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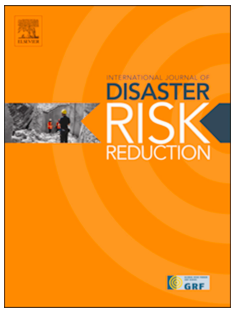

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Thabo Ndlovu, Vuyo Mjimba

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Dr Thabo Ndlovu[1] and Dr Vuyo Mjimba[2]

Abstract

The severity and frequency of climate change-induced weather events pose a serious threat to livelihoods in rural Africa where crop production and animal husbandry are pivotal for survival. Discussions to manage the adverse impacts of such events, droughts in particular revolve around the co-employment of a mix of modern 'scientific' approaches on one hand, the use of indigenous knowledge systems on the other hand with calls to exploit the merits of each approach. Against this background, this qualitative research employed the community capitals framework to interrogate the influence of gender on drought risk reduction interventions in communal cattle farming areas in Zimbabwe. Limited to the Umzingwane District, the qualitative study gathered data using the structured and open-ended questionnaires as well as in-depth face-to-face interviews methods to discern gender dynamics in the decision-making space in drought risk reduction processes. The findings show a community deeply steeped in traditions characterized by entrenched patriarchy in which men dominate the decisions-making processes that determine the use of cattle to mitigate the impacts of drought. With cattle typically the main store of value and a plausible source of income where cropping fails due to a drought, this means that unless women are deliberately empowered to own cattle even within the traditional family set-up, their contribution and impact in drought risk-reduction practices will remain limited. To counter this culture, national and traditional institutions and processes need to change and reconsider some patriarchal stances in the use of family 'wealth.' In addition, livelihood diversification is paramount to diffuse the culture of holding onto cattle until they lose market competitiveness.

Keywords: drought risk reduction, drought, culture, patriarchy.

[1] Corresponding author: Thabo Ndlovu

Address: Institute of Development Studies, National University of Science and Technology, P.O. Box AC139 Ascot, Bulawayo, Email: thabondlovu09@gmail.com

[2] Author:

Address: Human Sciences Research Council, HSRC Building, 134 Pretorious street, South Africa

Email: vmjimba@hsrc.ac.za

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1. Introduction

The African continent has experienced extreme drought events most notable in the years 1972–1973, 1982, 1983–1984, and 1991–1992 respectively, and in the recent past in 2001–2003 in southern Africa as well as 2015/2016 [21] and 2010–2011 in east Africa [33]. In Africa, such drought events discernably affect economic growth and development [9]. However, the impacts are disproportionate between and within countries due to differences in response capacities [4]. For example, although the 1991–1992 droughts had severe negative socioeconomic impacts in southern Africa as a whole, Malawi and Zimbabwe were comparatively severely impacted, compared to South Africa and Botswana. A microlevel analysis shows that the socioeconomic impacts of such disaster events differ between genders. Indeed, many studies show that women are more vulnerable and succumb to disasters more than men do [1]. These effects are particularly pronounced in agriculture-dependent rural communities and this is attributable to among other factors, cultural practices and beliefs, as well as limited economic, political and legal power [21]. For Instance, while in the majority

women grow most of the food crops for household consumption, often public programs and policies are tilted towards providing water for male livelihood activities. This bias weakens the ability of female farmers to adapt to climate change, particularly concerning food security and play their role as agents of change as perceived in their localities [33]. The discrimination and exclusion women face before, during, and after a drought, has generated interest in contemporary settings with a view of reframing the risk reduction strategies [41].

With predictions that in Africa, almost all nations will experience increased water insufficiency and thus supply vulnerability challenges by the year 2025 largely due to climate change effects [43], the escalation of gender mainstreaming in disaster risk reduction (DRR) initiatives has become inescapable mainly to enhance gender considerations in the decision-making spaces [7]. Such considerations inevitably will transform livelihoods in rural Africa where vulnerability to the impacts of climate change is deepened by dependence on rain-fed agriculture economies and the limited decision-making space for vulnerable groups such as women. Drought, characterized by its creeping nature [17], occurs in different forms. The four main forms are the meteorological, hydrological, agricultural and socio-economic type of drought [27]. Critical in this study is the meteorological drought reflected by the degree of departure of precipitation from normal to significantly below normal. Generally, meteorological drought leads up to hydrological and agricultural droughts.

Broadly this paper contributes to the general disaster risk reduction discourse. Narrowly, it locates this discourse in the gender equity space by examining how critical contemporary challenges, in this case, frequent and severe incidents of drought are eroding the long-established tradition of women owning and controlling the use of family wealth to mitigate vulnerability. This is an important consideration given that in the study area, the UMzingwane District, women bear the brunt of the impacts drought events as they often remain in the homestead when men travel to cities and other countries to seek employment. Thus, any changes in the power to use family wealth to mitigate such adverse events equally not only shift but also exacerbate some gender-linked vulnerabilities. Following this introduction, the article unpacks the influence of gender on drought risk reduction, in the subsequent sections which begin with an outline of the drought risk management-drought nexus as the theoretical framework adding the gender lens to this mix, followed by a section that presents, analyses and discusses the results, after which the final section distills pertinent conclusions.

2. Drought risk management-drought nexus

The adverse impacts of droughts on the socio-economic lives of many Africans are beyond dispute. Most vivid in many people's memories is Birhan Weldu as a three-year-old hungry child in a drought-stricken Ethiopia at the peak of the massive 1984 famine in that country. The famine claimed the lives of one million Ethiopians. Since then, the challenge for many African governments and some international organizations

continues to be efforts that seek to avert drought-related food shortages of a scale experienced in Ethiopia then. In this quest, a present challenge is the severity and frequency of climate related hazards that are increasing globally with Africa most adversely affected [53]. Consequently, subsistence agriculture the mainstay of the rural economies in the continent is in the doldrums.

Commonly, livestock production in many rural parts of Africa is dependent on communal grazing lands with rare cases of supplementary feeding or alternative pastures. The communal grazing lands are vulnerable to overgrazing, limited pasture recovery, soil erosion and the negative outcomes of some anthropogenic activities [30]. Against this background, it is prudent for the continent to inclusively prepare for droughts- climate change-induced in particular as disaster events of note. As stated earlier, managing the adverse impacts of drought borrows heavily from the concept of disaster risk reduction which emphasizes the mainstreaming of gender in its processes. Thus, drought risk-reduction is synonymous with disaster risk-reduction (DRR). Like DRR, managing drought-associated risks involves building the resilience of men and women to withstand natural and anthropogenic hazards [11]. The nature and scope of measures that confer resilience is dependent on the vulnerability of a system to a hazard. The concept of vulnerability emanates from the common understanding of the meaning of term. Among other things, vulnerability refers to the capacity to suffer physical or emotional damage. Vulnerability surfaces when communal farmers, both men and women as individuals or social units face harmful threats or shocks with inadequate ability and aptitude to respond effectively [42]. In this context, the term communal farmers refer to individuals in rural settings predominantly practicing subsistence agriculture.

Applied to drought and other natural disaster situations, the term vulnerability describes several issues that relate to the degree of loss in a given element at risk [5]. Its measure consists of a set of elements that result from the occurrence of a natural phenomenon in each magnitude, usually expressed on a scale that ranges from zero referring to no damage and one pertaining to total damage [6]. The term has found use in geography and natural hazards research where it applies to disciplines that include agriculture, ecology, public health, poverty and development, secure livelihoods, land use management and climate change [36].

In such applications vulnerability pertains to individual human, flora and fauna lives, physical and natural infrastructure as well as systems in which all these individual elements operate separately and collectively. The manifestation of adverse impacts of an event depends on the exposure of vulnerable groups and occurrence of an event at an appropriate scale or level.

However, vulnerability and exposure to a hazard do not always translate to an adverse impact. This is because a system (or individual) can mitigate its exposure and thus withstand the impacts of adverse events [44]. This is the essence of drought risk reduction. In communal farming setups in Africa, vulnerability is dependent on numerous factors. These include farmer characteristics (gender, age, education,

attitude); socio-economic status issues such as social class, religion, ethnicity, social networks, access to resources and power, local and national political structures, income diversification, lack of market access and land among other factors [19;39]. In many cultural contexts particularly in Africa, gender, marital status and level of wealth are important factors in this regard. This makes the understanding of these factors and their dynamics imperative for planning appropriate actions to deliver systemic drought risk reduction. The Community Capitals Framework (CCF) is a useful tool to this end.

The CCF shows the different interactions between various parts of a community. The framework offers a means of analyzing community efforts in seeking to improve general wellbeing by profiling assets (capitals), their interaction and resultant effects of the interacting capitals [13]. In the framework, communities are systems that have inflows and outflows with high, low and broad progression and regression moments. In this regard, the CCF views fortunes and misfortunes of a community and its capitals as determined by both socially constructed and natural sources [15]. CCF framework highlights seven forms of capitals as follows;

(i) Natural capital referring to the environment comprising natural features that include rivers, lakes, the flora and fauna as well as the local landscape.
(ii) Cultural capital relating to ethnicity, gender, traditions, value and norms that includes stories, dances and songs and matters of spirituality, habits, and heritage of a community [25].
(iii) Human capital concerns technical skills that allow the sustainable exploitation of resources, leadership skills and, knowledge and abilities of people in a community [45].
(iv) Social capital relating to organizations and groups as well as networks in the community, the sense of belonging and bonds between people [16].
(v) Political capital pertaining to links to people in power, access to resources, ability and influence to achieve goals [37].
(vi) Built capital that refers to hard infrastructure such as buildings, schools, roads, water sources, paddocking fences, irrigation equipment and roads or streets in a community [26].
(vii) Financial capital is pecuniary resources such as grants, access to funding, and wealth as well as stocks that can contribute to consumption and production [47].

This assortment of capitals reflects that a community's assets and their inherent characteristics form a set of resources available for use or investment to benefit all communities irrespective of gender by increasing wealth or the stock of other forms of capital [12]. Of relevance to this article is that the capitals are not neutral. They carry an inherent set of cultural and context-based set of beliefs, behaviors, habits, traditions and values- as articulated in the essence of cultural capital [12]. This attribute informs both individual and community practices and decision-making processes whenever there is a need to employ the relevant forms of assets. In this context, cultural capital informs how gender influences the use of resources and stores of wealth that can bring relief when adverse conditions arise.

Since culture shapes the behaviors, attitudes that change both within and outside a community [32], it therefore means that its dynamism defines the context under which DRR initiatives thrive or suffocate. A typical example of this assertion is livestock sales under stressful conditions, which in rural African communities is largely shaped by the assortment of beliefs and gender consideration in decision around the disposal of this and other classes of family assets. Under such conditions, ignoring the dynamics of the gender-drought risk reduction nexus becomes counterproductive given that culture reflects rituals, paradigms that communities use to deal with different circumstances [48]. What is important in this setting is the notion that culture is heritable and normally provides direction for humans to subsist. This means that some difficult to explain reactions to shocks such as drought have roots emanating from cultural contexts and are thus difficult to change and even understand. A critical issue in this space is the issue of gender in decision-making. Gender considerations are socially constructed roles, behaviors, activities and attributes that a society deems appropriate for a person aligned with being feminine, masculine, blended elements of both [41]. In many of Africa's cultural setting women assume overtly subordinate roles in many social and economic activities. Compounding the position of women is the limited policy and practice commitments to adopting gender perspectives by international agencies responsible for DRR [7]. Despite this there has been and still are many efforts seeking gender parity in all platforms. For instance, the Boserup's 1970 publication triggered movement towards the integration of gender into development [7]. Later and perhaps more famously, the General Assembly of Beijing Platform for Action in 2005 was established to entrench the role of women at all levels of environmental decision making [3]. Further and to affirm commitment towards mainstreaming gender in disaster context, the 3rd World Conference on DRR was held in Sendai to promote gendered DRR since 2015 [20]. Gender issues in the Sendai Framework rose from the realization that although the role of women in decision making was crucial, it was not evident in most disaster risk management policies and programmes [31].

Despite all these moves to empower women, an enduring and established school of thought is that publicly, gender plays a critical role in decision-making and access to resources in Africa [23; 50]. Predominantly, males are the main decision makers with women playing supporting and in some spaces no roles at all. For example, in many societies in Africa, culture regards matters concerning livestock management and disposal as falling outside the concerns of women [34:9]. This concept also extends to the ownership of land for the cultivation of crops. The latter scenario prevails even though women and children provide the majority of labour in this sub-sector. Women maintain 'subordinate' positions in their families of birth and carry it when they get married because they adopt husband's way of doing things [34]. Consequently, it is arguable that gender defines power asymmetries in decision making in programmes targeting DRR.

Droughts affect rural communities in different ways with the most obvious impact being the shortage of water for domestic and commercial uses with huge consequences for gender roles. Broadly, a drought manifests as a costly multifaceted hazard whose effects unfold gradually and combine in a manner that presents complex outcomes on

the lives of humans as well as that of other flora and fauna [28; 47]. In this milieu, there is convergence on the need to minimize adverse wider impacts of drought events even as the severity and frequency of such events escalates. This is the quintessence of drought risk reduction, which carries strong similarities to disaster risk-reduction.

The tenets of the concept of disaster risk reduction (DRR) are efforts that seek to support communities inclusively to become less susceptible to hazards and fortify their capacity to anticipate, cope and recover from shocks [16]. Against this background, this article interrogates the dynamics of gender in DRR focusing on communal cattle farming in a rural setting studying the Umzingwane district in Zimbabwe. The district has a majority rural population whose livelihood is dependent on agriculture both crop and livestock production as well as artisanal mining supplementing the former two. Typical of rural populations in Zimbabwe and elsewhere in Africa, in the district, cattle and goats provide a form of income diversification and alternative storage of wealth for use during times of stress [49]. In Africa and by extension in the Umzingwane district, cultural contexts are important in the storing and use of this form of wealth. Gender and other social status conditions are important determinants of the deployment of this wealth to mitigate adverse conditions.

3. Methodology

This predominantly qualitative research used structured and unstructured questionnaires as well as in-depth face-to-face interviews to gather data. The research respondents included stockowners, government departments, non-governmental organizations, traditional leaders and local institutions such as livestock development committees (LDCs) with direct and indirect involvement with cattle production and health management in the district. Through this engagement, 202 respondents informed the research as shown in Table 1.

Table 1: A breakdown of research respondents

Organization(s)	Number of respondents	Employment level of respondent (s)	Focus of engagement
Communal cattle farmers	180	Cattle owners	Cattle ownership, sales, livestock diseases and gender
Ministry of Agriculture	8	Provincial Officers, district and field officers,	Cattle numbers, sales deaths, diseases and management issues
NGOs	4	Directors and field officers	Marketing and destocking support programmes
Traditional leaders	6	Chiefs and Village heads	Local beliefs, values and cattle sales.
Livestock development committee members	4	Chairpersons	Marketing opportunities and cattle ownership

Source: Authors, 2019

Engagements with cattle owners were restricted to five of the 20 Wards with a total population of 3324 livestock farmers. The selection of the wards was based on the rainfall patterns, type of vegetation, and variety of cattle breeds and most critical, accessibility based on the time and resource constraints of the research. The study sought to engage 350 livestock farmers in the five wards. The 350 were targeted through stratified random sampling based on gender and experience (measured in years) in livestock production as determinants of the different strata of the cattle owners' sample. The targeted 350 respondents represent more than 10% of the target population- an accepted sample for generalizing about the population [18]. However, due to unforeseen circumstances, that include the reluctance of targeted respondents to inform the study and the temporal limits of the study only 180 livestock farmers informed the research. This make 5% of the population which Strydom and Venter [46] posit is adequate to generate meaningful conclusions. Engagements with stockowners explored perceptions and the use of cattle as a measure of wealth, decision-making considerations in the use of this wealth and the roles and influences of gender and marital status in decision making around drought risk reduction processes as centered on cattle.

To triangulate data gathered from communal farmers the research further engaged six purposively selected traditional leaders, four Livestock Development Committees and 12 informants from government ministries, non-governmental organizations that have a role in livestock production through in-depth face-to-face interviews using the unstructured interview approach. This part of the research explored gender, cultural values of cattle and community attitudes towards destocking under conditions of severe environmental stresses, droughts in this case.

The data analysis was thematic with the aid of Statistical Package for Social Sciences software where applicable. The analysis followed both the inductive and deductive thematic analysis approaches [8]. In the inductive approach themes are not driven by the researcher's theoretical interests in the topic, thus such themes are strongly linked to the data themselves [Ibid]. In contrast, the deductive approach allows the research to define themes as dictated by predefined theoretical or analytic interests [Ibid]. In this case, the pre-determined themes were around gender and marital status and their impact on decision making in cattle production in rural settings. The co-use of the inductive and deductive thematic analysis allowed for the deep and nuanced exploration of the data yielding findings discussed in the following section.

3. Research findings and discussion

3.1. Cattle and culture: the broad picture

As stated earlier, culture informs identity and norms that define a society. In this case, a fundamental issue is that communal farmers, particularly those from the Matabeleland provinces, measure wealth in terms of the cattle they own. Laube, Schraven, & Awo, [29] add that cattle have a strong socio-cultural value, as stock ownership signifies a highly esteemed social status and acts as currency for future use and ritual contexts

such as marriages, funerals, and traditional beliefs. Thus, communal farmers keep cattle for short and long-term benefits that include direct economic returns linked to products such as milk for domestic consumption and selling, meat, hides, manure and provision of draught power. For some farmers, cattle play a religious role as a means of connecting with their ancestors [2]. Here the belief is that cattle or presence of a kraal is pleasing to the ancestors as a culturally potent symbol of an ideal African homestead [ibid]. In this context, suggestions to reduce cattle numbers whether justified or not tend to carry a notion of being insensitive to traditional expectations and thus derogate cultural dignity.

Against such a belief system, this study identified a society-wide reluctance to sell cattle even to mitigate the adverse socio-economic impacts of drought. Surprisingly this reluctance manifested even under environmental conditions that presented a case of possible animal death due to lack of pasture and water. The relationship between reluctance to sell and the valuing of cattle as an indication of wealth is shown in Table 2.

Table 2: Comparing the social value of cattle and sales due to drought

Number of cattle sold due to drought	Respondents measuring wealth in cattle numbers				Total cattle sales
	Not important	Slightly important	Not sure	Important	
0	26	37	5	29	0
1	9	15	2	8	34
2	6	7	0	12	50
3	3	5	0	4	36
4	0	2	1	2	20
5	0	2	0	2	20
6	1	0	0	0	6
7	1	0	0	0	7
12	1	0	0	0	12

Source: Authors, 2019

The table shows comparable lower cases of selling cattle by farmers with majority not selling a single animal despite the threat of loss from drought related pasture and water challenges. In the majority, those reluctant to sell conceded that they measure wealth in cattle numbers. Indeed, the case of greater sales are linked to a lesser regard of cattle as a measure of wealth leading to such farmer willing to readily sell their livestock to mitigate the impacts of adverse events such as drought events.

Interesting is that the notion of measuring wealth in terms of cattle cuts across gender as evidenced by a popular phrase from the responding farmers that '*you just don't sell cattle*.' Under such an entrenched societal 'norm' it means that all strategies for drought risk reduction that centre on cattle and related sources of wealth need to skilfully navigate this terrain if farmers are to use their cattle to mitigate the social and economic

impacts of climate change events such as drought. The CCF acknowledges the importance of cultural considerations in attempts seeking to improve the wellbeing of society. In this case, an acceptable intervention must consider repackaging the advice of destocking when the environment is dire and plans to restock (rapidly) when conditions are favourable.

Broadly, the study identified an entrenched 'wait and see attitude' regarding the disposal of cattle even when their condition is calamitous due to challenging climatic conditions-drought in this case. As the frequency and intensity of drought events increases, it is imperative that drivers to such an attitude as based on cultural beliefs change to address current realties. As stated earlier navigating the culture consideration could proffer measures that seek to ensure that under a constraining environment, farmers retain only a manageable part of their cattle and thereafter allowing them to increase numbers when conditions improve. Activities to this end inter alia include the establishing of fodder plantations, culling of unproductive animals and seeking credit to mitigate the effects of drought.

While destocking in drought situations is widely supported by government institutions, there is a view that such hazards 'disturb' the markets leading to a notably under-valuing of livestock. This under-valuing of livestock and limited government intervention to prevent the exploitation of vulnerable farmers leads to a reluctance to sell livestock despite chances of drought-linked losses [2]. Even when market prices do improve, very few farmers sell cattle largely because of culture-based beliefs and the value they attach to cattle as the preferred store of value and status symbol. This is particularly strong and entrenched in Zimbabwe where economic turmoil has led to a loss of monetary savings. Many responding farmers stated that cattle do not suffer the same vagaries of loss of value as they had witnessed with their savings in financial institutions. While this view is acceptable under economic conditions that Zimbabwe is in (2019-2020) and has experienced previously, Rootman, Stevens, and Mollel [40] attribute this "*Cattle Complex holding"* syndrome typical in most African communities and linked to social gratification as opposed to economic benefits. However, the lived experiences of many communal farmers who have sold their cattle, invested their money in financial markets and thereafter witnessed the loss of value of their investment, contradicts the notion cattle complex holding syndrome as simply being a means of social gratification.

It is within this complex setting that it becomes important to note that in many cases in the Umzingwane District, communal households have alternative sources of income that include remittances from relatives abroad, pensions and rentals from properties in cities and towns and informal trading activities among other sources. This income adds to the reluctance to sell cattle. The time value of money in Zimbabwe is highly fluid forcing farmers to invest in the most stable and reliable assets- perceived and/or real. In this case, the view is that cattle provide households with an option for investment that can be transformed into hard cash often as a last resort to mitigate adverse conditions. Consequently, attempts to change some of these entrenched practices need to deal with issues of culture as a mould that shape concerns and actions of a community with

huge implications to the success of strategies seeking to reduce disaster risks [32]. In addition, there is a need to factor in the effects of prevailing national and local economic and political conditions. The dynamics in this space are interesting and complex when viewed through the gender lens.

3. 2. Gender and participation in cattle management

Gender mainstreaming processes have become inescapable in contemporary development interventions. This mainstreaming seeks to tame the prevalence of the marginalisation of women in patriarchal societies. Deliberate efforts to mainstream gender in development initiatives coupled with societal transformations emphasizing the rights of women have seen marginal shifts in the ownership and control of resources in rural Zimbabwe. In this study, the evidence of this change in the Umzingwane district is the 41% representation of women in cattle management matters with males dominating at 59% as shown in Table 3.

Table 3: Gender, marital status and cattle ownership nexus

Gender	Marital status and cattle ownership			
Male (59%)	Single	Divorced/separated	Married	Widowed
Female (41%)	2%	3%	69%	26%

Source: Authors, 2019

In the communal areas of Zimbabwe, records of ownership of cattle are recorded in booklets kept by cattle owners and in a central register administered by the government through the department of Veterinary Services of the Ministry of Agricultural Technical and Extension Services. Traditionally, men have been the sole registered owners with ownership only passing to married women upon the death of their spouses. Interestingly, in some cases even after the death of the male spouse, women did not assume the ‘legal’ ownership of cattle as this was assumed by the eldest surviving son of the couple provided that the son is not a minor. Thus, finding 41 % registered women owners of cattle is a significant deviation from an established cultural practice, as affirmed by one of the female respondents that “it’s rare for a woman to own cattle”.

However, the disaggregation of participants according to marital status shows that the married group owns most cattle in the region. Sole women ownership is dominated by widows with other groups-single, divorced or separated owning the least cattle. In addition, it is worth noting that the 41 % responding women owners is not entirely accurate as the majority of responding females could have been responding on behalf of their spouses who were not available at the time of the research. Economic decline in the country has seen many men migrating to the neighbouring countries in search of employment. As a result, several households are headed by women. Nevertheless, men remain heads and major decision makers

Culturally, the expectation is that married couples must own cattle, as a store of wealth to support diverse needs whenever they emerge. In this scenario, the norm is that newly wedded couples receive gifts that include cattle. This leads to a ‘natural’ need to grow

the herd to meet both present and future economic and social needs. Broadly, there are expectations and societal imperatives for this group to own cattle. In contrast, such expectations exclude divorcees and single people, especially women.

As stated earlier, an established tradition in the district and indeed nationally is that under the institution of marriage, the registration of all livestock, cattle in particular is the citadel of male power by virtue of being the traditional household heads. Women implicitly own cattle by virtue of being in a marriage. This corroborates Hovorka's [22] findings that in Africa men are in control of cattle while Waithanji, Njuki, and Nabintu [51] and the World Health Organization [52] confirm that, cattle remain predominantly, and sometimes exclusively, men's property in sub-Saharan Africa. In that vein, Ainslie [2] states that in many African cultural practices, the view is of men as 'pillars of the home' with absolute authority to either increase or decrease the homestead's herd of cattle.

Although male dominance still prevails, there is a notable number of females registered as owners of cattle. Respondents stated that this was a sign that gender-based "…*oppression is slowly disappearing*." This is an important development given that women have, for a long time, contributed massively to cattle production by overseeing dryland cropping which ultimately provides the primary cattle-feed supplements in winter seasons in rural settings.

An exciting development is that some women, especially widows, are compelled to learn about the management of livestock to preserve family wealth. Indeed, more than a quarter of the respondents that own cattle were widows making knowledge about the management of cattle imperative. In principle this is breaking the cultural barrier of women working directly on cattle. The case of widows owning cattle is not unique to the Umzingwane district. For example, Petitt [38:105] found the same in Botswana. However, reference to widows conceals other cultural practices that grant the ownership of cattle to women. For instance, in many communities in the Umzingwane District, there is cultural support for women to own cattle but not necessarily control their use. One such practice is through the custom that obligates that as part of dowry payment, the mother of the bride receives a cow, usually a heifer known as *Inkomo yohlanga* in IsiNdebele. This cow signifies an appreciation of her contribution in the upbringing of the girl child getting married. Although the cow becomes part of the family herd, it and its offspring remain the property of the mother of that household. However, the woman is not always at liberty to dictate its management and use. Modernization is threating this practice. A developing practice is that increasingly, this part of dowry obligation is fulfilled in cash even though local tradition abhors its settlement this way. Here again, this cash is not often available to the woman to use as she pleases as that cow would have been.

Under such conditions, it is arguable that the institution of marriage carries an inherent oppression of women leaving men as the sole decision-makers concerning family assets. In the sphere of cattle, men decide when to vaccinate, slaughter and sell. This reflects power asymmetry dynamics that grant men unlimited leverage in drought risk reduction matters [24]. In this space, culture has entrenched the control and influence of women on small stock such as poultry, a territory man regularly and wantonly invades when facing minor shocks. We posit that such an imbalance of power at household level

does not grow the magnitude of family and societal capital but instead compromises unity and commitment towards implementation of drought risk reduction. Under conditions of strained relations, this arrangement compromises women's capital negotiation prospects, as they do not own or control the deployment of critical assets in most development spheres [38]. This means that the influence of women in decision-making processes and outcomes in the drought- risk reduction space in such societies is limited. Noteworthy is that this condition is entrenched despite the absence of national gender-based legal restrictions focusing on the ownership of livestock. This leads to the subsequent negation of the insights of women, which is not a legal gender-based construction. More important and against the current condition in Zimbabwe i.e. increased frequency and severity of droughts that is compelling many men to be migrant workers, limiting the power of women in the space of using assets such as cattle to mitigate related challenge does not improve societal wellbeing. Instead, it increases the adverse impacts of drought events even where such impacts could have been mitigated by swift decision making by those at the forefront of the challenge-mainly women. Most concerning is that, undeniably, women continue to view themselves as not culturally inclined to own cattle. For example, one woman among many others responded that '*tradition does not permit women to own livestock'.* Such beliefs by both men and women deepen societal conditioning and, in the process, undervalue women contribution in livestock production and their ability to use this asset base to mitigate adverse conditions- drought in this case.

Placation is profound in households. To this end, and to minimize gender-linked conflicts regarding cattle management, consultation between men and women is increasingly becoming a pre-condition in choices concerning the use of available resources in the drought risk reduction strategies arena. However, this study found that such consultations between spouses often drag and the associated time lag has a bearing on the effectiveness of the proposed interventions to reduce drought related risks. Despite this, the study found that the interest of women in the management of cattle has increased. Tangible evidence to this end is an observation that a growing number of women are attending cattle-related training engagements wherever and whenever government and non-governmental organizations offer such. Most interesting is that this is happening even though women are still largely not the final decision makers on matters regarding cattle in the study area. In this space, it is fascinating to note the differences between men and women regarding the disposal of cattle. Table 4 shows how women and men react to the need to destock to avert losses and to mitigate adverse economic and climate conditions.

Table 4: Gender and sales

Sellers	**Number of cattle sold**								
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**12**
Number of male sellers	48	24	18	8	4	3	0	0	1
Number of female sellers	49	10	7	4	1	1	1	1	0

Source: Authors, 2019

The trend in the table shows that in general men will dispose of small numbers of cattle and indicating that they are reluctant to dispose greater numbers even to mitigate drought shocks. A common phrase in seeking to understand the reluctance was; "…disposing of cattle is a last option.' As stated earlier owning cattle also carries a symbolic cultural value and as such disposing off a sizeable herd threatens that value. Compounding the issue of reluctance to destock is the fact that successive and/or frequent drought events have led to a reduction in the average herd-size in the district and consequently per household. The frequency of drought events coupled with limited investment in cattle production is hindering the growth of herd size in many rural communities and the Umzingwane district is not an exception.

Compounding this challenge is the failure to invest in early warning systems to trigger and provide reasonable ground to destock to ease pressure on the strained and deteriorating natural veld. Furthermore, the farmers have poor access to competitive markets for their animals leading to a general reluctance to sell. This challenge affects both men and women despite the fact that men can travel to areas beyond their locality in search of markets. In addition, the research found that although women were willing to sell-off cattle to manage adverse conditions, they faced a challenge of poor price negotiation skills. This erodes their influence in the space of drought risk reduction. Mulugeta and Amsalu [35] corroborates this finding and Jordaan et.al. [26] as well as the Food and Agriculture Organization, FAO [14] attest that women generally have less access to markets than men, hence their influence in commercialisation of cattle is insignificant. These and other factors dampen the ability of women to participate in activities seeking to reduce drought-related risks. Remarkably this is contrary to observations in Table 4 that suggest that women are amenable to selling a greater number of cattle during times of need. However, and as stated earlier women have limited influence in the management of cattle and their voices are relatively subdued in matters of disposal of such livestock.

The fact that the voice of women receives limited audience and consideration in the use of this resource reflects the disempowerment of women in the space of efforts that seek to address some of the adverse impacts of drought events using some of the available sources. This does not add to the total sum of societal capital as the CCF suggests. To this end, unless deliberate efforts are made to prop female voices, their participation in drought mitigation decisions will remain marginal and with that increase in the total sum of societal capital will equally remain marginal. This form of gender discrimination needs addressing taking into account societal and cultural concerns. This is likely to add to societal capital to level that can reduce vulnerability to withstand the increasing severe and frequent climate change linked weather events such as drought. Providing resources to women—even non-traditional resources such as housing titles or more livestock—without tackling the household relations that limit women's ability to enjoy the benefits of these resources will produce no real change [7].

4. Conclusion

Power dynamics at household level grant men the latitude to decide on the strategy to embrace to counter drought risks. However, the study indicated women's propensity to excel in drought mitigation should they be granted space to ventilate and apply their

views. Patriarchy driven by cultural beliefs, entrenches passiveness and act as an impediment to women demonstrating their dexterity on drought mitigation. Unless there is effective participation by men and women in combating the hazard, negative effects shall remain deep-rooted in communal farming communities due to lack of collectivism. The ‘anything for us without us’ idea should be thoroughly interrogated and exercised for equity to prevail on drought risk- reduction in gender context. Marriage has not disentangled cattle management constraints facing women but continues to harbour pseudo-collective ownership of cattle. To promote the voice and influence of women in cattle drought-risk-reduction, deliberate efforts should be made to improve livestock ownership status of women, as this shall grant them space to put theory into practise given their significant participation in theoretical programmes. Cultural norms and beliefs deepen and magnify the notion that communal farmers measure wealth in terms of the size of the herd, hence they hold onto cattle even when threats posed by drought are evident. There is need to explore institutional frameworks aimed at decimating women oppression in livestock management.

References

1. Alam, K. and Rahman, M.H. (2014) Women in natural disasters: A case study from southern coastal region of Bangladesh," *International Journal of Disaster Risk Reduction*, vol. 8, pp. 68-82, 2014.

2. Ainslie, A. (2013) "The sociocultural contexts and meanings associated with livestock keeping in rural South Africa," African Journal of Range & Forage Science, 30:1-2, 35-38, 2013

3. Baten, M.A. and Khan, N.A. (2010) Gender issue in climate change discourse: theory versus reality, Unnayan Onneshan, Dhaka

4. Benson, C. and Clay, E.J. (1998) Additionally or diversion? Food aid to Eastern Europe and the former Soviet Republics and the implications for developing countries, *World Development*, *26*(1): 31-44.
5. Birkmann, J. (2007) Risk and vulnerability indicators at different scales: Applicability, usefulness and policy implications, Environmental Hazards 7: 20–31
6. Birkman, J. (2006) Measuring vulnerability to Natural Hazards: Towards Disaster Resilient Societies. New York: United Nations University Press.
7. Bradshaw, S. (2015) Engendering development and disasters. *Disasters*, *39*(s1), pp.s54-s75.
8. Braun, V. and Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), pp.77-101.
9. Brown, C., Meeks, R., Hunu, K. and Yu, W. (2011) Hydro climate risk to economic growth in sub-Saharan Africa. *Climatic Change*, *106* (4): 621-647.

10. Calow, R.C., MacDonald, A.M., Nicol, A.L. & Robins, N.S. (2010) Ground water security and drought in Africa: Linking availability, access and demand. *Ground Water*, 48: 246-56.

11. Chaudhury, M., Ajayi, O.C., Hellin, J. and Neufeldt, H. (2011) Climate change adaptation and social protection in agroforestry systems: enhancing adaptive capacity and minimizing risk of drought in Zambia and Honduras. *Documento de trabajo*, (137).

12. Duffy, L.N., Kline, C., Swanson, J.R., Best, M. and McKinnon, H. (2017). Community development through agroecotourism in Cuba: an application of the community capitals framework. *Journal of Ecotourism*, *16*(3): 203-221.

13. Emery, M. and Flora, C. (2006). Spiraling-up: Mapping community transformation with community capitals framework. *Community development*, *37*(1): 19-35.

14. FAO. (2013). *Report of the FAO/CRFM/WECAFC Caribbean Regional Consultation on the Development of International Guidelines for Securing Sustainable Small-scale Fisheries*-Kingston, Jamaica, 6-8 December 2012. FAO.

15. Flora, C. & Flora, J. L. (2008). *Rural communities: Legacy and change*. (Third ed.). Boulder, CO: Westview Press.

16. Frankenberger, T.R., Constas, M.A., Neson, S. and Starr, L. (2014). *Current approaches to resilience programming among nongovernmental organizations* (Vol. 7). Intl Food Policy Res Inst.

17. Habiba, U., Shaw, R. & Takeuchi, Y. (2011) Drought risk reduction through a socio-economic institutional and physical approach in the northwestern region of Bangladesh. *Environmental Hazards*, 10(2):121–138. DOI: 10.1080/17477891.2011.582311

18. Gray, D.E. (2009) Doing research in the Rea World, SAGE Publication Ltd, London

19. Hambati, H. (2013) Weathering the storm: disaster risk and vulnerability assessment of informal settlements in Mwanza city, Tanzania, International Journal of Environmental Studies, 70(6): 919-939.

20. Hemachandra, K., Amaratunga, D. and Haigh, R. (2018) Role of women in disaster risk governance. *Procedia engineering*, *212*, pp.1187-1194.

21. Herring, S. C., N. Christidis, A. Hoell, J. P. Kossin, C. J. Schreck III, and P. A. Stott, Eds. (2018) Explaining Extreme Events of 2016 from a Climate Perspective. Bull. Amer. Meteor. Soc., 99 (1), S1–S157

22. Hovorka, A.J. (2012). Women/chickens vs. men/cattle: Insights on gender–species intersectionality. *Geoforum*, *43*(4): 875-884.

23. International Federation of Red Cross and Red Crescent Societies. (2006) *World Disasters Report: Focus on Neglected Crises.* Bloomfield CT (USA) and London: Kumarian Press Inc and Eurospan

24. Jancovich, L. (2015). The participation myth. International Journal of Cultural Policy, 23(1):107-121. https://doi.org/10.1080/10286632.2015.1027698

25. Jordaan, A.J. (2011). Drought risk reduction in the Northern Cape. Doctoral thesis, University of the Free State, Bloemfontein, Republic of South Africa.

26. Jordaan, A.J., Sakulski, D.M., Muyambo, F., Shwababa, S., Mdungela, N., PhatudiMphahlele, B., Mashimbye, C., Mlambo, D., Fadeyi, O., Miya, T., (2017) Vulnerability, Adaptation to and Coping with Drought: The Case of Commercial and Subsistence Rain Fed Farming in the Eastern Cape. Available from: http://dimtecrisk.ufs.ac.za/wrc_ec/report/2_report.pdf (accessed on 19 September 2017)

27. Katyal, A.K. & Petrisor, I.G. (2011) Flood management strategies for a holistic sustainable development. *Environmental Forensics*, 12(3):206–218. doi: 10.1080/15275922.2011.595051

28. Kogan, F., Adamenko, T. & Guo. W. (2013) Global and regional drought dynamics in the climate warming era, Remote Sensing Letters, 4 (4): 364-372,

29. Laube, W., Schraven, B. & Awo, M. (2012) Smallholder adaptation to climate change: dynamics and limits in Northern Ghana, *Climatic Change* 111:753–774

30. Masih, I., Maskey, S., Mussa, F. E. F. & Trambauer, P. (2014). A review of droughts on the African continent: A geospatial and long-term perspective. Hydrol. Earth Syst. Sci., 18, 3635–3649, doi:10.5194/hess-18 -3635-2014.

31. Masson, V.L, Lim, S., Budimir, M. and Podboj, J.S. (2016) Disasters and violence against women and girls: Can disasters shake social norms and power relations? ," *Overseas Development Institute*, London, United Kingdom.

32. Mercer, J., Gaillard, J. C., Crowley, K., Shannon, R., Alexander, A., Day, S. & Becker, J. (2012) Culture and disaster risk reduction: Lessons and opportunities, Environmental Hazards, 11 (2): 74-95.

33. Morchain, D. and Kelsey, F. (2016) Finding ways together to build resilience," Oxford, UK

34. Mudege, N.N. (2008). Gender roles in agricultural knowledge in a land resettlement context: the case of Mupfurudzi, Zimbabwe, *Development Southern Africa*, 25:(4): 455-468

35. Mulugeta, M. and Amsalu, T. (2014). Gender, participation and decision-making process in farming activities: The case of Yilman Densa District, Amhara Region, Ethiopia. *J. Econ. Sustain. Develop*, *5*(1): 28-34.

36. O'Brien, K., Eriksen, S., Nygaard, L.P. & Schjolden, A. (2007) Why different interpretations of vulnerability matter in climate change discourses, Climate Policy, 7:1, 73-88

37. Pasteur, K. (2011) From vulnerability to resilience. A framework for analysis and action to build community resilience. Focus on Community Resilience. Practical Action Publishing Rand Corporation Warwickshire, UK.

38. Petitt, A. (2017). *Women's cattle ownership in Botswana: Rebranding gender relations?* (Doctoral dissertation, SLU Service/Repro).

39. Ray, D. (2008) *Development economics* (pp. 1364-1379). Palgrave Macmillan UK.

40. Rootman, G.T., Stevens, J.B. and Mollel, N.M. (2015). Policy opportunities to enhance the role of smallholder livestock systems in Limpopo Province of South Africa. *South African Journal of Agricultural Extension*, *43*(2), pp.91-104.

41. Rushton, A., Gray, L., Canty, J. and Blanchard, K. (2019) Beyond Binary: (Re)Defining “Gender” for 21st Century Disaster Risk Reduction Research, Policy, and Practice, *International Journal of Environmental Research and Public Health*; 3984; doi:10.3390/ijerph16203984

42. Shackleton, S.E. and Shackleton, C.M. (2012). Linking poverty, HIV/AIDS and climate change to human and ecosystem vulnerability in southern Africa: consequences for livelihoods and sustainable ecosystem management. *International Journal of Sustainable Development & World Ecology*, *19*(3), pp.275-286.

43. Shiferawan, B., Tesfayeb, K., Menale, K., Abatec, T., Prasannac, B.M., Menkird, A. (2014). Managing vulnerability to drought and enhancing livelihood resilience in sub-Saharan Africa: Technological, institutional and policy options, Weather and Climate Extremes 3: 67–79

44. Smit, B. and Wandel, J. (2006). Adaptation, adaptive capacity and vulnerability. *Global environmental change*, *16*(3): 282-292.

45. Stofferahn, C.W. (2012). Community capitals and disaster recovery: Northwood ND recovers from an EF 4 tornado. Community Development, 43(5): 581-598.

46. Strydom, H. and Venter, L. (2005) Sampling and sampling methods. *De Vos, AS, Strydom, H., Fouché, CB & Delport, CSL*, pp.192-203.

47. Su, F. & Shang, H. (2012) Relationship analysis between livelihood assets and livelihood strategies: A Heihe River basin example. Sciences in Cold and Arid Regions, 4(3):0265–0274.

48. Swindler, A. (1986). Culture in Action: Symbols and strategies. American Sociological Review, 51: 272-286

49. Thornton, P.K. (2010). Livestock production: recent trends, future prospects. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *365*(1554): 2853-2867.

50. Twigg, J. (2004) 'Disaster Risk Reduction: Mitigation and Preparedness in Development and Emergency Programming.' In *Good Practice Review No. 9.* London: Overseas Development Institute Humanitarian Practice Network

51. Waithanji, E., Njuki, J. and Nabintu, B. (2013). Gendered participation in livestock markets. In *Women, livestock ownership and markets* (pp. 59-79). Routledge.

52. WHO. (2002) *Gender and Health in Disasters*. Geneva: WHO

53. Wheeler, T. and Von Braun, J. (2013) Climate change impacts on global food security. *Science*, *341*(6145): 508-513.

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TABLES

Table 1: A breakdown of research respondents

Organization(s)	Number of respondents	Employment level of respondent (s)	Focus of engagement
Communal cattle farmers	180	Cattle owners	Cattle ownership, sales, livestock diseases and gender
Ministry of Agriculture	8	Provincial Officers, district and field officers,	Cattle numbers, sales deaths, diseases and management issues
NGOs	4	Directors and field officers	Marketing and destocking support programmes
Traditional leaders	6	Chiefs and Village heads	Local beliefs, values and cattle sales.
Livestock development committee members	4	Chairpersons	Marketing opportunities and cattle ownership

Table 2: Comparing the social value of cattle and sales due to drought

Number of cattle sold due to drought	Respondents measuring wealth in cattle numbers				Total cattle sales
	Not important	Slightly important	Not sure	Important	
0	26	37	5	29	0
1	9	15	2	8	34
2	6	7	0	12	50
3	3	5	0	4	36
4	0	2	1	2	20
5	0	2	0	2	20
6	1	0	0	0	6
7	1	0	0	0	7
12	1	0	0	0	12

Table 3: Gender, marital status and cattle ownership nexus

Gender	Marital status and cattle ownership			
Male (59%)	Single	Divorced/separated	Married	Widowed
Female (41%)	2%	3%	69%	26%

Table 4: Gender and sales

Sellers	Number of cattle sold								
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**12**
Number of male sellers	48	24	18	8	4	3	0	0	1
Number of female sellers	49	10	7	4	1	1	1	1	0

Declaration of interests

☒ The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

☐The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: