



Climate shocks and women's livelihood in Zimbabwe: A case study on the impact of Cyclone Idai in Chimanimani District

Douglas Marowa^{*1}, Angeline Musiya²

¹*Amrita School for Sustainable Development, Amritapuri, Amrita Vishwa Vidyapeetham, India*

²*Community In Need Africa, Department of Environmental Psychology, Palmerstone, Mutare, Zimbabwe*

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Abstract

Climate shocks in Zimbabwe have been of worry to the sustenance of women livelihoods. The study sought to assess climate shocks and women's livelihood in Chimanimani. To recommend for future gender sensitive adaptation and mitigation measure. Positivist and interpretivist paradigm, mixed research design were used. Used sample of 1,464 women, questionnaires, interviews, direct observation and focus groups for data collection. Findings, women were actively engaged in agricultural and heavily affected by the cyclone. No special considerations for women livelihoods. Adaptation strategies were early recovery, conservation agriculture, water harvesting, climatic resilience crops and environmental education. The provision of food aid as emergency phase, cash for work, and food for work or assets. Noted mitigation were use of organic fertilisers to reduce greenhouse gases, improved cropping, grazing and agro-forestry practices. To increase biomass productivity and carbon sequestration, it was also noted that there is now more reinforcement on forestry legislation to reduced deforestation and promotion of afforestation/reforestation. Noted was policy gaps in a gender based approach to climate shocks resilience and preparedness, as there was a clear exhibition of ignorance on the fundamentals of gender based approaches to climate shock resilience, mitigation and preparedness in District. Recommend need to consolidate and mainstream policies in harmonizing the sustainability of women livelihoods in climate shock resilience undertakings and preparedness. Establishment of climate smart technology and investing in breeding drought resilient crop varieties. Gender mainstream of women livelihoods in climate shock resilience. Increased developmental initiatives on capacity building and to strengthen environmental education programmes.

***Corresponding Author:** Douglas Marowa ✉ briddids20003@am.students.amrita.edu

Introduction

According to the WMO Conference (2006), the consequences of climate variability and climate change have developed from being a fable to a truth as the disastrous results of its harmful impacts are becoming more perceptible. The threat to human and food security essentials are being felt in a big and overwhelming way for all to observe. The disasters which have followed across the world are far reaching and the resultant repercussions of global warming permeating indiscriminately. The ever rising temperature and deterioration of the North and South Pole glaciers, rising sea water levels and opposite effects in other parts of the world, rainfall and droughts on mainland are the order of the day (Ncube *et al.*, 2016). The trail of disasters that are threatening the existence of mankind on planet earth as the impacts are ravaging and as a result high mortality, disaster induced displacements, outbreak of diseases and the decimation of housing structures and the destruction of infrastructure is a repeated challenge. Women vulnerability is therefore increasing in this global matrix as they form the nucleus of the family heartbeat anchoring and supporting family in all facets. It is women who are likely to be exposed to the onslaught of climate change injuries creating food insecurities leading to uncertainty to humanity.

The rural and urban women sustain their livelihoods from a variety of entrepreneurial ventures and natural disasters pose a serious threat to their sources of livelihood notwithstanding their vulnerability (Ncube *et al.*, 2016). Niang *et al.* (2014) reviewed that the growing inequality in developed countries as compared to developing countries on prioritising contingency and shocks on climate change effects on women is atrocious as the offensive of its results persist in wreaking havoc on communities and infrastructure unrestricted. Though there are conventions and platforms on climate change and it's tall on women at global and regional levels respectively, the response of African countries is worrying for the reason that there is lack of prioritisation and preparedness in preventing the apparent threats to women and the sources of their livelihood (Nkomwa *et al.*, 2014). There is impeccable

evidence that natural disasters have worsened the plight of women resulting in their demise and children as appendages. It is against this background that the researchers sought to investigate on the climate shocks on women livelihood in Chimanimani District.

The continuing traces of climate change provoked natural disasters that have badly affected Chimanimani District over the years due to cyclones that have been predicted and forewarned prior to happening continue to present women as punch bags to these circumstances thus germinating endemic cycles of poverty due to lose of livelihoods (AGRITEX, 2019). Cyclone Idai was a classic example of one which had been put on air two weeks before it hit the anticipated path. This has formed a cycle of likely disasters with no means in place to lessen the potential negative impacts with particular interest on the livelihoods of women in this district. As contrasting to developed countries, Zimbabwe's government evident in the case of Chimanimani District was left wanting as no clear strategies were in place to safeguard the livelihoods of women despite proof of vulnerability and affirmation that such a disaster was looming. The lack of clearness and uncertainty of measures to undertake by the responsible authorities in order to minimize the threats to livelihoods had serious corollary. There is no clear appreciation and understanding of whether it is a challenge of capacity to implement precautionary measures or it is rather a policy gap with regards to adaptation and resilience strategies for sustainable livelihoods to women. AGRITEX (2019) reviewed that there has been a challenge of complying with the paradigm shift from disaster management to disaster risk management, which has become the global and regional yardstick for climate change imperatives with gender approaches being a prerequisite.

The disaster management complex has exposed communities to disaster risks rather than mitigation of the impacts prior to their manifestation the current floods bedevilling Chimanimani is empirical evidence that shows the sustaining challenge to the Chimanimani community.

Therefore, the impacts on women's livelihood are adverse and unlikely to be sustained under such circumstances. An investigation then into the livelihoods of women becomes pertinent. The main objective of this study was to assess and analysis the climate shocks and women's livelihood in Zimbabwe, a case study of Chimanimani District. This was to recommend for future gender sensitive adaptation and mitigation measure to the study area.

Materials and methods

Research questions of the study

- i. What are the climate shocks on women in Chimanimani District?
- ii. What are the adaptation and mitigation strategies of coping and reducing climate shocks on women livelihoods in Chimanimani District?
- iii. What are the policy gaps in a gender based approach to climate shock resilience and preparedness?

Specific objectives of the study

- i. To establish the climate shocks on women livelihoods in Chimanimani District
- ii. To establish adaptation and mitigation strategies of coping and reducing climate shocks on women livelihoods in Chimanimani District
- iii. To establish policy gaps in a gender based approach to climate shocks resilience and preparedness

Theoretical framework

The theoretical framework used in this research was the Gender Approach in Climate Change Analysis in that men and women face their social, economic and environmental reality in dissimilar ways, how they contribute is also diverse and is intimately connected to age, socio-economic class and culture. World Bank (2013) highlighted that the gender approach attempts to take this realism into account while determined to present an understanding of how gender identities and relations in specific social contexts have evolved historically. UNESCO (2007) also reviewed that when incorporated in analyses of climate change, the gender approach promotes understanding of how the

identities of women and men determine different vulnerabilities and capacities to deal with climate change; such an approach can also help to attenuate the causes of climate change.

Study Area

The case study was conducted in Chimanimani District because of the severity of the aftermath of Cyclone Idai. The study site is located at 32°39'7.93"E, 55°8'40"S. It is a mountainous area throughout which receive 1200mm to 2100mm of rainfall per annum. The area is covered with mostly red clay and loam soils in general. Agroforestry is the main type of farming adopted by the communities settled within the area. The weather pattern and conditions experienced allow the farmers to mix their farming activities, since they are privileged to receive some rainfall during the winter season which is rear to other areas within the region. AGRITEX (2019) reviewed that the District comes in the wake up to a trail of demolitions that have been left by preceding cyclones and harsh ramifications of March 2019 Cyclone Idai which swept away hundreds living many impoverished, desperate and miserable with nowhere to start as homes were also damaged by the harsh force of the cyclone. The loss of lives, infrastructural destruction, social, environmental and economic obliteration was a disturbing experience which the people of Chimanimani are struggling to content, understand and recoup as almost all the cyclones that have hit mainland Zimbabwe have brutally affected the Chimanimani District exposing women to all forms of susceptibility.

Research design, population and sample

In order to understand a phenomenon well one needs to study it holistically and in-depth. There is no single route or particular method to knowledge, several routes are possible just as they are also different ways of eating and different ways of worshipping. Also anything not understood in one way is not understood at all. It is against this background that the researchers opted to use both positivist and interpretivist approach in this research. On positivist paradigm, reality was given from the community

using instruments that were independent from the researchers. On the interpretivist paradigm, people in the community perceived reality. Therefore, both quantitative and qualitative data was gathered. The Population, sampling procedures and sample, selection of respondents was based on their availability and flexibility. For the purpose of this study, the study population consisted of 12,680 households with a total population of 7,320 women. Purposive sampling was used whereby only the female gender and those women who were most affected by climate shocks were selected for the research. Therefore, random sampling was used to select 1,464.

Data collection methods, instruments and analysis

The researchers used the questionnaires, interviews, direct observation and focus groups as the research tools, to collect data. This research study used the mixed method research design, which was appropriate for the investigation of presently existing conditions. Analysis started by indexing or coding data according to the objectives of the study. The objectives of the study provided the units of analysis. Data organised according to the themes that emerged from the respondents, particularly the focus group discussions.

Results

It was noted that the tenth named storm, seventh tropical cyclone, and seventh intense tropical cyclone of the 2018–19 South-West Indian Ocean cyclone season, Idai originated from a tropical depression that formed off the east coast of Mozambique on 4th of March 2019.



Plate 1. The origin on the complex Cyclone Idai that landed in Chmanimani District.



Plate 2. The complex Cyclone Idai landed in Zimbabwe, affecting four provinces.

On 16th of March 2019, the eastern parts of Zimbabwe were hit with heavy rains and strong winds as Cyclone Idai made landfall. Cyclone Idai characterised by floods and landslides resulted in loss of lives and left immense damage of infrastructure and livelihoods. The cyclone affected four provinces namely, Manicaland, Masvingo, Midlands and Mashonaland East.

Demographic characteristic of the respondents

Women between the ages of (24-39) years were identified as young working class group whereas those between the ages of (40-65) were identified by NGOs as the age groups that are directly engaged in income generating exploits, and thus the women between (24-65years) were actively engaged in agricultural activities for survival. This is the group which was heavily affected by the climate shocks during the Cyclone Idai.

The climate shocks on women in Chimanimani District

The research revealed that psychologically the survivors were shocked and traumatized by heavy rains that hit their area on 16th of March 2019. Survivors indicated that the people were left fearing for their lives and the rains swept pass the area. The researchers quoted the survivors saying: *“The rains drought in madness in the community, people ran up and down looking for their beloved ones and property to no avail, mentally majority were mad and could not reason normal”*. It was very clear that Chimanimani District experienced a trail of demolitions that was left by preceding cyclones and harsh ramifications of cyclone Idai which swept away hundreds living many impoverished, desperate, and miserable with nowhere

to start as homes were also damaged by the harsh force of the cyclone.



Plate 3. Chimanimani- Ngangu resident house and Nyahode Bridge swept by Cyclone Idai floods.

The researchers quoted the respondents saying: *“We lost people, houses, properties, clothes, chickens, cattle, goats, dogs, infrastructures and crops”*. The survivors got psychologically confused on how to get out of the place to safe area or even to send their products to the markets as infrastructure was destroyed and road network was rendered unusable for months, affecting market access and supply of basic commodities. The researchers quoted the survivors saying: *‘How do we get out of this area to other safe places, or to go and sell our products in Mutare as we are told that the roads and bridges out of Chimanimani were severely damaged and there is no road network’*



Plate 4. Damaged Chimanimani tarred road and a temporary crossing structure at Nyahode River.

“It has been long whilst we are failing to go and sell out products. The agriculture products are rotting. Search for daily fresh food, fresh water, shelter, and health facilities became order of the day in this area”. Psychologically their school children were affected as they could vividly see the damaged school blocks and they could not go to school, some of their teachers died and some were reported missing. The researchers quoted the survivors saying: *The school classroom blocks at Ngangu was taken away,*

heavily damaged and teachers were swept away by the floods. Our children could not go to for more than seven months. Mentally our children are not yet stable and cannot believe that some of the teacher are dead or are missing”

It was unfortunate that psychologically, it was the women and children who bore the most impact of the disaster in Ngangu. The researchers quoted the women survivors saying: *“Some pregnant women gave birth due to the trauma and stress induced by the Cyclone. The breastfeeding mother had to find shelter and safe place for the children and elders.”* *“After the Cyclone, women had to look after the children, relatives, ill person whilst their of important was their reproductive healthy vulnerability, women healthy was demanding as no special attention was given to it by the people who came to help us”*



Plate 5. Vulnerable and homeless women as they assess the impact of Cyclone Idai.

The survivors also complained about the chaotic process attached to the psychological services they have been getting and the researchers quoted them saying: *“There is corruption on the identification of who should get psychological intervention and humanitarian aid. The screening process was not rigorous as many people who were not from the affected areas are joining the queues for psychosocial support and benefit at the expense of psychological victims who needed more provisions especially the elderly, women and the young ones.”* The research revealed that schools were damaged, and this was confirming the previous literature reviewed which indicated that many schools were damaged or used as shelter for displaced people.



Plate 6. Properties lost and damaged during Cyclone Idai in Chmanimani.

This destruction was supported by the key informant as they indicated that and the researchers quoted them saying: *The major impact of Cyclone Idai was that there was loss of live and psychological experiences, such that at 51,000 people were displaced, more than 340 died and many others went missing.*”

The key informant concurred with the survivors as they gave out the list with statistics of the damage and loss. The researchers quoted the key informant saying: *“There were 140 schools were affected, 78 houses, 7 health facilities were destroyed, and several agriculture facilities were damaged. Arable land was rendered unusable and at least 348 cattle, 17,000 chickens, and 222 goats and sheep were lost, alongside losses of stored cereals”.*

There was an alarming level of ignorance on women reproductive health issues in interviews with government officials some had this to say:

“Chimanimani district has been a classic case of the negativities of psychological experiences and subsequent maternal healthy complication however as you can see the whole population and community was adversely psychologically affected and thus it would be myopic to have programs that are specifically focusing on women healthy. Women are the most affected as some were pregnant or breast feeding who have got any extended responsibility to take care of themselves and the young children, however do not live in isolation they cannot be separated from the general population lest we create social and economic fissures. Therefore, any

program that seeks to deal with psychological issues has been all encompassing.”



Plate 7. Slippery roads, Soldiers and communities rescue victims during Cyclone Idai in Chimanimani.

The key informants that were interviewed with regards to the challenge and complain by women regarding psycho-social support preference, one submitted and admitted that this was adding on psychological problem as the deprived beneficiaries were become more stressed and vulnerable to mental health. He attributed the chaotic to patriarchy. The researchers quoted him saying: *“It is true that psychological victims were bunched up with everyone else in most instances and that would be addressed in future undertakings, however probably the problem stems from the patriarchal society which puts men in the forefront all the time. I also blamed women themselves for not being assertive in registering their concerns as individuals and groupings respectively.”*

The government official also noted the same problem and had this to say: *“Indeed there was a serious oversight regarding preferential treatment to psychological victims especially women, elderly and children, the challenge are probably that rural communities have a patriarchal dominance that pushes women to the peripheries during such undertakings. However it is also a challenge to women as individuals or groupings to raise their concerns without hesitation. Women have been capacitated on their rights through capacity building initiatives in communities. They are a critical stakeholder within the community, actually the backbone of society is very much reflected on their well-being through carrying the burden and mandate of holding together the family unit.”*

In interviews with the key informants on the psychological experience was an eye-opener as it came out that it was chaotic, with no clear standardized way of handling traumatised people or healthy aid that catered for the needs of specific affected people. In the interviews they had this to say:

“The Cyclone Idai was a development that caught stakeholders unaware and the relief in terms of food and healthy aid was rushed to the affected areas, however we were looking at covering affected communities and we were just focusing on ensuring that every individual got food and health care in the form of pills. There was no special consideration for psychological intervention to the psychologically traumatised people as they were equally affected as others”.



Plate 8. Focus group discussions in progress in Chimanimani District.

According to the focus group discussions that was conducted during the research, it was agreed and confirmed that the Cyclone was a complex problem. The individuals and communities were heavily mentally affected by Cyclone Idai, which disrupts their mental health and well-being. The economic and social development of Chimanimani, Ngangu village was interrupted as the focus was now on humanitarian aid. It was very loud during the group discussion that Manicaland province especially in Chimanimani District, was vulnerable to natural disasters and other types of disasters which leads to a significant loss in the affected population as witnessed by the impact that was left by Cyclone Idai. It was noted that the aftermath of disasters had a significant impact on the socio-economic and mental state of the survivors. As there were broken

marriages, some families were bark passing on the causes of psychological illness and witchcraft was said to be the cause of psychological illness like mental. The researchers quoted some respondents saying:

“My in-laws were the cause to the mentally illness that my grandmother is experiencing.” Another male survivor had this to say *“I lost my wife, she now staying with one of the Humanitarian Aid Officers in Chimanimani village, my children are now staying with my mother in my rural home in Nhedziwa”.* Another female survivor had this to say *“I am a married woman, who is now surviving on gold panning as all my fields were swept away, and at the panning fields there are also gold buyers and other men who would supplement my money through adultery activities. Cyclone Idai has brought shortage of food in my house and forced me to live this new life”*

Apart from the government interventions which focused on the socio-economic condition, the psychosocial interventions were also being emphasised. It comprises of acceptance as a coping skill, which helps the survivors to maintain social relationships positively and protect and enhance their well-being. The survivors indicated that and the researchers quoted them saying:

“The psycho-social team focused on life after the cyclone, people need to move on and get the social and economic life back on track. People should be able to do their normal business again through finding adaptation measures to reduce the impact of psychological experience”

The interventions also include the awareness programme which helps the survivors to practically visualize the situation and adopt effective measures to inculcate patience and resiliency in them. Thus, it helps the survivors to adapt to the changes they experience post-disaster. These interventions assist the survivors in normalising their mental health despite their loss, and researchers quoted the survivors saying:

“In preparation for future disaster, we want awareness programmes to start now and early warning to be given weeks before a disaster occurs, we were caught unaware”.

The adaptation and mitigation strategies of coping and reducing climate shocks on women livelihoods

There was inadequate food and relief, forcing women to leave camps alone to secure food or income and this made them more vulnerable to violence by local militias, police or military forces. The respondent indicated that, and researchers quote: *“The food aid distribution was haphazard and chaotic as there was no clear system that also protected the interests of special groups. In some instances, there were allegations of corruptions, victimisation, and double or multiple allocation of food aid for the same person.”* The research finds out that the reproductive health care was not being adequately considered especially women’s needs. The psychological survivors had this to say: *“During and after the Cyclone Idai, our reproductive health care has been overtaken by the overwhelming pressure to recovery dead bodies and relocation of survivors to the camp sites. There is no reproductive education being given to the psychologically affected people hence there are unwanted pregnancies in the camp site”*

The researchers had to ask the survivors to compare other psychological interventions like protection measures, security measures, therapies conducted and health safety strategies. The survivors were asked whether they were helpful to manage psychological experiences to the survivors. The survivors thought therapy and healthy safety were the major important strategies. The researchers quoted some of the survivors during the discussion saying: *“Because some of us are psychologically experiencing the effects of the Cyclone, so let have therapy interventions done, when we now know what we will be doing the health safety can be introduced”* Some said, and the researchers quote; *“We do not need protection and security before we are treated. What is protection or security to a psychologically ill person”.*

The from the above findings, it was clear to the researchers that the survivors were still living in trauma, these were noted as aftermath effects of the Cyclone Idai. The survivors indicated that psychological therapies were their most important factor as most of the people were traumatised by the natural disaster. Healthy safety was second important strategies. The researchers quoted some survivors saying: *“Haa factors like protection and security are important only after when are mentally supported and then future plans for protection to follow. We want psychological therapies and health safety first. The government should focus on these two so that we are psychologically healed from the trauma.”*

However the same assignment of comparing the psychological intervention like protection measures, security measures, therapies conducted and health safety strategies was also given to the key informant who viewed protection as the most priority and most effect psychological strategy in managing both the psychological people and natural disasters. The research quoted some of the key informant saying: *“The survivors need to be protected as they are in a state of shock, if not there will be another crisis of social norms being affected and the mental people will be seen all over, the marriages will be broken as people run away from their families. The environment need protection to reduce land degradation which causes climatic disasters. The panning activities need to be managed through protection of the mining field.”* Therefore this was in contrary to what the survivors recommended as the psychological interventions.

There have never been specific undertakings that are targeted or specifically for women livelihoods in Chimanimani to address climate shocks, but rather the entire population indiscriminate of gender imperatives. The premise and basis for such was that the climate change onslaught has affected the entire population and thus creating food security needs for everyone. On the specific question of women livelihoods and their peculiar vulnerability, there was an alarming level of ignorance to such and through

observation as complemented by the interviews and focus groups it appeared that there were no special considerations for women livelihoods in particular.



Plate 9. Debriefing meeting before distribution on questionnaires to participants.

The research revealed that development partners who were embarking on mitigation strategies, they impressed that their interventions were “blanket” interventions for the whole community had been severely affected and that since it was the livelihoods of communities at large the short term was a critical time in which all human life and sustenance was equally important. The major adaptation strategies highlighted during the interviews, group discussion and even noted in the response to the questionnaires were that of early recovery, conservation agriculture, rain water harvesting, and climatic resilience crops and varieties. The female felt that if these are implemented, it will be a major milestone towards management of climate shocks and improve women livelihood. The research revealed that the stakeholders and the community have started to implement mitigating strategies. Some of the noted mitigation were use of manure and livestock management and, improved fertilizer application techniques to reduce greenhouse gases, improved crop and grazing land management to increase soil carbon storage, restoration of cultivated peaty soils and degraded lands and agro-forestry practices. To increase biomass productivity and carbon sequestration, it was also noted that there is now more reinforcement on forestry legislation to reduced deforestation and promotion of Afforestation /reforestation, monitoring of sustainable management and utilization of commercial forest around the area, and there is tree species improvement.

The research revealed that the adaptation strategies that were in place were humanitarian aid in the form of food aid as emergency phase, cash for work, and food for work or assets. However, there was an outcry on community women exclusion from the affected areas in the planning and execution of the climate shocks mitigation, the Civil protection Unit could also include marginalized groups into the district committee so that they could express their views on matters of interest. This was totally in contradiction with the literature reviewed, as women are very vulnerable, and are most likely to be disproportionately affected by the adverse impacts of climate change because they constitute the majority of poor people.

Women traditional roles as the primary users and managers of natural resources, primary caregivers, and engaged in unpaid labour mean they are involved in, and dependent on livelihoods and resources that are put most at risk by climate change. Furthermore, women lack rights and access to resources and information vital to overcoming the challenges posed by climate change. The research revealed need to establish of climate smart technology through conservation agriculture as a very welcome paradigm that empowers particularly women in Chimanimani against climate shocks as these technologies mitigate the imminent onslaughts against natural disasters.



Plate 10. Undistributed donated Cyclone Idai foodstuff rotting in a warehouse in Chimanimani.

However women insisted that the climate smart technologies would be more effective and sustainable if women were given preference because they constitute

the bulk of the constituency that is at the forefront of most economic activities for livelihoods in the most vulnerable places to natural disasters in Chimanimani.

The policy gaps in a gender based approach to climate shock resilience and preparedness

The key informant also concurred with the survivors on the damaged of roads as they indicated that road network was rendered unusable for months, affecting market access and supply of basic commodities and even provision of psychological support by the profession was affected. The researchers quoted them saying. *“Quickly response and provision of psychological services was heavily affected and derailed by the damaged that was done of the road infrastructure in the area. The bridges were swept and landslide in Skyline area make the road blocked. Livelihoods were disrupted as people could not go out to do their day to day business for living”*. The major policy gaps in a gender based approach to climate shocks resilience and preparedness, the research revealed that there was a clear exhibition of ignorance on the fundamentals of gender based approaches to climate shock resilience, mitigation and preparedness in Chimanimani district. There is a gap between climate policy, governance and research. As such the Zimbabwe government must make special consideration of investing in breeding drought resilient crop varieties and by so doing the most vulnerable yet highest in population demographic (women) are not exposed to unmitigated impacts of climate change due to ignorance and resistance by communities where natural disasters are prevalent.

Discussion

Demographic characteristic of the respondents

It can be observed that the information on the age groups were fairly represented in the total population of 70 respondents. However, the respondents within the age groups 20 or less and 31 and above warrants further explanation. Lower level of respondents constituting the ages 20 years or less and majority were 31years and above justified and explained by the fact that some of the survivors were school going children and had relocated in search of better schools

since many schools were destroyed. The respondents surveyed in this thesis-research represented survivors in different villages in Ngangu.

Most of the key informant were official who were in Chimanimani during the disaster and are still working in Chimanimani. Through use of focus group discussion in the study, it was discovered that the majority (74%) of the respondents were 31 years and above. It implies that most of the respondents fall within the age range of being able to comprehensively explain what happen during and after the Cyclone idai in terms of psychological experience. How they were being assisted management the trauma induced by Cyclone Idai. Majority of the respondent attained secondary education as 64% had reached “O” level, and majority (95%) of the key informant had diploma certificates. Women between (24-65years) were actively engaged in agricultural activities for survival. This is the group which was heavily affected by the climate shocks during the Cyclone Idai. This outcome confirms what the literature reviewed as IPCC (2014) indicated that nonetheless, low-income groups in many countries will remain vulnerable to short- to medium-term supply constraints arising from climate change.

The climate shocks on women in Chimanimani District

The research revealed that the immediate aftermath reaction of a Cyclone Idai disaster by the survivors was a combination of shock and denial. The survivors had a challenge to take the necessary steps to start picking up the pieces, calling insurance, assessing what property was lost, even finding temporary housing. The researchers quoted one key informant from the health sector who said:

“After the Cyclone disaster, majority could not accept and believe that some members of their families were killed or psychologically traumatized by the disaster. They could keep on looking for they beloved ones downstream or could not take time to take their traumatized relative to the hospital”

The research revealed that the survivors were experiencing nightmares, anxiety, extreme concerns about storm safety, or obsessive preparation to avoid

the next disaster. It was indicated that the insecurity could be especially pronounced in children and mental persons who were feeling constantly unsafe. Researchers quoted one of the survivors agreeing with the other survivors in the discussion saying: *“My children, hallucinate and have increased in sleeping working, almost every night the boys wake up and walk in the house. There is also any increase in bed wetting, sure the my children are experiencing psychological stress induced by Cyclone Idai, I totally agree with you”*

The research revealed that that there was also posttraumatic stress and extreme stress in the survivors. Mentally those survivors with posttraumatic stress were experiencing flashbacks to the storms, panic attacks, and an extreme startle reflex, persistent avoidance of things that remind them of the storm, and anxiety and depression. It was noted that the survivors could not control emotions, leading to angry outbursts or crying spells, during the research process. The healthy system was overwhelmed by traumatized related patients. During focus group discussion one respondent cried loudly and I quoted the survivor saying: *“It is unfortunate that the discussion is bringing back the memories of my two daughters and my husband that I lost during the Cyclone Idai. Can we stop the discussion now, and I mean now, please take me back to my house”*

It is important for the study to be cautious on the sustainability of activities on the African continent as it is an exercise that is apparently ineffective if there is no step up in hands-on action as opposed to intransigent assistance all the time. This is further supported by Huq *et al.* (2015) and the IPCC (2014) that the impact of climate change are far reaching, unsettling human lives, settlements, food production and the supply of adequate clean water further impoverishing vulnerable groups of society. Nhemachena (2014) opines that climate change experiences are resulting in high rates of human morbidity and mortality because of stress and psychological injury. Swai *et al.* (2012) also noted that out-migration of male counterparts in search of jobs

and food to feed families as another consequence of out-migration and that in the near future there will be trans-boundary movement of people due to natural disasters if they go unmitigated. This movement and migration of men has exposed women and live them vulnerable to the climate change on their livelihoods.

It was very difficult to manage the reaction by some of this survivor, however, the researchers worked with the elders to comfort the survivor. The elders had to take her to a separate place any comfort the survivor, thereafter she was never involved in the discussion. The research revealed that Chimanimani District has had a protracted battle with climate shocks spanning to more than the last two decades. However over the years there have been pockets of different initiatives which were implemented through development partners in partnership with government in an attempt offer resilience mechanisms in affected communities and lessen the negative impacts on food security imperatives.

World Bank (2013) highlighted that more daunting is the fact that women are frequently excluded from processes and decisions relating to the use and management of natural resources, including those impacting on climate change. In this regard, several gender networks have called for the effective participation of women in climate processes and decisions at all levels (Gender CC Network, 2007). It is recognised that the actions that women can take depend on their involvement in decision making processes at all levels, their capacity to effectively intervene in climate change matters, their integration into climate change institutions, and to be engaged in policy and decision making processes at all levels. It was also noted that the actions that women can take depend on the strength of their networking, particularly with gender and women climate change organisations. Women and gender experts should ensure that they are well informed about the gendered dimensions of climate sensitive sectors, particularly the existing inequalities between men and women and how climate change can exacerbate these inequalities. In this regard, the empowerment

of women in all aspects, including their access to appropriate information, skills and adequate resources, to enable them to act in a timely manner, was seen as key.

The forecasts insinuate that Africa is on the path of being ruthlessly harmfully affected by climate change. The temperatures are becoming exceptionally high with irregular or incessant rainfall followed by cyclones, hurricanes and droughts, Sango and Godwell (2015b) and IPCC (2014) predicted that the urban and countryside underprivileged community groupings including women will be grossly harmfully impacted by the outcomes of climate change given the natural attributes of poor communities.

It is important to note down that by now the devastating attack of climate change is already being experienced right through the sub-sahara region. Muzari *et al.* (2014) and Ncube *et al.* (2016) concede that sub-Saharan Africa will record crop and livestock failure and endless food insecurity due to famine and other related climate extremes such as cyclones.

Gukurume (2013) and Muzari *et al.* (2014) opine that the amplified drought and or rain variability force in sub-Sahara Africa of late has hostile consequences on rural and urban communities and smallholder farming across the African continent, thereby affecting subsistence farmers who live on farming and the forward and backward linkages created by such.

Bola *et al.* (2014) and Nkomwa *et al.* (2014) also consent that the constant phenomenon of cyclones, droughts and floods in lower- lying areas of the African continent and in Zimbabwe is by and large a direct outcome of climate change. Bola *et al.* (2014) weigh in and raise concern over the heavy negative effects on the livelihoods of the rural communities and women notwithstanding the impact on the environment itself and the food production impediments thereof.

Already women in rural communities are seized with the challenges of vulnerability attributed to climate change as asserted by Suckall *et al.* (2015). Niang *et*

al. (2014) suggested that there hasn't been an innovation that deals decisively with climate-proof infrastructure and agricultural resilience strategies on the adaptation to alternative livelihoods in affected regions. All these imply potential disaster for African women and communities with respect to their livelihoods and the capacity to prepare for natural disasters. However, Suckall *et al.* (2015) also noted that out-migration of male counterparts in search of jobs and food to feed families as another consequence of out-migration and that in the near future there will be trans-boundary movement of people due to natural disasters if they go unmitigated. This movement and migration of men has exposed women and live them vulnerable to the climate change on their livelihoods.

The world has become more complex and unpredictable than ever before. Pereira (2005) says we live in a global disorder. The 21st Century has witnessed an increase in environmental challenges, which are both natural and human in origin. Natural causes are triggered by extreme natural events especially those related to weather whilst the recent expansion of human activities has also resulted in environmental degradation. The following are some of the major issues that we should try to solve before the earth reaches catastrophic levels. Those issues, and the ones related to the exploitation of natural resources in particular, are perhaps the most global, both in their essence and scale of action. According to Anand (2013), some of the most common global environmental problems.

- ✓ Depletion of natural resources
- ✓ Climate change
- ✓ Water pollution
- ✓ Air pollution
- ✓ Nuclear wastes and radiation issues
- ✓ Ground water pollution
- ✓ Toxic chemicals & soil pollution
- ✓ Ozone layer depletion
- ✓ Global warming
- ✓ Loss of bio-diversity and extinction of wildlife and loss of natural habitat

The adaptation and mitigation strategies of coping and reducing climate shocks on women livelihoods

The research revealed that the impact of any disasters

could be neutralized with the help of some variables like the willingness for positive psychological adjustment of the survivors, the ability of the community to adapt to the environment. The survivors indicated that given enough information on disaster and risk management, the future potential disaster could be managed, the researchers quoted some of the survivors saying: *“There was no information shared to us or even to know that the district has a disaster and risk preparedness plan, had it been to say the information was shared and awareness were properly planned, implemented and monitored, disasters like these could be managed”.*

The one two survivors who were of old age indicated the same by thought indigenous knowledge and traditional culture could have been used to stop disaster like Cyclone Idai, the researchers quoted the two survivors saying: *“The local traditional leadership would have been the best way to intervene on natural disaster occurrence and to heal those experiencing psychological effects. There is need to conduct ritual ceremonies in the area and families with people who are psychologically ill, traumatized and stressed should come to the village head for cleansing”*

The survivors believe that the community can be adaptive to the environmental condition through capacity building and provision of raw material and implementation of developmental aid. This included building of psycho social facilities and introduction activities, the researchers quoted the survivors saying: *The psychological support teams can bring in developmental projects that includes project start up raw material and can also build recreational centres as psychological intervention strategies to us. We want to have time to play and forget about when happen in March 2019. These will be adaptive way for us to start moving on.”* IPCC (2014) indicated that nonetheless, low-income groups in many countries will remain vulnerable to short- to medium-term supply constraints arising from climate change. The basic food security issue will remain that of poverty and the lack of food purchasing power.

Although the impacts of climate change on food production and food security up to 2030 may be relatively small and uncertain, those projected for the remainder of the century are larger and more widespread. By 2100 climate change could pose a serious threat to global and local food security (IPCC, 2014). It is therefore vital that action be taken now to counter this threat. Actions should include measures to reduce agriculture’s role as a driving force for climate change.

Sandford (1995) indicated that there are several actions need to be taken to mitigate and adapt to climate change;

First, comprehensive support mechanisms must be formulated to help farmers adapt to climate change and to increase production under more variable conditions. Such mechanisms could include approaches to crop production which improve the resilience of farming systems. Second, given the probability of higher incidence of drought, aridity, salinity and extreme events, greater priority will need to be given to the following measures:

- ✚ maintenance, both onsite and offsite, of a broad genetic base for crops and development and distribution of more drought-tolerant crop varieties and livestock breeds;
- ✚ breeding for greater tolerance of crops, livestock and fish to higher temperatures;
- ✚ development of salt-tolerant varieties of wheat, rice and oil crops;
- ✚ improving the resilience of agricultural ecosystems by promoting conservation agriculture and practices such as agroforestry that utilise and maintain biological diversity;
- ✚ raising the efficiency of rainwater use and groundwater recharge by conservation agriculture, etc. and that of irrigation water by appropriate pricing policies, management systems and technologies;
- ✚ supporting pastoral and other livestock production systems, many of which are already food insecure. Activities should be centred on maintaining livestock mobility and providing location-specific investment in supplementary feed production, veterinary services and water supply and on improving the marketing of livestock during droughts and making it easier to restock after droughts or floods; and

✚ developing improved sea defence and flood management systems in sea level rise and storm surge situations, where these are economically viable.

All developing regions are considered by the IPCC (2014) to be vulnerable to increased droughts and floods. These extreme events could pose significant threats to food security, requiring policy action and investment both outside and within the agricultural sector. For many countries the key to reducing food insecurity will be better disaster preparedness planning, although actions to lower the sensitivity of food and agricultural production to climate change will clearly be important to cope with the longer-term impacts of climate change. Many of the actions in response to drought and sea level rise should be conceived on the pattern of disaster management strategies being developed to reduce agricultural vulnerability to tropical storms (FAO, 2001g). The objectives of such strategies include avoiding or minimising death, injury, lack of shelter and food shortages, loss of property or livelihoods of poor households, and preparing funding and procedures for large-scale relief and rehabilitation. Such strategies may be implemented through:

- the development of early warning and drought, flood- and storm forecasting systems;
- preparedness plans for relief and rehabilitation;
- introducing more storm-resistant, drought-tolerant and salt-tolerant crops;
- land use systems that stabilise slopes and reduce the risk of soil erosion and mudslides;
- constructing livestock shelters and food stores above likely flood levels;
- equipping fishers with communication systems and safety devices so that they can benefit from early storm warnings, and credit systems so they can quickly replace any lost boats or equipment.

Mapira (2014) reviewed environmental education as a concept that seeks to educate people about their natural and cultural environs with a view to conserving them for both the present and future generations. It has evolved to become a major subject or discipline in some schools, colleges and universities.

The definition shows that environmental education is concerned with both management of the natural environment as well as the contribution of people in the sustainable use of the environment. The human element in environmental education focuses on aspects such as culture, attitudes and values towards the environment (Risiro, 2014). The goals of environmental education were agreed upon in the Tbilisi Declaration at the Intergovernmental Conference on Environmental Education held at Tbilisi in 1977 (UNESCO-UNEP, 1996). This means that the issue is not new and is important in understanding how human beings through their activities have continued to interfere with nature. The goals were amended at UNESCO meetings in the Asia-Pacific region in order to capture the notion of sustainability. The three goals of environmental education agreed upon are:

- To foster clear awareness of, and concern about, economic, social, political and economic interdependence at local, regional, national and international/global levels;
- To provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment;
- To develop and reinforce new patterns of environmentally sensitive behavior among individuals, groups and society as a whole for a sustainable environment.

Five objectives outlined in UNESCO-UNEP (1996) are to improve:

- *Awareness* - to help social groups and individuals acquire awareness and sensitivity towards: “the environment as a whole, and; “issues, questions and problems related to environment and development.
- *Knowledge* - to help individuals, groups and societies gain a variety of experience in, and acquire a basic understanding of what is required to create and maintain a sustainable environment.
- *Attitudes* - to help individuals, groups and societies acquire “a set of values and feelings of concern for the environment, and “the motivation to actively participate in protection of the environment.

- *Skills* - help individuals, groups and societies acquire the skills for “identifying, “anticipating, “preventing and “solving environmental problems.
- *Participation* - to provide individuals, groups and societies with an opportunity and the motivation to be actively involved at all levels in creating a sustainable environment.

The policy gaps in a gender based approach to climate shock resilience and preparedness

The major noted policy gaps were lack of disaster management policy, the planning, implementation and evaluation of the current climate policy, poor governance and research. As such, the government must make special consideration of investing in breeding drought resilient crop varieties. The most vulnerable and highest in population demographic (women) were not involved in the humanitarian aids leading to rot of food donations in warehouses. According to World Bank (2013), women were frequently excluded from processes and decisions relating to the use and management of natural resources, including those impacting on climate change. In this regard, several gender networks have called for the effective participation of women in climate processes and decisions at all levels. Noted was that the actions women can take depend on their involvement in decision making processes at all levels, their capacity to effectively intervene in climate change matters, their integration into climate change institutions, and to be engaged in policy and decision making processes.

Most ironically, the vast majority of those most vulnerable to the impacts of climate change are also the least responsible for contributing to it in the form of GHG emissions (IISD and Ministry of Foreign Affairs of Denmark, 2007). World Bank (2013) emphasis the point that women are very vulnerable, and are most likely to be disproportionately affected by the adverse impacts of climate change because they constitute the majority of poor people. Women traditional roles as the primary users and managers of natural resources, primary caregivers, and engaged in unpaid labour mean they are involved in, and

dependent on livelihoods and resources that are put most at risk by climate change (FAO, 2001g). Furthermore, women lack rights and access to resources and information vital to overcoming the challenges posed by climate change. The issue of environmental education was said to have been missing in the area meaning issues of disaster risk management are behind. Environmental education is a holistic approach to learning in order to achieve an ecologically, socially, economically and politically sustainable future (IGES, 2004). Further alluded to that the concept in more recent decades, has gathered currency at global level in response to emerging environmental problems such as: global warming and climate change, desertification, air and water pollution (Palmer, 1998). Its main aim is the enhancement of an individual’s knowledge, attitudes, skills, values and motivation to improve the environmental quality. Hence, this has to been one of the mainstream in humanitarian, development work, at schools and at workplaces.

Conclusion

The researchers concluded that there was a huge policy gap on gender mainstreaming in climate change adaptation and mitigation programmes. The community women exclusion from the affected areas in the planning and execution of the climate shocks mitigation remains as a barrier to address the women livelihood. The researchers as per the results recommended that there is need to consolidate, coordinate and mainstream policies in harmonizing the sustainability of women livelihoods in climate shocks resilience undertakings and preparedness. It was established through interactions that there is resistance to a narrative of a new paradigm must reinforce investment not only into conservation agriculture. As such the Zimbabwe government must make special consideration of investing in breeding drought resilient crop varieties and by so doing the most vulnerable yet highest in population demographic (women) are not exposed to unmitigated impacts of climate change due to ignorance and resistance by communities where natural disasters are prevalent. There is need to

enhance the compulsory implementation of gender mainstream of women livelihoods in climate shock resilience. The government of Zimbabwe must encourage drought resilient crop varieties as a mechanism of ensuring women livelihoods from climate shocks. Increase the coordination of state and non-state actor collaboration in climate shock resilience through gender mainstreaming standards. Increased development partners and civil society initiatives on capacity building and oversight on government undertakings in climate shock resilience. Government ensure efforts to fund, research, and stakeholder development on women livelihood imperatives. Improve and strengthen environmental education programmes in the study area. As it plays different roles and functions in realizing a sustainable future, namely by changing people's knowledge, attitudes and behavior, deepening people's understanding and heightening their awareness, passing on knowledge to future generations, making people innovative, investigative and inquisitive, postering creativity as well as ingenuity and enhancing people's volition the power to choose or decide something without fear.

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