



Socially Inclusive Climate Change Resilience and Adaptation Strategy for Zambia

April 2023

Executive Summary

This policy brief accentuates the impact of climate change on the social sector in Zambia. The social sector in Zambia has prominently exhibited its vulnerability to extreme weather patterns induced by changes in the climate. Zambia, like many other countries around the world, predominantly considers climate change an environmental challenge that affects local infrastructures, energy supplies, agriculture, forestry and other economic sectors and almost never as a social challenge.

Although health impacts are probably the main social issues debated with respect to climate change, they are very poorly analysed and lack appropriate policies.

At present, Zambia needs effective management of climate change induced social challenges that require localised strategies and ownership which will emphatically assist vulnerable people, who face disproportionate challenges in terms of extreme events, food insecurity, livelihood security, migration, access to social services and other related risks.

Therefore, It is hoped that in the future this policy brief will serve as a basis for comprehensive and

technically-robust research, policy formulation and implementation that will play a pivotal role in addressing the social sector challenges associated with climate change in Zambia.

Background

Historically Zambia experiences a sub-tropical climate characterised by¹ three distinct seasons: the hot season (mid-August to mid-November), the rainy season (mid-November to April) and the cold season (May to mid-August). In recent years, Zambia has experienced extreme weather patterns in the hot and rainy season, induced by changes in climate. The two seasons come with intense heat and severe rainfall that obstruct the well being and livelihoods of affected citizens. The changes in the climate system are intrinsic to the fundamentals of the social sector and its disruption makes it a challenge to tackle existing inequalities in the provision of social services.

This disruption is strongly foregrounded in how the climatic changes negatively impact the rainfed agricultural systems on which the social wellbeing and livelihoods of a large proportion of the country's population currently depend. As agricultural livelihoods become more undependable, the rate of rural-urban migration then increases, adding to the already significant urbanisation trend. This trend has led to the movement of people into informal settlements that exposes them to extreme poverty and limited access to cardinal social services.

It is therefore important for policy makers to itemise climate change as a social crisis, so that they may convey efforts in formulating and implementing socially inclusive climate change policies and adaptive strategies that conform to principles of distributive climate justice and financing in the social sectors. This will provide more effective development, climate resilient communities and livelihoods for the most vulnerable, who are often socially and disproportionately impacted by measures to address climate change.

Rural - Urban Migration

Lusaka and Kitwe, like many other Sub-Saharan African (SSA) cities, has experienced rapid urbanisation as a rural escape from the agricultural production shocks induced by changes in the climate. The incidence and impacts of rainfall shocks, dry spells, excessive floods, and waterlogging are all detrimental to crop productivity and are expected to directly decrease net agricultural exports, household consumption and indirectly affect input prices and off-farm employment opportunities. These impacts may lead to migration as a means to access new farm land and resources in frontier districts in the absence of in-situ adaptation options.²

With about 22% of the population in Zambia employed in the sector,





agriculture remains an important employer and the largest source of income for low-income households.³ Thus climate change poses a threat to the livelihoods of more vulnerable populations, leading to an increase in the rural - urban migration, which in turn creates pressure on the demand for jobs and impairs the provision of healthcare, education, water supply, proper sanitation and hygiene services while putting a strain on the environment at large. As a result, the number of people living in Lusaka's informal settlements has nearly tripled over the past two decades to about 1.4 million as of 2020, which is nearly 62% of Lusaka's current population and approximately 38.3% of Lusaka's land that is in residential use is informal.⁴

Consequently, the impacts of climate change have been acute for those who live in informal settlements, as they tend to be located in undesirable and environmentally problematic areas where shelter is cheaper or land is available for informal occupancy. As a result, informal settlers often suffer from routine flooding and water-logging, and become receptors of diffuse pollution from the catchment/drainage areas. Therefore, there is an urgent need for urban planning and housing development programs with better estimates of the potential effects of climate change on water accessibility and sanitation, as well as additional information to determine appropriate sanitation facility designs for different target populations.

Water, Sanitation and Hygiene Sector

Water, Sanitation and Hygiene (WASH) are the bedrock for unlocking economic development and maintaining a progressive social sector. Most of the climate change impacts experienced in this sector include: droughts, floods, and less predictable rainfall and water flows from natural water sources. These undermine efforts in establishing water and sanitation services and future gains in access and service quality.

Unfortunately, the climate impacts on this sector have a ripple effect on the health and the education sectors in Zambia. This is of particular concern as it leads to substantial set-backs in Zambia achieving the Sustainable Development Goals (SDGs),⁵ which are the world's shared plan to end extreme poverty, reduce inequality, and protect the planet by 2030.

Water and Sanitation Accessibility

The pressures of climate change have affected the intensity and frequency of precipitation, while the rising temperatures intensify the water cycle, increasing evaporation. The increased evaporation

has in some parts of Zambia contributed to drying over some land areas. As a result, the affected areas are likely to experience increases in precipitation and increased risk of flooding,⁶ while other areas are likely to experience less precipitation and increased risk of drought.⁷

Key to note is the water and sanitation scarcity, exacerbated by these climatic changes which spur migration. The water shortages from an increased demand by a growing population due to internal migration have contributed to inequitable access. This creates a threat to the safety and availability of drinking water and sanitation facilities, particularly in densely populated areas like Garden House, Middle West of Lusaka and many other similar areas in Lusaka,⁸ which still have challenges in accessing water and sanitation services.

While no extensive studies have specifically addressed the climate threats in relation to pit-latrines, which are the most basic form of improved sanitation used in high density areas, informal settlements and poor rural communities. Their development, dissemination and design standards are often not approved by water supply and sanitation companies who have the responsibility of assisting communities with the planning and construction of these sanitation facilities. This is of particular concern as studies carried out in high density areas like George, Kanyama and elsewhere in Lusaka show high levels of contamination of groundwater by pit-latrines.

Noteworthy is that many sprawling informal settlements, as well as poor rural communities in Zambia, are currently situated in zones that are flood prone. The increase and the prevalence of flooding in these areas, limits the ability for safe vertical water separation between pit-latrines and the saturated zone. Thus, it is likely that contaminant transport from pit-latrines to groundwater will increase. Consequently, this compromises the health of the settlers leading to a reduced ability for productive work and ultimately negatively impacting the economic, environmental, and social condition of the country.

Water Insecurity

Despite Zambia having abundant surface water and groundwater resources, communities living in arid parts of the country are likely to experience water shortages during the prolonged dry seasons induced by changes in the climate. Population growth in urban and mining towns has already put pressure on groundwater resources by increased pollution, over-abstraction and climate change. This has added additional pressure by leading to a lowered water table, and drying of boreholes and natural water bodies like rivers.

Other major concerns with regards to water security include the impacts of man's actions, the current status of ecosystem health, and the role of climate change on freshwater resources, which are rarely measured or available in a format most people can understand. The knowledge gap allows decisions about water management to be made without adequate information at the expense of the water basin's health like the Lower Kafue⁹ and most vulnerable communities such as Kankoyo township in the Mufulira District of the Copperbelt Province in Zambia.



Kankoyo is a township in the Mufulira District of Copperbelt Province in Zambia.[1] The informal settlement is located next to the Mufulira copper mine and is heavily polluted by sulphur dioxide emissions from the mine.[2]

Health Sector

Climate change presents an unprecedented global and urgent health threat to sustainable development, human health and survival in Zambia, thus placing human lives at risk. The shifts in weather patterns induced by climate change have immediate and

direct effects on the health and well being of millions of households, especially for rural and poor urban areas in Zambia.

The health impacts of climate change are arguably due to existing socio-economic and health inequities. The unequal distribution of power, income, goods, and services shaped by political, economic and social norms, contribute greatly to the limited access to health care, access to nutritious foods and healthy working and living conditions for the average zambian. It is likely that the inequities in these 'social determinants' of health also create inequities in climate change adaptive capacity.

The rate of water-related illnesses and infectious diseases swells and cannot be stabilised in circumstances of climatic instability, migration and impoverishment. The already high rates of undernutrition and infectious diseases can be expected to increase compared to a scenario without climate change. This is seen in the differing climate change vulnerabilities, which require differing capacities to adapt to changing climatic conditions. In view of this, the health sector deserves careful consideration and policy attention that will have a strong and effective intersectoral organisational effort.

Health Care Provision

It is clear that climate change will affect future health outcomes directly through extreme weather events such as extreme temperatures and flooding in Zambia. The impacts will be seen on the built infrastructure, social and institutional systems of health care provision, and indirectly due to induced changes in the volume and structure of demand for health care.

The changes in climate may put systems of health care under pressure because of the mortality and morbidity increase for water-related illnesses and infectious diseases as well as associated increases in hospitalisations. Floods in turn result in increased accidents and emergency visits. They also contribute to the alarming rise in mental health and psychosocial well-being issues of the affected; who may suffer from emotional distress, anxiety, depression, grief,

food stress, and exposure to disease vectors. The stated all demand for intensive and efficient health care services to address them.

The potential care and service disruptions may also include power outages, delays in emergency responses and reduced access to health care because of the impacts of flooding and extreme weather on transport infrastructure and services, and reduced staffing and capacity for the same reasons in health care provision post a threat to the health sector.

The health sector plays an integral role when it comes to developing policies and actions to adapt to climate change as it intersects many sectors that will be directly affected by climate change. It is hoped that the allocation to the health sector in the coming national budgets can therefore be used strategically as a lever to address the fundamental social causes of health and health inequities. Climate change will bring nothing new per se to Zambia's health status; however the current burden of disease and social inequities will be exacerbated if not addressed.

Education sector

It has become clear that the impacts of climate change can exacerbate existing inequities, especially with children and adolescents in rural communities in Zambia. The environmental hazards induced by climate change such as floods have detrimental effects on the education system and educational continuity. However, the education sector offers an opportunity to combat climate change through contributing to mitigation efforts by implementing awareness programmes, thereby reducing vulnerabilities and building resilient societies.

Climate change interferes with all aspects of life including schooling. For example, In January 2022 the existing inequities were further highlighted during the evacuation of flood victims at Namalyo Fishing Camp, located on the boundary between Namwala and Monze districts in Southern Province by the Disaster Management and Mitigation Unit.¹⁰ In such instances, children and adolescents are not likely to attend the free education introduced by the new dawn administration which is aimed at ensuring that the right to education is guaranteed for the

country's nearly eight million children by removing the monetary obstacles that made it inaccessible to the majority of citizens.¹¹ Worth noting is as long-as climate change continues, the inaccessibility of free education will continue to be a barrier to breaking the inter-linkage between poverty and climate change in Zambia.

Education System

The education system which refers to the economic and social factors such as school facilities and teacher staffing that typically make up public schools at community levels, are negatively impacted by changes in the climate. The climatic hazards such as floods compromise school infrastructure and previously well contained hazardous ablution materials are spread by such disasters. As such, these changes in the climate drive the contamination of school grounds, create physical and chemical hazards, resulting in prolonged school closures with pervasive social and economic impacts for families and communities.

Educational Continuity

The inadequate water supply, sanitation and hygiene facilities in the available schools have also played a critical role in the high dropout rates, especially amongst children and girls.¹² If separate toilets for girls and boys, and privacy for menstrual hygiene management are considered, girls are more likely to remain in school, delay pregnancy and marriage, and have stronger employment opportunities to bridge the gender gap. Climate change has made gender inequality worse and increased their risk and vulnerability to physical and sexual abuse because homes and nearby schools are destroyed by disasters and girls are forced to shelter in unsafe places. Consequently, these climate-induced economic and social hardships have led to many families viewing education as a burden and led to many girls dropping out of school and becoming more vulnerable to child, early and forced marriages.

Without adequate water and sanitation, children cannot attend school, their health is compromised, their livelihoods are threatened, and children are often vulnerable to external threats while collecting

water.

Conclusion

In conclusion climate change is more than an environmental crisis, it is a social crisis and must compel policy makers to urgently address it as it borders on issues of social service provision, which is cardinal in addressing the existing social inequalities in Zambia. In the absence of well-designed and socially inclusive policies, climate change mitigation measures will continue to place a higher financial burden on vulnerable populations.

Communities should be engaged as partners in resilience-building rather than being regarded merely as beneficiaries. It is critical that the initiatives and adaptation strategies are localised. This requires transparency, access to information and citizen engagement on climate, not limited to the mitigation but also adaptation strategies to create coalitions of support to reduce climate impacts and to overcome behavioural and political barriers to social climate justice as well as to generate new ideas and ownership of solutions.

Recommendations

- 1. Although climate change is occurring and will continue, governments have undertaken little policy action to reduce climate-related migration, particularly in rural and poor urban areas of Zambia. Such policies need not be climate-specific, but could serve to enhance families' livelihood options, making them more resilient if their resource-base changes. In this way, development efforts and programs to reduce poverty will lessen livelihood vulnerability, ultimately reducing the need for families to migrate because of climate change.*
- 2. Vulnerability assessment will play an important role in influencing socially inclusive Climate change policies. At present the focus is on the mitigation of climate change rather than adaptation measures that will prepare communities to adapt to the unfolding climate change impacts.*
- 3. There is a need to engage community leaders who*

can help in setting climate change adaptation and mitigation strategies as priorities. This will positively influence ownership, the design and implementation of localised climate change initiatives and programs that will be responsive to their community's needs.

- 4. Communities should take lead in addressing shocks and pressures induced by climate change. This should include: a mindset shift, behavioural change and practice to guarantee sustainable and inclusive ensuring that communities adopt better ways of managing the environment.*
- 5. Issues of WASH are highly vulnerable to the effects of climate change. With rapidly shifting rainfall patterns, many water supply solutions utilising groundwater and sanitation solutions relying on in-ground waste storage may become obsolete in the near or distant future. Policymakers and creators of project proposals can utilise this link between the two (climate change and WASH benefit from climate-change-related funding mechanisms to increase the resources allocated to WASH solutions in both rural and urban areas.*
- 6. The Zambian government needs to recognise WASH as a public health priority. Academia, Civil Society Organisations (CSOs) and Think tanks, must continue to engage in robust-research, lobbying and advocacy to this end.*
- 7. There is a need to increase water and sanitation financing for marginalised communities through a fixed percentage of annual government budgets and from international donors and the private sector.*
- 8. Investment is key in groundwater development. Knowledge, expertise, finance and institutional support is required in securing life-saving, sustainable and safe water and sanitation for communities living on the frontline of the climate crisis.*
- 9. There is a need for research to fill in the vast knowledge gaps pertaining to health issues associated with climate variability and change in Zambia. Only better understanding of the interactions between climate and health that can enable the development of effective strategies, policies, and measures for coping with and adapting to the many consequences of climate variability and change.*
- 10. There is a need for the National Food and Nutrition Commission to continue to implement the Healthy Diets Campaign in schools aimed at promoting good nutrition practices and ensuring that there is education continuity in areas that have been affected or are at high risk of being impacted by climate change in Zambia.*
- 11. University lecturers and climate change researchers should be financially motivated to carry out research in various fields of knowledge related to climate change, so that innovative research can contribute to practical solutions.*
- 12. A decentralised approach will be important in finding solutions to ensure that community demands are heard and that the interventions are reflective of their needs and concerns in the design and implementation of climate change project interventions.*
- 13. The government together with relevant stakeholders must work together to ensure that society adapts to the unfolding impacts of climate change. Climate and social scenarios can be integrated to better understand the inter-relationships between a changing climate and the dynamic evolution of social, economic and political systems. The integrated scenarios will be key in the application of a 'bottom up' approach for local stakeholders in vulnerable sectors of the economy.*

Endnotes

1. *Zambia - Climatology | Climate Change Knowledge Portal*
2. *Putting trapped populations into place: Climate change and inter-district migration flows in Zambia - PMC*
3. *Climate change impacts on Zambia's energy and agriculture sectors: an economy-wide analysis | SA-TIED.*
4. *Informal settlements in Lusaka | Blavatnik School of Government .*
5. *Sustainable Development Goals | unfoundation.org*
6. *Zambia – Floods Affect Thousands in Southern Province – FloodList*
7. *<https://aquaknow.jrc.ec.europa.eu/en/news/crises-looming-zambia%E2%80%99s-drought-affected-areas>*
8. *Storm Ana: Disaster on back of poor drainage – Zambia Daily Mail*
9. *Water Situational Analysis of the Lower Kafue Basin | WWF*
10. *DMMU to evacuate Namwala flood victims – Daily Nation*
11. *Zambia's free education policy raises hope and suspicion | FairPlanet.*
12. *Water, Sanitation and Hygiene | UNICEF Zambia*

