



Green Governance Zimbabwe

POLICY BRIEF

ADDRESSING THE THREAT OF CLIMATE CHANGE ON WATER, ENERGY AND FOOD SECURITY IN ZIMBABWE



EXECUTIVE SUMMARY

There is growing evidence that climate change threatens the availability and accessibility of water, food and energy resources. The purpose of this policy brief is to inform advocacy and raise awareness on climate change threats on these resources. The relationship between climate change, water, energy and food security was explored. Desk studies and stakeholder consultations were conducted to gather in-depth data on the contemporary climate change impacts in Zimbabwe. Findings showed that there is lack of cross-sectorial collaboration and policy coordination among different ministries, use of the Water-Food-Energy (WEF) nexus approach, real-time data for specific areas, policy on climate finance, and adequate financing of climate smart technologies in the water, food and energy sectors in Zimbabwe. Recommendations were then proposed based on findings.

BACKGROUND OF CLIMATE CHANGE ON WATER, ENERGY AND FOOD SECURITY IN ZIMBABWE

According to the Zimbabwe Climate Response Strategy (2014), Zimbabwe is already experiencing adverse effects of climate change across all its socio-economic sectors, making it a top priority and one of the greatest threats identified by the government, with a potential to reduce the development gains made by the nation. As a semi-arid country with low average rainfall reliability of approximately 650mm over the past 30 years, Zimbabwe has been facing reduced rainfall and recurring droughts. These climatic variations significantly impact the country's agricultural system, food security, hydro-energy generation, and overall economy. Zimbabwe heavily relies on 90 % of its water from the surface water and 10% from groundwater, with agriculture being the largest consumer, accounting for around 81% of water usage. However, the frequency and intensity of climate-induced environmental stressors have made the environment increasingly arid, leading to a shift in Zimbabwe's Agro-ecological zones. This shift has particularly affected smallholder farmers (who constitute 80% of farming in Zimbabwe) heavily depend on rain-fed agriculture, contributing to food and nutrition insecurity and undermining livelihoods and development. Moreover, the declining water levels, both in surface and groundwater sources, have also begun to compromise water quality and quantity in Zimbabwe. As water and energy have an intimate relationship, the decreasing water levels in Zimbabwe has severe repercussions for the power generation sector as the country relies on hydropower and thermal power stations. For instance, the Kariba Hydropower station recorded extremely low reservoir levels, falling below 30% of its capacity due to droughts, leading to a significant drop in power generation capacity, generating as little as 358 MW out of the installed capacity of 1005MW, and leaving the nation in darkness. According to Zimbabwe's Climate Change Gender Action Plan (2022), these climate-induced impacts have disproportionately affected vulnerable groups, exacerbating gender inequalities and increased the vulnerability of women, girls, the poor, sick, disabled, and the elderly.

KEY FINDINGS

Findings from the desk studies and stakeholder consultations showed that:

- There is lack of cross-sectorial collaboration and policy coordination among different ministries. Closely linked ministries tend to operate in silo, setting policies and plan for each sector separately. This has resulted in unsustainable policies and development choices. For instance, different ministries and departments oversee water, energy, and agricultural food production: the Zimbabwe National Water Authority, the Ministry of Energy and Manpower Development, and the Ministry of Lands, Agriculture, Water, and Climate, respectively. There is room to deepen cross-sectorial collaboration and policy coordination among these ministries.
- There is lack of use of the Water-Food-Energy (WEF) nexus approach in Zimbabwe. The WEF approach is a valuable tool for harmonising development plans of institutions and managing resources efficiently. It offers a holistic approach for integrated resource management and improves investments planning in the WEF sector. Southern Africa Development Committee (SADC) has recognised the importance of the WEF Nexus in managing resources use and adapting to the challenges posed by climate change and developed a WEF Nexus Action Plan for the region. In that regard Zimbabwe should adopt the approach to improve policy coherence of the sectors.
- Although, the Zimbabwe National Climate Change Response Strategy has recognized the need to mainstream gender, youth, people living with disabilities, and other marginalized groups into all climate interventions, more concerted efforts are required to fully implement and address the specific vulnerabilities of these groups.
- Currently, the functionality of many meteorological stations across Zimbabwe is compromised, leading to a lack of real-time data for specific areas, posing challenges in obtaining timely and accurate climate information. Early warning systems also need to shift from the Traditional Early Warning Systems which did not include climate adaptation. For instance, Southern Africa has been doing quite well in Early Warning System, however, Cyclone Fred which hit Mozambique and Malawi and further went inland into Zimbabwe, although well forecasted the cyclone destroyed people and infrastructure because of the lack of the adaptive capacity to respond, therefore climate adaptation should be integrated into Early Warning System.
- There are a lot of adaptation projects which have been implemented regionally and locally where important lessons have been developed. Those important lessons need to be replicated, adapted and institutionalised. For instance, the Enhancing Community Resilience and Sustainability (ECRAS) project carried out in 2016, by CARE, ICRISAT and Plan International in Masvingo, brought important lessons which should be institutionalised. The project successfully mainstreamed vulnerable groups like women and youth, revived disaster risk reduction strategies, established social safety nets, promoted participatory scenario planning, improved crops, livestock, and agroforestry production, and facilitated private-public sector partnership linkage .
- There is lack of policy on climate finance which is crucial for unlocking funding in Zimbabwe. For instance Kenya has a National Policy on Climate Finance established in 2018, the policy has been successful in establishing a national climate change fund crucial for funding adaptation and mitigation projects.
- There is lack of adequate financing of climate smart technologies in the water, food and energy sectors. Given the current climate change threats, climate smart technologies and financing are crucial in improving water, energy and food security through promotion of low greenhouse gas emissions technologies across all sectors. Climate smart technologies can be Internet of Things for water management, climate adaptation using artificial intelligence, renewable energy technology, climate agriculture initiatives.
- Although, Zimbabwe has broad agriculture policies such as the agriculture policy framework (2015-2035), seed policy, Zimbabwe Agriculture investment plan (2013), the following gaps have been identified: (i) lack of institutional capacity for policy implementation, (ii) duplication of activities by donors due to poor stakeholder coordination (iii) lack of private sector involvement for financing and marketing.

POLICY RECOMMENDATIONS

To address some of the key threats of climate change to water, energy, food security in Zimbabwe, the following policy recommendations are proposed.

CROSS-SECTORIAL RECOMMENDATIONS

Strengthening cross –sectorial collaboration and policy coordination

There is need for Zimbabwe to adopt a more cohesive and collaborative approach across sectors. By breaking down the barriers between ministries and encouraging joint planning and decision-making, the country can foster greater synergy in its climate response strategies. This integrated approach will allow for a better understanding of how actions in one sector can have repercussions on others, enabling more informed and sustainable policy-making. Furthermore, such cross-sectional collaboration will facilitate the identification of win-win solutions that promote development while safeguarding the environment. For instance, promoting renewable energy sources like solar power can not only boost food production but also reduce greenhouse gas emissions, thereby contributing to climate mitigation efforts. In summary, addressing climate change in Zimbabwe necessitates a holistic and intersectorial approach that fosters collaboration and coherence among different ministries. By aligning policies and strategies across sectors, the country can make significant progress in mitigating the impacts of climate change while advancing sustainable development.



Water-Food-Energy (WEF) Nexus Approach

There is need for adoption of the Water-Food-Energy (WEF) nexus approach for Zimbabwe that will increase policy coherence among the three sectors and harmonise institutions and manage resources efficiently. Water-Food-Energy (WEF) nexus is a policy and planning approach that holistically manages the three interconnected resources of water, energy and food to improve their security amidst climate change, population and economic growth. To be effective there is need for bridging the science –policy interface, establishment of the nexus governance and institutional structure and building human resource capacities for nexus integrated planning and management.

Strengthening climate information and Early Warning Systems Based Adaptation

Addressing climate change threats of the WEF resources, requires strong climate information and early warning systems, so that communities and nations involved, build their adaptive capacity to respond to the expected climate hazards and its associated impacts. In Zimbabwe, like many other developing countries there is need for mobilisation of funding to develop state of the art Early Warning System Infrastructure, to bridge the data gap and to provide accurate climate information critical for assessing the risk and the vulnerability of the environment stressors. Policies should also address the inclusion of climate adaptation in the Early Warning Systems for the development of disaster risk reduction (DRR) approaches that enhance resilience of the water, energy and food sector. Training and capacity building should be prioritised on risk knowledge, capacity response and communication, among stakeholders and community members, to increase preparedness and capacity response.

Enhancing Climate Education, Knowledge management and Capacity Building

There is need for climate education and capacity building to stakeholders in water, energy and food security field to equip them with the knowledge and skills to innovate policies and technologies that safeguard these three sectors. The training and capacity building should be inclusive, leaving no one behind, ensuring that all groups are represented.

Improving Access to Climate-Smart Technologies and Finance

The Government of Zimbabwe and non-state actors should consider financing the development of climate smart technologies and moreover developing human capital with appropriate skills in venturing in technology building. Policies should be geared towards financing and skill development.

Formulation of a National policy on climate finance

I recommend the formulation of a National policy on climate finance for unlocking Zimbabwe's domestic and international fund. This policy will be crucial for mobilising finance needed for investments and funding in the water, energy and agriculture sector. Although Zimbabwe is eligible to receive funding from UNFCCC special climate change fund managed through Global Environmental Facility etc., domestic funding is still needed to complement the efforts

SECTOR- SPECIFIC RECOMMENDATIONS

Food security

Crop diversification

Crop diversification has a potential to significantly enhance food security and efforts should be focused towards provision of training and skills development to smallholder farmers, especially women, who constitute a significant portion of agricultural producers in the country. However, crop diversification has its own tradeoffs, it increases crop production costs, which can be burdensome for smallholder farmers. A study conducted in Western Kenya evaluated the impact of crop diversification on variable cost structure and confirmed that while crop diversification increases food security, it also raises production costs. In light of this, I recommend that policy makers should consider developing policies that lessen farmer financial costs in the implementation of crop diversification adaptation strategies. By providing support and incentives, such as access to affordable inputs, innovative farming technologies, or financial assistance, policymakers can help farmers effectively implement crop diversification without facing overwhelming production costs.

Upscaling and strengthening Climate Smart Agriculture (CSA)

There is need for Upscaling and strengthening Climate Smart Agriculture (CSA) as it present opportunities for addressing food security and increasing the resilience of small holder farmers to climate variability and change. Scaling up of the provision of inputs, equipment, finance and training to farmers is paramount as it incentivizes the adoption of the technology. Although the Government and non-state actors have been successfully championing CSA, much effort is needed in creating policies and institutional framework that attract private sector investment in CSA technology to bridge the financing and marketing gap.

Water Security

Although Zimbabwe is an early adopter of the Integrated Water Resource Management, underpinned in the 1998 Water and Zimbabwe National Authority Acts (1998), much is still needed as it regards to the institutional arrangement and implementation. A critical step in achieving water management and conservation, is the strengthening of policies and strategies based on the following elements (i) sustainable wetland management (ii) promoting water use efficiency in all sectors including recycling (iii) water storage and harvesting (iv) rehabilitation and maintenance of surface and groundwater (v) water transfer schemes (vi) modification of irrigation techniques e.g. promotion of micro irrigation (vii) promotion of multipurpose agro-systems which delivers more than just food but water and energy, for instance Tugwi Mukosi dam.

Energy security

Diversifying energy mix and energy efficiency: this can be achieved through promotion of policies that increase share of renewable energy in the current energy mix and energy efficiency.

Promotion of renewable energy adoption: this can be achieved through promoting perpetual renewable energies such as wind and solar as a better option as they do not consume water. Government may dedicate institutional structures towards renewable energy development to give the sector the attention it needs given its importance in the economy.

There is need for introduction and strengthening of policies that advocate for access to clean energy such as solar geyser policy where by each new house is enforced to use only solar geysers for heating water. This policy can be extended to lighting where by each new house maybe enforced to put at least one solar panel to provide energy for lighting.

Climate impact assessment should be mandatory when designing new hydropower projects to ascertain how climate change is likely to impact the hydrological cycle of that given location. Decision will be then be made whether to go ahead with the project or not.

Promotion of both off grid and on grid energy technologies to reach remote communities.

Promotion of public-private partnership to promote project financing and off take e.g de-risking of renewable energy projects.

Decentralisation of Waste to Energy through promotion of appropriate incentives and regulatory instruments

CONCLUSION

Conclusively, addressing climate change threats to water, energy, and food security in Zimbabwe requires a tailored and diverse approach. There is no one-size-fits-all solution; rather, multiple pathways can be explored to effectively tackle these challenges. This brief has examined both cross-sectoral and sector-specific recommendations. Sector-specific recommendations have shown positive impacts on resilience and sustainability within the Water-Energy-Food (WEF) sector. However, they do have limitations, such as being focused on individual sectors and the potential risk of mal-adaptation due to imbalances and duplication of efforts. On the other hand, cross-sectional and multi-dimensional approaches have been recommended as more comprehensive and efficient means of integration. By fostering collaboration and coherence across sectors, these approaches ensure that development efforts remain cost-effective and mutually beneficial, with one sector's progress not undermining others. In conclusion, while sector-specific recommendations can contribute to resilience and sustainability within specific sectors, it is crucial to adopt cross-sectional and multi-dimensional approaches to achieve a more holistic and integrated response to climate change threats in Zimbabwe. By embracing a diverse range of strategies and effectively coordinating efforts, the country can effectively address the challenges posed by climate change on water, energy, and food security.



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