

Climate Change Adaptation and Resilience Capacity Building in Sub-Saharan Africa: A Policy Framework Approach

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Abstract

Climate change related disasters are increasing in severity and frequency across Sub-Saharan Africa worsening an already desperate socio economic and political climate. El Nino induced droughts, floods, cyclones and related disasters have increased community vulnerabilities especially on the rural poor that make up the majority of the population of Sub-Saharan Africa. This paper argues that climate change has become an inherent and permanent aspect of contemporary development discourse and trajectories. Therefore, the study discovered that resilience capacity building rests only on a robust policy framework tailor made to respond to climate change induced vagaries for a particular region as opposed to a one size fits all approach borrowed mainly from western based multinational institutions. Research results show that policy decay has led to repeated and worsening vulnerabilities. Adaptation and resilience to such dangers, hence requires a deliberate, meticulous and well-balanced response strategy enshrined in an equally well thought and inclusive policy framework. It is argued therefore that policy decadence is the major cause of the worsening vulnerabilities and policy paradigm shift is the major catalyst to a climate change resilient community. The research relied mainly on qualitative research methods and the collected data was analysed using the exploratory analytical method. The finding of this research is that policy decadence has led to ever increasing vulnerability across Sub-Saharan Africa in general and Zimbabwe in particular.

Key words: Vulnerabilities, resilience, climate change, policy framework, adaptation, El Nino, livelihoods, Sub-Saharan Africa, qualitative research, exploratory

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1.0 Introduction

The third world in general and sub-Saharan Africa in particular has been facing a number of climate change hazards that have threatened socio-economic and political development. World over, climate change is no longer a debatable issue but a certainty and its effects are also no longer up for debate. The academia and climate related institutions generally agree that the developing world is the least emitter of greenhouse gases but is the worst hit by the effects of climate change compared to their more industrially advanced counterparts who, ironically, are responsible for most of the emissions. The region is prone to a number of socio-economic, political and environmental vulnerabilities that include a number of failed and fragile states. Instability across most of the third world has made the states weak and unable to adapt to or mitigate the effects of climate change. As alluded to by Clar et al (2013) and Abegunde et al (2019), political instability affects agricultural activities causing hunger and starvation as wars cause internal displacement and forced migration. Climate change has also led to economic challenges especially in countries reliant on hydro energy. The depletion in water levels has led to reduced electricity output leading to debilitating power outages that have affected small scale and large-scale industrial activities and enterprises as well as agricultural production ultimately leading to reduced income and worsening vulnerability. This challenge is exacerbated by numerous government changes and policy shifts such that there is lack of consistency in terms of climate change policy or indeed any development policy.

In some cases, knowledge gaps exist as the population of developing nations lack adequate awareness to the challenge of climate change. Any policy framework therefore should also aim to address this anomaly as argued by Aldunce et al (2010). Building capacity for adaptation, resilience and mitigation to climate change therefore requires a robust shift in policy where the policies are supposed to be inward looking taking into cognizance social, political, economic and environmental factors prevalent in the particular community. This notion is supported by studies such as those by Ambani and Percy (2014) that show the extent to which characteristics such as cultural heterogeneity, language and communication problems are barriers to policies of climate change adaptation. Poorly structured and poorly implemented policies usually do not have a positive impact on climate change capacity building or adaptation. This is enunciated in researches by Musolesi and Mazzanti (2014) who provide empirical

evidence supporting the idea that policies are critical in reducing carbon emissions but when they analysed the Kyoto protocol, they found no evidence showing that the protocol had led to a reduction in global carbon dioxide emissions a position supported by the findings by Boakye (2017) in his study of the same protocol. These scholars argue that the Kyoto protocol had several structural weaknesses that contributed to its failure.

The major questions which need answers in as far as climate change vulnerability in Sub-Saharan Africa is concerned are basically few but very pertinent. Firstly, what is the extent of Africa's vulnerability to climate change. Secondly, why do we have persistent and even worsening climate change vulnerability in most parts of Sub-Saharan Africa? What are the policy challenges existing in Sub-Saharan Africa that somehow contributes to the current vulnerability malaise?

Furthermore, what is the main answer to continued vulnerability, resilience and mitigation challenges of the populations of Sub-Saharan Africa? These are the key questions this research sought to find answers to.

Sub-Saharan Africa's climate change policy framework therefore should be premised on existing realities. Institutions should be strengthened and governance should be improved to allow effective policy formulation and implementation. Acemoglu (2010) lauds institutional strengths in adaptations to climate change and argues that without strong institutions climate change adaptation will never succeed. The region can take a leaf from South Korea's adaptation strategy which is hailed by environmentalists as a beacon of policy success from the setting up of green growth committees, green growth laws, smart adaptation policies, regulatory frameworks and decision-making processes. Collier et al (2008).

Sub-Saharan Africa should therefore implement technologically driven capacity building policies that hinge on food security, good governance, community inclusivity and political stability among a host of interconnected factors and aspects critical to effective climate change adaptation, resilience and mitigation. The study exposes policy deficit within Sub-Saharan Africa manifesting through increasing vulnerability to climate change related disasters. This information is well documented with the World Food Program (2022) Global Outlook report putting Africa's food insecurity at 150% increase since 2019. About 149 million Africans were food insecure with 122 million

living in countries facing conflicts. The same report suggests that about one in four people in 2022 faced severe food insecurity with Central Africa having 78.4% of the population facing food insecurity with Southern Africa at 25.9% being food insecure. Country statistics show high food insecurity prevalence in DRC with 24.4 million being food insecure, South Sudan 7.8 million people, Sudan 20.3 million and Ethiopia 20.1 million people. Burundi, Burkina Faso, Mauritania, Somalia, Niger and Eritrea are some of the most food insecure nations in the region owing in part to chronic armed conflicts that have displaced millions and disrupted agricultural activities.

Zimbabwe has had an increase in climate change vulnerability over the years epitomized mainly by food insecurity manifesting in the form of hunger and starvation especially at the turn of the millennium. The El Niño induced droughts, dry spells, cyclones and other related disasters have led to increased vulnerabilities across the country. In some instances, wide spread starvation was only averted by concerted efforts of multilateral aid agencies as was the case in the 2007 drought. It should be noted that in the first ten years of independence where governance and policies were relatively sound, vulnerability to climate shocks was low as compared to the new millennium era where national development policies were pivoted around political grandstanding more than national development. The new political dynamics around the year 2000 where the Movement for Democratic Change threatened to overthrow the ruling ZANU PF party saw the government abandoning good governance policies in favour of populist policies like the Land Reform Program which became a monumental disaster. In the meanwhile, there was no sound climate change policy to respond to the climate crisis and its related social, economic, environmental and political effects. The Zimbabwe National Climate Response Strategy and the National Climate Policy promulgated in the year 2014 were a direct result of an international requirement by the UNDPCC and though the wording of the document appeared lofty, it exposed a huge disconnect between the realities on the ground and the contents of the document. The creation of the National Adaptation Plan of October 2024 follows a very familiar and worrying path that Zimbabwe has followed over the years. This is mainly the creation of policy after policy, realise deficiencies in that policy leading to the formation of another one and the pattern goes on and on. The document appeared like a long wish list crafted in paradise. The proposed recommendations have or no way of being implemented under the current socio economic and political environment

prevailing. Worse still, only a small percentage of the population actually know the policy exists.

Zimbabwe in particular has had its share of policy challenges leading to increased vulnerability such that one year the country can declare a bumper harvest and good rains, the next, it is declaring a state of emergency. These fluctuations in vulnerability indicate failure of proactive planning and utilization of available resources to build resilience and provide effective mitigation measures against the vagaries of climate change that continue to affect the population with reckless abandon.

2.0 Literature Review

Climate change has been topical in contemporary development discourse with a number of nations placing it at the centre of development blueprints. There is a general and silent consensus among scholars that climate change is a key development issue. This has resulted in a number of initiatives to either curb climate change or effectively deal with its disastrous effects. Climate change induced hazards however, continue to wreak havoc across the developing world especially Sub-Saharan Africa. This therefore entails that the existing mitigation and adaptation policies, in limited cases where they exist, are failing to stem the tide of destruction and underdevelopment epitomized by growing abject poverty and increased vulnerability caused by climate change induced hazards. Scholars like Brunschwenger and Ingold (2023) and Bandielli (1976) as far back as 1976 attributed this phenomenon largely due to policy deficiencies in formulation, implementation or evaluation.

What this effectively means is that the vagaries of climate change continue to worsen because both mitigation and adaptation policies do not exist or are not being implemented effectively. There has been little literature on this aspect and there hasn't been much information on the effectiveness of climate change mitigation and adaptation policies in Sub-Saharan Africa and the recommendations thereof. Most scholarly work dwelt on the presence or rather absence of climate change adaptation and mitigation policies. This article calls for a thorough, scrutiny of the whole policy formulation and implementation process by African nations since this appears to be the major reason why climate change induced hazards continue to plague Sub-Saharan Africa. Masud and Khan (2023) are among the most recent scholars to explore policy implementation challenges to climate change adaptation and resilience

in the developing world. The two scholars focusing on Pakistan, concluded that the top-down approach to policy implementation has created policy misinterpretation and wrong policy goals. This has contributed to Pakistan's continued vulnerability that has placed it among the world's top '8' most climate change vulnerable nations. In recent years Sub-Saharan Africa has been focusing on trying to reduce carbon emissions as advocated for by the first world and multinational development institutions which provided funding for carbon reduction policies more than the more urgent adaptation policies. A number of scholars have criticized these policies crafted in the West in a totally different social, economic, environmental and political environment to be implemented in Africa without question in a copy and paste manner.

This research hence advocates for a more measured adoption of such policies adjusting them to suit the local environment since research conducted across the world show evidence of institutional failure which slows down policy planning and implementation. It has been proven too that financial constraints and political will are key factors negatively affecting climate change policies. In a study of San Francisco, Ekstrom and Moser (2016) discovered that lack of finance and political will were common impediments to adaptation. They discovered that the principality had sound policies that did not have any financial backing of the treasury hence several disasters had severe effects on the local people unlike in other cities close to it. This financial constraint challenge is paramount in Sub-Saharan Africa where a huge debt hangs like an albatross more likely militating against policy success though little research has been made to this effect. According to the IMF (2024) report, Africa owed Western multilateral financial institutions about 1.152 trillion dollars by end of 2024 or an equivalent of 24.5% of their GDP with some countries spending more on debt repayment more than critical services like health and surely climate change adaptation would be more of a luxury under such phenomena. Furthermore, studies in Kenya, Uganda, Ethiopia and Ghana by Ampaire et al (2022) expose lack of financial resources to implement a climate change adaptation plan which in any case, rarely appeared in the national development agendas. It has been noted further by a number of academics that funds towards climate change adaptation and capacity building even through the United Nations Framework Convention on climate change finance is grossly unable to meet the between USD 50 Billion to 500 Billion by 2050 needed to fight climate change.

As argued by Machingura et al (2018), Sub-Saharan African countries also do lack the political will to create solid policies and implement them successfully with a number of African nations ranked among failed states with the likes of Libya and Somalia coming to mind and an equally worrying number, being ranked among the highly corrupt. A good number that includes Mali, Burundi, DRC, Burkina Faso, Niger among others is entangled in perpetual conflicts and instabilities such that policy formulation and implementation becomes a huge challenge. OECD (2009). It has been noted too that climate change mitigation initiatives have become cash cows for corrupt bureaucrats with some climate adaptation funds from international donors and institutions disappearing into private pockets. Other scholars like Guja and Bedeke (2024) lamented fragmentation of climate change policy knowledge among the people as a key challenge to policy success a view shared by Jones et al (2015) who advocated for a bottom-up approach to policy formulation.

There exists a tendency by governments in Sub-Saharan Africa to view climate change as an environmental problem. Evidence suggests the contrary. Climate change has become a national development problem and relegating it to the periphery of development has led to increased poverty levels across the developing world especially Sub-Saharan Africa. Zimbabwe's climate change policy for example is the prerogative of the ministry of environment and tourism rendering it peripheral to development as well as being structurally deficient on account of its rather narrow outlook. This is especially so given the reliance of the country on Kariba dam hydroelectricity. There has been reduced electricity output with the Zambezi River Authority citing reduced water levels as the source of reduced electricity. This has multiple ripple effects including energy challenges which hits at the core of manufacturing and related productive and service sectors leading to declining GDP, reduced household income and worsening exposure to climate change vagaries.

Though blessed with abundant resources and generally good climate, Sub Saharan Africa remains caught and trapped in a quagmire of abject poverty and extreme underdevelopment that makes effective response to climate induced hazards very difficult. Large sums of unbudgeted financial resources continue to be poured towards unexpected climate change disasters creating a development vacuum that appears like it is never going to be filled. Adaptation and mitigation policies ought to start with acknowledgement and prior planning for these unforeseen natural hazards. Disasters

like cyclones and EL-Nino induced droughts continue to plunge the continent into ever present hunger crises. The already fragile conflict-ridden states have borne the brunt of these disasters with thousands of children being malnourished and starving to death. The frequency of these disasters recorded in literature and their effects shows a huge policy gap that can only be filled through a holistic approach that brings climate change adaptation and capacity building to the nucleus of development trajectories. These policies should be inclusive and cut across all sectors, should be well funded and religiously implemented and evaluated.

Nate (2023) highlighted that current global carbon emissions rates continue to skyrocket with the world expected to breach the critical 1.5% threshold by 2030 yet climate change adaptation funding meant for the least developed nations continues to decrease just as the devastating effects are increasing at an alarming rate. This challenge is also captured in The United Nations Environment Program (UNEP) (2023) report which lamented the injustices of the climate crisis where the wealthy countries, the main culprits in this climate crisis, have largely failed to assist developing nations to adapt to and mitigate the negative impacts of climate change. This therefore calls for a new policy paradigm shift in developing countries to craft homemade, inward looking, realistic adaptation and resilience capacity building policies that speak to the generality of the population falling victim to climate change.

The COP29 summit, like its predecessors, hastily pledged an increase in climate finance to \$300 billion by 2035 with the ultimate goal being \$1.3 trillion annual target. This target though most likely to fail on account of previous policy failure, falls far too short of the needed funding and there is no end in sight for fossil fuels use. There has been noise about transition to green energy but apart from a few experiments with solar energy and wind energy in some European nations like Denmark and Norway, the rest of the continent still lags far too behind in the clean energy transition. In fact, industrialised countries continue to rely on fossil energy such that any slight disruption as happened in the Russo-Ukrainian conflict rattled western economies pushing costs of living upwards. It appears therefore that even the COP30 summit to be held in Brazil from 10-21 November 2025 will see the usual glamour and rhetoric even as hunger and starvation continues to increase at an alarming rate across Sub-Saharan Africa. According to World Vision (2024) report 20% of the entire population is malnourished and a further 57 million facing hunger. An estimated figure of 868 million people are

said to have experienced moderate food insecurity in Africa in 2002 with one third of those facing severe food insecurity yet the future of climate finance looks even bleaker with the new US administration led by Trump withdrawing from the Paris agreement.

According to IPCC, (2018) and Roberts (2013) economically less developed countries have a higher risk of negative impacts by climate change than the more industrialised nations. These sentiments were echoed by Scheaneder and Waggerman (2012) who noted the effects of glaciers in the Himalayas causing flooding in Nepal, Bangladesh, Pakistan and parts of India. Khan et al (2010) observed the severe impact of the 2010 flood in Pakistan which affected about 20 million people. Aligisher et al (2022) weighed in arguing that anthropogenic climate change will cause about 1 billion people to face water shortage and drought by 2050.

In spite of all these widely recorded literatures of these disasters in developing countries, Singh et al (2017) and Spires et al (2014) discovered the absence of much literature on adaptation to climate risks in the underdeveloped world.

The research paper therefore argues that if climate change is to be combated effectively, there is need for improved policy decisions by governments as observed by Dupuis and Knoepfel (2013) who posit that effective climate change policies crafted for adaptation are the best way forward to institutionalize mechanisms that can help build resilience in different communities. This surely should be the best foot forward for Sub-Saharan Africa.

A careful analysis of Zimbabwe in particular exposes shocking structural policy deficiencies that led to increased vulnerability and reduced mitigation capacity against climate volatility. There is empirical evidence showing that Zimbabwe has been particularly prone to climate change induced disasters since independence with about three droughts recorded in the years 2015/16, 2019 and 2023/24. Each drought created its unique vulnerability of the Zimbabwean population as has been specifically explained by Matunhu (2012) and Chigora (2013). Both scholars discovered policy inconsistencies as a key factor in increasing climate change vulnerability. Sillah (2014) added gender and children dimension to vulnerability exposing how climate change has a paramount effect on women and the children. Of note, Mantoshi (2010) and Chitambara (2010) dwell on the Land Reform Policy as the beginning of vulnerability. Mandaza (2006), Makumbe (2002) and Moyo (2013) cite policy challenges as

precursor to poverty and economic meltdown of Zimbabwe. Zimbabwe has had a number of economic blue prints that have failed to trigger economic development since 1980 none of which put climate change at the centre of development. That was a fatal error that left Zimbabweans extremely vulnerable to cyclones like Eline and Idai that left a trail of destruction and worsening poverty. The country relies mainly on rain fed agriculture which in itself is susceptible to climate variability such that any slightly below normal rainfall spells drought and starvation.

As a response to international pressure, the Zimbabwean government adopted the National Climate Policy. This document was crafted by and limited to, the Ministry of Environment and tourism making it narrow in outlook. As argued in this study, a climate adaptation policy is expected to be holistic in outlook and takes into consideration various line ministries and institutions. The ministry of Energy, Agriculture, Local Government Finance among others are all very critical to the effectiveness of a climate response policy and their inputs are vital to climate mitigation and adaptation policy success but were largely ignored in the policy formulation stage.

The study exposes a policy vacuum that has led to incessant and often disastrous vulnerabilities. There are a number of policies none of which are effective enough to improve climate change adaptation and mitigation as well as resilience capacity building. The study advocates a paradigm shift that leads to the crafting of a holistic, all round, multi-faceted policy framework approach to foster effective climate change adaptation and resilience capacity building. Technology needs improvement, finance is needed, laws need to be changed, and energy needs to be transformed among other interconnected factors to be considered if the policies are to be effective.

3.0 Methodology

This study was mainly premised on the qualitative research paradigm though quantitative research was used to a limited extent. Qualitative research was carefully chosen in this study as it allows for an in-depth analysis of causal relationships between variables. With regard to policy effectiveness analysis in climate change policy formulation and implementation, quantitative methods are grossly unable to capture relevant information including a change in lifestyle, opinions of the community as well as general happiness and wellbeing in times of disaster. These are generally regarded as key policy outputs.

The sampling design used in this research was a non-probability sampling method. This sample was carefully selected through recommendations (snowballing) as well as specific characteristics critical to the research. In this case, the researcher specifically targeted key sources like renowned scholars, well known organizations and multinational institutions like WFP, FAO, IPCC among others. The researcher also targeted Zimbabwe's local institutions like the Meteorological department, Civil Protection Unit, Statistical office, key ministries like Ministry of Environment & Tourism, Ministry of Agriculture and Ministry of Finance among others. However, when interviewing key respondents in both urban and rural areas, the sample was chosen randomly as the researcher attempted to ascertain the level of vulnerability which included poverty levels, number of meals per day, access to education and other services, income levels as well as assets which could be used in times of crises among other measurements of vulnerability.

The researcher carried out about fifty random interviews in Harare and fifty unstructured interviews in Seke District with respondents of varying age groups. ten were elderly women, ten elderly men, ten youths, ten traditional leaders and ten girls.

These groups were carefully chosen because they represented the most vulnerable groups in the district. The data was then analysed using exploratory data analysis strategy. The researcher was able to notice key survival patterns and income generating activities which respondents conducted for survival. The research also looked for exposure to weather volatility crises among the respondents.

Since climate change effects are multidimensional and often cut across various social strata and situations, qualitative research helps to bring in a number of factors likely to contribute to the phenomena under study. Unlike quantitative methods that rely on extensive data, make assumptions that often produce generalised findings that do not reflect the diversity of outcomes and effects on different social groups, qualitative methods like focus group discussions offer a broader conceptualization of situations. Individuals usually have different opinions concerning the effectiveness of a policy. Mahoney (2010). With regard to climate change, it is essential to harness the different opinions of individuals with regards to a specific policy. It has been argued by a number of scholars like Acemoglu (2012) that for a policy intervention to be successful, it has to be accepted by the intended target population. There is evidence of a number of policies that have failed because the much needed buy-in from the general population

was absent. Bryman (2012) argued that qualitative methods enable a detailed analysis of different situations providing a deeper understanding of underlining systematic factors, how they interact and contribute to various levels of success in climate adaptation.

The study therefore made use of unstructured interviews, case studies, analysis of journals, climate change reports, country development reports among a number of qualitative methods. The paper is premised on the Moser and Ekstrom (2010) policy analysis principles. The argument is that there is need to examine problems that arise from planning to implementation stage of a policy. The study has simplified the whole framework and narrowed it down to general analysis of policy failure highlighting its importance in exposing areas which can be affected by a number of factors. The conceptual framework of the study also borrows from Gordon et al (1977) policy analysis research that emphasizes the need for policy evaluation in order to improve policy formulation where feedback is key to improved policy formulation. Using this approach, a number of policies on climate change across Sub-Saharan Africa were analysed leading to the conclusion that there is poor policy formulation. Semi structured interviews were used in this research with a number of interviews including with several officials from various ministries and organisations in Zimbabwe. Information from the Civil Protection Unity, Meteorological Services, Ministry of Environment and tourism, Ministry of local Government among a number of related ministries and institutions was solicited through these interviews. The data was mainly collected through open ended questions which solicited discussions from participants who included general public in the rural areas, chiefs and headmen included.

An extensive analysis of disasters and their effects across Africa as well as trends of poverty and general underdevelopment and possible causal factors was done through the study of reports and country responses to those disasters and effects thereof. The method adopted here was deemed sufficient and effective in leading to the conclusion that adaptation, capacity building and mitigation across Sub-Saharan Africa in general and Zimbabwe in particular fail at policy formulation and implementation stage. Therefore, most climate change induced disasters have severe effects because of policy failure.

4.0 Results

The findings of this research proved that the increase in climate change vulnerability is a direct result of policy deficiency and failure on the part of the governments. All literature sifted through showed the existence of a number of policies that sought to trigger economic growth but largely ignored climate change issues. As a result, when disasters struck the countries where ill-prepared to respond to the crises. Research showed too that large sums of money were being diverted from development issues to disaster mitigation with alarming frequency thereby contributing to a decline in economic performance which in turn lowered disaster preparedness. The net result was that any slight variability in weather led to crop failure, hunger and starvation. Even the climate change policy and the Climate Action Plan promulgated by governments were documents in isolation as there were no proper synergies between them and other related sectors like the economic sector, legal architecture and political reforms across most of Sub-Saharan Africa. Evidence suggests that climate change continues to increase and worsen weather unpredictability meaning therefore that all economic blue prints should live with this stark reality and put climate change resilience capacity building at the epicentre of every development trajectory.

The results of the research showed also that all the economic development policies being implemented by the governments of Sub-Saharan Africa have largely been affected by climate change leading to general community underdevelopment as budget are affected by costs of drought relief and post disaster rebuilding. Evidence gathered during the research also shows that climate change has political, economic, social and environmental effects that are interconnected like a web with each being affected by and also affecting the other.

It was discovered through a number of literatures that all those governments that have internalized climate change mitigation and adaptation in their development trajectories have successfully managed to build resilience and mitigation against climate change. Result shows that the recovery period in the event of a climate change related disaster has been very short in such countries. Key examples have been drawn from China, the European Union, Egypt and Mauritius among a number of nations that have successfully integrated climate change into their development plans and reduced vulnerability by significant percentages.

Countries that have carried out policy transformations pivoted around climate change resilience capacity building showed higher degrees of sustainability as indicated above. The communities from the mentioned case studies showed greater pace of development even during periods of severe droughts or cyclones. This resilience was mainly founded upon food security. The mentioned states have faced numerous droughts but have never declared state of emergencies or declared hunger or starvation. An analysis of their economic development policies showed seamless integration of economic, environmental, political and social policies hinging upon one another.

Closer home, Zimbabwe's perennial food insecurity and worsening poverty was also seen as a direct result of policy failure at formulation and implementation stages. The country is endowed with a multiplicity of water bodies and good soils yet the country goes around with a begging bowl with astonishing frequency. It was discovered during research that before the chaotic land reform exercise, a small percentage of the population was food insecure. Several droughts that occurred before the year 2000, though requiring some external assistances were not as disastrous as the post 2000 droughts that almost brought the country to the brink of total collapse. Even the national growth rate averaged upwards of 5% GDP in the first 20 years of independence only to shrink to negative figures after the land reform policy.

Research carried out showed worrying climate change vulnerability levels. 80% of the respondents interviewed in Harare and Seke rural area, lived well below the poverty datum line and also survived through menial jobs like brick moulding, selling mice and gardening. It was discovered, too, that 75% of the respondents mainly relied on rain fed agriculture for survival and had very few livestock which included cattle, goats and chickens. Some of the respondents claimed to have sold some of their livestock in the 2023-2024 El Nino induced drought and they did claim that some of the livestock had also perished due to the drought. Almost all of the respondents expressed knowledge of a number of donors present in their community. These donors dished out a few food handouts. About 20% of the respondents also claimed to receive presidential inputs every year though these, they claimed, were not adequate to cover the needed inputs. 80% of the respondents claimed to have failed to access the presidential inputs though they flatly refused to give reasons for the situation. The researcher later discovered that the area was politically charged with both poverty alleviation handouts and

presidential inputs being distributed along partisan lines hence the respondents feared political persecution.

When asked about existence of any government programs in the area, many expressed ignorance of same. It was a few donors like WFP that funded a few nutritional gardens near Dema Growth Point, close to Muda dam along Hunyani river. The researcher did notice too that the district was now home to hundreds of new settlers and mostly new home seekers who had acquired land from some of the respondents. It appears a new source of income in the district is illegal sale of ancestral land to home seekers. This has ultimately led to reduced pasture and farmland, compounding the vulnerability of the population. The research also showed that apart from Agritex workers, Census and Voter registration officials, no other government officials visit the area. This therefore explains why some of the government policies are out of touch with reality on the ground. No successful mitigation and resilience building policy can be formulated and implemented without prior assessment of the prevailing situation.

Through thorough analysis of the multiple journals and reports by multilateral institutions, renowned scholars and donor agencies show a worrying trend of worsening poverty and vulnerability to weather shocks across Sub-Saharan Africa in general and Zimbabwe in particular.

The challenges created by weather variability was worsened by a litany of economic policy missteps since 1980 including ESAP, the ill-fated Economic Structural Adjustment Program, the Zimbabwe government's involvement in the DRC war, War veterans gratuities of \$50-000 each, a number of high profile corruption scandals like the Willow gate, NOCZIM and GMB scandals towards the turn of the millennium sparking a dramatic rise in the cost of living and increased vulnerability to weather and climate shocks. Droughts created more starvation than before with the WFP (2003) country report showing a 43% increase in vulnerability and poverty from 2000 to 2003 and successive reports have shown the same worrying upward trend.

However, this research discovered that there was little investment in Agricultural technology accompanied by a shambolic land ownership and a legal framework that disincentivised agriculture through a number of controversial legislatures including but not limited to price controls of maize. Further to that, former commercial farmers

controversially lost farming land to a new breed of indigenous farmers including unproductive peasants. As a result, agricultural output plummeted by 70% on average yearly and recovery remained very elusive in spite of several policy interventions in the sector such that as climate change vagaries hit in 2002 and 2007 in the form of droughts, 90% of the population was left vulnerable and faced starvation to levels never known in Zimbabwean history. A catastrophe was only averted by Multinational Aid Agencies that rushed with food aid. Bizarrely, the Mugabe regime insisted that it was food secure.

These disasters showed that climate change vulnerability is a direct result of policy failure at a national level. The failure by the government to transform land into a security and bankable asset led to a decline in agricultural productivity and an increase in food insecurity especially when faced with climate change induced droughts.

5.0 Discussion

The research discovered that across the globe all countries that have implemented solid adaptation and resilience capacity building policies have largely averted climate change induced catastrophes and have significantly reduced vulnerabilities. Research by Ahmed et al (2009) shows that over the last half century western Europe and the USA have witnessed increased budgetary investments in climate change resilience mitigation, significantly reducing the vulnerability of the population by an annual average of 20%. Morton (2012) also noted huge investments made in agriculture and technology in western Europe, with the European Union's Common Agriculture Policy (CAP) being the most celebrated of the bloc's food security initiative, with an investment of about \$230 billion from 1997 to 2012. FAO 2024 report put the CAP agriculture investment at a whopping \$420 billion by 2025. EU farmers have been subsidized making the produce much cheaper than imports leading to food security.

However, as the west's vulnerability is decreasing steadily over the years, Schlenker and Lobell (2010) expose a very rapid increase of climate change induced vulnerability across the third world especially Sub-Saharan Africa especially on agriculture.

A number of countries in Sub-Saharan Africa are facing vulnerabilities of different proportions. Countries such as Niger, Mauritania, DRC, Burundi, Burkina Faso, Eritrea, Somalia, Ivory Coast among others have perennially been named by a number of multilateral institutions among the most vulnerable and fragile states in the world.

Kalinowski (2020). A quick look at these countries shows political insecurity leading to policy decay. The net result is increased vulnerability to climate change induced hazards. This therefore proves that without a solid policy base, populations are bound to face increased vulnerability as alluded to by Eborle et al (2020).

The research paper focused on assessing the major reasons behind the increase in vulnerabilities of Sub-Saharan African countries to climate change induced hazards as well as a lack of resilience and adaptation capacity building. This is especially so given that a number of mitigation, adaptation and resilience building policies have been implemented over the years with no meaningful impact. Presence of a number of policies and an increase in vulnerabilities indicates parallels between the two. Evidently, it is the policies which are either out_of sync with reality on the ground or simply not being implemented properly. This paper discovered the existence of data suggesting that in some cases, policies are so shambolic that they are actually deemed non-existent and, in some scenarios, they are poorly implemented. After a careful analysis of the patterns of vulnerability increase and existing policy frameworks, it was concluded that for sustainable climate change resilience capacity building the whole policy framework needs to be dismantled and be replaced by more pragmatic, holistic and tailor-made policy framework that takes into cognisance socio-economic, political and environmental factors prevalent in a particular community.

The paper discovered that the major negative outcome of climate change which is food insecurity is a direct result of policy failure as governments fail to provide holistic policies that respond to the effects of climate change especially climate variability that has adversely impacted on agriculture, the mainstay of the undiversified economies of the third world. It was noted that the agricultural sector employs about 60% of the third world work force and is connected to all other sectors. For example, drought leads to reduced demand for agricultural inputs and machinery meaning that those industries do suffer leading to reduced production as well as ensuing job cuts thereby worsening vulnerabilities. It was established too that overreliance on hydro energy like the Kariba dam hydro energy plant has led to severe economic challenges epitomized by electricity challenges. The resultant power cuts affect severely, Small to Medium Scale enterprises and the informal economy which make up the majority of the population's means of survival. It means therefore that energy challenges resulting from climate change reduces national growth as well as compromising livelihoods. Mugano (2022)

has noted that Zimbabwe's economy is very informal and this makes it highly susceptible to climate shocks.

The study further unearthed abundant evidence of monumental policy blunders that have led to national catastrophes in history. The great leap famine that occurred between 1959 and 1961 that killed about 15 million people in China was, according to Hoddinot (2006), a direct result of Mao's failed policies that disrupted food production as agriculture was now centrally planned and controlled by central government. People were driven into communes or cooperatives whose production was appropriated by the state and distributed at its discretion. Hence other scholars argue that food was available but was not well distributed yet others argue that food output was reduced. Following Hoddinot's analysis, policy failure led to mass starvation.

The second such disaster caused by human policy failure was the Bengal famine of India that occurred in 1770 where about 3.8 million people are deemed to have died due to policies put across by the British East India Company including mass purchase of rice for the army. The Indian Gomasthas also created monopolies of grain such that rice prices rose steeply and the ensuing drought worsened matters leading to mass starvation. Dell et al (2012).

These two examples clearly show how policy failure leads to disasters, catastrophes and hence worsening vulnerabilities. Such policy gaffes are repeated across the developing world at an alarming pace. A combination of poor governance systems that lead to poor institutions coupled with chronic wars that have gone on for decades across sub-Saharan Africa have disrupted food supply and increased presence of food insecurity often requiring food aid from multinational organisations like USAID and Oxfam.

A quick look at current national policies would show a very disturbing legal framework and architecture that has led to perennial food shortages across Sub-Saharan Africa. Sachikonye (2012 looking at Zimbabwe, discovered that the country declined from being the bread basket of southern Africa at the turn of the millennium to being a basket case owing to disastrous land reform policies that were carried out with little regard for social and economic implications. The result was that the land reform policy led to an increase in food insecurity from the year 2000 upwards owing to an average food crop reduction of about 80% according to FAO (2008). These results were

collaborated by WFP (2010) country report which put agricultural output decline at an average of 75%. The government attributed these to the droughts of 2002 and 2007 yet evidence suggest that since independence in 1980, Zimbabwe has faced a number of droughts some of them worse than the contemporary ones yet the level of food insecurity was not as severe as currently obtaining thereby suggesting the presence of other factors which included land management policies. It should be pointed out that the government changed the land management and ownership laws by bestowing all the land into the land of the government through the infamous Chidyausiku ruling of 2005. Hungwe (2014).

Title deeds were banished and all land was bestowed into the hands of the president. What it effectively meant was that land was no longer bankable as the 99 year leases that replaced title deeds did not attract investment as banks refused to offer agricultural loans. Various efforts in injecting life into the sector provided futile as the bank tasked with spearheading agricultural turn around, Agribank, suffered from cash challenges. Agro checks and presidential inputs also failed to tame the slide. The net result of this policy was that any slight decrease in rainfall, led to food shortages as the country also failed to invest in new and modern agricultural technologies. Matunhu (2012). As has been noted earlier on, a number of countries like Egypt and Israel which receive less than 20% of the annual rainfall received by Zimbabwe are always food secure showing that it is actually not about rainfall but government's agricultural policy. The government has recently proposed to reintroduce title deeds in an effort to rejuvenate agriculture and whether this will bear fruits remains to be seen. The government, therefore, ought to make agricultural development a policy priority and that is only possible through a number of innovations and policy changes that address both land ownership and utilization challenges. The government is also expected to increase agricultural budget to include new technologies and necessary weather information to improve productivity.

Zimbabwe also has had its share of general policy challenges over the years. In no chronological order, these included the Growth with Equity, ZimAsset, STERP I, STERP II, MERP and NERP. Kinsey (2004) noted that none of these policies put climate change at the center of national developments plans. As a result, the county's development path continued to face hurdles because quite huge chunks of the national budget would go towards hunger alleviation. Tibaijuka (2005) report on effects of

Operation Murambatsvina noted increased urban poverty and vulnerability triggered by policy missteps like murambatsvina. The authorities seemed to have learnt very little from the perennial_droughts as evidenced by the absence of a robust climate change adaptation and mitigation strategy.

This paper proposes that climate change adaptation and capacity building should hinge on food security premised on agricultural transformation which, itself, should not be tackled in isolation. There is an urgent need for revision of land use, land tenure and land management laws. There is need also to be proactive in anticipating droughts, flooding and other related hazards. Adaptation policies should target small communities which are supposed to be included in the development strategies and policies being implemented.

6.0 Recommendations

The study recommends the following measures to enhance climate change adaptation, resilience and mitigation policy making and implementation processes. These recommendations are premised on the fact that climate change adaptation success pivots around meticulous policy planning and implementation.

Firstly, there is need for inclusivity when formulating climate change policies. The input of different stakeholders is critical in making a climate policy successful. The research advocates for integration of information from various stakeholders in order to have a solid adaptation and mitigation policy that is effective and also speaks to the generality of the community. Community engagement is therefore key in this endeavour.

Secondly there is need for governments to place climate change adaptation and mitigation at the centre of any development blueprints. It was discovered in this research that climate change is worsening vulnerabilities because national development plans exclude climate change adaptation, resilience building and mitigation.

Thirdly, the research recommends improvement in governance where institutions dealing with climate related issues are strengthened and capacitated so that there is national stability as these are vital conditions for sustainable development. There is evidence that countries with strong institutions and good governance have higher chances of positively reacting to climate change vagaries. Many countries in sub-

Saharan Africa are politically unstable thereby making resilience, adaptation and mitigation difficult.

Fourthly, the governments of developing nations should prioritise information technology innovation to spearhead green economies and smart energy development initiatives that can drive smart agriculture development to improve food security. Irrigation schemes have to be enhanced to substitute rain fed agriculture that is exposed to climate and weather volatility.

Finally, it is recommended that governments prioritise adaptation and mitigation in their national budgets to cater for crises like the recent El Nino induced drought that severely hit southern Africa prompting governments of Zimbabwe and Zambia to declare state of emergencies. These state of emergencies impact negatively on other development programs and projects as unbudgeted expenditure. It should be noted that these recommendations are not exhaustive and as climate change data continues to filter in, new measures should be analysed for possible implementation.

7.0 Conclusions

The study concluded that sub-Saharan Africa in particular and the developing world at large is increasingly becoming vulnerable to climate change. A number of policies implemented to improve capacity for adaptation and mitigation have largely failed as starvation, malnutrition and susceptibility to other climate change related hazards continues to worsen.

This therefore points to the fact that, to a large extent all policies that were initiated to tackle challenges of climate change have largely failed. The research unearthed a number of impediments to policy success and this include poor policy formulation and non-implementation of formulated policies.

In most sub-Saharan Africa climate change policy formulation is relegated to institutions that deal with weather and climate or environment. This is a grave error that has contributed to policy failure since it has been noted that climate change affects and is also affected by almost all facets of existence be they environmental, social, political or economic. As a result, the research advocates for an inclusive all stakeholders approach to climate change policy formulation and implementation to enhance adaptation and resilience capacity building.

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