informal Traders in Masvingo URBAN

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Abstract

The research evaluated the Zimbabwe's City of Masvingo's response to the impacts of COVID-19 on informal traders . The research shows the resilience strategies which have been adopted by the informally employed and the sustainability of the strategies therein. A sample of 94 informal traders were selected to participate in this research. Key informant interviews, questionnaires and observations were used in data collection as they support the mixed approach. Key findings reveal that appreciation of the Sendai Framework by the City of Masvingo that agitates for resilience and protection of livelihoods and productive assets throughout the supply chains, ensure continuity of services and integrate disaster risk management into business models and practices. Most strategies employed by the planning authority to counter contingencies were skewed towards the physical response such as renovations and demolitions of marketplaces, water and sanitation rehabilitation and the hierarchy of controls, whist the socio-economic dimension has been kept at bay. The research recognises that social and physical distancing are essential response mechanisms to the COVID-19 pandemic. However, there is need to for integrative planning that takes human factor into consideration by guaranteeing safety nets.

Keywords: pandemic, informality , local government, policy, resilience[12]

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INTRODUCTION AND BACKGROUND

The COVID-19 pandemic brought unexpected exogenous shocks that resulted in global, regional and national responses. The pandemic tested the resilience of governments, leaders, societies, economies and institutions in a way that few crises have over the past century (Morley *et al*., 2020). To contain the spread of the virus, different countries adopted unprecedented policy measures based on their capacity. The World Health Organisation (WHO) led a response by issuing a press release urging disaster management agencies to prioritise biological hazards. The International Monetary Fund (IMF) made US$10 billion of zero-interest loans available to its poorest member countries asnvestment funds for the health care sector, labour market and small entrepreneurs. The World Bank Group increased COVID-19 by US$14 billion to help sustain economies and protect informal jobs. However, Africa's public and private sectors, individuals and communities had limited response alternatives to COVID-19 commercial lockdowns and disruption of income sources. As a response to COVID-19 for the informal sector, Japan approved two packages of small business loans US$6 billion and US$15 billion on February 4 and March 15, respectively. South Korea allocated more than US$13 billion in emergency funds to stroke economic activities. Singapore set aside US$4.02 billion to help businesses and households. Under Zimbabwe's indefinite COVID-19 lockdown, informal traders and vendors and their families were highly vulnerable, unable to to go out to earn their living. The demolition of their stalls exacerbated an already-desperate situation. According to UNDP, measures taken by Zimbabwe to reduce the spread of the virus led to a 3,8% decline in GDP growth in the continent. The economy became disastrous, disproportionately with the poor and vulnerable, small and informal businesses as well as small agricultural producers. Delayed imports of goods increased the shortage of basic consumer and intermediate goods, thus fuelling further inflammatory pressures in the country. A strict response to the pandemic by the government could dampen growth further and discourage the much-needed investments, thus leading to an increase in the levels of poverty. Zimbabwe is largely an informal economy dominated by small to medium enterprises (SMEs) that are domiciled in the informal sector due to economic decline perpetuated by bad governance.

STATEMENT OF THE PROBLEM

Urban spaces are epidemiological foci of COVID-19 due to densities and spatial interactions within market places, accelerating people's exposure and susceptibility to this biological hazard, hence there is need for robustness in preparedness and response in cities (Lone & Ahmad, 2020). Local authorities have governance and policy-making responsibilities and play an important role throughout the emergency management cycle – from preparedness and readiness to response to and eventual recovery from COVID-19 (WHO, 2020) . Preparedness in cities and other urban settlements is critical for effective national, regional and global responses to COVID-19. Urban market spaces play a significant role in sustaining urban livelihoods in the

face unemployment and fragile economy. The Chitima and Chicken market places, prior to the invocation of Statutory Instrument 133 of 2020, had been spaces for spatial interaction, spatial flows of people as well as social interaction. People in market places have inadequate sanitation, clean water is rare and no water storage tanks, electricity connections are unreliable, fire safety equipment is lacking, pathways are narrow and there is limited space between the sellers (UN Habitat, 2020). Such an environment is fertile ground for risk and susceptibility to communicable diseases due to confined spaces and intense clustering. There has been general consensus amongst spatial epidemiologists and disaster epidemiologists that there is need for COVID-19 response and preparedness premised on engineering and management controls that seek create COVID proofing market infrastructure.

SIGNIFICANCE OF THE RESEARCH

The COVID-19 is a biological disaster of significant proportions, with dire consequences on the socio-economic front, hence any response and preparedness mechanisms should integrate human rights and dignity. However, the hierarchy of controls imposed by the Zimbabwean government as a response and preparedness strategy have a negative bearing on citizens' rights to partake in economic activity and to be protected from exposure and susceptibility. While social and physical distancing are essential response mechanisms to the COVID-19 pandemic, there is need, however, for integrative planning that takes the human factor into consideration by guaranteeing safety nets. There is propensity of the government towards recentralisation local government due to failure to re-align the Section 264, Chapter 14 of the Constitution on devolution. At the centre of re-centralisation there is evidence of issuance of ministers directives and statutory instruments, thereby subverting the right of citizenship participation in matters affecting their wellbeing. The Sendai Framework,clear on managing the risk of disasters, stipulates that people's health, livelihoods and productive assets should be protected while maintaining and protecting their alienable rights and the right to development. This research focuses on the effectiveness of the response and preparedness within urban settings against the recommended standard operating procedures specified in the Sendai Framework, Constitution of Zimbabwe, as well as pre-established rules enshrined in related legislations and urban by-laws.

THEORETICAL FRAMEWORK SENDAI FRAMEWORK

The Sendai ramework clearly states that to reduce the frequency and impact of disasters, what is to better understand disaster risk and to improve risk governance, thereby minimising new risks.. This is no aneasy feat. It requires establishing consistent access to and collection of disaggregated data and strengthening capacity for contextually analyzing risk assessment and forecasting data. Most importantly, it requires building political will and action to ensure that all development programming and future investments are risk-informed. The response and recovery strategies, while

focusing on physical space, the recognition of local markets as the mainstay of livelihoods strategies, have been relegated to the background with little emphasis on inclusivity to risk reduction. There is limited appreciation of the Sendai Framework by the City of Masvingo which agitates for resilience and protection of livelihoods and productive assets throughout the supply chains, ensure continuity of services and integrate disaster risk management into business models and practices.

INCLUSIVITY OF URBAN POLICIES

The aim must be to devise robust, flexible and resilient adaptive systems that work in harmony with all sectors. To attain the expected outcome, there should be reduction of existing and prevention of new disaster risk through implementation of integrated and inclusive economic, structural, legal and social measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery and thus strengthen resilience. There must a calculated endeavours for more multilevel governance that engages with various stakeholders and to support grassroots and community level networksThere has to be a broader and more people-centred preventive approach to disaster risk. Disaster risk reduction practices need to be multi-hazard and multi-sectoral, inclusive and accessible to be efficient and effective. While recognising their leading, regulatory and coordination role, Governments should engage with relevant stakeholders, including women, children and youth, persons with disabilities, the poor, migrants, indigenous peoples, volunteers, the community of practitioners and older persons in the design and implementation of policies, plans and standards. There is need for the public and private sectors and civil society organizations, as well as academia and scientific and research institutions, to work more closely and create opportunities for collaboration and for businesses to integrate disaster risk into their management practices, enhancing disaster preparedness for effective response and to build better cities in recovery, rehabilitation and reconstruction.

METHODOLOGY

The mixed method approach allowed the use of a wide array of data collection tools than when using either qualitative or quantitative only. By using qualitative data to explain quantitative data and vice versa, mixed methods provided answers to questions that could not be answered by either qualitative or quantitative research only. The mixed approach led to the adoption of the exploratory research design so as to develop an understanding of the local government authority's response strategies to COVID-19 in urban settings. The sample size calculator (http://www.raosoft.com/samplesize.html) was used to determine the sample size of 94 from 4 000 registered informal traders. The key informants were purposively selected for this research. Research instruments included questionnaires, desktop review and key informant interviews.

RESULTS

City's response strategy to COVID-19 on informal traders

PHYSICAL DIMENSIONS

DEMOLITIONS

Municipal police and council officials demolished illegal market stalls and cabins in the City of Masvingo. The intention was to help prevent the spread of the virus by minimising hotspots. The premises were considered likely to harbour the spread of COVID-19 due to intense clustering.

COVID-19.

EXTRACTS FROM KEY INFORMANTS

A participant from the Department of Spatial planning highlighted that:

> the designs of the existing market sheds were no longer in line with the RTCP Act regulations on how buildings in the CBD should look like so the council had to demolish and renovate the existing infrastructure.

The city council complied with a Cabinet resolution that during the national lockdown, local authorities should clean up and renovate workspaces used by informal traders.

Figure 2 and 3 show how the designs of the vending structures were improved into market sheds that are strong and resistant to natural disasters, thus building resilience.

Figure 1: *Market sheds being demolished by the City Council.*

RENOVATIONS

THE government, local council and development agencies committed resources to renovating market and vending stalls, making them safer for both traders and citizens within the jurisdiction of Masvingo. Figure 2 shows the Chitima marketplace after it had been renovated. The new building designs were spacious and allowed physical distancing in the face of infectious diseases. The city improved in terms of solid waste management and sanitation. The council managed to renovate public toilets and provide hand-washing basins at all public vending markets.

Figure 2: *The improved Chitima Musika after renovations*

BUILDING BACK BETTER CITIES

The city is trying to build back better cities that are resilient. Mucheke Hall and Rujeko Hall were renovated to be used as evacuation centres in case of disasters (biological and natural disasters). The city improved the provision of services as well, to build back better cities that are adaptive and resilient to shocks.

A participant from Masvingo City council argued:

> The city improved the provision of services, public toilets, Jojo tanks and hand-washing basins in public places, for instance, Chitima, town flea market also bus stop markings to ensure social distancing

To improve water supply, solid waste management and hygiene (,ASH,) the city renovated public toilets and provided hand-washing basins at all vending places, e.g Chitima, Tanaiwa, Sisk and Gomba. There was a constant supply of water and relocation of dumpsite from Vic Range to 10 km away from town.

NONPHYSICAL DIMENSIONS

PACKAGES/ GRANTS

A participant from a Focus Group Discussion highlighted that: Each *member was given 200 bond, inokwaneyi.* Furthermore, another participant from FGDs noted that:

> Though the government promised SMEs a grant to cushion them during the lockdown, the process has been very slow, halfway through the shutdown informal traders in Masvingo still haven't received any funds.

Based on the information gathered from discussions, the grants offered by the government were not enough and the people had to go through many processes resulting in some failing to receive the money. From key informant interviews pertaining to the issue of informal traders receiving loans, Key informant 1 said; "It *was hard for other informal traders to receive loans as the Ministry of Social Welfare usually offer loans to cooperatives (SACCO)".*

Informal traders faced difficulties in accessing loans from banks as most of them do not have collateral security, yet the Ministry responsible for loans targeted only registered cooperatives and not informal traders. According to Birla (2018), providing loans and credit guarantees with limited conditionality can be one means to invigorate private sector participation in continuing economic productivity, increase the liquidity of small-scale businesses and limit job losses. Thus, the only way to cushion the informal sector in the face of rapid disasters such as COVID-19.

INCLUSIVENESS

According to Key informant 4:

> Before the demolitions of Chitima and other market stalls, the vendors were consulted, the council held a meeting and the chairmen of Masvingo Residence Association was present to advocate for the informal group, even on the issue of rentals the sector was consulted.

In this case, there was inclusiveness as the city response to the impacts of COVID-19 included vendors in the decision-making processes.

THE LEGAL FRAMEWORK THAT GUIDED THE CITY'S RESPONSE

The demolition and renovation of vending stalls as the city's response were in line with and guided by several Acts, laws and Statutory instruments (SIs). They include the following

BILL WATCH 18/2020 – 22ND APRIL

Municipal police and council officials were empowered to demolish market stalls and illegal cabins in the high-density suburbs with the intention of preventing the spread of COVID-19. The Ministry of Local Government Public Works and National Housing asked the council to comply with the Cabinet resolution, meaning they had no choice but to carry out the directive from the Minister.

S.I 2020- 077 PUBLIC HEALTH

According to information gathered from key informant interviews, the renovations were necessary as they were guided by SIs and the RTCP Act. According to the SI 2020 section 8 sub (1) l

> In pursuance of the object of these regulations, the Minister may (in consultation with the President) by orders published in the Gazette –
>
> …authorise in any local authority the evacuation, closing, alteration or if deemed necessary, the demolition or destruction of any premises the occupation or use of which is considered likely to favour the spread or render more difficult the eradication of such disease ……"

IMPACTS OF COVID-19 ON INFORMAL TRADERS

Table 1 shows that most of the city's response to COVID-19 has been dominated by infrastructure rehabilitation as represented by 53%, relative to other non-physical dimensions such as livelihoods (18%), job opportunities (12%) and financial sustainability (15%).

Table 1: Impacts of COVID-19 on informal traders.

	Frequency	Percent	Valid Percent	Cumulative Percent
Infrastructure development	50	53.7	53.7	53.7
Financial sustainability	15	15.9	15.9	69.6
Job opportunities	12	12.8	12.8	81.9
Livelihoods	17	18.1	18.1	100.0
Total	94	100.0	100.0	

INFRASTRUCTURE DEVELOPMENT

Results from Table 1 indicated that most participants on the city's response were biased towards infrastructure provision. They agreed that infrastructure such as Rank town flea markets, Chitima Musika and Tanaiwa Market have improved significantly, building designs in line with the WHO regulations that agitate for spacious vending stalls that reduce the spread of Covid. Moreover, water and sanitation facilities , a vital cog in the spread and occurrence of communicable diseases, have been refurbished and rehabilitated.This was also a way of building back better cities that are resilient, adaptive and can respond to shocks. A respndent from Masvingo City Council highlighted that:

> The city renovated Mucheke Hall and Rujeko Hall to be used as evacuation centres in case of disasters; vending stalls were also renovated to allow social distancing, they are well ventilated and the building designs were improved.

Results from key informants indicate that the city's response was focused mainly on the development of the city and neglected social and economic aspects. As a result, the livelihoods of the informal group were disrupted as informal traders were displaced. Results from informal traders and key informants present how each group was affected by the city's response to infrastructure development. The development of infrastructure is also a benefit to the local authority as it strengthens the city's financial sustainability. Also, disaster management of the citiy was improved and the building designs were stronger and well-ventilated.

FINANCIAL SUSTAINABILITY

Results show that financiall,y 23% of the participants were affected by COVID-19 restrictions. This is because their social networks were disrupted and due to stiff competition in the market, their returns were low. The 2008 multi-inflationary environment showed the vulnerability of these traders in times of crisis and it means they need social safety nets that respond to their needs and circumstance. The social groups were their funding strategy and during this period, they could no longer meet and they had no money to save, thereby affecting their financial status.

Discussions Member 4 stated,

> Maround were very important because *munhu waishanda une* target *uchiziva kuti panopera* week*, ndikufana kukanda mari yakati, manje n*elockdown *mari yekutokanda unenge usina nekuti yekudya hapatorina*.

These findings are in line with Horing et al. (2020) who mentioned and explained the importance of otating savings and credit associations (ROSCAs) and Accumulating Savings and Credit Associations (ASCRAS) Informal traders in South Africa should have government-supported schemes that they can contribute to. Such schemes exist for the formally employed and their employers. Schemes such as the South African Unemployment Insurance Fund that has, despite the many challenges, paid out R16.5

billion (US$916 million) in the first two months of the COVID-19 lockdown (SA News, 2020). The COVID-19 limited market also affected the financial status of the informal traders. The participants were complaining about the issue of the limited market which was resulting in low profits. This is because they were facing stiff competition from vendors who were selling at home and in the streets, charging very low prices because they do not pay any rentals, this leadingcustomers opting to buy in the streets at Chitima Musika.

LIVELIHOODS

The results indicate that 18% of the participants' livelihoods were affected because of the city's response and increased their vulnerability. The closure of light industries, informal economy businesses and vendors deprived them of their sources of livelihood and income.

FDG Member 4, said, "We are facing a hunger crisis and lockdown *yovhiringidza zvanga zvichiita tiwane mari, zvirinani kufa wakaguta."*

These findings are in line with Calina *et al*. (2020) who stated that:

> Street vending is a source of employment and income for poor dwellers who have limited opportunities in a country where the ongoing pandemic exacerbates the already existing social inequalities.

More so the vulnerable groups were affected to a greater extent as they depend on the informal sector for survival. This is because the informal sector tends to be vulnerable during outbreaks as they have low levels of investments and savings.

FGD Member 7 avered:

> Vakawanda vanotengesa they're the disabled and *havasi mutoenda hamusi kudiwa vanhu* that will affect them more because *havana* any other source of income to sustain a living.

Member 8 added,

> The closure of *ma*borders as well as lockdown *yatoaffector* some of us *vainoita zvekutengesa kunze tichidzoka kumba* something.

These findings show that as a result of the closure of borders, remittances slowed down and had a double impact on fiscal space and household vulnerability to poverty. The findings are agreeing with Arias *et al*. (2019) who also supported the result of loss of income and increased vulnerability of the poor.

JOB OPPORTUNITIES

The results show that 12% of the participants benefited from the new wave of informality. These findings are in line with what Koroma *et al*. (2017) who observed

In Zimbabwe, where unemployment is estimated at up to 90% when considering only the formal economy, has created significant employment opportunities, with an estimated 57 million people currently employed in the informal economy.

Cross-border traders (CBTs), in trying to adapt to the lockdown restriction, used runners to order goods online from abroad and use trucks to transport them overland. Thus, in this case, there was the creation of jobs for runners and truck drivers. The creation of new jobs made it possible for the informal traders to make a living and sustain their families' livelihoods . Brenton and Soprano (2018) also supported the view that the informal sector creates employment. They explained that revenues are often the main source of income for the households of CBTs. Then there was the the black market which resulted in many people benefiting and at the end of the day, improving their livelihoods.

COPING STRATEGIES EMPLOYED BY THE INFORMAL TRADERS

IDENTIFYING AND CREATING ALTERNATIVE SPACES

The most employed strategy was of identifying and creating alternative spaces. Some (42.6%) were now selling on open spaces and street pavements but these were often raided by municipal police who confiscated their goods, resulting in huge losses in some cases. These victims are vendors who were not allocated vending stalls because of different reasons based on criteria used by the local authority. This attracted fines from council police as the RTCP Act supports the city in the creation of designated vending areas, not open spaces.

Table 2: Coping strategies employed by vendors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Identifying & creating alternative spaces	40	42.6	42.6	42.6
	Middlemen marketing	23	24.5	24.5	67.0
	Adoption of e-technologies	17	18.1	18.1	85.1
	Door-to-door service delivery	14	14.9	14.9	100.0
	Total	94	100.0	100.0	

EXTRACTS FROM FOCUS GROUP DISCUSSIONS

CBT traders had different views from questionnaire participants on the issue of coping strategies. For them to survive, they adopted financial coping strategies since the closure of borders led to losses of jobs for many and the disruption of livelihoods.

"We had to borrow money from friends and relatives and sell productive assets such as livestock."

Identification and creation of alternative vending spaces indicate that the city's response to the impacts of COVID-19 on informal traders was not effective. The city focused on the physical aspect which is infrastructure development, neglecting the informal group that sustains their livelihoods through the informal industry. Vendors had to create other alternatives such as the creation of vending spaces in open spaces.

ADOPTION OF E-TECHNOLOGIES

Adoption of e-technologies was employed by 18,1% of informal traders. CBTs used digital platforms to network with business associates for supplies, advertising on WhatsApp groups, Facebook pages and so forth. It was sustainable as a low fee was charged and no need to travel because people were not allowed to.

EXTRACTS FROM DISCUSSIONS

Member 5:

> "We adopted the use of Whatsapp platform to order goods and advertise to customers through whatsapp status."

Member 6*:*

> "WhatsApp *ndoyaitoshanda since* m*aborder akavharwa* and it was easy because one could order through runners and the goods were transported by trucks and then you deliver to your customers.

Findings from CBTs stated that the use of social media was the best because many people were using the same platforms for communication and it was easy to advertise. Many scholars agree with the use of e-technologies as a coping strategy for vendors during the COVID-19 lockdown. Chikulo *et al*. (2020) indicated the use of digital platforms to network with business associates as a sustainable way of trading without violating WHO regulations.

CHALLENGES FACED BY INFORMAL TRADERS

Table 3: Callenges faced by informal traders

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High rentals	24	25.5	25.5	25.5
	Confiscation of goods	23	24.5	24.5	50.0
	Stiff competition	8	8.5	8.5	58.5
	Harassment	39	41.5	41.5	100.0
	Total	94	100.0	100.0	

HARASSMENT

Although vendors had reasons to justify their presence on street pavements, it is against city regulations. The number of stalls built by the municipality on the market sites was limited, only a few vendors could be accommodated, hence leaving them with no option but to remain to go on the streets.

A key informant said,

> Pertaining to the issue of the limited vending spaces, vendors were denied access because of the council waiting list procedure and the city have limited space for such use as compared to the number of people, but are still trying to create more spaces to accommodate them

The findings are in line with what Wegerif (YEAR??) observed when he argued that the city, in trying to create a better city council, have failed to drive the vendors away from the street. “The street is ours”, as one trader once remarked in an interview, is an essential characteristic of the new geography of resistance in which street-induced informality is one of the concessions.

HIGH RENTALS

Twenty five percent (25%) reported that they were facing challenges of high rentals and they were struggling to pay since they were now charged in US dollars. It is hard for them to afford because they are still recovering from COVID-19 shocks.

Extracts from FGDs: "Many failed *kudzoka kuChitima nenyaya yema*rentals anga akwira *from US$5 to US$25"*

Extracts from key informants: *"The criteria that were used to allocate market sheds also verified if the people applying have the capacity to afford the rent."*

CONFISCATION OF GOODS

Nearly a quarter (24%) of the participants reported that they were negatively affected by COVID-19. In trying to adapt, they lost their goods and loss of revenue, among other things . Mitullah (2003), Ninathen (2006) and Shaiara *et al*. (2015) also supported these findings as they explain how informal traders suffer due to them not being recognised. "Since street trade is not legitimately regulated in many countries, harassment often results in the confiscation of and damage to their goods as well as loss of money.’

EXTRACTS FROM FDGS

> *Mabhero edu atakasiya muChitima paka announswa nyaya yema* renovations it was too late *kuti titore zvinhu zvedu* and *takaita* loss coz *vaive paduze ndovakatora.*

When Chitima stalls were demolished, many informal traders left their goods on shelves hoping they would go back to work after the three-week lockdown.

Extracts from key informant

> The informal traders were consulted on the issue pertaining to renovations and their representatives were present in the meeting, meaning they were supposed to tell the other vendors what the city was planning.

This means that the loss of goods and other stuff because of demolitions by the city was due to the Vendors Association failing to communicate with their members effectively.

DISCUSSION

An empirical study of the impacts of COVID-19 restrictions on informal traders was carried out in Masvingo urban. The main objectives of the study were to discuss the city's response to the impacts of COVID-19, its effectiveness, how the informal sector survived and the challenges faced in employing the strategies. The results indicate that the city demolished vending infrastructures that were regarded as hotspots for the spread of COVID-19. These vending stalls, like Chitima Musika designs, were poor and prone to disasters like floods and biological shocks like COVID-19. The Sendai Framework, which guides cities on disaster risk management, creating back better resilient cities that respond to shocks, was adopted. This indicates that in response to biological disasters, the city is required to better understand disaster risk management, formulate inclusive urban policies and a holistic approach that addresses all dimensions of life to work towards a sustainable society. Also, the city improved the provision of services like the supply of water, provision of hand-washing basins and solid waste management was also improved.The city, in response to the impacts of COVID-19, demolished vending stalls and renovated them and cancelled all leases. This led to the displacement of informal traders, disruption of livelihoods and social networks that helped the informal group to sustain and eradicate poverty. The closure of borders affected the traders and other members who had been benefitting from remittances. Vendors, in most cases, survive by hand-to-mouth, meaning they do not have any savings that will help and sustain their livelihoods in case of disasters. The informal traders, as a result, employed coping strategies to survive the post-COVID-19 period. Those who were displaced by the city's renovations identified and created open spaces and street pavements as alternative vending areas . Cross-border traders adopted e-technologies to order their goods online, advertise and sell. This was a sustainable way of continuing with their day-to-day running of business, minimising movements to reduce the spread of the virus. Also, they used middle marketing (runners) who would order goods online and then transport them using trucks. Although they tried to buffer against the COVID-19 shocks, the informal group faced many challenges in trying to employ the strategies. Harassment by the council police was a major challenge as this led to the confiscation of their goods and resulted in losses and fines. Also, rentals were now charged in US$ which was not affordable

since the traders were still recovering from the shocks. The literature revealed the debate on the impacts of COVID-19 has generated mixed responses and views.

The COVID-19 pandemic has been viewed as a blessing and a curse at the same time. The City of Masvingo found an opportunity to develop infrastructure by demolishing vending stalls that were no longer in line with the RTCP Act. Renovations of Mucheke and Rujeko Halls into evacuation centres in the event of floods, increased disaster risk management of cities. Chitima and other vending stalls were demolished and buildings of better quality and designs that allow ventilation and social distancing, were constructed, minimising the spread of the virus. The City of Masvingo's response to the COVID-19 pandemic is deemed a failure as they did not to plan for the informal sector. Repressive tolerance is how Rogerson (2016) and (Kamete, 2013b) characterise the response of municipal authorities to street trading. Repressive tolerance is an "intervening" measure. It is an unofficial response that characterises the authorities' handling of all types of informality (Kamete, 2013a).

CONCLUSION

The study outlined the experiences and response strategies employed by informal sectors during and afte COVID-19 within Masvingo. The rapid onset of disaster in the mould of COVID-19, exposed the informal traders to loss of assets and capabilities, hence planning authority provided with the opportunity to build back better in line with the development control and SENDAI priorities. This study outlined how the COVID-19 response strategies were carried out by Masvingo City Council have affected the livelihoods of its informal traders. It has been noted that the response strategies have focussed mainly on the health side of the COVID-19 pandemic,giving less attention on how the livelihoods of the informal traders have been affected in a country with unemployment above 80%. Whist much of the interventions targeted physical dimension, the socio-economic dimension has been partially addressed in the face of contingency. There is need for the city to come up with a comprehensive disaster action plan that anticipates future contingencies.

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