

Research Article

Climate Change and Human Security in Zimbabwe

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Abstract: Across the global spectrum, climate change has proven to be problematic with no definitive way of solving it. At the same time, its effects on humanity have been catastrophic and detrimental, undermining all facets of human security such as food security, personal security, health security, environmental security, economic security, political security and community security. Zimbabwe has not been spared, as the scale and magnitude of climate change have proven to be more vicious and malignant owing it to a myriad of quagmires which among others include but are not limited to weak preparedness and emergence management systems, insufficient budget, lack of political will and poor community education campaigns. Using mixed method, the research examines the effects of climate change and human security in Zimbabwe with the primary purpose of coming up with organic and actionable policy alternatives that can be used to enhance human security. The paper concludes that, climate change undermines human security and there is need for urgent intervention from the government to invest in climate adaptation and mitigatory measures.

Keywords: Climate Change, Human Security, Indigenous Knowledge, Peoples Perspective.



1. Introduction

Climate change and human security are intricately intertwined and there is a positive correlation between the two, although the effects are negative and detrimental. This is because, the effects of climate change, such as more frequent natural disasters, droughts, forced migration, family dysfunctional, long-term changes in precipitation and temperature, coral bleaching, and sea-level rise undermines human security. Human security is at the core of Human Capital Development (HCD) which is the nerve centre of national development and growth. To this end, it is the ambition of this paper to examine the link between climate change and human security in Zimbabwe with the primary objective of coming up with organic recommendations that enhance national resilience by fostering human security. Therefore, the effects of climate change will be examined under the prism of the seven dimensions of human security which are food security, personal security, health security, environmental security, economic security, political security and community security. Thus, the paper projects scale and magnitude of the effects of climate change on human security.

2. Literature Review

2.1. Climate Change

Climate change is a gradual alteration to local or global climate trends. The increase in global temperatures that began about the middle of the 20th century and continues now is frequently expressly referred to as climate change [1] [2]. The warming temperatures and changes in precipitation, as well as the effects of earth's warming, such as: rising sea levels, shrinking mountain glaciers, ice melting at a faster rate than usual in Greenland, Antarctica and the Arctic and changes in flower and plant blooming times are often considered to be the results of climate change [3].

No country or continent has been spared from the devastating consequences of climate change. The rising global temperatures are fuelling environmental degradation, natural disasters, food and water insecurity, economic disruption, conflict, and in some cases, terrorism as seen in the Chad Basin of Africa [4]. The world has witnessed a rise in sea levels with the arctic glaciers melting, coral reefs dying, oceans acidifying, and forests burning hence loss of biodiversity [5]. The world has increasingly witnessed heatwaves, droughts, typhoons, and cyclones and hurricanes causing mass destruction worldwide [6]. Madagascar has witnessed its worst drought in 40 years and Europe is experiencing extreme temperatures in 500 years.

Approximately 90% of disasters are now classified as weather or climate-related, costing the world economy. Global annual economic impact allied with disasters were estimated at around US\$ 75.5 billion in the 1960s, US\$ 138.4 billion in the 1970s, US\$ 213.9 billion in the 1980s, US\$ 659.9 billion in the 1990s, US\$ 374 billion in 2011, US\$ 117 billion in 2016, US\$ 75 billion in 2020 and US\$ 145 billion in 2021 [6]. The World Bank estimates that, in the absence of action, more than 140 million people in Sub-Saharan Africa, Latin America, and South Asia will be forced to migrate within their regions by 2050 [6].

The 2021 Germanwatch's Global Climate Risk Index ranked Mozambique, Zimbabwe and Malawi the 1st, 2nd and 5th most affected countries in the world in 2019. Ironically, these countries are placed at the 32nd, 108th and 75th respectively with regards to climate financing received. In 2019, Cyclone Idai cost Zimbabwe US\$274 million and Mozambique US\$3 billion, 1.6% and 19.6% of their respective GDPs. Climate change in Zimbabwe is also evidenced by declining water resources resulting in fall of agricultural productivity, biodiversity loss, geographical spread of vector-borne diseases and the pestiferous nature of problem pests, and volatile weather and climatic disasters. While climate change impacts permeate all economy wide sectors of the country (such as Agriculture Forestry and Other Land Use, Energy, Industrial Products and Processing Unit, Waste Management), the collective responses by the government, development partners and individuals on mitigation and adaptation may in fact lead to development in a number of indicators towards poverty alleviation, particularly through improved food security, energy, water, and social protection if prudently implemented to minimize inequalities.

All in all, despite all these negative effects of climate change. There are climate mitigation and adaptation strategies that can be utilised to redress the effects of climate change. Some of the climate mitigation strategies include but not limited to afforestation, reforestation and apiculture. While adaption strategies include but to smart agriculture, borehole drilling, sustainable mining and other resilient project that aims to foster environmental protection and human security.

2.2. Human Security

The Commission on Human Security (CHC) defines human security as "...creating political, social, environmental, economic, military, and cultural systems that together provide people with the building blocks of survival, livelihood, and dignity" [7]. For the United Nations [8], human security denotes "safety from such chronic threats as hunger, disease and repression" or "protection from sudden hurtful disruptions in the patterns of daily life". The United Nations Development Department (UNDP) [8] further expanded the concept of security by initiating an incremental paradigmatic shift that moved away from state-centric approach and to an individual-centric approach. An approach that focusses on seven important components of human security such as: Personal security, health security, food security, economic security, community security, environmental security, and political security [9]. To this end, UNDP [8] postulated that, human security is a global, preventive and people-centred concept that seeks to ensure that, "a child who did not die, a disease that did not spread, a job that was not cut, an ethnic tension that did not explode in violence, a dissident who was not silenced".

The notion of human security, which was initially proposed in the Human Development Report in 1994, focuses on two key components [10]. These include freedom from fear and freedom from desire. The protection of people from threats such as physical violence, armed conflicts, and war requires a variety of methods, including the construction of peacebuilding architecture. Freedom from want, on the other hand, necessitates freedom from nonviolent threats to people's welfare and dignity, such as poverty, malnutrition, diseases, environmental degradation, and others. Thus, human security means protecting people from critical (severe) and pervasive (widespread) threats and situations. It is a concept that is centred on the welfare and well-being of humanity.

The theory of human security is broader, as it considers underlining social and economic quagmires that affects humanity and transcend to propound optimum ways of protecting and safeguarding humanity against all forms of threats [11]. Human security intends to establish participatory participation and solutions that empowers all people. Thus, it is based on the ultimate recognition of various capacities, circumstances and needs of people, organisations and governments. The concept of human security takes a comprehensive approach by learning from various stakeholders and actors to strategically intervene to prevailing challenges. The implementation of an effective human security strategy integrates solutions, advances coherence and guarantees optimum security that entrenches improvements in people's lives. Human security has a dual function, which is a programming framework and analytical lens that can be used to determine the attainability of Sustainable Development Goals (SDGs) both in developed and emerging economies. This is because, human security programs and initiatives interacts closely with people to determine their vulnerabilities and specific needs with the primary goal of advancing human-centred policies.

Human security is a comprehensive model that is multi-dimensional. The dimensions of human security are calibrated in a manner that fosters the security and safety of individuals. These dimensions are presented hereunder:

1. Economic Security

According to Chancel [12] each person requires access to a safety net that is supported by a basic income guaranteed to them through gratifying and productive labor. For Chancel [12] only one-fourth of the world's population currently enjoys financial stability. Emerging economies experience greater economic insecurity coupled with economic conflict and racial violence which are all fueled by unemployment and widespread poverty.

2. Community Security

Inter-ethnic conflict based on identity is currently evident in almost half of the world's states [13]. In many places of the world, ethnic minorities are under attack. To this end, community security is to safeguard individuals against sectarian and ethnic violence while also preserving their culture, traditions, beliefs, and practices.

3. Health Security

The health security dimension seeks to ensure a minimal level of protection from illnesses and harmful lifestyle choices [14]. Nearly 80% of deaths from chronic diseases occur in low- and middle-income countries, making them the leading cause of death globally at the moment. Health-related risks are typically larger for the poor in rural areas, especially children, in both developing and industrialized nations, according to the UN. Malnutrition, a lack of clean water, access to medical care, and other basic needs are the main culprits [15].

4. Personal Security

Personal security seeks to ensure that individuals are protected and safeguarded from violence championed by individuals, state and sub-state actors [13]. Zeigermann [13] propounded that, violent crime is the greatest threat to personal security globally.

5. Environmental Security

This dimension of human security put great emphasis on protecting the populace from both immediate and long-term natural and human-caused hazards, as well as from environmental degradation [16]. Air pollution, a lack of clean water resources, and global warming brought on by greenhouse gas emissions are the three main environmental issues of today [17].

6. Political Security

This dimension of human security focuses on basic human rights, particularly first-generation human rights [18]. Thus, it seeks to safeguard individuals against political repression, systematic torture, disappearance and ill-treatment for political expediency.

7. Food Security

This dimension of human security entails that, basic food must always be physically and financially accessible to everyone [19]. According to the UN, poor distribution of food and a lack of purchasing power are the main problems, not the general availability of food [20]. This is clearly evidenced in Africa where extreme poverty is largely concentrated. World Bank [22] stated that, approximately, 593 million children on the African continent are experiencing multidimensional poverty. About 63% of people older than 15 in Africa are living in extreme poverty. Approximately 60% of the world's extreme poor in 2022 lived in Sub-Saharan Africa while 81% of the global poor at the poverty line of US\$ 3.65 live in Sub-Saharan Africa.

2.3. The Interlinkage Between Climate Change and Human Security

Climate change and human security are intricately intertwined as climate change adaptation has many facets that foster human security. Selin and VanDeveer [1], reinforced the above assertion by noting that, "climate change adaptation is a human security issue". Climate mitigation and adaptation strategies do not only seek to protect the environment but ensure the safety and well-being of humanity [22]. This is because, effective climate change mitigation, rehabilitation and adaptation programs promote environmental resilience, smart agriculture, sustainable mining, reforestation and afforestation which are all quintessential in promoting the well-fare of humanity [23]. Food security can be attained as a result of viable climate mitigation strategies as it prevents and minimise drought impact [24]. Environmental security can also be achieved through robust sustainable mining practices, afforestation and reforestation which all lessens environmental degradation [25]. To this end, weak climate change mitigation, rehabilitation and adaptation can undermine optimum human security [26]. As climate change often facilitate the occurrence of droughts, floods, heatwaves, earthquakes to mention but a few. Thus, it is critical that when one undertakes the subject of climate change, he or she must take a comprehensive and broader approach that accounts for human security. Such an approach is imperative in informing and shaping policy discussions. Any attempt to understand climate change outside the facets of human security is a derailment of an effective and comprehensive responsive mechanism.

3. Methodology

This research made use of mixed method research design. It leveraged on both qualitative and quantitative research techniques to generate and analyse data. Convenience and purposive sampling were used to identify key informants from Chiredzi, Ngangu, Kurwaisimba, Kopa, Rusitu, Chivi and Muzarabani. The research identified the aforementioned areas, as areas that are highly prone to climate change. Observations were also carried out in the same areas. The research had 87% response rate, a reflection of high participation. The data was analyzed using thematic and content analysis. The findings of the research play a significant role in shaping climate change and human security discourses as well as informing the policy making machinery of the interconnectedness of climate change and human security.

4. Finding and Discussion

4.1. Climate Change in Zimbabwe: People's Perspective

The subject of climate change is considered technical by a lot of citizens. It is a subject that many people shun and do not understand yet negatively impact their livelihoods. At the same time, a lot still need to be done with respect to climate education, awareness and advocacy. It is ironic that, the most affected

communities are the ones with less climate change programs and projects. Approximately 78% of the respondents from Ngangu, Kurwaisimba and Rusitu lamented that, “majority of community members are not aware of climate change despite being affected year-in year-out, they are only acquainted with the effects such as floods, droughts and heatwaves but do not understand the causes thereof”. A key informant from Kurwaisimba stated that, people’s lack of understanding of climate change presences a sad situation, that has limited the effectiveness of climate change interventions and people’s participation.

It is also a reflection of weak climate education and intervention programs by various stakeholders. A scenario often caused by blanket approach to climate change education and interventions by the government, civil society and private sector. Thus, there is need for each climate change program and intervention to be informed by the context community it is going to be implemented. The project implementation ecosystem must be used to calibrate climate change interventions and program. At the same time, communities such as Muzarabani, Rusitu and Chivi believes that the government is doing less with respect to climate intervention and is not prepared enough to handle its effects. About 60% of the respondent rated government climate change intervention as weak. Attached hereunder are the findings from AFROBAROMETER 2022 survey which also reinforces this study findings by presenting a glimpse of people’s perspective about climate change in Zimbabwe.

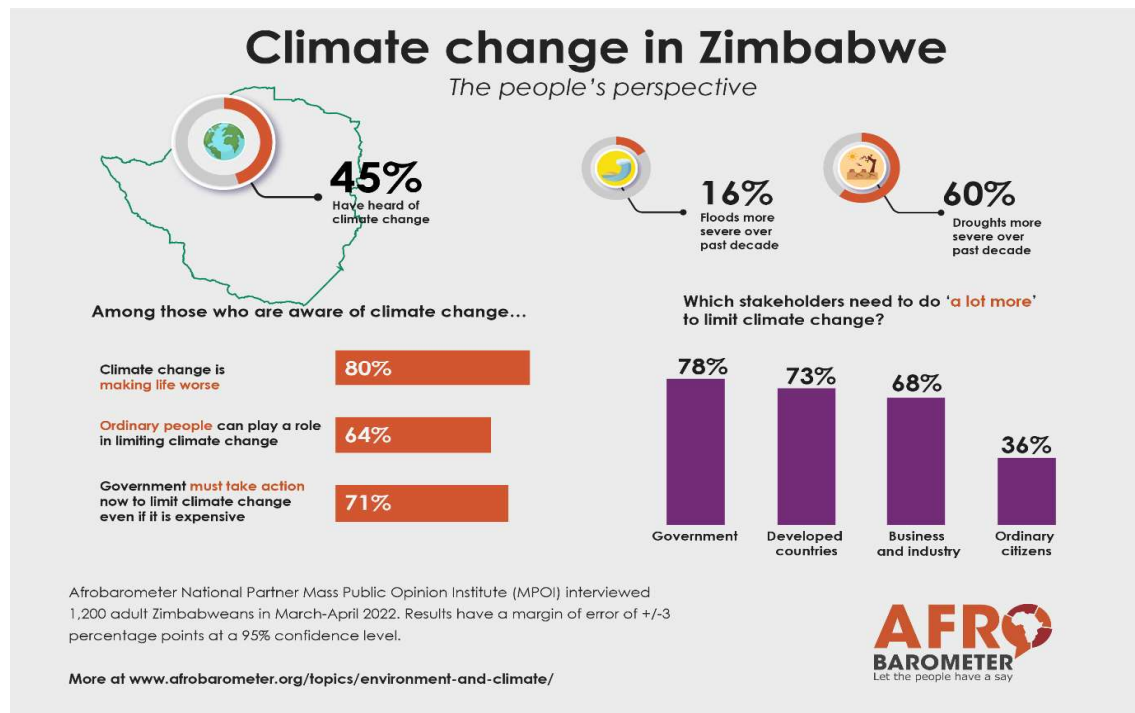


Figure 1. Peoples Perspective for Climate Change in Zimbabwe

4.2. The Indigenous Knowledge Debate

Although the indigenous knowledge debate might seem farfetched from a scientific perspective, neglecting it completely is problematic in climate change mitigation and adaptation. Indigenous knowledge is defined as “community of people sharing intergenerational ancestry and cultural aspects with original (pre-colonial) occupants of ancestral lands in a specific region of the world” [27]. Indigenous knowledge denotes the comprehension, philosophies and skills of a community with long histories of interaction with their natural surroundings [28] [29]. Indigenous knowledge is essential in unpacking cultural complexes, that includes language, systems of classification, resource use practices, social interactions, values, ritual and spirituality [30] [31].

The findings from key informant interviews conducted in ward 15 Ngangu and ward 10 Chikukwa discovered that, majority of the community members believed that “Cyclone Idai of 2019 was more of a spiritual event than physical”. According to one key informant, “the cyclone was as a result of lack of appreciation of indigenous knowledge, the nation and communities’ failure to appease the ancestors”. The proponents of this narrative are of the view that, prior to cyclone Idai, a number of traditional leaders and chiefs engaged the authorities and informed them of a pending disaster. Traditional ceremonies which include brewing of beer and sacrificing of cows and other beasts were to be done to avert Cyclone Idai. The key informants strongly believed that indigenous knowledge system is critical in averting climate change and enhancing human security. Thus, traditional leaders such as chiefs, spiritual mediums (masvikiro and mhondoro) are integral actors of the climate change policy community and network which must never be excluded in policy formulation and implementation. An assertion that is supported by the United Nations Educational, Scientific and Cultural Organization (UNESCO) which stated that, the views of indigenous knowledge custodians must never be neglected and should be used to compliment scientific narratives [32]. The Zimbabwe indigenous knowledge school of thought validates its views by stating that, our culture and history testifies to our importance in climate change mitigation and adaptation as traditional ecological knowledge and native sciences has always help in averting disasters.

4.3. Cyclones and Floods

Cyclones and floods have become more frequent and devastating undermining human security in all its facets. Some of the cyclones and floods that have hit Zimbabwe include but not limited to Cyclone Eline 2000 Cyclone Japhet in 2003, Cyclone Cela in 2013, Tokwe Mukusi Tsholotsholo floods in 2014, Cyclone Dineo in 2017, Cyclone Idai 2019 to mention but a few. However, evidence from documentary review shows that the most destructive ones have been cyclone Eline and Idai. This can be substantiated by Cyclone Eline which affected 2.7 million people directly or indirectly in the Southern and Eastern part of Zimbabwe, among them were vulnerable groups. The scale or magnitude of the impact has been described as “huge” with a total cost of US\$ 3,160,799.00 leaving many homeless at the mercy of poverty [6]. The Cyclone Eline floods of February 2000 left approximately over 250, 000 people affected, 90 people dead and the destruction of about US\$ 7.5 million worth of goods [33]. In addition, the World Food Programme Zimbabwe (2000) citing Timber Producers Association, noted that 3340 hectares of timber was damaged valued at US\$10 000 000 which is one year’s produce and this had a devastating impact on the livelihoods of the people. Infrastructure in Mutare and Chipinge was destroyed e.g., granaries, bridges, schools, telecommunications lines, roads clinics. Electricity and telecommunication lines are among other essential facilities that were affected by the cyclone. Estimated rehabilitation costs of irrigation schemes and water resources was US\$ 2 042 047 [6]. Approximately over 16000 chickens, 13000 goats, 2000 cattle and 1000 donkeys died due to the cyclone. In addition, Cyclone Idai affected approximately 270 000 people including 129 600 children, leaving more than 60 000 people in need of food assistance, 334 people dead, over 257 missing. Approximately, 7000 people were displaced and had their livelihood undermined.

In reinforcing evidence from documentary review, the findings from the study shows that cyclones and floods have affected and undermined the livelihoods of people. According to one key informant, “cyclones and floods destroyed our community, families and our banana plantations, which are our major source of livelihoods”. A submission that was reinforced by other key informants who stated that, the police station in Kopa Vally and households which were surrounding, were all destroyed by the cyclone. The Taro root (madhumbe) plantations were also affected thereby undermining their source of livelihood. A key informant from Kopa Valley lamented how her family was left homeless only to find shelter in a small tent that was designated for her family. The tent was said to be improper for a family set-up as it did not account for the number of children and their difference in sex. Therefore, given the above it would be just for one to argue that in this regard the effects of climate change undermined all facets of human security such as food, community, health, economic and environmental to mention but a few.

4.4. Droughts and Food Insecurity

Approximately 67% of the respondents from Chivi, Chiredzi and Muzarabani ranked food security and droughts as the major effect of climate change in their communities. The trio areas experience low rainfall which impacts negatively on their agricultural produces, at times culminating in a series of

droughts. Thus, food insecurity has become the order of the day leaving these communities vulnerable depending on donors and well-wishers. A key informant from Chivi stated that, “Chivi is a very dry and hot area, if you attempt to grow maize you will die of hunger, this is not an area of maize but rather sorghum which at times is affected by high temperatures and poor rain”. The submission by a key informant from Chivi shows how climate change has undermined food security and sovereignty in the community. The same applies to Chiredzi and Muzarabani which faces similar climate conditions. According to key informants from Chiredzi and Muzarabani, growing cotton and sorghum is far much better than attempting to grow maize. This is because, the temperatures in these areas are not conducive for maize unless one is using irrigation systems.

Evidence generated from documentary review also shows that climate change has grave effects on national food security. According to the 2020 Humanitarian Needs Overview for Zimbabwe, natural disasters such as droughts have significant consequences on national food security. For instance, 30% of Zimbabwe's agricultural output typically comes from the three provinces that were most severely impacted by Cyclone Idai. It is imperative to note that, Cyclone Idai came soon after the 2018-2019 drought which had grave implications on the electricity and water sectors, causing widespread rationing and tariff adjustments to manage costs. Agricultural support services have been inadequate, there is a financing crunch, and there are severe shortages of basic supplies including seeds, fertilizer, and fuel.

In addition, the continuous recurrence of climate induced droughts and food shortages have left half of the entire population vulnerable. A 2021 Report by the World Bank noted that, approximately 7.9 million Zimbabweans are in extreme poverty. A view which was validated by the 2020 Humanitarian Needs Overview for Zimbabwe which stated that, about “7 million people in 30 urban areas and 62 rural districts across Zimbabwe are estimated to be in urgent need of humanitarian assistance in 2020, compared to 5.5 million people in August 2019”. The 2022 Zimbabwe Vulnerability Assessment Committee (ZimVac) Rural Livelihoods Assessment Report stated that, approximately 3.8 million rural households are food insecure due to poor rainfall and high temperatures induced by climate change. Matebeleland North had the highest food insecurity with 58% households in need of food support. Some of the areas with the most insecure households are Hwange had 73%, Binga 71% and Buhera 75% which are all subjected to erratic and poor rainfall distribution due to the malignant and inimical effects of climate change.

Nevertheless, the statistics of ZimVac are greatly disputable if one is to considered that, it is chaired by the Food and Nutrition Council (FNC), a department in the Office of the President and Cabinet and is part of the Scientific and Industrial Research Centre (SIRDC). Therefore, it will not be surprising to note that, the findings of the ZimVac might be greatly conserved, thereby failing to capture the reality on the ground. The Zimbabwe Coalition on Debt and Development (ZIMCODD) [34] propounded that, citing the Food and Agriculture Organisation (FAO), reported that less than 10% of Zimbabwean children between 6-24 months of age consume a minimally acceptable diet. While approximately, 4.8 million suffers from Severe Acute Malnutrition (SAM) a reflection of food insecurity. Famine Early Warning Systems Network (FEWS NET) [35] stated that, food security in Zimbabwe has become problematic due to climate induced shocks that have altered rainfall patterns, facilitates heatwaves and natural disasters. To this end, it is just to note that, there is a correlation between climate change and food insecurity.

4.5. Climate Induced Migration

According to key informants from Chivi climate induced migration has caused and community dysfunctional. A view that was subscribed to by the approximately 86% of the study respondents. Millock [36] propounded that, climate induced forced migration and displacement are the twin effects of climate change that have undermined human security. According to a key informant from Chivi, “climate induced migration often ignores the concept and principle of just transition in the event that a community is relocated by the government. A principle and concept which advocates for fair compensation of families and individuals who might have been affected by the migration.” The key informant gave reference to the Tokwe Mukosi flood disaster relocation, where families were relocated without compensation. Mucherera [37], substantiate this verdict by stating that about 5 793 families were affected and relocated to Chingwizi. A relocation which has been described by many as abrupt, exposing the government's weak emergence management systems. Another key informant lamented that, “our relatives were forced to go to Chingwizi under the guise that they will be compensated. However, it is now seven years since the relocation yet no compensation has been received.” The

relocation of the 5 793 families fit squarely under the prism of community security which is an integral part in the human security dimension. From a rights perspective, this climate induced migration had far-reaching effects on the culture, identity and practices of the affected community.

Evidenced from documentary review suggested that, climate induced migration can also be facilitated by poor and erratic rainfall patterns which culminates in droughts, hunger and starvation [38]. To overcome this, people are left with no other choice than to look for greener pastures. Chakanda [39] argued that, the movement of people from drought prone areas to Mutare was rife. This movement was also described as the major source of conflict. Chakanda [39] noted that, people from low rainfall areas such as Marange and Chitora which receives an annual rainfall of 400 mm were migrating to Mpudzi and Burma Valley which receives an annual rainfall of 900 mm. However, the migration had also its negative effects as the migrants were allocated on pasture land close to water sources and river banks by traditional leaders. This undermined banana plantations in Mpudzi and Burma Valley as water flow was diverted upstream by migrants.

In Chiredzi, Save, Maparadze and Mutandahwa which are all communities in the lowveld area of Zimbabwe. Climate induced migration has led to brain and manpower drain, as majority of young people left the country to South Africa in search of greener pastures. This is because, the areas are in region 5 which receives low rainfall undermining their food production capacity. A situation that has been exacerbated by other complimenting social and economic challenges which intersects to militate against optimum livelihoods. Some of these factors include but not limited to economic meltdown, unemployment, currency distortion, poverty and infrastructure gaps to mention but a few. The migration of community members from these areas has a negative bearing on national human capital development. It undermines national competitive advantage and robs the nation the potent to effectively rebuild the country. Therefore, it is against this backdrop that, one believes that climate induced migration if left unchecked undermines national growth and development by stalling optimum human capital development.

4.6. Undermining Livelihoods

The most direct victims of climate change are livelihoods depending on natural resources [36]. For instance, by lowering agricultural yields, gradually making traditional grazing areas unsuitable, or drying up of significant water bodies. This may endanger the livelihoods of those who depend on climate-sensitive natural resources, as well as seriously reduce agricultural output and jeopardize food security. Impacts on livelihoods that depend on the climate can also make people turn to unauthorized or illegal sources of income and increase mobility. Also, due to shifting climatic circumstances, agriculture, livestock, farming, and fishing are all directly dependent on natural resources and are likely to become less reliable, diminished, or completely lost. Rising temperatures, altered rainfall patterns, or salinization are especially likely to have a detrimental impact on areas that already experience deterioration of the land and its resources [38]. According to key informants from Rusitu Kopa Valley and Kurwaisimba “natural disasters such as cyclones destroyed banana and avocado plantations which are the nerve-centre of livelihoods, as we sell bananas and avocados across the country and even export to other countries for a living”. Therefore, any alteration or disruption of “our plantation greatly undermines our livelihoods and can even led to unemployment on those individuals whose jobs are facilitated by these plantations”.

4.7. Climate Financing

Zimbabwe has a limited fiscal room, which makes it more difficult for the government to lessen the effects of climate change and boost environmental and economic resilience. Zimbabwe’s weak climate financing is facilitated by a myriad of socio-economic challenges such as debt distress, currency distortion, economic meltdown, corruption, economies of affection, poverty and lack of political will to mention but a few [40]. The Zimbabwean government is in a vicious cycle of debt which undermines its optimum Domestic Resource Mobilisation (DRM) to finance climate change. Paradoxically, in an attempt to mobilise revenue, the government embraced Resource Backed Loans (RBL) which has left the government more impoverished and facilitated unsustainable resource extraction that enhances the detrimental effects of climate change. This can be evidenced by land degradation that is happening at a large scale in Chiadzwa, Mutoko, Penhalonga coupled with desertification and river contamination. The cutting down of trees and purification of gold using chemicals such as sodium cyanide, clorox bleach, muriatic acid, hydrogen peroxide to mention but a few have all undermined efforts to finance climate

change. Ironically, in an attempt to raise revenue for government expenditures including climate financing, the chosen method had proven to be problematic as it is facilitating the inimical and malevolent effects of climate change.

According to ActionAid [41], Zimbabwe is in debt distress and is ranked 23rd on the climate vulnerability and debt distress index. Zimbabwe has climate vulnerability index score of 0.554 and is in debt distress utilising 4.1% of its revenue to repay its debts. A scenario which undermines climate financing. At the same time, this also bring to light another possibility that even if Zimbabwe was to generate more revenue, its debt distress level presents a possibility that the generate revenue will be channelled towards debt servicing rather than climate financing. At the same time, the efforts being made by the government are worth acknowledging although the allocations are too meagre. In the 2022 national budget, ZWL 52.4 billion (US\$ 76.5 million) using the exchange rate of 684.3339. Development partners contributed around US\$850.2 million in 2021 to the progress of projects addressing climate change, with the health sector and humanitarian activities receiving the largest portion of the total [40]. Development partners are contributing more to climate financing than the government. This can be supported by the fact that, Global Climate Fund (GCF) authorized nearly 200 projects in Zimbabwe totalling US\$6,8 billion as part of programs to help poor nations curb or reduce their greenhouse gas emissions and prepare for climate change. The Climate Change Management Department (CCMD) noted that, as of January 27, 2022, the GCF had approved 190 projects totalling US\$6,8 billion, with 68% of those projects already in the implementation stage. However, the GCF has only provided funds to Zimbabwe for two projects so far: Building Climate Resilience of Vulnerable Agricultural Livelihoods in Southern Zimbabwe, valued US\$47,8 million, and Integrated Climate Risk Management for Food Security and Livelihoods in Zimbabwe, worth US\$10 million.

4.8. Effects of Climate Change on Women

Observations and key informant interviews conducted in Muzarabani, Chiredzi and Chivi reveals that, the effects of climate change impacts negatively on men and women. About 89% of the respondents indicated that, women are bearing the bane of climate change more than men.

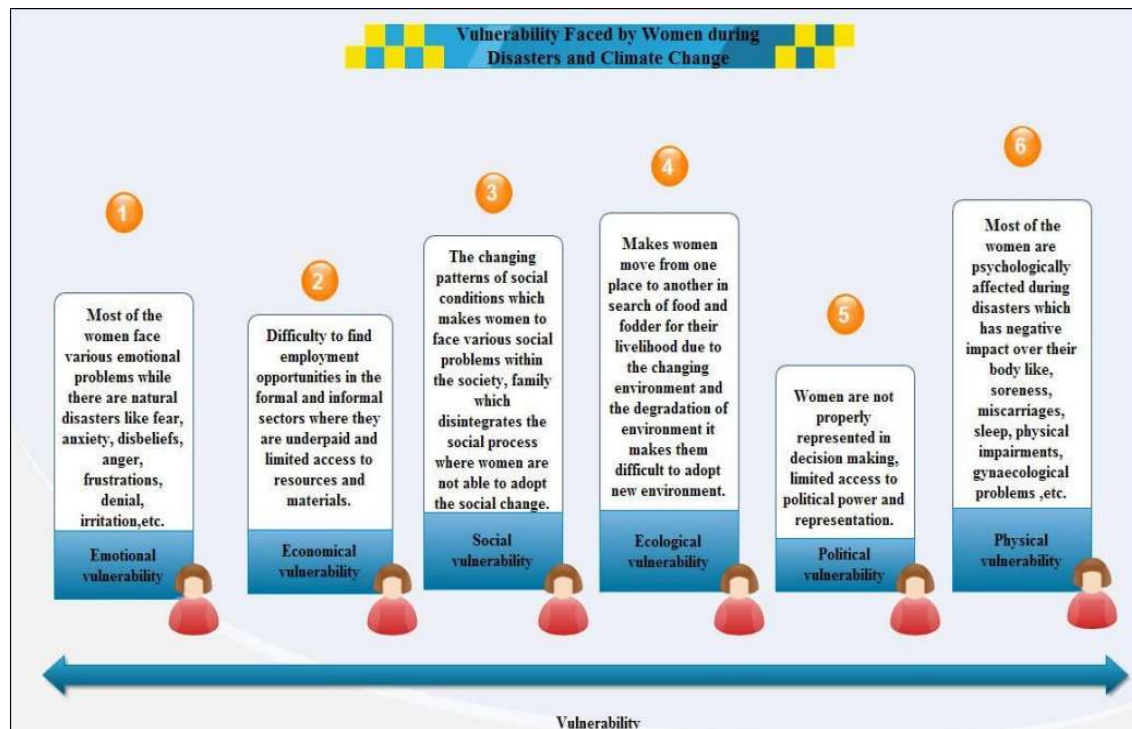


Figure 2. Vulnerability Faced by Women During Disasters and Climate Change

A female key informant from Muzarabani stated that, “due to the cultural and social configuration, women are entrenched into care work which requires them to walk for long distance in search of firewood and to fetch water. Majority of well and boreholes run dry around end of July and mid-August due to high temperatures leaving women with no choice but to walk for long distances to fetch water.” A view which was supported by a key respondent from Chivi who argued that, “women are expected to undertake care work as a result, they are not considered when climate policies are formulated and implemented. A scenario that alienates their views, interests and aspiration in climate change mitigation thereby making the most vulnerable group.” The study revealed that, during the Tokwe Mukosi floods, women were more affected than their male counterparts, this is because men would easily climb trees for safety something that could not be done easily by women. Dimitrov, reinforces the above view by noting that men and women are affected negatively by climate change, but broadly speaking, poor women are more affected than other groups since they have less access to resources for recovery, rehabilitation, and reconstruction. This is more evidence in Zimbabwe’s rural areas, as women lack access to resources and flexibility to adapt to climate change during natural and man-made disasters. Women are particularly exposed to the effects of landslides, earthquakes, and floods. A scenario that, undermines their human security from all its dimensions and facets such as health security, economic security, food security to mention but a few. The extract below shows some of the vulnerability factors that are undermining women security during natural disasters.

5. Conclusion

In conclusion, climate change undermines greatly human security and all its facets in Zimbabwe. However, the ambition of this paper is not to end a discussion on climate change and human security in Zimbabwe but to generate debate for future studies on the same. This is because, climate change has proven to be a wicked problem with respect to human security. Its effects and impact are not only inimical but malignant and requires immediate intervention. The effects of climate change such as droughts, heatwaves, cyclones, forced migration, floods to mention but a few are intricately intertwined and compliments to threaten human security.

Therefore, this study provides a springboard for future studies by adding to the existing stock of knowledge and informing the policy making machinery of existing human security challenges that are being stimulated by climate change. Thus, to redress some of the issues raised by paper it is critical for the government to religiously follow the recommendations prescribed hereunder.

There are few recommendations:

- The government must facilitate community education awareness campaigns on climate change and effects. This is because, majority of the citizens are not aware of the effects of climate change.
- The Ministry of Environment, Climate, Tourism and Hospitality must establish Climate Change and Resilience Officers (CARO) in every village across the country to facilitate knowledge transfer.
- The government must always provide alternative homes for communities and villagers that might have been affected by floods, natural disasters and other climate induced calamities.
- The Ministry of Agriculture must facilitate cheap and affordable smart agriculture technologies that are climate resilient to ensure the attainment of food sovereignty.
- There is need for the construction of more dams across the country, especially in areas that are in region 5 that receive low rainfalls. Thus, water harvest must be prioritised.
- The Department of Civil Protection (DCP) must be capacitated to undertake optimum pre- and post-disaster management to guarantee the human security of the country.
- The Ministry of Finance must develop better alternative ways of mobilising resources rather than using resources as loan guarantees.
- The Ministry of Environment in conjunction with the Ministry of Mines must put punitive measures that deter companies to extract resources in an unsustainable manner facilitate land degradation and environmental contamination.
- There is need to engender climate change resilient project so as to target many women who are excluded in the policy networks and communities.
- The government must consider indigenous knowledge in its climate change policy mitigation.

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