

## The Role of Public Finance in Mitigating the Effects Climate Change in Zimbabwe

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### Abstract

Climate change posed significant challenges to Zimbabwe's economic, social and environmental sustainability. Public finance played a crucial role in addressing these challenges by mobilising and allocating resources to support climate change adaptation and mitigation initiatives. This study examined the role of public finance in addressing climate change in Zimbabwe, with a focus on the current state of climate finance, challenges and recommendations. The study made use of extant qualitative research methodology. Study findings indicated that Zimbabwe faced significant funding gaps in meeting its climate change commitments, with an estimated \$19 billion required to finance its Nationally Determined Contributions (NDCs). Despite the establishment of key institutions such as the Infrastructure Development Bank of Zimbabwe's Climate Finance Facility and the proposed National Climate Fund, the country still faced significant challenges in mobilising climate finance. The study highlighted the importance of public finance in supporting climate-resilient infrastructure, promoting sustainable agriculture and enhancing climate information services. The study concluded that public finance was critical to addressing climate change in Zimbabwe but could be used strategically to leverage additional resources and support climate-resilient development. The study recommended that the government prioritise climate finance in its budget, strengthen institutional capacity and explore innovative financing mechanisms to support climate change adaptation and mitigation efforts.

**Keywords:** Climate Change, Public Finance, Nationally Determined Contributions, National Climate Fund.

### Introduction

Climate change is one of the most pressing global challenges, with far-reaching consequences for the environment, human health and the economy (Heaps, 2022). Zimbabwe, like many other countries, was already experiencing the impacts of climate change, including more frequent and severe droughts, floods and heatwaves. These climate-related shocks had significant economic, social and environmental implications, threatening the country's development progress and undermining its ability to achieve the Sustainable Development Goals (SDGs). (Muchuru & Nhamo, 2019). The impacts of climate change were multifaceted and far-reaching. Rising temperatures and changing precipitation patterns were altering the country's ecosystems, affecting biodiversity and impacting agricultural productivity. This, in turn, threatened food security, livelihoods and economic growth. (Heaps, 2022). Climate-related disasters, such as droughts and floods, were also having a devastating impact on the country's infrastructure, including roads, bridges and buildings. Furthermore, climate change was exacerbating water scarcity, compromising access to clean water and sanitation and increasing the risk of water-borne diseases. (Ripoll & Jones, 2019).

In response to these challenges, Zimbabwe was committed to reducing its greenhouse gas emissions and transitioning to a low-carbon economy. The country submitted its Nationally Determined Contributions (NDCs) to the United Nations Framework Convention on Climate Change (UNFCCC), outlining its plans to reduce emissions and adapt to the impacts of climate change. (Government of Zimbabwe, 2021). However, implementing these plans requires significant financial resources, estimated at approximately \$19 billion. Public finance plays a critical role in addressing climate change in Zimbabwe (Moyo, 2023). The government has a range of policy instruments and financial mechanisms at its disposal to support climate change adaptation and mitigation initiatives. These include budgetary allocations, taxes, subsidies and guarantees, as well as partnerships with international donors, development banks and the private sector. (Tinarwo, Erasmus, Maketo & Chaoneka, 2025). Effective use of these instruments could help to leverage additional resources, reduce the costs of climate change and promote sustainable development.

The Infrastructure Development Bank of Zimbabwe (IDBZ) has established a Climate Finance Facility (CFF) to mobilise and channel climate finance resources from international, national and private sources. The CFF aims to support green infrastructure projects, promote climate-resilient development and leverage funding from multilateral and bilateral sources (IDBZ, 2020). Additionally, the proposed National Climate Fund will finance mitigation and adaptation projects, provide co-financing and project preparation support and issue grants to local authorities and public entities. (Mushawemhuka, Fitchett & Hoogendoorn, 2022). Despite the importance of public finance in addressing climate change, there are several challenges and gaps in Zimbabwe's climate finance landscape. The country faced significant funding gaps, institutional capacity constraints, policy and regulatory barriers that hindered the effective use of climate finance. The current economic challenges, including a high debt burden and limited fiscal space, further exacerbated these challenges. (Tinarwo, Erasmus, Maketo & Chaoneka, 2025).

It is against this backdrop that this study aimed to examine the role of public finance in mitigating climate change in Zimbabwe, with a focus on the current state of climate finance and challenges. It analysed the effectiveness of public finance mechanisms in supporting climate change adaptation and mitigation initiatives and identified opportunities for improving the design and implementation of these mechanisms. The study was structured into four sections and these included the role of public finance in mitigating the effects of climate change in Zimbabwe, research methodology, research findings, analysis, conclusions and recommendations.

### **The Role of Public Finance in Mitigating the Effects of Climate Change in Zimbabwe Mobilising Climate Finance**

Public finance played a crucial role in mobilising climate finance in Zimbabwe. The government could use various financial instruments, such as budgetary allocations, taxes and subsidies, to mobilise domestic resources for climate change initiatives. For example, the government can allocate a portion of its budget to support climate change adaptation and mitigation projects, such as reforestation, climate-resilient infrastructure and climate-smart agriculture (Malley, et al., 2021). In addition to domestic resources, public finance could also be used to leverage international climate finance. Zimbabwe could access climate finance from international sources, such as the Green Climate Fund (GCF), to support its climate change initiatives. The GCF provided concessional loans and grants to developing countries to support

their efforts to reduce greenhouse gas emissions and adapt to the impacts of climate change. (Tinarwo, Erasmus, Maketo & Chaoneka, 2025). By mobilising climate finance, Zimbabwe could access the resources it needed to support its climate change initiatives and achieve its development goals. The mobilisation of climate finance could also help to leverage additional resources from the private sector and civil society organisations. For example, the government can use public finance to provide a grant or loan to a private sector company to support a climate change project, which could help to leverage additional private sector investment (Chirisa, Gumbo, Gundu-Jakarasi, Zhakata, Karakadzai, Dipura & Moyo, 2021).

### **Supporting Climate-Resilient Infrastructure**

Public finance could support the development of climate-resilient infrastructure, such as flood-resistant buildings and roads, to reduce the impacts of climate-related disasters. Climate-resilient infrastructure could help to protect communities and economic assets from the impacts of climate change, such as flooding and droughts. (Meinshausen et al., 2022). By investing in climate-resilient infrastructure, Zimbabwe can reduce the costs of climate-related disasters and promote sustainable development. In addition to supporting the development of climate-resilient infrastructure, public finance can also be used to support the maintenance and repair of existing infrastructure. This could help to ensure that infrastructure remains functional and effective in the face of climate-related disasters (Mushawemhuka, Fitchett & Hoogendoorn, 2022).

### **Promoting Renewable Energy**

Public finance can promote the development of renewable energy sources, such as solar and wind power, to reduce dependence on fossil fuels and lower greenhouse gas emissions. Renewable energy can help to reduce Zimbabwe's dependence on imported fossil fuels, which can help to improve the country's trade balance and reduce its vulnerability to price shocks (Elberry, Naert & Goeminne, 2023). Public finance can be used to support the development of renewable energy projects, including the provision of grants, loans and guarantees. (Bachner & Bednar-Friedl, 2019). For example, the government can provide a grant to a private sector company to support the development of a solar power project, which can help to increase the country's renewable energy capacity. In addition, public finance can also be used to support the integration of renewable energy into the national grid. This can help to ensure that renewable energy is able to compete with fossil fuels and increase its share of the energy market (Benzecry & Smith, 2024).

### **Supporting Climate-Smart Agriculture**

Public finance can support climate-smart agriculture practices, such as conservation agriculture and agroforestry, to help farmers adapt to climate change. Climate-smart agriculture can help to improve crop yields and increase the resilience of agricultural systems to climate-related shocks. (Tashu, Moyo & Marumahoko, 2025). Public finance can be used to support the development and dissemination of climate-smart agriculture practices, including the provision of training and extension services to farmers. (Moyo, 2023). The government, for example, can provide a grant to a non-governmental organisation to support the development of climate-smart agriculture practices in a specific district. In addition, public finance can also be used to support the development of climate-resilient agricultural infrastructure, such as irrigation systems and water harvesting infrastructure (World Food Programme, 2020). This can help to

improve the resilience of agricultural systems to climate-related shocks and improve crop yields.

### **Enhancing Climate Information Services**

Public finance can support the development of climate information services, including early warning systems and climate forecasting, to help communities prepare for and respond to climate-related disasters. Climate information services can help to provide accurate and timely information to communities, which can help to save lives and reduce the impacts of climate-related disasters. (Tashu, Moyo & Marumahoko, 2025). Public finance can be used to support the development of climate information services, including the provision of equipment and technical assistance. The government can provide a grant to a meteorological department to support the development of a climate early warning system. (World Food Programme, 2020). Furthermore, public finance can also be used to support the dissemination of climate information to communities. (Muchuru & Nhamo, 2019). This can help to ensure that communities have access to accurate and timely information, which can help to save lives and reduce the impacts of climate-related disasters.

### **Providing Climate Finance Governance**

Public finance can provide a framework for climate finance governance, including policies, institutions and mechanisms for managing climate finance, to ensure transparency, accountability and effectiveness. Climate finance governance is critical to ensuring that climate finance is used effectively and efficiently and that it supports the achievement of national development goals (Tinarwo, Erasmus, Maketo & Chaoneka, 2025). Public finance can be used to support the development of policies and institutions that promote transparency and accountability in the management of climate finance. The government can use public finance to support the development of a national climate fund, which can help to ensure that climate finance is managed in a transparent and accountable manner (Mushawemhuka, Fitchett, & Hoogendoorn, 2022). Furthermore, public finance can also be used to support the development of mechanisms for managing climate finance, such as financial reporting and auditing systems (Tashu, Moyo & Marumahoko, 2025). This can help to ensure that climate finance is used effectively and efficiently and that it supports the achievement of national development goals.

### **Leveraging Private Sector Investment**

Public finance can leverage private sector investment in climate change initiatives, such as through public-private partnerships (PPPs) and blended financing models. By leveraging private sector investment, public finance can help to mobilise additional resources for climate change initiatives and increase the impact of climate finance (Nyahunda, Tirivangasi, & Mabila, 2022). Public finance can be used to support the development of PPPs, which can help to leverage private sector investment in climate change initiatives. For example, men can provide a grant to a private sector company to support the development of a climate-resilient infrastructure project, which can help to leverage additional private sector investment (Ripoll & Jones, 2019). To add on, public finance can also be used to support blended financing models, which can help to combine public and private sector finance to support climate change initiatives. For example, the government can provide a loan to a private sector company to support the development of a renewable energy project, which can help to leverage additional private sector investment. (Tanyanyiwa & Mufunda, 2020). By leveraging private sector investment, public finance can help to increase the impact of climate finance and support the

achievement of national development goals. It can also help to promote sustainable development and reduce the impacts of climate change.

## **Research Methodology**

Extant secondary qualitative literature is the research method used to gather information. This approach aims to comprehend the role of public finance in mitigating climate change in Zimbabwe. As a means of gathering specific and needed information, the analysis relied on secondary data from international institutions and government publications to generate accurate data. More so, findings, conclusions and recommendations were also drawn from a documentary search of books, journal articles and working papers.

## **Results and Discussion**

### **Current State of Climate Finance in Zimbabwe**

#### **Climate Finance Sources**

Zimbabwe has accessed climate finance from various international sources, including the Green Climate Fund (GCF), the United Nations and the World Bank. These organisations provide funding for climate change projects and programs in Zimbabwe, including initiatives to promote renewable energy, climate-resilient agriculture and disaster risk reduction. (Tirivangasi, Nyahunda, Mabila & Zingwena, 2023). The country has also received funding from bilateral donors, including the European Union and the United Kingdom. In addition to international sources, Zimbabwe has also established local funding mechanisms, such as the Infrastructure Development Bank of Zimbabwe (IDBZ) Climate Finance Facility (CFF) (IDBZ, 2020). The CFF provides financing for climate-resilient infrastructure projects, including renewable energy, green buildings and climate-resilient water management systems. The facility aims to mobilise domestic and international resources to support climate change initiatives in Zimbabwe. (Tinarwo, Erasmus, Maketo & Chaoneka, 2025). The country's climate finance landscape is also characterised by a growing interest in innovative financing mechanisms, such as green bonds and climate-resilient infrastructure investments. These mechanisms have the potential to mobilise significant resources for climate change initiatives in Zimbabwe, while also promoting sustainable development and reducing the country's vulnerability to climate-related shocks. (Tashu, Moyo & Marumahoko, 2025).

#### **Renewable Energy Development**

Zimbabwe has set ambitious targets for renewable energy development, aiming to increase its renewable energy capacity from 142 megawatts to over 2,000 MW by 2030. The country has significant potential for renewable energy development, including solar, wind and hydro power. Renewable energy can help reduce Zimbabwe's dependence on fossil fuels, lower its greenhouse gas emissions and promote sustainable development (Tinarwo, Erasmus, Maketo & Chaoneka, 2025). The Renewable Energy Fund (REF) is a key initiative aimed at promoting renewable energy development in Zimbabwe. The fund provides financing for renewable energy projects, including solar, wind and hydro power. The REF aims to mobilise domestic and international resources to support the development of renewable energy in Zimbabwe, while also promoting private sector participation and investment in the sector. (Tashu, Moyo & Marumahoko, 2025). The development of renewable energy in Zimbabwe can have significant benefits for the country's economy and environment. (Benzecry & Smith, 2024). It

can also create jobs, stimulate local economies and improve energy access for rural communities.

### **Climate Change Bill**

The Climate Change Management Bill is a key initiative aimed at promoting climate-resilient development and mobilising climate finance in Zimbabwe. The bill will establish a National Climate Fund to support climate change initiatives in Zimbabwe, including initiatives to promote renewable energy, climate-resilient agriculture and disaster risk reduction. The fund will provide financing for climate change projects and programs and will aim to promote transparency, accountability and coordination in the management of climate finance. (Tinarwo, Erasmus, Maketo & Chaoneka, 2025). The bill also aims to promote private sector participation and investment in climate change initiatives in Zimbabwe. This includes providing incentives for private sector investment in renewable energy, climate-resilient infrastructure and other climate-resilient projects. The bill also aims to enhance public awareness and education on climate change and to promote climate-resilient development in key sectors, including agriculture, water and infrastructure. The bill has the potential to mobilise significant resources for climate change initiatives, while also promoting sustainable development and reducing the country's vulnerability to climate-related shocks. (Tashu, Moyo & Marumahoko, 2025).

### **National Climate Fund**

The National Climate Fund is a key component of Zimbabwe's climate finance architecture. The fund will provide financing for climate change projects and programs, including initiatives to promote renewable energy, climate-resilient agriculture and disaster risk reduction (Tinarwo, Erasmus, Maketo & Chaoneka, 2025). The fund aims to mobilise domestic and international resources to support climate change initiatives in Zimbabwe, while also promoting transparency, accountability and coordination in the management of climate finance. (Tirivangasi, Nyahunda, Mabila & Zingwena, 2023). The National Climate Fund will be established as a self-sustaining entity, with a mandate to support climate change initiatives in Zimbabwe. The fund will aim to promote private sector participation and investment in climate change initiatives, while also enhancing public awareness and education on climate change. The fund will also aim to promote climate-resilient development in key sectors, including agriculture, water and infrastructure. (Tinarwo, 2023). The fund will play a critical role in supporting Zimbabwe's climate change efforts and will help to ensure that the country is able to meet its climate change commitments.

### **Green and Resilient Recovery Strategy**

The Green and Resilient Recovery Strategy is a key initiative aimed at promoting climate-resilient development in Zimbabwe. The strategy aims to drive ambitious climate action across major economic sectors and strengthen national resilience. The strategy includes initiatives to promote renewable energy, climate-resilient agriculture and disaster risk reduction. The strategy aims to promote sustainable development and reduce Zimbabwe's vulnerability to climate-related shocks. It will do this by supporting initiatives that enhance climate resilience, promote sustainable livelihoods and improve disaster preparedness and response. (Tinarwo, Erasmus, Maketo & Chaoneka, 2025). The strategy aims to promote private sector participation and investment in climate change initiatives, while also enhancing public awareness and education on climate change. The strategy will play a critical role in supporting Zimbabwe's

climate change efforts and will help to ensure that the country is able to meet its climate change commitments. (Tashu, Moyo & Marumahoko, 2025).

## **Challenges of Climate Change Financing in Zimbabwe**

### **Funding Gaps**

Zimbabwe faces significant funding gaps in meeting its climate change commitments, with an estimated \$4.8 billion required to implement its updated Nationally Determined Contributions (NDCs) and \$35 billion for adaptation actions up to 2030. (Tinarwo, 2023). The country's climate finance needs are substantial, and the funding gap is a major challenge in achieving its climate change goals. The funding gap is attributed to various factors, including limited domestic resources, inadequate international support and inefficient use of available funds. (Tanyanyiwa & Mufunda, 2020). The funding gap has significant implications for Zimbabwe's ability to adapt to the impacts of climate change. Without sufficient funding, the country will struggle to implement its climate change plans, including initiatives to promote climate-resilient agriculture, improve water management and enhance disaster preparedness. (Tashu, Moyo & Marumahoko, 2025). The country's dependence on global finance mechanisms to mitigate the effects of climate change is high and its domestic finance mechanisms have not been fully explored. This will have far-reaching consequences for the country's economy, environment and human well-being.

### **High Financing Costs**

Zimbabwe faces high financing costs, which can make it challenging for the country to access affordable finance for climate change initiatives. The high costs of capital negatively affect project viability and attractiveness, making it difficult for Zimbabwe to attract private sector investment in climate change initiatives. (Nhapi, 2022). This highlights the need for concessional finance and innovative financing mechanisms that can help reduce the costs of climate finance. The high financing costs in Zimbabwe are attributed to various factors, including the country's macroeconomic constraints and limited access to development finance. (Tinarwo, 2023). The country's macroeconomic constraints pose a double bind, where the inability to finance development, climate adaptation and mitigation leads to increased land degradation, higher net emissions and less economic growth. (Tashu, Moyo & Marumahoko, 2025).

### **Institutional Capacity Challenges**

Zimbabwe faces significant institutional capacity challenges that hinder its ability to mobilise and manage climate finance effectively. The country's institutional capacity to access and utilise climate finance is limited, which can make it difficult to implement climate change projects and programs. (Tanyanyiwa & Mufunda, 2020). This highlights the need for capacity-building initiatives that can help strengthen the capacity of local institutions to access and manage climate finance. The limited institutional capacity in Zimbabwe is attributed to various factors, including limited technical expertise and inadequate policy frameworks (Tashu, Moyo & Marumahoko, 2025). The country's climate finance architecture is still evolving and there is a need for stronger institutional capacity to support climate change initiatives. This includes improving transparency, accountability and coordination among stakeholders, as well as enhancing the capacity of local institutions to access and manage climate finance (Nhapi, 2022).

## **Regulatory Barriers**

Zimbabwe faces regulatory barriers that can make it challenging for the country to access climate finance and implement climate change initiatives. The country's regulatory framework is often inadequate and there is a need for clearer guidelines and supportive policies to facilitate the flow of climate finance. (World Food Programme, 2020). This includes streamlining procedures and providing incentives for private sector investment in climate change initiatives. (Tinarwo, 2023). The regulatory barriers in Zimbabwe are attributed to various factors, including limited policy coherence and inadequate institutional capacity. The country's climate change bill is a step in the right direction, but there is a need for more effective implementation and enforcement of climate change policies and regulations. This includes strengthening the capacity of regulatory institutions and improving coordination among stakeholders. (Tashu, Moyo & Marumahoko, 2025).

## **Dependence on External Funding**

Zimbabwe is heavily dependent on external funding to support its climate change initiatives, which can create uncertainty and unpredictability in climate finance flows. (Mugiyo, Magadzire, Choruma, Chimonyo, Manzou, Jiri, & Mabhaudhi, 2023). The country's ability to access international climate funds is limited and there is a need for more predictable and sustained climate finance flows to support its climate change efforts. (Tinarwo, 2023). The dependence on external funding highlights the need for Zimbabwe to explore alternative financing mechanisms and partnerships that can help mobilise additional resources for climate change initiatives. This includes leveraging private sector financing, public-private partnerships and domestic resource mobilisation to support climate change initiatives. (World Bank, 2020). By diversifying its climate finance sources, Zimbabwe can reduce its dependence on external funding and improve the sustainability of its climate change efforts.

## **Conclusion and Recommendations**

Climate finance is a critical component of Zimbabwe's efforts to address the impacts of climate change. Zimbabwe has made significant progress in promoting climate-resilient development and mobilising climate finance. The country has developed several initiatives and strategies to support climate change adaptation and mitigation, including the development of a Climate Change Bill and a National Climate Fund. Despite the progress made, the country faces significant challenges in mobilising climate finance, including limited financial resources, high financing costs and institutional capacity constraints.

The study recommends that the development of a comprehensive climate finance strategy is essential for Zimbabwe to achieve its climate change goals. This strategy should prioritise climate-resilient development, promote private sector investment and explore innovative financing mechanisms. The country should also strengthen its institutional capacity to mobilise and manage climate finance, including improving transparency, accountability and coordination among stakeholders. By taking a proactive and coordinated approach to climate finance, Zimbabwe can reduce the impacts of climate change, promote sustainable development and achieve its development goals.

Ultimately, the success of Zimbabwe's climate finance efforts will depend on the effective implementation of its climate change policies and strategies. The country needs to ensure that climate change is integrated into its national development plans and strategies and that climate

finance is used in a way that is transparent, accountable and effective. With the right policies, strategies and partnerships in place, Zimbabwe can build a climate-resilient future and ensure a sustainable and prosperous future for its citizens. By working together, Zimbabwe can overcome the challenges of climate change and achieve its development goals.

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