

The Zambian Landscape for Private Investment in Climate-Friendly Projects

Final Research Report

April 2024



1 Acknowledgements

1.1 About Kukula Capital Limited

Kukula Capital is a pioneering investment and advisory firm headquartered in Lusaka, Zambia. The company was founded in 2009 by Danish and Zambian partners and has since grown to boast a diverse team with extensive local and international experience. The company aims to create a positive impact and its work is guided by environmental, social and governance factors to contribute positively to Zambian SMEs, their employees, and the country. To date, Kukula Capital has created +3,000 direct and indirect jobs in Zambia while developing a deep understanding of the Zambian market through +14 years of private equity investments, asset management and advisory. The company is registered with the Securities and Exchange Commission of Zambia, is a member of the Capital Markets Association of Zambia and is a member of the Lusaka Securities Exchange.

1.2 About Climate Compatible Growth and the Flexible Research Fund

The Climate Compatible Growth (CCG) Flexible Research Fund (FRF) provides research funding to respond to new and emerging research opportunities and demands. It is funded by the UK government through the Foreign and Commonwealth Development Office (FCDO). The CCG programme is led by Loughborough University and implemented through partnerships with academia, business, and non-government organisations. The FRF is a funding mechanism for research that will provide tangible and impactful benefits in CCG countries. Currently, CCG has six priority countries: India, Kenya, Lao PDR, Ghana, Vietnam, and Zambia.

1.3 About Tandem Circular Consulting

Tandem is a pioneering consultancy firm that collaborates with leading global organizations to tackle significant social challenges in developing markets while promoting efficiency and sustainability through the Circular Economy framework. With a specific focus on Sub-Saharan Africa, Tandem provides research, insights, advisory, business development, coaching and mentorship services to the private, public, and development sectors. By empowering businesses to operate more sustainably and fostering the development of green and circular projects and business models, Tandem strives to create a positive impact in the areas of waste management, water resources, and renewable energy.

1.4 Contributing authors

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2 Foreword

From Kukula Capital



Niels Bojsen
Managing Director

For over 14 years, Kukula Capital has served as a catalyst for change within the Zambian landscape for private investment in climate-friendly projects. When the opportunity arose to research what incentives could increase private sector investment in Zambia, we eagerly embraced it. In addition, to informing the rest of the investment ecosystem, we believed this research could support and shape our strategies as fund managers and venture capitalists for future initiatives.

We would like to extend our gratitude to our partners, Climate Compatible Growth, the University of Loughborough, Tandem Circular Consulting, and the various stakeholders who have contributed their knowledge and expertise to this report.

As Zambia navigates the transition to a green economy, it is important for all stakeholders to collaborate so that we can achieve our shared vision for a climate-resilient and sustainable Zambia.

From Tandem Circular Consulting



Andrew McNaught
Founder

Since its inception, Tandem has been at the forefront of circular economy and clean cooking research and interventions in Zambia.

We have come to understand that without the involvement of the private sector, halting deforestation in Zambia will likely be unachievable.

We are thankful to CCG for the chance to research the barriers and incentives for increasing private sector investment in climate-compatible projects. We hope this report provides stakeholders with a holistic overview and shines a light on the path forward for climate-compatible finance in Zambia.

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4 Executive Summary

4.1 Purpose of the Report

This report, developed through the collaborative efforts of Kukula Capital and Tandem Circular Consulting with funding from Climate Compatible Growth, delves into the landscape of private investment in Climate Compatible projects in Zambia. It draws upon research articles, a detailed survey of 40 participants from the development sector, the government, SME investees, investors and banks, and the local expertise of Kukula Capital to map out the current state and potential of impact investments in climate compatible projects.

The report leverages Kukula Capital's extensive institutional knowledge and experience in impact investment and corporate finance advisory to enhance the dialogue between the public and private sectors regarding the climate finance landscape in Zambia. The report centres around the research question:



How can stakeholders boost private investment into climate compatible projects in Zambia, and what will the effects be?

The intent of the research question is to present a holistic view of the consequences of boosting Climate compatible investments in Zambia. The positive impacts and potential benefits of ramping up private sector investment in Climate Compatible projects within Zambia will be outlined, while also unpacking the trade-offs that such an increase might entail.

Outlined objectives are:

- Determine the historical and current state of Climate compatible investments in Zambia ([Section 6](#))
- Identify barriers to investment and gaps toward climate adaptation ([Section 7](#))
- To capture and understand the perceptions and priorities of investors and stakeholders, evaluating how Zambia is viewed as a hub for climate-compatible projects ([Section 7.2](#))
- Identify the impact that would occur if investment gaps could be significantly closed ([Section 7.5](#))
- To evaluate the primary and secondary effects of directing local and foreign investment into climate-compatible projects, with an eye on the potential redistribution of investment from other sectors ([Section 7.5](#))

Based on the results of the research objectives the report will conclude with recommendations to investors, governmental partners, market enablers, regulators, development sector, private equity investors and banks.

4.2 Who should read this report?

This report is essential reading for all decision-makers with an interest in the Zambian financial market. Its primary aim is to shed light on the Climate Compatible investment landscape within the country, reducing information asymmetry and uncovering potential risks. By doing so, it enables investors and stakeholders to acknowledge the significance of financing climate-friendly initiatives, emphasizing that it is both a moral imperative and has potential commercial opportunity.

The report is designed to resonate with a diverse array of stakeholders including private equity investors, institutional investors, development finance institutions, government ministries, regulators, market facilitators, and particularly SMEs, which play a crucial role in driving sustainable development. We hope that it can serve as a valuable guide for anyone committed to aligning financial gains with efforts to combat climate change.

4.3 Methodology

The methodology employed when developing this report is as follows:

- Conducted a literature review on the trade-offs and accrued advantages associated with investment in climate-compatible projects, with a focus on Zambia and a subsidiary global perspective.
- Developed and circulated a survey to 130 SMEs, investors, banks, and other stakeholders, from which we received 40 responses. The purpose of the survey was to gather insights from stakeholders on the incentives, perceived trade-offs, and barriers associated with climate-friendly investments.
- Conducted 11 focus group interviews with representatives from each of the sub-segments to gain more in-depth qualitative data to understand the survey responses.
- The research team conducted a case study on Foxdale Court - a real estate sector client that Kukula provides advisory services to - to understand the challenges encountered in implementing and financing its climate-friendly initiatives.
- Desktop study of current policies and regulations that incentivize climate-compatible investment in Zambia.
- Desktop study and stakeholder interviews to examine current private sector initiatives to increase the flow of climate-compatible investment in Zambia.

The survey report is included in the annex to this report.

4.4 Research Findings

4.4.1 Survey and case study

The detailed survey revealed a strong consensus on the importance of private investments in driving Zambia's transition to a more sustainable and climate-resilient economy. An overwhelming majority of survey respondents (80%) emphasized the critical role of such investments, while 85% of participants indicated that the current level of investments is insufficient to meet the UN's sustainable development goals and Zambia's economic objectives. It is evident that there is recognition of the importance of sustainable investments. However, due to Zambia's challenging macroeconomic and debt situation, along with high transaction costs, the high cost of capital reflecting the high-risk premium, regulatory obstacles, and the perceived risk associated with sustainable investments, capital is not being effectively channelled into these ventures.

From the survey, renewable energy and sustainable agriculture were identified as the sectors with the highest priority for investment. This was corroborated by the focus group discussions. This prioritization underscores the need for a focused approach in channelling resources and efforts to where they can have the most significant impact on Zambia's sustainable development goals.

The government and local institutions were recognized by respondents as being pivotal in facilitating and encouraging investments in Climate Compatible projects. Their roles are essential in creating an enabling environment that attracts and sustains private capital flows into the sustainable sectors.

The survey highlighted the multifaceted benefits of investing in Climate Compatible projects, including the potential for economic growth, job creation, and significant reductions in emissions. However, it also asked survey respondents to provide feedback on trade-offs and challenges, such as the risk of overreliance on foreign investment, concerns over financial returns, and the efficient allocation of capital.

According to the survey, barriers to the growth of Climate compatible investments in Zambia are primarily financial, including high upfront capital costs, concerns over profitability, and limitations in accessing financing. These financial hurdles are compounded by regulatory challenges, a conducive policy environment, a lack of reliable information, and gaps in necessary infrastructure.

The case study analysis revealed financial and operational challenges that a Zambian SME faced in the absence of supportive policies, and that the general macro-economic environment has made it more difficult to obtain debt on favourable terms.

4.4.2 Focus Group Discussions

The insights gathered from focus group discussions with various stakeholders underscored the potential for climate compatible projects to impact Zambia's economy positively. However, access to financing was a core concern amongst respondents, with a major takeaway being that even the most impact projects may struggle to attract investment.

In the FGDs, several sectors were identified as potential investment opportunities. These include solar energy and solar irrigation (for agriculture.) The discussion also highlighted clean cooking and organic fertilizers as key areas for investment, aiming to promote sustainable and eco-friendly agricultural practices. Additionally, water and waste recovery were identified as crucial for promoting recycling and sustainability. The group also considered biofuel and sustainable agroforestry important sectors, both of which contribute to reducing carbon emissions and promoting environmental conservation.

4.4.3 Desktop research

The desktop research undertaken revealed that Zambia has proactively aimed to create an enabling environment for climate-compatible investments through comprehensive governmental policies and frameworks such as the National Policy on Climate Change (NPCC). However, challenges in measuring the direct impact of these policies on private sector investment and climate-friendly projects remain, highlighting the need for more specific mechanisms and sector strategies to enhance investment attractiveness.

The research evaluated Zambia's implementation of Natural Capital Accounting (NCA), highlighting the essential role of natural assets in societal well-being and economic development. By quantifying the value of a natural resource, an NCA would enable investors to make informed decisions that align financial returns with long-term sustainability and conservation goals, in cases where that natural resource is affected. However, the absence of a digitized, publicly accessible NCA database currently limits its usefulness to investors.

The establishment of the Ministry of Green Economy and Environment in Zambia, under President Hakainde Hichilema's leadership, signifies a significant commitment to environmental sustainability and climate resilience. The introduction of the Temporary Guidelines for carbon market management illustrates Zambia's proactive approach towards establishing a structured carbon market. However, research on and engagement with alternatives to charcoal companies revealed that many companies do not understand how to access these markets, indicating a potential opportunity for a market enabler to emerge as a one-stop shop to assist SMEs in accessing carbon markets.

The 2023 Nationally Determined Contributions Implementation Framework for Zambia (NDC Implementation Framework) outlines an ambitious approach to climate action, emphasizing cooperation and the need for substantial investment to meet its Paris Agreement targets, yet it highlights challenges in mobilizing private sector investment due to factors like cumbersome funding processes and a lack of bankable projects. The research revealed that Zambia requires \$17.2 billion in investment to meet its Nationally Determined Contributions, a substantial sum when compared to Zambia's national budget, its external debt, and the size of its capital markets.

The research revealed that Zambia has introduced climate compatible tax incentives and regulatory frameworks, such as reduced investment thresholds and support for green bonds, aiming to lower financial barriers and stimulate private investment in sustainable energy and climate-compatible projects. However, further fiscal incentives are necessary and have been proposed by the research team.

Furthermore, Zambia's enhanced investment in climate resilience and sustainable infrastructure is poised to drive economic growth through job creation, currency stabilization, and economic diversification, while also increasing energy security and reducing dependence on imported fossil fuels. However, the shift towards climate-compatible investments, supported by the development sector through blended finance, may introduce market distortions and impact government borrowing costs, necessitating careful management to balance economic benefits with financial market stability.

The report concludes with actionable recommendations for stakeholders to bolster initiatives for Climate compatible investments in Zambia, emerging from these primary and secondary research activities. The recommendations are presented in the following table and elaborated upon in section 10.

Recommendation		Key Stakeholders
1	Incorporating blended finance mechanisms in the sector specific NDC Implementation Framework	<input checked="" type="checkbox"/> Ministry of Green Economy
2	Establish an online Natural Capital Accounting (NCA) database that is regularly updated	<input checked="" type="checkbox"/> Ministry of Green Economy <input checked="" type="checkbox"/> Development Aid Sector
3	Capacity building for local green certification	<input checked="" type="checkbox"/> Securities and Exchange Commission <input checked="" type="checkbox"/> Market Enablers
4	Reduce corporate income tax for climate compatible projects to 10%	<input checked="" type="checkbox"/> Ministry of Finance
5	Tax credits for companies issuing climate compatible securities	<input checked="" type="checkbox"/> Ministry of Finance
6	Zero rate withholding tax (WHT) on interest earned from green bonds regardless of whether the bond is listed on the Lusaka Securities Exchange or if its maturity is less than 3 years	<input checked="" type="checkbox"/> Ministry of Finance
7	Mind-set change by Ministries and municipalities to engage with and broaden the scope of PPP's outside just the road infrastructure and energy sectors	<input checked="" type="checkbox"/> Ministry of Finance <input checked="" type="checkbox"/> Ministry of Green Economy <input checked="" type="checkbox"/> Municipalities
8	Setup a National Green Fund	<input checked="" type="checkbox"/> Ministry of Finance <input checked="" type="checkbox"/> Ministry of Green Economy <input checked="" type="checkbox"/> Industrial Development Corporation <input checked="" type="checkbox"/> Ministry of SMEs
9	Specific EV sector recommendations	<input checked="" type="checkbox"/> Energy Regulation Board <input checked="" type="checkbox"/> Ministry of Finance
10	Fast track the implementation of Net Metering	<input checked="" type="checkbox"/> Energy Regulation Board <input checked="" type="checkbox"/> Ministry of Justice
11	Pension fund portfolio allocation for climate compatible investments	<input checked="" type="checkbox"/> Pensions and Insurance Authority Zambia <input checked="" type="checkbox"/> NAPSA

12	Pension fund portfolio allocation for private equity	<input checked="" type="checkbox"/> Pensions and Insurance Authority Zambia <input checked="" type="checkbox"/> NAPSA
13	Cap investments into Government Securities	<input checked="" type="checkbox"/> Pensions and Insurance Authority Zambia <input checked="" type="checkbox"/> NAPSA
14	Support the establishment of a blended finance fund	<input checked="" type="checkbox"/> Development Aid Sector
15	Develop programmes to provide end-to-end support for accessing carbon markets	<input checked="" type="checkbox"/> Development Aid Sector
16	Provide risk capital in the form of concessional low interest repayable grants	<input checked="" type="checkbox"/> Development Aid Sector
17	Apply an ESG lens to existing portfolio investments and also new pipeline	<input checked="" type="checkbox"/> Private Equity
18	Establish a climate compatible virtual deal room through which project developers and SMEs can submit proposals to banks	<input checked="" type="checkbox"/> Banking Sector

5 Literature Review

The desktop literature review thoroughly examines research on incentives for private sector involvement in climate-compatible projects in Zambia. It analyses a wide range of literature from the past decade to understand the nuances of impact investing and climate finance, underlining the challenges and advantages of green financialization both locally and globally.

The review incorporates findings from key reports by the International Finance Corporation (IFC), Merrill Lynch, and the National Advisory Board for Impact Investing Zambia (NABII), providing insights from both Zambian and international perspectives on the changing landscape of impact investing. It further explores Zambia's investment climate through the work of academic researchers who explore the complexities of fostering climate-compatible investments in the region. Contributions from Van Rooij, J. (2014), and the Commonwealth Secretariat (2021) highlight the challenges in policy coordination and stress the importance of enhanced access to climate finance and stronger public-private partnerships.

The analysis benefits from insights from H. Walimwipi of Snow Systems Zambia, the United Nations Economic Commission for Africa, the Institute for Sustainable Resources, and the Donor Committee for Enterprise Development (DCED). These sources emphasize the importance of both fiscal and non-fiscal incentives in attracting private investments into renewable energy, green growth initiatives, and the creation of green jobs in the construction industry. They highlight the role of renewable energy in improving energy security, the critical role of MSMEs in green growth, and strategies for a resilient green economic recovery post-COVID-19.

While impact investing is identified as a crucial approach to bridging the financing gap for the Sustainable Development Goals (SDGs) in Zambia, significant barriers remain, including inadequate regulatory frameworks, lower returns, and limited liquidity options. Effective mobilization of private sector investment, through green financialization and strategic de-risking, necessitates careful collaboration with government entities to ensure alignment with Zambia's development goals and the green economy.

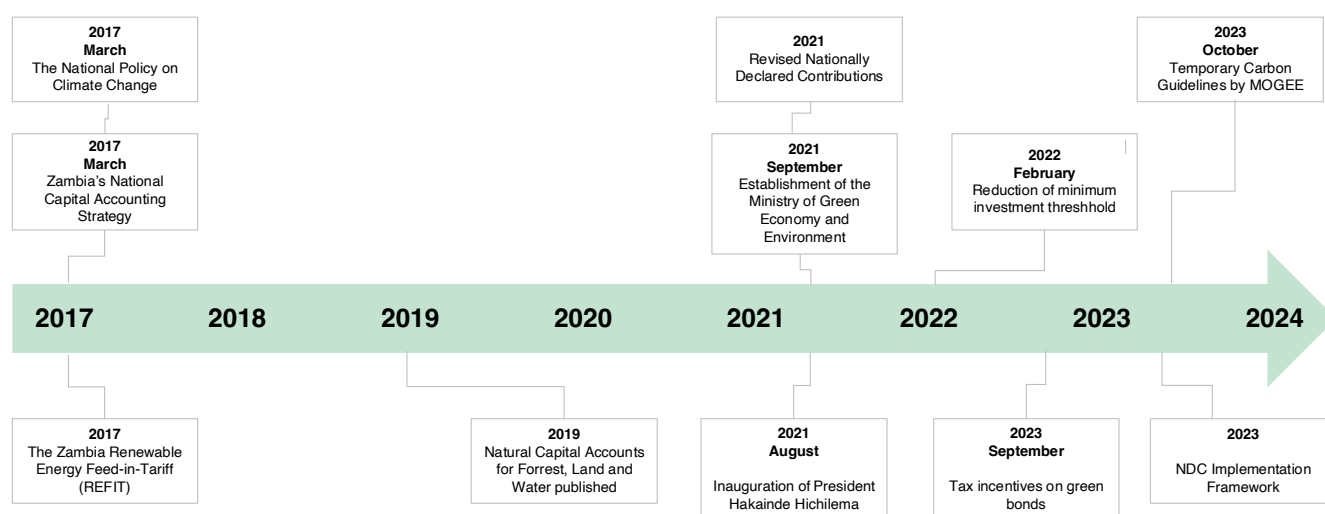
The literature review outlines key areas for increasing private sector engagement in climate-smart agriculture, renewable energy, and sustainable urban development. It recommends improving access to finance, integrating low-carbon technologies, showcasing successful projects, and offering economic incentives to overcome existing challenges. These steps are vital for Zambia's progress toward sustainability, emphasizing the crucial role of multi-stakeholder collaboration in creating a conducive environment for investments in climate-compatible projects.

6 Historical and Current State of Climate compatible investments in Zambia

This section provides a comprehensive overview of the recent historical developments and the current status of Climate compatible investments. It will be divided into two main segments: firstly, an examination of the governmental policies that have been implemented to promote such investments, and secondly, an analysis of the macroeconomic environment that impacts these investments.

6.1 Governmental Policies within Climate compatible investments in Zambia

Figure 1: Timeline of governmental policies within Climate compatible investments in Zambia (non-exhaustive)



Source: Kukula Analysis

Zambia is at a pivotal moment in its journey toward sustainability and climate resilient economy and has acknowledged the necessity for this transition. The nation's susceptibility to climate change is evident through the severe impacts it faces, including droughts, floods, and erratic rainfall patterns. These phenomena have profound effects on key sectors such as agriculture, water resources, energy, and biodiversity.

In response to these new threats arising from climate change, Zambia has proactively developed and implemented a suite of policies and strategies aimed at fostering climate-friendly initiatives and enhancing climate adaptation measures. These efforts underscore the country's commitment to mitigating the impacts of climate change and safeguarding its development trajectory against environmental uncertainties.

6.1.1 National Policy on Climate Change

The National Policy on Climate Change (NPCC) of Zambia, launched in 2016, is a comprehensive framework aimed at addressing the negative impacts of climate change on the country's socio-economic progress (PMRC, 2017). It outlines Zambia's commitment to reducing greenhouse gas emissions and enhancing resilience and adaptive capacity to climate variability and change. The policy emphasizes the need for a coordinated national response, integrating climate change into development plans and promoting sustainable development.

Key aspects of the policy include adaptation and disaster risk reduction, an increase in renewable energy generation, capacity building, research development, education and public awareness, gender awareness, technology development and transfer, promotion of green investments.

The implementation framework involves collaboration among various stakeholders, including government ministries, local authorities, civil society organizations, the private sector, and international partners. The NPCC in Zambia integrates with existing policies and economic strategies through a multi-sectoral approach that ensures coherence between National Development Plans and all climate change programs.

The NPCC has formed a Steering Committee consisting of Permanent Secretaries. This committee plays a crucial role in advising the Council of Ministers, particularly in the areas of policy and program coordination and implementation. The Steering Committee is notable for its diversity, comprising Permanent Secretaries from various key sectors: National Development Planning, Local Government, Health, Energy, Agriculture, Environment and Natural Resources, Communications, Minerals Development, Information and Broadcasting, Works and Supply, Home Affairs, Disaster Management and Mitigation, and Gender. With the involvement of high-level government officials from each sector, there is enhanced coordination across sectors and a coordinated approach to the implementation of the NPCC (United Nations Framework on Climate Change, n.d.).

While the NPCC framework does not provide specific mechanisms on how private sector investment can be increased into climate friendly projects, it does offer broad suggestions such as tax breaks, subsidies and other financial incentives aimed at reducing the cost and increasing the attractiveness of investing in technologies that contribute to the reduction of greenhouse gases. The impact of the NPCC framework is hard to measure and no direct link between increased awareness or uptake can be identified.

6.1.2 Natural Capital Accounting (NCA)




Zambia has a national capital accounting strategy as part of the Wealth Accounting and Valuation of Ecosystem Partnership of March 2017 (Wealth Accounting and the Valuation of Ecosystem Services, u.d.).

In 2019, Zambia achieved a milestone by developing and launching natural capital accounts for Forests, Land, and Water. Efforts are currently underway to formalize the creation, analysis, validation,

endorsement, and application of these accounts within governmental processes (World Bank WAVES, 2020).

Key findings of Zambia’s NCA that were last published in March 2023 were as follows:

Table 1: Latest NCA findings

Type of Account	Key Findings
 <p data-bbox="165 722 393 751">Forrest Account</p>	<ul style="list-style-type: none"> <li data-bbox="477 525 1372 636">⇒ Between 2010 and 2015, the forest account shrunk mainly due to agriculture (64.31%) and urbanization due to unplanned settlements (32.8%) <li data-bbox="477 646 1372 751">⇒ Zambia earned ~\$13.3 million USD from the sale of honey products between 2010-2015, and that the market potential for honey was 10 times the current annual production.
 <p data-bbox="165 1041 375 1071">Water Account</p>	<ul style="list-style-type: none"> <li data-bbox="477 848 1372 919">⇒ Water supply network is inefficient with 21% of piped water leaking away between dams and users. <li data-bbox="477 930 1372 1077">⇒ The process has helped identify and assess policies such as managing demand through water pricing and licensing, improving regulation of groundwater abstraction, and increasing water supply through dams.
 <p data-bbox="165 1362 363 1392">Land Account</p>	<ul style="list-style-type: none"> <li data-bbox="477 1171 1372 1283">⇒ Forest cover had a net reduction between 2018 and 2021, decreasing from 41,002,568 ha (55.28% of national coverage) to 39,723,591 ha (53.55%). <li data-bbox="477 1293 1372 1398">⇒ Built up areas and crop land increased from 332,194 ha and 2,571,702 ha to 405,259 ha and 2,809,215 ha between 2018 and 2021, respectively.

A well-defined NCA Framework has the potential to offer investors a standardized method for measuring and evaluating the environmental impact of their investments, aligning financial decisions with sustainable practices. It is a crucial source of data that can be used by investors to identify investment opportunities that contribute positively to ecosystem preservation and restoration.

By quantifying nature's contribution to societal well-being in monetary terms, investors can appreciate the significant trade-offs involved in preserving nature and biodiversity, placing these values on par with other monetized goods and services. Natural Capital Accounting (NCA) further demonstrates the financial benefits of investing in natural assets and the potential economic drawbacks stemming from insufficient conservation efforts. This calculation of opportunity costs can be instrumental in the investment appraisal process, bolstering the argument for Climate Compatible projects over traditional

infrastructure endeavours, particularly when the latter show lower returns, profitability indices, or net present values.

An example scenario could be an investor evaluating the opportunity cost between investing in an agroforestry project versus a rail project. Agroforestry, by integrating trees and shrubs into agricultural landscapes, offers long-term ecological benefits, including carbon sequestration, biodiversity conservation, and soil health improvement. These contribute to climate resilience and community well-being, potentially offering significant societal value, which is not captured by traditional financial metrics. In contrast, a rail project might offer immediate, higher financial returns but lacks these broader ecological and social benefits. By using NCA, an investor with a climate conscious mandate can quantify the agroforestry project's environmental benefits in monetary terms, comparing these with the rail project's financial returns. This comparison may justify the agroforestry investment as offering greater long-term value to society, despite a lower immediate financial return. However, for this to succeed in practical investment decision-making clear guidelines are required.

6.1.3 Establishment of the Ministry of Green Economy

Following the inauguration of President Hakainde Hichilema in August 2021, Zambia took a significant step toward environmental sustainability and climate resilience by establishing the Ministry of Green Economy and Environment. The new Ministry has been tasked with a broad spectrum of responsibilities, including the development and enforcement of policies and laws related to the green economy, climate change, environmental management, meteorology, forestry, biosafety, and sustainable development (Ministry of Green Economy, u.d.).

The Ministry places a significant emphasis on developing policies, legislation, and regulations related to carbon and environmental pricing mechanisms. These mechanisms, such as carbon taxes, carbon pricing, and carbon fee & dividend schemes, are fundamental to the success of initiatives aimed at offering alternatives to charcoal usage and conserving forests. This approach plays a vital role in achieving Zambia's broader environmental and climate ambitions by mitigating the impact of carbon emissions and promoting sustainable practices.

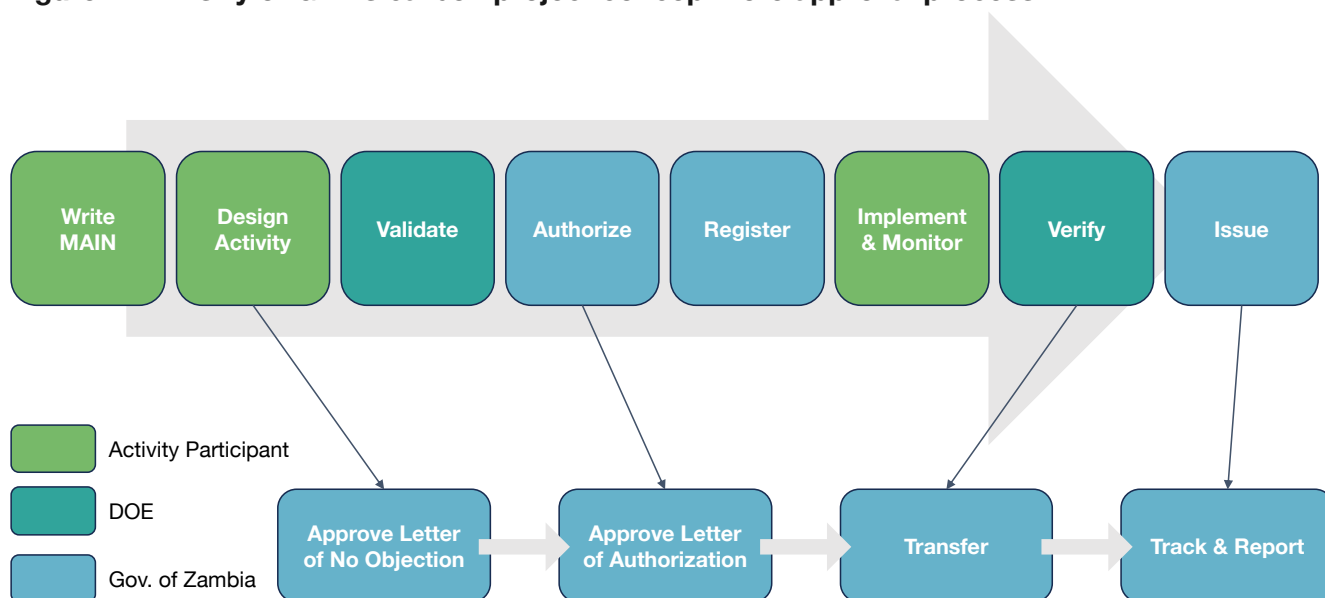
Since its creation, the Ministry has primarily engaged in efforts to boost investment in renewable energy by working on new carbon market guidelines. This initiative is taken on in collaboration with international partners such as the Green Climate Fund and the African Development Bank. These collaborations aim to increase the financial and technical support available for Zambia's transition to a greener, more sustainable energy infrastructure. While the new carbon market guidelines have been a focal point, the Ministry of Environment in Zambia has yet to embark on many new initiatives aimed at enhancing Climate compatible investments. Given the considerable authority vested in the Ministry, it would be highly beneficial to witness them harnessing this power to drive sustainable development initiatives forward.

6.1.3.1 Carbon Market Framework Guidelines for Zambia

In October 2023, the Zambian Ministry of Green Economy introduced the Temporary Guidelines for the Submission and Evaluation of Mitigation Activities Under Article 6 of the Paris Agreement (Ministry of Green Economy, 2023). These guidelines mark a cornerstone of Zambia's carbon market framework, expanding beyond the scope of the earlier Forest Carbon Stock Management Regulations to include a broader range of carbon projects. This initiative underscores Zambia's preparatory steps towards a more comprehensive climate legislation, including the forthcoming Environment Management (Amendment) Act, 2023, and the Climate Change Bill, which is currently under development (National Assembly of Zambia, u.d.).

The guidelines are crucial for the management of Zambia's nascent carbon market, emphasizing the production of credible carbon offsets to maintain market integrity and ensure that the benefits of carbon offsetting are shared with local communities. By establishing the criteria for project eligibility, technological requirements, and the approval process, the Ministry has laid the groundwork for the adaptation of these guidelines into future regulatory frameworks. In aligning with international standards, Zambia aims to become a significant player in the global carbon market, contributing to both national and international climate change mitigation efforts, thereby creating opportunities that could attract a diverse pool of investors.

Figure 2: Ministry of GEE's carbon project concept note approval process



Source: (Ministry of Green Economy and Environment, 2023)

The Ministry of Green Economy's guidelines have fundamentally changed how carbon offset projects are managed in Zambia. By requiring concept notes to be rigorously screened and proposals thoroughly vetted, the ministry is making sure that only projects that meet their high standards for environmental impact and sustainability are approved.

At the time of this report's compilation, it is still too early to assess the specific outcomes and the effectiveness of the carbon pricing mechanism guidelines. Since the implementation of these

guidelines, Kukula Capital has observed a noticeable uptick in the interest towards carbon offset projects. This increased appetite is evident from the number of developers and nature-based funds that are now seeking entry into the market to initiate projects under the new regulatory framework.

6.1.4 NDC Implementation Framework for Zambia 2023

The 2023 NDC Implementation Framework for Zambia represents a strategic initiative developed by the Zambian government to bolster both mitigation and adaptation efforts in alignment with the nation's strategic interests and its commitments to the Nationally Determined Contribution (NDC) targets as stipulated in the Paris Agreement. This comprehensive strategy employs a holistic methodology to address climate change through concerted actions across eleven pivotal sectors, aiming to curtail greenhouse gas emissions while simultaneously enhancing Zambia's capacity to withstand the impacts of climate change.

The NDC Implementation Framework is aligned with critical national and sector-specific strategies, including the Eighth National Development Plan (8NDP) and the NPCC. This alignment underscores the ambition to transition Zambia towards a climate-resilient and low-carbon economic model, in line with the nation's "Vision 2030" Plan (Government of Zambia, 2020).

The Framework is designed to increase co-operation across government institutions and development partners while serving as a foundational guide for climate action in Zambia. The aim is to streamline efforts across various stakeholders and harness the potential of private sector investment into Climate Compatible projects through several key initiatives:

- The National Designated Authority (NDA) for the Green Climate Fund (GCF) has been designated, serving as a pivotal entity for channelling climate change projects funded by the GCF in Zambia. This designation is crucial for facilitating access to the GCF's facility, which is a significant incentive for private sector engagement in climate-friendly projects.
- The Development Bank of Zambia was accredited as the National Implementing Entity (NIE) for Direct Access under the GCF. This accreditation enabled the Development Bank of Zambia to directly access GCF funds, which were to be used to finance climate change projects. This setup was meant to attract private sector investment by providing a direct mechanism for debt counterparty funding of Climate Compatible initiatives. However, with the Development Bank of Zambia being repossessed by the Bank of Zambia, due to non-compliance with regulatory requirements, the only other bank in Zambia which has a mandate as an NIE is ZANACO (Bank of Zambia, 2023).
- The preparation of the NDC involved broad stakeholder participation, including government institutions, civil society, the private sector, and sub-national stakeholders. This inclusive approach ensures that the interests and capabilities of the private sector are considered in the NDC implementation, fostering a conducive environment for private investment in climate action.

Despite the availability of the GCF, at the time of this report's compilation, the fund has been underutilized due to;

- The bank's existing access to 'green' lines of credit from other Development Finance Institutions (DFIs) and funds.
- The perceived challenges associated with the lengthy and cumbersome application process for GCF funding have deterred engagement.
- The absence of a well-developed bankable pipeline of projects in Zambia, which align with the investment criteria of the GCF, presents a significant barrier to utilization.

(Kukula, 2024)

The NDC Framework has stated that investments of \$17.2 billion between 2023 and 2030 to effectively make contributions to the Paris Agreement Contributions (NDC Partnership, 2023). The NDC Framework states that Zambia's climate change adaptation budget is \$2.1 billion USD per annum, demonstrating the awareness of the problem and the need for private sector and external help as the Government of Zambia is unlikely to fund this from national coffers.

Zambia pledges a 25% reduction in CO2-equivalent emissions by 2030 from 2010 levels, with potential to increase to 47% given international financial support. The NDC Framework has outlined sector-specific strategies and targets. In addition, the NDC Investment Strategy and Financial Plan has identified traditional sources and non-traditional sources of capital to bridge the financing gap by 2030;

Traditional	Non-Traditional*
<ul style="list-style-type: none"> • Domestic Revenue • Grants • Donations • Concessional Loans 	<ul style="list-style-type: none"> • Private Public Partnerships • Impact Capital

* No interest or guaranteed commitments from Government

The NDC Implementation framework stresses that some projects in the 8th National Development Plan will not be financed from the national budget but will rely on resources coming from the private sector and other co-operating and development partners (Ministry of Green Economy and Environment, n.d.).

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6.1.5 Fiscal policy

The Government of Zambia has introduced several green tax incentives to incentivize increased investment in climate compatible projects. Selected incentives will be presented in the following:

6.1.5.1 *Reduction of minimum investment threshold*

One significant initiative is the reduction of the minimum investment threshold to attract incentives for local green investments, which makes smaller projects more bankable as they can be initiated by smaller developers rather than large investments. This reduction, from \$250,000 to \$50,000 allows projects related to biodiversity conservation and other priority sectors to enjoy fiscal and non-fiscal incentives, including zero percent import duty rates on capital equipment, accelerated depreciation on machinery, investment guarantees, and protection against nationalization (BIOFIN Zambia, 2022).

Tax benefits on green bonds

In September 2022, the Zambian Ministry of Finance and National Planning implemented new tax incentives for green bonds to promote environmentally friendly investments. Specifically, these measures remove the 15% withholding tax on the interest income from green bonds that are traded on the bond market and have a maturity period of at least three years. This tax exemption is designed to boost investments in projects that have positive environmental impacts, making green bonds a more attractive financial instrument compared to traditional bonds, especially in a scenario where both offer similar coupons.

On December 29, 2023, the Copperbelt Energy Corporation PLC (CEC), a Zambian energy utility company, successfully closed out the first tranche of its US\$200 million green bond program (which was oversubscribed by over 178 percent) (CEC Investor, 2024). This accomplishment follows the initial registration announcement at COP 28 in Dubai on December 5, 2023. The US\$53.5 million first tranche, issued through a private placement to select investors, closed on December 28, 2023. Notable investors, including the Emerging Africa Investment Fund, ABSA Bank, Atlas Mara Bank Zambia, and the African Local Currency Bond Fund, participated in this green bond issuance. The positive response from a diverse range of investors underscores CEC's dedication to renewable energy development in Zambia.

The funds raised will support CEC in developing 200 megawatts of solar energy. This is Zambia's first non-recourse project bond, adhering to the ICMA Green Bond Principles, and serves as a vital proof of concept for green bonds in the country. The government's incentives, such as withholding tax exemptions, have facilitated local and international investor participation, fostering the growth of debt capital markets. In essence, the successful green bond issuance represents a pivotal moment for CEC, Zambia, and its capital markets, highlighting alternative financing avenues for sustainable energy initiatives.

6.1.5.2 *Feed in tariff programme*

The Zambian Renewable Energy Feed-in Tariff (REFiT) Policy was developed to enhance the country's electrical grid capacity and overall power production by attracting private investments into renewable

energy ventures, specifically targeting projects with a capacity of up to 20 MW. Under this framework, the GET FiT Zambia program was established as the primary mechanism to implement the REFiT Strategy. It aimed at facilitating and supporting the development of Independent Power Producer (IPP) projects, with a focus on renewable energy sources including solar energy and small-scale hydroelectric projects, each not exceeding 20 MW in capacity (United Nations Economic Commission for Africa, 2021).

The establishment of REFiTs for small hydro projects was led by the Energy Regulation Board (ERB), in collaboration with Power Africa's Southern Africa Energy Program and the GET FiT Zambia initiative. These REFiTs are fundamental in setting the base tariff for Power Purchase Agreements (PPAs) related to projects engaged through the GET FiT Small Hydro Tender. By providing a consistent and predictable pricing framework, these tariffs were meant to be instrumental in drawing private sector investment towards sustainable energy initiatives.

However, evidence for the success of GET FiT Zambia has been scant. The Tender programme faced significant challenges; with many commentators stating it has been a failure. Key issues included;

- ⇒ The employment of predominantly foreign nationals as GET FiT staff, who were unfamiliar with the local context and the utility-scale power project development process, including the activities required to reach financial close.
- ⇒ GET FiT Zambia failed to obtain debt security from ZESCO, which resulted in PPA negotiations failing to gain traction.
- ⇒ Many IPP bidders submitted low tariff bids, and some of the winning tariffs have become unbankable over time.

6.1.5.3 *Tax and import exemptions*

- ⇒ *Zero percent import duty rate on capital equipment and machinery:* This exemption was introduced in 2022 and aims to reduce the cost of importing necessary equipment for green projects, making investments in climate-friendly initiatives more financially viable.
- ⇒ *Tax Waiver on Solar Systems:* A tax waiver was introduced for all imported goods for the purpose of supply, install and maintenance of solar systems.
- ⇒ *Accelerated depreciation on capital equipment and machinery:* This policy, introduced in 2022, allows for an 80% depreciation rate on written down value (WDV) of investment equipment, providing tax benefits to companies investing in green projects.
- ⇒ *Zero rating of Liquefied Petroleum Gas (LPG) products:* The Government amended its VAT legislation to zero rate LPG and its appliances (Ernst & Young, 2020). This initiative aimed to make LPG competitive with charcoal and incentivize consumers, especially in low-income households, to switch over.
- ⇒ *Waiver of customs duty on Electric Vehicles:* In the 2024 National Budget announcement, the government put forward proposals aimed at promoting the adoption of electric and hybrid vehicles. These proposals include:

-
- a. Eliminating customs duties on a range of electric transportation options and related equipment. This exemption applies to electric motorcycles, cars, buses, trucks, and essential accessories like charging units.
 - b. Lowering the excise duty on hybrid vehicles, which are used for transporting people, to 25 percent from the previous rate of 30 percent. This reduction is intended to make hybrid vehicles more financially accessible and encourage their use.

A Stakeholder interview with an alternative technologies and fuel business, PayGas (Chibale, 2024) revealed that the zero rating of LPG products may have helped bring down the cost, but an LPG stove in Zambia was still more expensive than in South Africa therefore the uptake of LPG was slow. The cost barrier to start using LPG (cylinder + stove + LPG) is still too high for most charcoal users. Reducing the high upfront cost, for low-income households, remains critical. This could perhaps be done through carbon offsets although the carbon offset markets for LPG stoves prove to be more difficult to access than other types of stoves.

Another stakeholder interview, with a Solar EPC business, Timbuktu Zambia Ltd, revealed that the tax waiver on solar equipment increased affordability for consumers and subsequently Timbuktu's sales (Marais, 2024).

A third stakeholder interview with a car dealership business, conducted under the condition of anonymity, revealed that their decision to include an electric vehicle brand under their umbrella was directly influenced by the government's reduction of customs duties on electric vehicles.

6.1.5.4 *Subsidies*

There is significant evidence that subsidies are being used extensively by the US, China, and the EU to stimulate green economic growth.

The EU is preparing to abandon its longstanding restrictions on state aid to compete with US and Chinese subsidies over green technologies. The European Commission President, Ursula von der Leyen, has discussed the need to counteract China's hidden subsidies in green tech and other sectors, proposing new tax credits and subsidies for clean technology companies.

The US has committed a record \$369 billion to greening its economy, which includes tax breaks and subsidies. Meanwhile, China has long subsidized its industrial sectors, a strategy that the US has adopted with its Inflation Reduction Act (Idos-Research, 2023).

While subsidies are often viewed as having a negative impact on a nation's economic health, they could play a crucial role in supporting climate-friendly initiatives in Zambia that might not be economically feasible on their own, such as rural off-grid mini-grids. Implementing specific subsidies within Zambia could enhance the appeal of investing in projects with significant climate benefits. Furthermore, increasing access to electricity in rural areas of Zambia has the potential to dramatically reduce deforestation, which is widespread due to the dependence on firewood for cooking and charcoal production as a source of income. By offering alternative and sustainable sources of electricity, the depletion of forest resources for energy needs could be significantly curtailed.

Despite strong demand for electricity in rural areas, the disparity between this demand and the consumers ability to pay, and willingness to pay poses a significant challenge to the commercial viability and bankability of such projects. Targeted subsidies would make electricity accessible to low-income rural households, thereby aligning incentives for investors with broader environmental and developmental goals.

The Rural Electrification Agency (REA) of Zambia has undertaken projects that offer subsidies to improve rural electrification. Among these initiatives is the Electricity Service Access Project (ESAP), designed to broaden access to the ZESCO utility distribution network. This was achieved by providing a connection subsidy directly to households or customers (Rural Electrification Authority, 2023).

More relevant to making rural electrification projects attractive to private developers, the REA has setup the Rural Electrification Fund (REF) which offers subsidies to qualifying developers.

The REA's REF Operational Manual, states that publicly led rural electrification projects can receive a capital subsidy of up to 100%. Privately driven rural electrification projects can receive a subsidy of up to 50% of capital costs, with remaining funds to be secured by the developer with a minimum level of 20% of equity, and a minimum internal rate of return of 10% before the grant is made available.

The Rural Electrification Authority (REA) has identified a funding need of approximately US\$50 million annually to meet its objectives, but this goal has yet to be fully realized. Additionally, the expected 3% levy from ZESCO, which is intended to support REA's activities, is not consistently paid in full, thereby constraining the operational capacity of REA to execute its projects and initiatives effectively.

REA has a pipeline of mini grids under development where the provision of a capital grant lowers the cost reflective tariffs to a more affordable tariff.

6.1.5.5 *Regulation of mini grids*

The establishment of a regulatory framework by the Zambian Energy Regulation Board in 2018 for the governance of mini grids represents a significant step towards enhancing rural households access to energy within the country. This regulatory framework provides a structured approach to the deployment and operation of mini grids. The framework went through a phase of trial implementations to assess the effectiveness and practicality of the established regulations.

The establishment of the trial mini grid regulations was supported by the European Union's Increased Access to Electricity and Renewable Energy Production project (IAEREP). IAEREP's deliverables included providing technical assistance to create an enabling environment and capacity building. IAEREP deliverables also planned for the development of comprehensive mini-grid regulations by 2022, covering aspects such as net metering and the reassessment of generation licenses (Energy Regulation Board, 2019).

Even before the implementation of Statutory Instrument 41 (SI 41), the licensing requirements set forth by the Energy Regulation Board (ERB) for mini-grid projects, particularly those with a capacity ranging

from 100 to 1000kW, were characterized by a relatively lenient regulatory approach with pre-approved tariffs and predefined escalation rates for a duration of five years provided.

The Statutory Instrument (SI) No. 41 of 2023, under Zambia's Energy Regulation Act of 2019, outlines specific regulations for off-grid mini-grids within its exclusions section. This legislation defines "qualifying off-grid activity" as any commercial operation that generates, distributes, and supplies electricity—possibly including storage capabilities—while remaining separate from the national grid and having an installed capacity of no more than 250 Kilowatts. This definition effectively exempts these small-scale projects from the extensive regulatory framework and tariff approval process that applies to larger or grid-connected energy ventures. By doing so, the SI aims to support the development of off-grid mini-grids, in remote and underserved areas. This approach is intended to encourage small-scale energy projects that are tailored specifically to local needs (Energy Regulation Board, 2023).

Zambia's commitment to climate compatible investments is commendable and has been showcased through its implementation of various fiscal and non-fiscal policies and frameworks designed to promote sustainable impacts. However, those initiatives alone might not be adequate to bridge the financing gap and significant policy action and incentives are required.

6.2 Macroeconomic environment for Climate compatible investments in Zambia

6.2.1 Zambian macroeconomic landscape

An understanding of the broader economic context is useful to appreciate the peculiarities of investing in climate compatible projects in Zambia. The macroeconomic environment in Zambia presents both opportunities and challenges for climate compatible investments. On the one hand, the country's rich natural resources and agricultural potential provide a good foundation for sustainable economic development. On the other hand, the economy is facing significant headwinds, such as high interest rates, high currency volatility and a large public debt burden. All of which can deter investment and complicate the financing of climate compatible projects.

Zambia's economy can be characterised as being commodity dependent, owing to its heavy reliance on the mining sector which typically accounts for over 10% of Zambia's GDP (PMRC, 2023) and is responsible for approximately 53% of annual energy consumption, around 7,355.1 GWh in 2022 (ERB, 2023). The mining sector is the country's predominant source of hard currency earnings and therefore has a direct impact on foreign exchange performance and liquidity in the Zambian market. Zambia's heavy reliance on imports makes Zambia's economy highly dependent on US dollar liquidity.

Agriculture is another vital sector of Zambia's economy, employing a large portion of the population and contributing significantly to GDP. The country's fertile land and favourable climate support diverse agricultural activities, presenting opportunities for sustainable farming practices and agribusiness investments. Initiatives promoting climate-smart agriculture and sustainable land management can enhance productivity while mitigating environmental degradation.

Zambia has a high public debt burden, which at the time of writing is the subject of a dynamic restructuring process. High debt levels constrain fiscal space and limit government spending on sustainable development initiatives. Addressing debt sustainability concerns is crucial for creating a conducive environment for long-term green investments.

Approximately 86% of Zambia's installed electrical generation capacity is from renewable sources, c. 83% Hydro (ERB, 2023). While arguably positive for the environment, this concentration in hydro power puts Zambia's energy stability at risk especially during El Niño weather cycles which are typically associated with lower-than-average rainfall in Zambia. Diversification of Zambia's generation capacity across different technologies is therefore important in the long run.

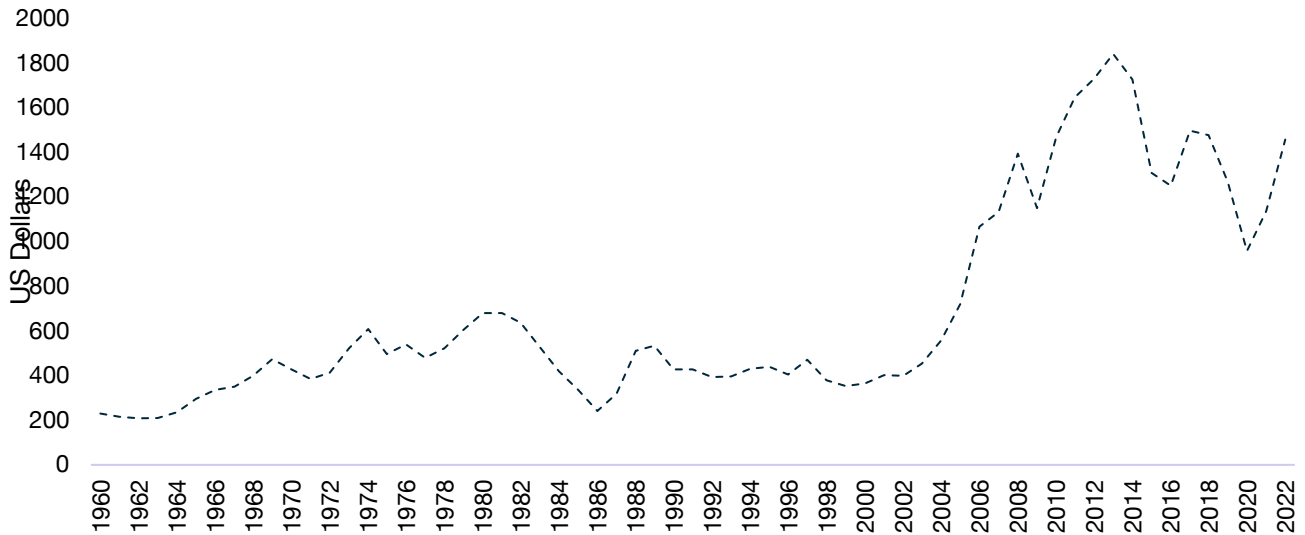
6.2.1.1 Economic growth and productivity

Zambia has young and rapidly growing population which stood at c. 19.7m people in 2022 according to the most recent census (Zamstats, 2022). This is compared to a population of c. 13.1m in 2010 (Zamstats, 2022). This represents a compounded annual population growth rate of 3.4%. The rural population is larger than in the urban population, 11.8m and 7.8m people respectively. Naturally, energy demand is expected to increase. At the same time, rapid urbanisation will lead to an increase in per capita energy consumption as living standards increase.

Recognizing the challenges and opportunities posed by this demographic landscape, increasing the manufacturing base has become a key national priority for Zambia's government. This move aims not only to create job opportunities for the burgeoning young population but also to foster value addition within the economy. By enhancing value addition, Zambia can boost productivity, generate higher incomes, and create a more sustainable economic future. Moreover, a robust manufacturing sector would decrease the economy's reliance on imports, which often leads to imported inflationary pressure, especially during periods of poor foreign exchange performance.

Without bolstering the manufacturing sector, Zambia risks having population growth outpace economic growth, exacerbating existing economic challenges. Indeed, Zambia's GDP per capita has stagnated in recent years, with data from the World Bank indicating a peak in 2013. However, there are signs of progress as GDP per capita shows signs of improvement in recent years. This could be attributed to various factors such as increased investment in infrastructure, better economic policies fostering growth, technological advancements driving productivity gains, and effective utilization of human capital through education and skill development programs. These efforts, if sustained, can contribute to a more prosperous future for Zambia's economy and its people.

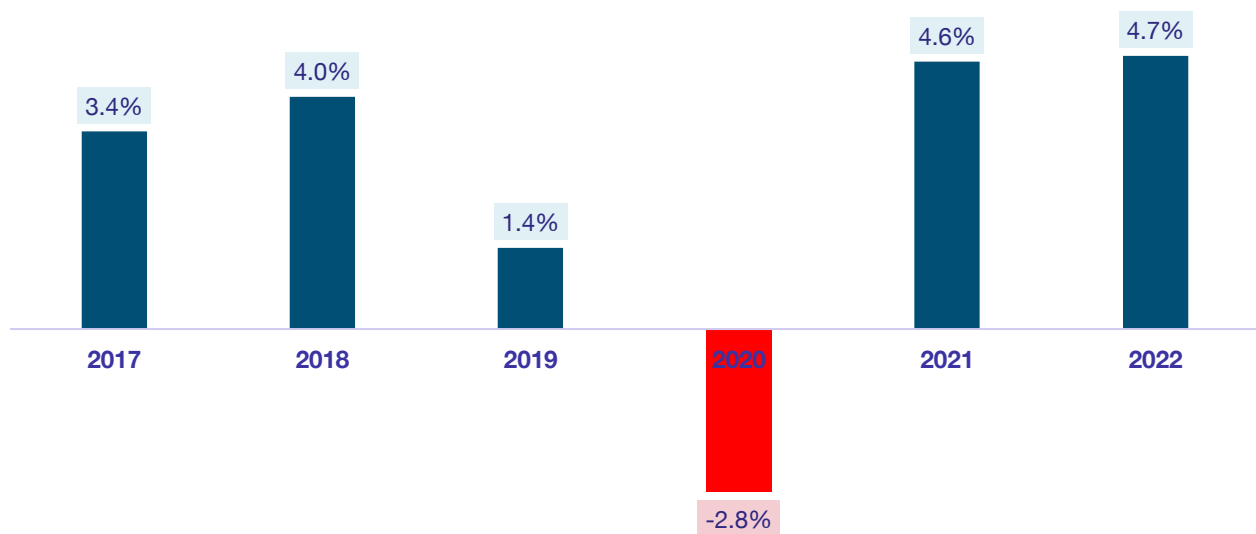
Figure 3: Zambia’s GDP per capita (1960 – 2022)



Data source: (World Bank, n.d.)

While real GDP growth has generally been positive, it remains below Zambia’s potential. A relatively low manufacturing base and energy instability have stifled growth, in addition to the short-run effect of the COVID-19 pandemic. Climate compatible projects can offer partial solutions to these challenges. In the realm of energy stability, Zambia has substantial untapped hydro and solar potential if developed could help resolve energy availability challenges. In addition, the relative simplicity of the supply chain means that circular economy solutions can be backed into the infrastructure from the outset and “leap-frog” other economies that have needed to retool to improve sustainability.

Figure 4: Zambia’s real GDP growth YoY (2017 – 2022)



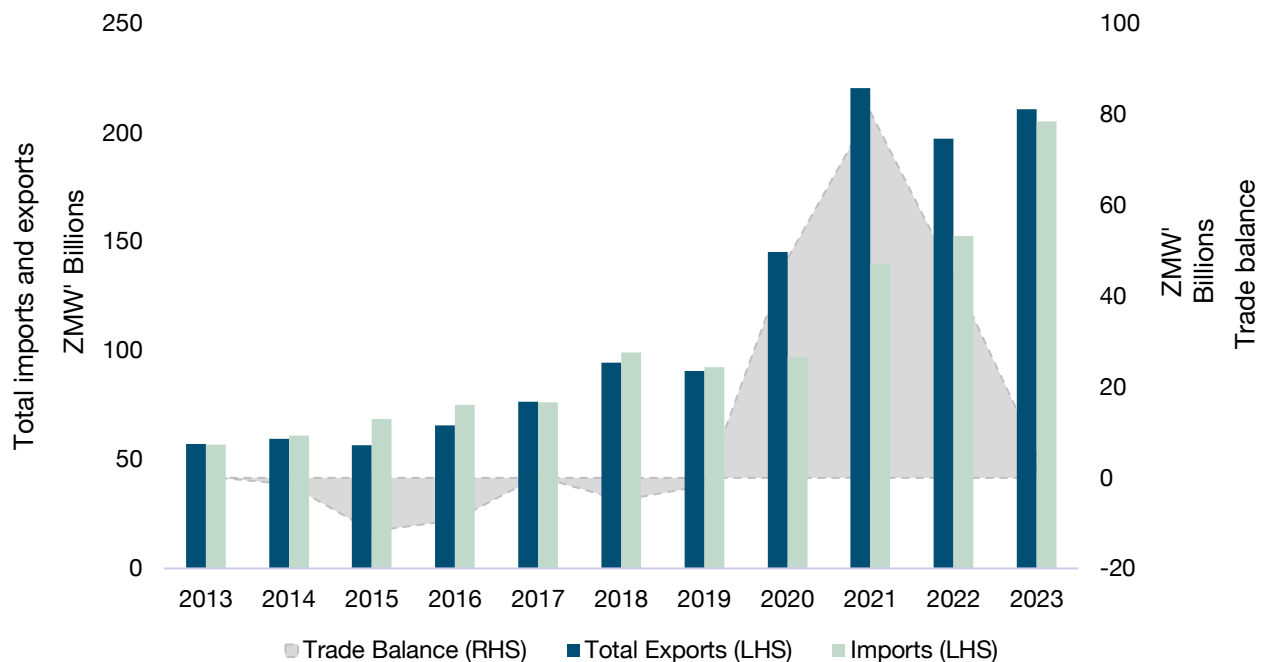
Data source: (IMF, n.d.)

6.2.1.2 Zambia's trade position

Zambia has run a trade surplus for the last 5 years i.e. the value of its exports is greater than the value of its imports. Zambia's exports are predominantly copper and articles thereof and to a lesser extent, although still meaningful, agricultural produce. Zambia's export values therefore are largely a function of copper output and the prevailing price of copper on the global market. The price of copper in recent months has been high due to increased demand, mainly driven by electric mobility sector and other green technologies which require substantial amounts of copper.

However, supply side shocks, hard currency outflows as well as high inflation have historically undermined the local currency. Considering this, import substitution is of critical importance to make the Zambian economy more robust and resilient to shocks. One example of the kind of interventions being prioritised is the construction of the United Capital Fertilisers' plant which commenced in 2023. The plant has a nameplate capacity of 300 000 metric tonnes of synthetic fertiliser. This is expected to have a substantial impact on the domestic agricultural industry as Zambia is heavily reliant on fertiliser imports. Interventions like these are necessary to reduce reliance on imports and stabilise domestic prices.

Figure 5: Zambia's imports, exports, and trade balance (2013 – 2023)



Data source: (ZamStats, 2024)

6.2.1.3 *Fiscal constraints and their impact on green investments*

The new administration's emphasis on fiscal conservatism suggests that significant capital spending will have to come from the private sector to reach capital investment targets. With reduced government involvement in financing initiatives, particularly in the green sector, the burden shifts to private investors and businesses to provide the necessary resources. This shift is underscored by the administration's inclination towards limited subsidies opting rather to create a more conducive environment for private capital flows.

In the short run, and with the attendant risks involved in investing in a developing economy like Zambia, the absence of government intervention in the form of financial support, or subsidies or similar incentives diminishes the financial attractiveness of such ventures and may deter potential investors, thereby impeding the growth of green initiatives.

In line with fiscal conservatism, the administration may favour market-based solutions for addressing environmental concerns. This preference entails implementing mechanisms such as carbon pricing and fostering private sector participation in green initiatives. Market-based approaches are often viewed as more efficient and conducive to economic growth. However, the emphasis on market-driven solutions also implies a shift in the financing landscape for green projects. Rather than relying on government subsidies or grants, funding mechanisms may lean towards private sector investment and revenue-generating models. This must be balanced with the need to ensure equitable access to financing for green projects, particularly for smaller-scale initiatives or in underserved communities which private capital may not find lucrative.

6.2.2 **Key economic risk factors**

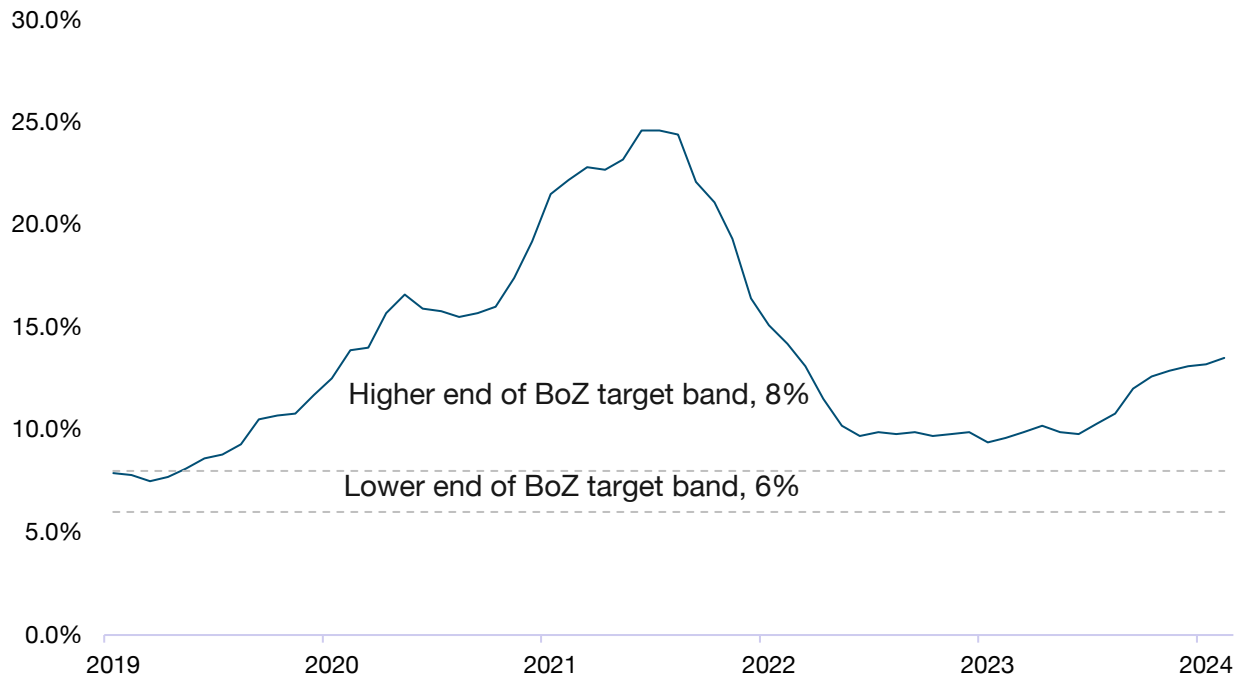
The most pertinent risks in our opinion, from a macroeconomic perspective, are outlined in the following passages. These include persistently high inflation driven by high fuel prices and electricity tariffs and fluctuation in global fertilizer prices; high volatility in the exchange rate brought on by variability in copper production and prices, ultimately impacting the availability of hard currency; investor and public sentiment; and lastly, perennial drought which may have a substantial impact on agricultural productivity, energy stability and food security.

6.2.2.1 *Inflation*

Inflation has tended to be elevated in Zambia, having been outside the Bank of Zambia's (BoZ) target range of between 6% and 8% for the last five years (BoZ, 2024). Sustained high inflation feeds into the high cost of capital and may further diminish the attractiveness of climate focused investments in the country. While several periodic interventions from the central bank have helped stave off excessive inflation, in the long run, it is increased and sustained high copper output and a robust local energy supply that will help stabilise the exchange rate.

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Figure 6: Zambia's CPI YoY rate (2019 – Feb 2024)



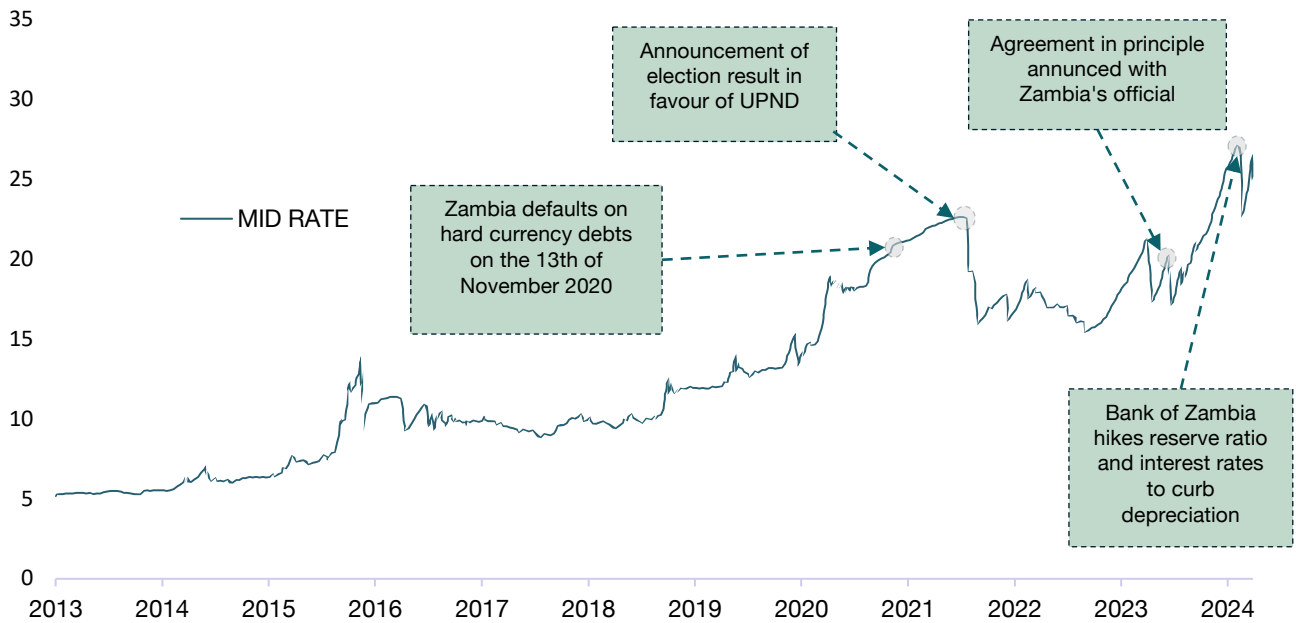
Data source: (ZamStats, 2024)

6.2.2.2 Currency volatility

Currency volatility is widely recognized as a significant obstacle to the viability of long-term projects, particularly when there exists a discrepancy between the currency in which the investment is made and the underlying cash flow generated by the project. Green infrastructure projects, forestry initiatives, and similar ventures face heightened vulnerability to such currency fluctuations. This exposure amplifies the risks associated with these projects, making them more susceptible to financial instability and jeopardizing their long-term sustainability. Moreover, currency volatility exacerbates the already high cost of financing, particularly when external sources of capital are involved.

The increased uncertainty surrounding returns on investment due to fluctuating exchange rates contributes to elevated financing costs, thereby impeding the feasibility of these projects and hindering their implementation. Addressing currency risk is therefore crucial for promoting the development and success of green initiatives and other long-term projects, necessitating strategic measures to mitigate such financial challenges.

Figure 7: US Dollar vs Zambian Kwacha exchange rate (2013 – Feb 2024)



Data source: (Bank of Zambia, n.d.)

6.2.2.3 Adverse weather conditions

Adverse weather events are more prominent risk. The El Niño cycle typically brings about significant climatic anomalies, which can have pronounced effects on Zambian agriculture and hydropower generation. During El Niño events, Zambia often experiences below-average rainfall, leading to drought conditions across many regions. This can severely impact agricultural productivity, causing crop failures, reduced yields, and food shortages. Additionally, decreased rainfall reduces water levels in rivers and reservoirs, negatively impacting hydropower generation, which heavily relies on adequate water flow. Consequently, during El Niño years, Zambia may face challenges in both food security and energy production, highlighting the vulnerability of its agricultural and hydroelectric sectors to climate variability.

As this report is being finalized, Zambia is grappling with a significant drought, which is expected to adversely affect maize production—one of the country's staple foods. This situation could lead to increased mealie meal prices, exacerbating food security. (Reuters, 2024). ZESCO also instituted 8-hour load shedding (scheduled power outages) that is not expected end in 2024 (Lusaka Times, 2024).

6.2.3 Economic outlook

Zambia's economic outlook is generally positive. However, there are a few preconditions for sustained economic growth. Firstly, the resolution on the treatment of government debts to restore confidence a cr. Well capitalised mining sector. Improved fiscal interventions for critical infrastructure. Government creating a conducive policy environment for green investments. It is therefore critical to crowd in private capital into vital infrastructure.

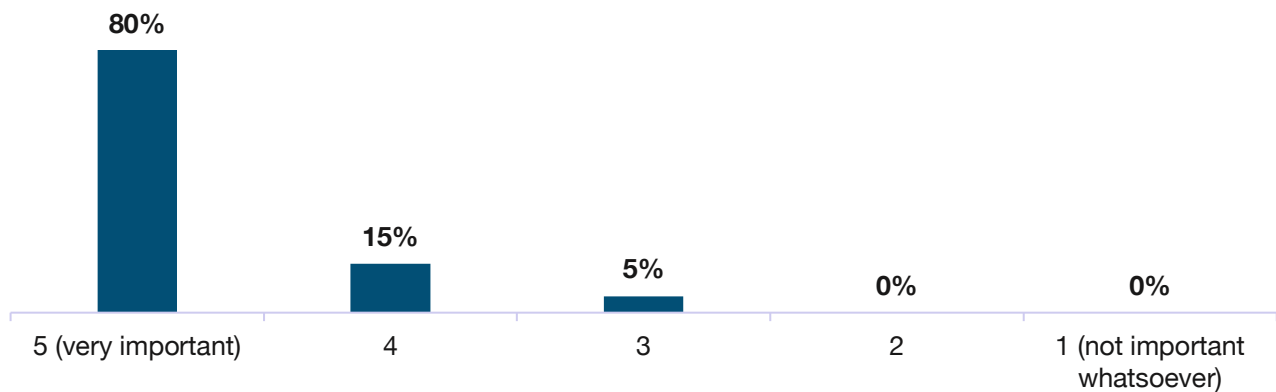
In recent years, Zambia has seen a more focused attempt to advance Climate compatible investments, particularly in the agriculture and energy sectors. The World Bank's Climate-Smart Agriculture Investment Plan and the Green Climate Fund's Renewable Energy Financing Framework highlight Zambia's efforts to incorporate sustainability into its economic activities. However, the relatively recent emphasis on climate compatibility means that the country is still in the early stages of realizing the full potential of these investments. Challenges such as policy inconsistency, financial constraints, and the need for technological adaptation remain significant barriers. Furthermore, the impacts of climate change on Zambia's economy, coupled with macroeconomic volatility, underscore the urgency of accelerating Climate compatible investments. Addressing these issues requires a multifaceted approach that includes stabilizing the macroeconomic environment, ensuring policy consistency, and enhancing the capacity for technological and financial innovation.

Zambia's macroeconomic environment offers both opportunities and challenges for climate-compatible investments. The economy relies heavily on mining, particularly copper, and agriculture, presenting potential for sustainable practices and diversification, especially in energy sources. However, challenges such as high interest rates, currency volatility, and a substantial public debt burden persist. Despite these obstacles, there is a focus on fiscal conservatism, indicating that significant investments in the green sector may need to originate from the private sector. Resolving Zambia's debt is crucial for boosting economic confidence and stability, creating a favourable climate for both local and international investors.

7 Barriers to Investment and Gaps Toward Climate Adaptation

This section critically examines the barriers to investment, identifies the significant gaps impeding progress toward effective climate adaptation and examines the impacts of mobilizing climate finance into Zambia. Our research shows that there is consensus about the fact that private investments into Climate Compatible projects are of high importance. At the same time, only 3% of respondents believe that the current level of investments is sufficient.

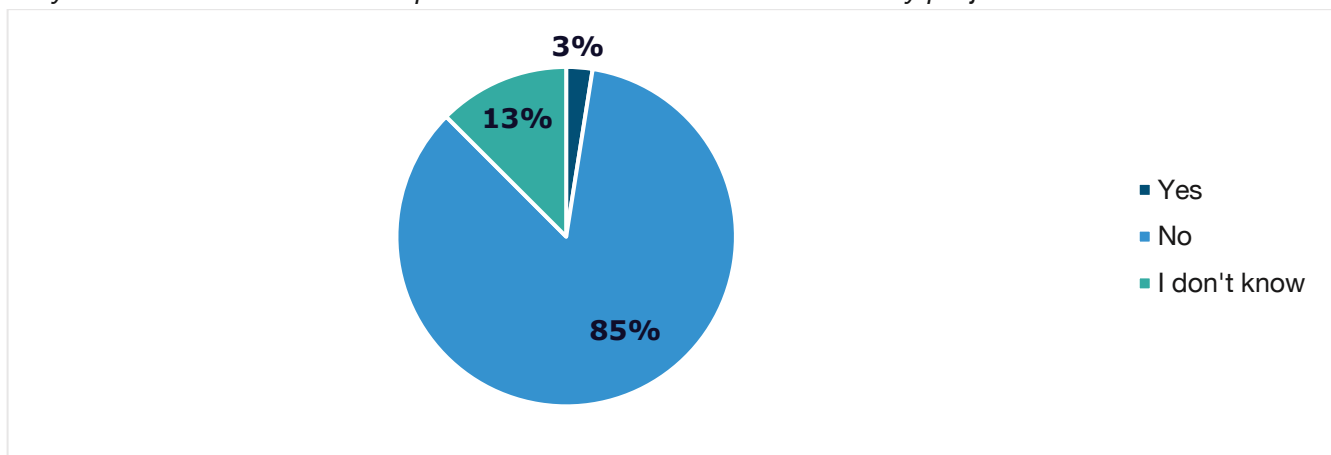
Figure 8: Survey Results of Importance of Private Investment in Climate compatible investments
How important do you find private investment in climate-friendly projects in Zambia?



Respondents emphasise the fact that Zambia is one of the countries that is most vulnerable to climate change. At the same time, the government has limited capacity to prioritize climate-friendly investments, so public funds are insufficient to meet the capital demands for such projects. Some SMEs also highlighted that the result-oriented nature of the private sector makes it more suitable to create real impact than the public sector.

Figure 9: Survey Results on The Perception of The Current Level of Private Investment into Climate compatible investments

Do you find the current level of private investment into climate-friendly projects in Zambia sufficient?



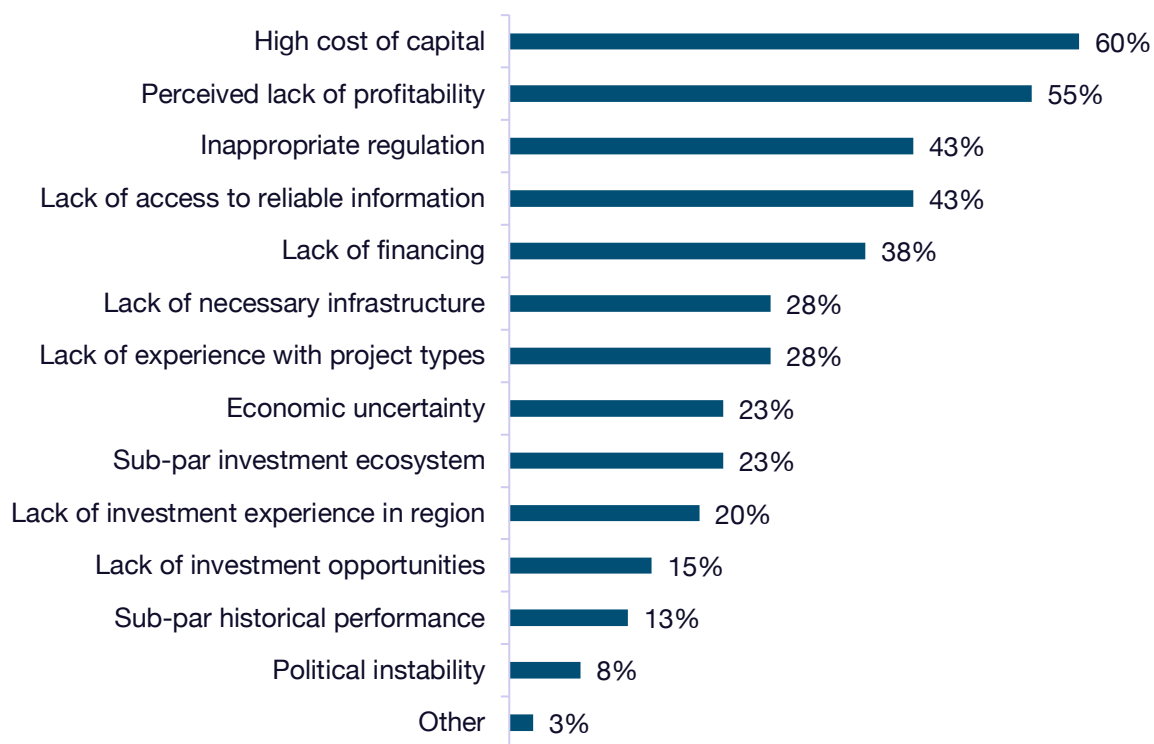
Huge investments are needed to make the necessary transformations in the country. For instance, 70% of Zambians don't have access to the national grid, making many resort to wood and charcoal for cooking and heating that lead to deforestation. Despite relative consensus on the fact that the current level is insufficient, several respondents believe that this might improve going forward, with more attractive projects being made available.

7.1 Barriers to Investment

Figure 10 depicts the respondents' perception of the main barriers to Climate compatible investments in Zambia. The high cost of capital is seen as the main barrier to impact investments, with 60% highlighting it as a barrier. Climate compatible investments are often associated with high upfront costs, creating a need for large investments where the cash flows might be far in the future. The high cost of capital, therefore, makes it difficult to raise money for many Climate Compatible projects.

Figure 10: Survey Results on Barriers to Climate compatible investments

What are the barriers/obstacles to increasing private investment in climate-friendly projects in Zambia?



55% see lack of profitability as a barrier to Climate compatible investments. Several respondents believe that since many of the benefits of Climate compatible investments are non-monetary, they will exhibit poorer returns. This is also linked to the fact that 23% see the investment ecosystem as sub-par, and 15% believe there is a lack of investment opportunities. With fewer projects overall, and little liquidity in such investments, there is a perception that few projects will be able to give competitive returns. Lack of access to reliable information is also seen as a major barrier, highlighted by 43%.

Respondents find it difficult to identify potential projects to invest in and find reliable information about them. At the same time, some investee companies find it difficult to pitch and present their projects to investors, due to a lack of experience with this. On the other hand, those who are good at presenting themselves might get granted a disproportional share of grants and investments, even though the projects might not be the best. This may lead to a poor allocation of capital.

7.1.1 Trade-offs to Investment

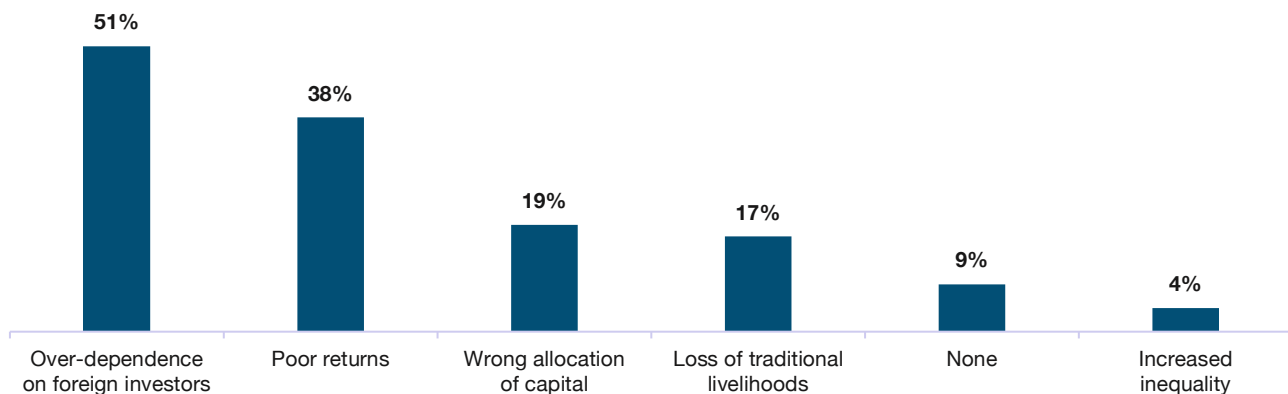
Examining the trade-offs to investment in Climate compatible investments in Zambia, dependence on foreign investments, poor returns and wrong allocation of capital is highlighted among respondents. Notably, over half of the respondents are worried about being overly dependent on foreign investors. Among the factors they highlight is the concern that these investors do not understand the local terrain and needs, which could result in a poor allocation of capital. Some also highlight that investors with the wrong ethics and practices can create poor working conditions.

Many also believe that one must choose between financial returns and making a positive impact, with approx. 40% stating poor financial returns as a potential issue. Potential poor returns can also discourage further investments into the space, limiting the scale and pace of implementation of projects that are critical to addressing climate change. Some traditional livelihoods, such as charcoal burning and clearing of the natural environment will need to be reduced. Respondents highlight that the people involved in these practices could be trained to use their skills for climate-positive work. Increased inequality is seen not seen as a major trade-off by the respondents.

Despite 55% of respondents believing that climate-friendly investments are associated with lower returns, research on international markets suggests this might not be the case. The 2016 Merrill Lynch report “Impact Investing: The Performance Realities” suggest that impact investments can provide competitive financial returns, while also reducing portfolio risk.

Figure 11: Survey Results on Trade-offs from Climate compatible investments

Which of the following potential issues/trade-offs resulting from private investment into climate-friendly projects in Zambia do you find the most significant?



In summary, there is a strong consensus on the importance of private investment in climate compatible projects and that current levels are insufficient. However, the barriers to investment are prohibitive and it is crucial to offer financial solutions that adequately mitigate the associated risks.

7.2 Local and Foreign Investor Perceptions

This section delves into the perspectives on Climate compatible investments (CCIs) in Zambia, examining the viewpoints of both local and international investors. Initially, the discourse will explore Foreign Direct Investment (FDI) in relation to Climate compatible investments, alongside the perceptions held by local stakeholders regarding such investments.

7.2.1 Local Investors' Perception of Climate compatible investments in Zambia

The survey results shed light on the perspectives of local investors regarding Climate compatible investments in Zambia. Local investors agree on the critical nature of Climate compatible investments in Zambia for fostering job creation, stimulating economic growth, and reducing emissions. While acknowledging that job creation and economic growth are benefits that could accrue from any investment, the emphasis on reducing emissions underscores the specific value attributed to Climate compatible investments. Despite recognizing their importance, investors express dissatisfaction with the current investment levels, deeming them insufficient to meet the urgent needs of Zambia's transition towards a more sustainable and climate-resilient economy.

As outlined in section 7.1., investors identify several barriers impeding the flow of investments into climate-compatible projects. Prominent among these barriers are the poor returns on investment and the high cost of capital, which significantly deter local investors from committing funds to these projects. The trade-offs between achieving financial returns and making impactful investments in the climate sphere are notable, with investors highlighting the small and illiquid nature of Zambia's capital market as a significant barrier to entry. The perceived lack of profitability, coupled with a lack of investment experience and difficulty accessing reliable information, further compounds these challenges, indicating a need for enhanced support structures and investment facilitation mechanisms.

The survey examined the local investors perception of the current ecosystem for climate-friendly projects in Zambia, where some investors see the ecosystem as growing but lacking experience and expertise for honing climate skills. Others express a lack of sufficient knowledge, suggesting a gap in information and education among investors about climate-friendly projects. Optimism is evident in views that with more support, the ecosystem will improve and thrive, yet there are also concerns about the ecosystem being mediocre, cryptic, or even non-existent. The lack of adequate collaboration among economic agents in green financing is highlighted as a crucial area needing improvement.

The sentiment among local investors towards Climate Compatible projects is mixed, with negative experiences and challenges due to unfamiliarity with the sector. A notable gap in knowledge and understanding of the area, potential returns, and the overall investment opportunities in Zambia suggests a perception of uncertainty that hampers investor enthusiasm. Addressing these issues through

targeted interventions, such as improving access to information, fostering public-private partnerships, and implementing favourable economic policies, could significantly enhance the attractiveness of Climate compatible investments in Zambia. Building organizational capacity and creating a more conducive investment climate are imperative for mobilizing local investors towards this vital sector.

7.2.2 Foreign Investors Perception of Climate compatible investments in Zambia

The capital inflow from foreign investors is crucial for Zambia, not only as a means of economic growth but also for the transfer of technology, enhancement of human resources, and promotion of sustainable development practices. Zambia's approach towards FDI is generally liberal, offering a conducive environment for investments across various sectors, including the field of Climate compatible investments (U.S. Department of State, 2022). As global attention shifts towards sustainable development, Zambia's potential in renewable energy, sustainable agriculture, and green infrastructure has attracted the interest of foreign investors. However, Kukula Capital has witnessed that navigating the investment landscape in Zambia, particularly in new and evolving sectors such as climate-compatible investments, presents a unique set of challenges and opportunities.

Zambia's policy towards FDI is underpinned by a legal framework that does not discriminate against foreign investors investments (U.S. Department of State, 2022). The Zambia Development Agency (ZDA) plays a pivotal role in attracting FDI, promoting trade, and spearheading the country's economic development strategy geared towards the private sector. Institutional reforms, such as the Private Sector Development Reform Program (PSDRP) and the Millennium Challenge Account (MCA), have been instituted to enhance the investment climate, focusing on reducing the cost of doing business, ensuring transparency, and promoting good governance Investments (U.S. Department of State, 2022).

Kukula Capital has experienced those foreign investors investing in Zambia, particularly in new sectors like Climate Compatible projects, are faced with inherent risks related to policy instability, land tenure uncertainties, and the need for compliance with specific regulatory requirements in sectors. Zambia has faced criticism for frequent policy shifts that engender uncertainty among investors. This unpredictability is particularly concerning for foreign investors looking into Climate Compatible ventures, where stability and long-term planning are crucial. These characteristics of the Zambian investment landscape underscores the importance of local knowledge. Understanding the intricacies of the Zambian legal and regulatory environment, cultural nuances, and the local market is vital for the success of foreign investments, especially in emerging sectors. Local partnerships can facilitate easier navigation through bureaucratic processes, offer insights into local consumer behaviour, and provide a cushion against the risks associated with policy changes.

The perception of foreign investors towards Climate compatible investments in Zambia is shaped by a mix of policy openness, challenges related to land ownership and regulatory compliance, and the potential for impactful investments. While the risks associated with investing in a new country and sector are notable, the strategic importance of foreign capital in driving Zambia's sustainable development cannot be understated. The research team suggest that through careful navigation of the

investment landscape, leveraging local knowledge, and aligning with Zambia's development goals, foreign investors have the opportunity to contribute meaningfully to the country's sustainable future.

7.2.3 Foreign Direct Investments (FDI)

The survey conducted offers a multifaceted view on the implications of FDI for Climate Compatible projects within the country, underscoring the necessity of a nuanced approach that harmonizes foreign involvement with local interests and sustainable development goals.

A consensus emerges on the critical need to strike a balance between attracting foreign capital and expertise and preserving domestic ownership and influence over projects. This balance is vital to ensuring that FDI not only injects much-needed resources into Zambia's Climate Compatible initiatives but also supports a development model that is beneficial to both foreign investors and local stakeholders. Emphasizing local participation and ownership in such projects is key to leveraging the advantages of FDI while minimizing the risks tied to external control.

The responses advocate for robust regulatory measures to manage FDI effectively, ensuring it aligns with Zambia's national interests and development priorities. Proposed measures include incentivizing partnerships between foreign and domestic investors, enhancing transparency, and fostering the retention of capital within the country. The introduction of regulations aimed at integrating Zambians into FDI projects over time is seen as essential for building local capacity and ensuring the sustainable impact of foreign investments. The significance of Public-Private Partnerships (PPPs) is highlighted as a strategic approach to mitigate the risks associated with FDI. Through PPPs, the collaboration between the government, local businesses, and foreign investors can facilitate project implementation that serves national development objectives while promoting local ownership. PPPs have been successfully structured in Zambia, primarily in the road and energy infrastructure sectors. Notable examples include the Chingola-Kasumbalesa Road (Lusaka Times, 2024) and the Ndola-Lusaka Dual Carriageway.

However, there is strong need for PPPs for climate compatible projects especially in the renewable energy, forestry, and water infrastructure sectors. These partnerships are instrumental in de-risking FDI, facilitating knowledge transfer, and building local capacity in managing and executing Climate Compatible projects

There is a strong call for policies and initiatives focused on enhancing local expertise and control over FDI-driven projects. This includes comprehensive training programs for local stakeholders, promotion of skills development in climate-smart investments, and integration of Zambians into significant roles within project management and decision-making processes. By prioritizing capacity building and training, Zambia can better position itself to harness FDI for climate-compatible development while ensuring that the benefits of such investments are widely distributed and sustainable.

Thus, the survey underscores the complexity of FDI in the context of climate compatible investments in Zambia. A balanced and strategic approach, underpinned by thoughtful policies, regulatory measures, and capacity-building efforts, is essential for maximizing the benefits of FDI. Such an

approach not only supports the advancement of climate compatible projects but also safeguards national interests, ensuring that Zambia's journey towards sustainable development is inclusive and equitable.

In essence, FDI is essential if Zambia is to maximize investment in climate compatible investments and a multi-faceted approach is required.

7.3 Investor and Stakeholder Priorities

This section examines the priorities and roles of investors and stakeholders. It will build upon the findings from the survey conducted.

7.3.1 Stakeholder importance

Figure 12 shows that the investor survey indicates a consensus among participants that the government or public sector plays a pivotal role in fostering and enhancing Climate compatible investments. The respondents position the government at the forefront as policymakers, underscoring their responsibility in crafting a supportive ecosystem through the establishment of clear guidelines and the implementation of measures aimed at encouraging private sector investments. Despite acknowledging the effectiveness of current government policies and initiatives, as depicted in Figure 13, which assesses the perceived impact of government policies on climate-friendly investments, there is a general perception that the policy landscape harbours significant untapped potential, and the current level of policy regulation could improve. Respondents advocate for the introduction of policy instruments such as tax incentives, lower tariffs on eco-friendly products (e.g., electric vehicles), engagement in Public-Private Partnerships (PPPs), and provision of government guarantees to further incentivize investments in sustainability. As highlighted in Section 7 of the report, the government has initiated engagement in these activities, yet there is a desire among stakeholders for an increase in such efforts.

Additionally, the survey reveals that local institutional investors and the development sector are regarded as the second most crucial stakeholders in Climate compatible investments. This acknowledgment stems from their vital role in ensuring the alignment of capital allocation with the specific environmental needs of Zambia. Given their on-the-ground presence and intimate understanding of the local context, these actors are indispensable for maximizing the impact of invested capital. Among local investors, institutional pension funds stand out for their early engagement potential and long investment horizons. Hence, there is a call for these entities to make more definitive allocations in their investment portfolios towards environmentally beneficial asset classes, such as solar energy projects, yieldcos, and Renewable Energy Funds, to drive meaningful progress in climate-compatible investments.

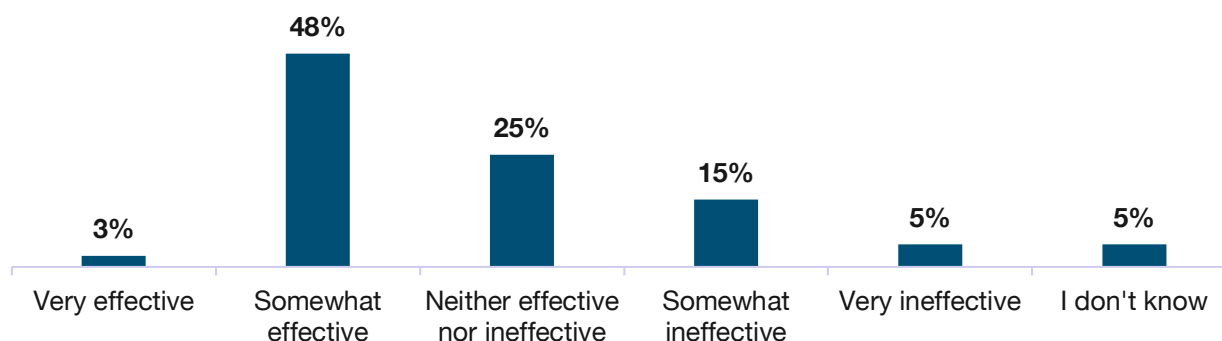
Figure 12: Survey Results on the Most important Stakeholder in Climate compatible investments
Which stakeholders are most important in contributing to incentivising and/or increasing investment into climate-friendly projects in Zambia?



The ranking was done using the Borda Count method, where each first-place ranking gives eight points, each second-place gives seven points, and so on. The total points are aggregated, and the stakeholders are ranked based on the number of points.

Figure 13: Survey Results on the Perception of Government Policies Effect

How effective have existing government policies and initiatives been in attracting private investment in climate-friendly projects in Zambia?



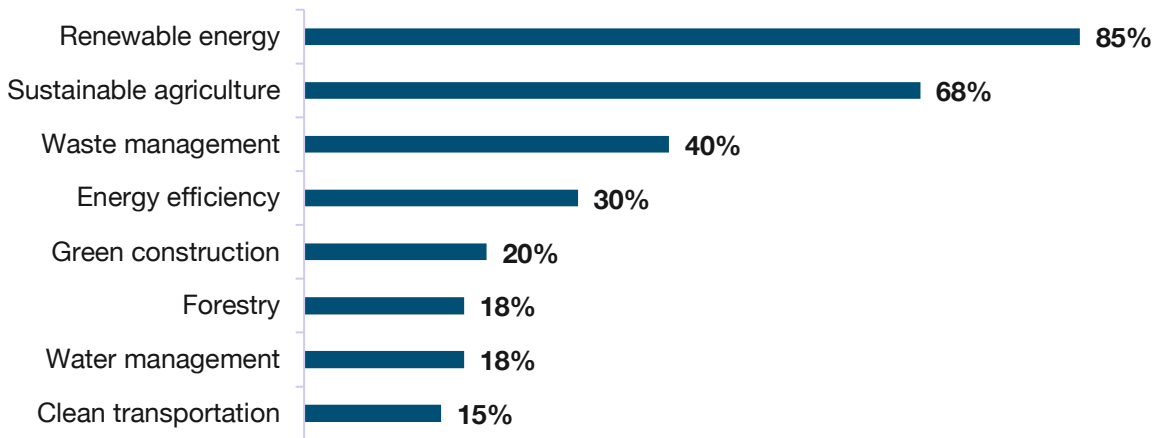
7.4 Sub-Sectors with High Potential

This section explores the potential sub-sectors within Climate Compatible areas in Zambia, drawing on survey findings and focus group discussions with stakeholders in renewable energy, agriculture, the circular economy, and forestry. The exploration of sub-sectors within climate-friendly areas in Zambia underscores the opportunities for private sector investment in renewable energy, sustainable

agriculture, the circular economy, and forestry. These investments not only address critical environmental and social challenges but also offer substantial economic benefits. However, overcoming challenges such as financing, regulatory barriers, and the need for knowledge transfer will be crucial for unlocking the full potential of these sectors.

Figure 14: Survey Results on Sectors for Climate compatible investments

What types of climate-compatible projects should private sector investment prioritise in Zambia?



7.5 The impact of mobilizing climate Investment on Zambia’s economy

In addition to strengthening climate resilience and climate infrastructure, enhanced climate investment levels have implications for Zambia’s economy and capital markets.

7.5.1 First Order Effects

7.5.1.1 Job Creation and Skills Transfer

Investing in capital-intensive projects, especially those focused on sustainability, is a strong driver of job creation. This is particularly true in sectors like renewable energy, sustainable agriculture and green construction.

The opportunity for job creation in Zambia through investments in renewable energy, especially solar energy, is highlighted by the country's current and projected energy needs. With Zambia's peak electricity demand expected to reach 5,422 MW by 2030 (MOE, 2024), and the current installed capacity at 3,705 MW, the projected deficit is evident.

To address this, approximately 1,800 MW of renewable energy from Independent Power Producers (IPPs) and off-grid mini-grid projects are required over the next five years. This step is vital to satisfy future energy demand and lessen the effects of seasonal droughts on hydroelectric power—Zambia's main energy source, which is also vulnerable to climate change.

In addition, renewable energy investments offer significant potential for both direct and indirect job creation. The World Bank estimates that 1 MW of solar PV can create about 35.5 direct jobs (Kojima & Bacon, 2011). If solar projects completely fill the energy deficit, it could lead to around 63,900 direct jobs, not including indirect jobs in related industries like construction, maintenance, and solar facility administration. These investments also contribute to broader economic benefits, including enhanced energy security and sustainability.

Developing renewable energy infrastructure, particularly solar and wind, is crucial for Zambia to combat climate change and secure a stable, sustainable energy supply. Zambia's abundant solar resources, with an estimated 3,000 sunshine hours per year and average solar insolation of 5.5 kWh/m²/day, make it an ideal location for solar energy development. The country's significant wind resource potential, with speeds between 6 to 11 m/s at heights of 80 to 200 meters above sea level, further supports the diversification of its energy mix and job creation in the renewable energy sector.

7.5.1.2 Currency Stability

Over the past decade, Zambia has experienced significant capital flight, leading to a decline in its foreign currency reserves from ~\$3.9 billion in 2016 to ~\$3 billion in 2023. This trend has adversely affected the local currency, the kwacha, causing it to depreciate sharply. Consequently, the cost of living for most Zambians has risen significantly. (PMRC, n.d.)

The National Development Coordination (NDC) framework has determined that Zambia needs \$17.2 billion USD to meet its Paris Agreement targets. Successfully mobilizing and domiciling these funds within Zambia could play a critical role in stabilizing the kwacha.

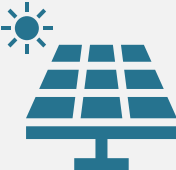


7.5.1.3 Economic Diversification

Zambia's economic dependence on copper exports has made its economy susceptible to boom and bust cycles, the vicious cycle further exacerbated by debt crises.

However, climate-compatible investments in renewable energy, carbon offsets, and the battery electric vehicle (BEV) value chain present significant opportunities for economic diversification. These sectors offer Zambia new paths to generate export earnings, reduce reliance on copper, and enhance economic stability through sustainable growth avenues.

The potential for export earnings, estimated below, in these sectors is promising, offering Zambia new avenues for sustainable economic growth.

Table 2: Export potential of climate compatible sectors

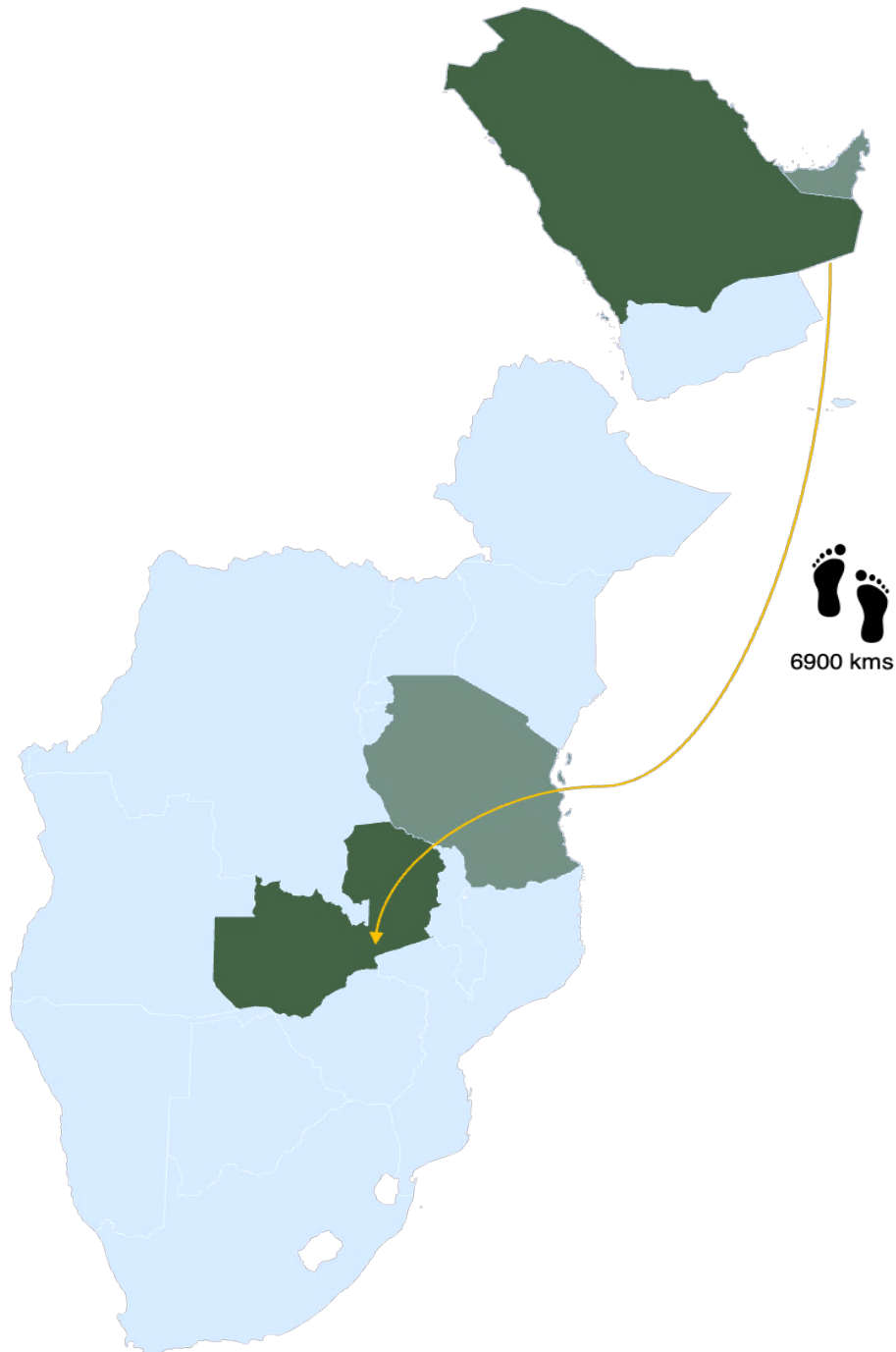
Export Field	Annual Potential for Export Earnings USD (millions)	Comments
 <p>Electricity from Renewable Energy</p>	<p>By 2030 – \$433 million</p> <p>By 2040 - \$867 million</p>	<p>According to the Zambia’s Ministry of Energy the projected electricity export demand will be 500 MW in 2030 (4380 GWh) and 1000 MW (8760 GWh) by 2040 (Ministry of Energy, 2023). In order to estimate the annual potential for export earnings, we have assumed the median of the standard historical South African Power Pool’s DAM (Day Ahead Market) average market clearing prices from 2021-2023, which was 9.9 USc per KWh (SAPP, 2023).</p>
 <p>Carbon Offsets</p>	<p>~\$162 million</p>	<p>Our estimate is derived from the Memorandum of Understanding (MoU) that the Zambian government signed with two Chinese companies (Bloomberg, 2023). This agreement allocates 5% of Zambia's land for carbon offset initiatives, anticipated to produce 23.25 million tonnes of carbon credits. Calculated at the average 2023 carbon credit price of \$6.97 per tonne (Eco Systems Market Place, 2023).</p>
 <p>Battery Electric Value Chain</p>	<p>~\$7.3 billion*</p>	<p>Zambia and the Democratic Republic of Congo collectively hold 70% of the world's cobalt reserves, a crucial mineral for electric vehicle battery production. Recognizing their pivotal role in the EV value chain, both countries have expressed intentions to move beyond being mere raw material suppliers. They have taken a significant step by signing a memorandum of understanding (MOU) to establish a joint battery precursor manufacturing plant (afreximbank, 2023), highlighting their commitment to adding value within the EV battery value chain. The demand for cobalt is expected to surge, with projections indicating that battery demand for cobalt could reach over 320,000 tonnes by 2030 (Fu, 2020).</p>

*Annual cobalt demand for EV batteries

7.5.1.4 Increased Energy Security

Zambia imports 1.4 billion litres of petroleum per annum. Despite having no natural petroleum resources, Zambia has 4300 MW of undeveloped hydro potential, and its climate is optimal for solar energy generation.

Figure 15: Zambia has no natural resources and fuel imported has an extra carbon footprint due to the distance involved



If Zambia had to make an electric mobility transition, it would result in Zambia securing its energy needs and insulating itself from geo-political shocks.

In addition, Zambia's trade balance would be improved by not having to exchange hard currency for fossil fuels. Zambia currently spends \$1.2 billion per annum on fuel imports (Lusaka Times, 2021).

Electric vehicles driven in Zambia would be powered by truly renewable and clean electricity.

7.5.2 Second Order Effects

7.5.2.1 *Potential to distort financial markets*

As mentioned in Section 9 of the report, a key strategy in mobilizing climate finance is the use of blended finance to de-risk climate compatible projects which are often seen as inherently risky.

Due to the nature of blended finance, it has the potential to distort financial markets because of its lower-than-market pricing. Introducing non-market-priced capital into the market can lead to market distortion.

However, it-must be noted that Zambia's financial markets, such as its banking sector and debt markets, have exorbitant interest rates. The introduction of massive amounts of blended finance into the market could have a net overall positive effect on debt instruments, from the perspective of SMEs, by reducing interest rates and extending tenors.

7.5.2.2 *Reduced investment in Government securities*

One of the key recommendations in this report, is for commercial banks and large institutional investors to cap their purchases of government securities and instead channel excess funding into climate compatible investments.

The result of this would lead to a decrease in demand for these instruments, potentially raising the cost of borrowing for the government. This scenario could result in higher interest rates on new government debt, reflecting the reduced demand from a traditionally large buyer segment.

The increased cost of borrowing for the government could lead to adjustments in fiscal strategy, potentially prioritizing certain expenditures or seeking alternative funding mechanisms. Over time, this could influence the structure and sustainability of public finances.

The shift in investment strategies by major institutional investors could increase volatility in the capital markets, especially in the short to medium term, as markets adjust to the new investment flows. This could affect the valuation of equities, corporate bonds, and other asset classes.

In addition, banks and pension funds adjusting their investment portfolios significantly would, potentially alter the risk profiles of these institutions.

Overall, mobilizing climate finance is essential and can resolve Zambia's economic woes. However, it would be important to manage incentives for these investments carefully to maximize their positive impacts while mitigating potential market distortions.

8 The Role of Blended Finance

This section explores the impact of blended finance on Climate compatible investments in Zambia. It starts with an explanation of blended finance to establish a foundational understanding. Following this, the discussion shifts to an analysis of various blended finance mechanisms, focusing on their potential benefits and challenges. To illustrate these mechanisms in action, case studies from Zambia will be examined.

8.1 Definition

Blended finance is a strategic approach that uses public sector funds to attract private sector investment in developing countries. This method addresses the lack of funding that impedes sustainable development and climate change projects. It combines public and private capital, where public funds are offered on favourable terms to entice private investment, thus reducing the risks associated with such projects. The key idea behind blended finance is its ability to draw significant private sector resources for crucial projects aimed at achieving sustainable development goals, particularly in areas where private investors usually see the risks as too high (Convergence, n.d.).

Blended finance has grown since its early use to play a key role in increasing private financing for climate-related projects. Its expanding acceptance among various stakeholders, such as development agencies, multilateral development banks (MDBs), private foundations, impact investors, institutional investors, asset managers, and commercial banks, highlights its ability to fill the climate financing gap. By working together across public, private, and philanthropic sectors, practitioners of blended finance are earnestly aiming to expand investment opportunities and set up reliable principles and practices. (NGFS, 2023).

Through these concerted efforts, blended finance mechanisms could be instrumental in addressing the pressing need for climate-friendly investments in Zambia, paving the way for a more sustainable and resilient global future.

8.2 Typical Blended Finance Mechanisms

The following section will describe common blended finance mechanisms. Building upon the insights from previous sections, this segment offers an assessment of the blended finance mechanisms previously outlined. It evaluates their implementation timeline, complexity, the specific issues they aim to tackle, and their applicability and potential within the Zambian market.

8.2.1 Guarantee / Risk Insurance schemes

Guarantee schemes are financial arrangements designed to mitigate risks associated with projects, offering assurances to investors by providing a form of security against potential losses. These schemes often involve a third party stepping in to cover specified risks, thereby enhancing the feasibility of investments and encouraging private sector participation. Uptake of guarantee schemes has been a mixed bag mainly due to the crowding out effect of government securities in Zambia.

In the Zambian context, the research team has noted an increased interest from major development aid players such as USAID, FCDO, and MCC. These organizations are stepping in to provide crucial support as third parties by offering first loss capital and guarantee scheme.

In recent years, government securities in Zambia have offered high yields due to the country's debt crisis. As a result, lenders, including banks, have maintained conservative balance sheets, favouring investments in these government securities, which they deem conservative despite offering similar or higher returns compared to new ventures. This preference persists even in the presence of guarantee schemes designed to mitigate lending risks to new projects.

Table 3: Pros and Cons of Guarantee Schemes

Pros	Cons
Guarantees help lower the risk for private investors by safeguarding against possible losses, thereby making projects more appealing for investment.	The crowding-out effect in Zambia illustrates how the appeal of government securities may deter banks from participating in guarantee schemes, as they might favour these lower-risk investments instead.
By offering protection against losses, these mechanisms can attract significantly larger amounts of capital from private investors, including risk-averse entities like commercial banks, than would be feasible without such security.	There's a concern that reliance on guarantees could lead to a market dependency, hindering the development of independent risk assessment and management skills, essential for project advancement without such supports.
This approach is especially beneficial for long-term projects, like infrastructure developments, forestry projects or environmental conservation efforts, which typically experience delayed returns and long investment horizons.	Establishing guarantee schemes involves complexity and significant administrative expenses, necessitating considerable initial investment in legal, financial, and operational structuring.
	If not carefully designed, guarantees might encourage overly risky behaviour from beneficiaries, assuming that any losses will be covered.

8.2.2 First-Loss Capital

First-Loss Capital is a risk mitigation strategy where a portion of potential losses is absorbed by a third party to protect investors. This mechanism enhances investor confidence, encourages investor participation in high-risk projects, and ensures that the initial losses are covered, thereby promoting financial stability and project viability. First loss facilities generally do help align incentives better than grants.

First loss capital and guarantee / risk insurance schemes are both risk mitigation tools in blended finance, but they operate differently. First loss capital acts as a safety net for other investors by absorbing the first share of any losses, functioning similarly to equity. This mechanism encourages further investment by offering protection to subsequent investors. Guarantee schemes, meanwhile, involve a third party promising to compensate for losses under specific conditions, serving as a form of insurance for debt investments.

Table 4: Pros and cons of first loss capital

Pros	Cons
By absorbing the initial losses, it enhances investor confidence to engage in high-risk projects.	The entity providing first-loss capital risks losing their entire investment if the project fails.
	There is a potential for project developers to become overly reliant on first-loss capital for project feasibility

The research team found no instances of first loss capital being used in Zambia. However, they observed the successful implementation of first loss coverage and other incentives by Aceli Africa in East Africa (Swiss Agency for Development and Cooperation, 2022). In 2024, Aceli Africa is planning to expand into the Zambian market, and we may get to observe the successful deployment of first loss capital in the Zambian agricultural sector.

8.2.3 Concessional loans and grants

Concessional loans and grants involve the provision of financial assistance to countries or projects, typically at favourable terms such as low-interest rates or outright gifts.

Grants, when added to the capital stack, can reduce the weighted average cost of capital, and subsequently positively affect Net Present Values and Internal Rates of Return of projects.

Concessional loans have drawn criticism before due to their potential distortion it can have on the local ecosystem or economy, potentially even creating a dependence on donors. Therefore, mechanisms to align incentives need to be carefully considered.

Table 5: Pros and cons of concessional debt

Pros	Cons
The low-interest rates or grant nature of the funding make it feasible for projects that might not be viable with commercial loans.	Can lead to distortions in the local economy by disincentivizing private investment or affecting competitiveness.
Concessional loans and grants can be directed towards sectors that are crucial for the well-being of a population but are not attractive to private investors.	If the terms are not carefully crafted, they may lead to behaviours or decisions that do not align with long-term sustainability goals.

8.2.4 Technical Assistance Facilities

In blended finance, Technical Assistance (TA) plays a crucial role as both an enabler and risk mitigator, offering support services that ensure investments are financially viable and aligned with development goals. TA encompasses capacity building through training, covering the costs of project development activities, project preparation, stakeholder engagement to align interests, operational enhancement post-investment, and market development efforts, including regulatory reforms and sector advocacy.

It also includes risk mitigation by strengthening operational and strategic aspects of projects and subsidizing essential but non-revenue-generating costs. This comprehensive support is vital for overcoming market inefficiencies, capacity gaps, or high-risk environments, and facilitating private sector involvement.

Technical Assistance also include donor funded transaction design assistance. This refers to design-stage funds, typically in the form of grants, provided by the development sector. These grants play a crucial role in the early stages of transaction design by enabling the project to be thoroughly planned and structured in a way that it can attract the necessary blend of finance from various investors.

Table 6: Pros and cons of technical assistance facilities

Pros	Cons
TA develops local capacities, ensuring project longevity and effectiveness	Recipients may become reliant on external TA for project continuation, creating “donor babies” and hindering the development of independent capabilities.
It increases the financial viability of projects by addressing gaps in expertise and knowledge.	The effects of TA can be intangible and hard to measure, posing challenges for evaluation and justification of expenses.
By improving project design and execution, TA reduces the risk profile for investors.	The foreign aid sector frequently encounters issues of redundancy and inefficiency, as various organizations often provide similar services without adequate coordination. This lack of synergy results in duplicated efforts and a continual cycle of developing similar strategies, tools, or programs— thereby constantly “reinventing the wheel.” For a more effective aid landscape, these entities need to foster greater collaboration, share knowledge, and streamline their interventions to avoid overlap and enhance the impact of their collective efforts.
Supports regulatory reforms and sector advocacy, fostering a more conducive environment for investment.	Many technical assistance facilities tend to favour providing 'soft' forms of assistance, for example the creation of pitch decks and business diagnostics, rather than investing in the 'hard' costs associated with development activities. This inclination towards non-

capital-intensive support reflects a preference for advisory and strategic services over direct financial contributions to tangible assets or development activities.

8.3 Examples of use in Zambia

There have been several blended finance transactions in Zambia that have been facilitated by various organizations. Here are a few recent examples:

8.3.1 EDGE program | USAID- DFC guarantee scheme

In Zambia, the USAID EDGE program has collaborated with the U.S. International Development Finance Corporation (DFC) to establish a loan guarantee agreement with Absa Bank Zambia. This strategic partnership aims to mitigate the bank's lending risks, thereby expanding its capacity to offer increased financial support, including unsecured lending, to small and medium-sized enterprises (SMEs) (USAID, 2022).

The DFC's guarantee serves as a critical financial backstop, enhancing the accessibility of much-needed loan capital for Zambian SMEs, which are instrumental in fostering economic growth and development across various sectors.

EDGE acted as a market facilitator, offering technical assistance to Zambian SMEs and MSMEs. This support helped prepare them to apply for and secure capital from banks.

8.3.2 Prospero's Concessional Finance Facility

Prospero's Concessional Finance Facility, a collaborative endeavour between Prospero Limited (an FCDO backed market enabler) and the Zambia Industrial Commercial Bank (ZICB), is designed to extend concessional loans to Zambian SMEs (Prospero Limited, 2021).

This initiative is committed to enhancing climate resilience and promoting environmentally sustainable practices within the local business community. Beneficiaries of the facility, include entities involved in honey production, solar-powered irrigation, and cashew nut processing.

By assuming full credit risk, the facility enables ZICB to offer these loans at reduced interest rates, thereby enabling eco-friendly business innovations and Zambian citizens to contribute to positive environmental impact.

A successful use of Prospero's concessional financing facility was G&T's Energy as a Service (EaaS) Solar Project, where Kachema Meats was an offtaker. Instead of Kachema Meats purchasing the solar system, G&T developed the asset and retained ownership, supplying power under a Power Purchase Agreement (PPA). This model, enabled by concessional debt from Prospero, was essential in making the project competitive with non-cost-reflective tariffs from ZESCO. By lowering the cost of capital and enhancing equity returns, concessional financing was pivotal for the project's feasibility, underscoring the necessity of such support to render Solar Commercial and Industrial Projects economically viable.

While Prospero's facility significantly benefited the businesses it supported, the size of the facility was limited to 1 million pounds. To achieve Zambia's Nationally Determined Contributions, substantially larger pools of concessional capital are necessary.

8.3.3 FSD Africa and Sofala Capital

Financial Sector Deepening Africa (FSD Africa), a development institution aimed at fostering African financial markets, acquired a 25 percent stake in Sofala Capital in June 2018. This equity investment was a deliberate step in blending different sources of finance to support housing finance companies and was designed to leverage additional resources by attracting further investment from other commercial and institutional finance sources (Centre for Affordable Housing Finance in Africa, 2019).

A portion of the equity funds Sofala Capital received from FSD Africa was designated to be reinvested into Zambian Home Loans (ZHL) and iBuild Home Loans. These two entities specialize in offering long-term mortgages and construction assistance to low-income earners who are incrementally building their own homes (FSD Africa, n.d.).

In addition to the stake acquisition and equity investment, ZHL received a \$500,000 credit line directly from FSD Africa.

The overarching goal of the transaction structure was to boost ZHL's and iBuild Home Loans' ability to assist individuals in building homes, specifically targeting low-income earners. By improving their financial capabilities and reducing lending risks, the transaction aims to provide broader access to affordable housing finance, contributing to economic growth and development.

With African Life Financial Services possessing a 70% equity stake in ZHL, the capital structure serves as a classic example of integrating development finance, impact investment, and concessional capital with institutional funds, showcasing how blended finance could enable the execution of projects or further on lending.

Our key findings from the analysis of selected blended finance transactions in Zambia indicate that these initiatives have proven effective in reducing capital costs, attracting commercial investment, and facilitating additional on lending. However, these benefits have been realized on a relatively modest scale.

To fully harness the potential of blended finance, there is a need for a significant increase in the mobilization of guarantee schemes, first loss capital, concessional debt funds, and other blended finance mechanisms within the country. This approach will enhance the scale and impact of such financial structures, enabling broader economic and developmental gains.

9 Case Study

These case studies were carefully selected to examine the practical aspects and real-world outcomes of climate-compatible investments in the country. The primary purpose of the case studies is to illustrate successful implementations, lessons learned, the financing mechanisms behind the projects, and to examine what incentives were available or could have been useful at the time.

Foxdale Court is a mixed-use commercial property located in Roma, Lusaka. Since its opening in 2011, the property has pioneered and integrated various sustainable practices in its operations, including rainwater harvesting, waste separation, organic composting, Zambia's first commercial-scale rooftop solar project, and also Zambia's first electric fast charging station. For the case study, the research team focused on its commercial-scale rooftop solar project and the fast-charging electric station.

9.1 150 kW rooftop solar project

Figure 16: Aerial photo of Foxdale Court's rooftop solar array



9.1.1 Background and Objectives

In 2015, Zambia experienced significant load shedding, up to 12 hours a day, due to low water levels in the Kariba Dam. The situation in 2015 was part of a broader regional drought affecting several countries in Southern Africa, impacting their power generation and economic stability.

Initially, Foxdale Court turned to diesel generators, but these proved to be very costly, consuming over 400 litres of diesel per day to keep the building operational and retail tenants open.

In 2016, to mitigate against the load shedding and reduce its diesel consumption, Foxdale Court undertook the installation of a solar system. The system was a hybrid that would integrate ZESCO, solar PV with the generated being throttled down and providing emergency baseload.

9.1.2 Financing Mechanism

The system was financed in 2016 by a loan from a local commercial bank. This is interesting because the prevailing debt financing terms in 2024 would not be attractive for a solar project.

The debt was provided at a rate of 7.5% and a tenor 8 years.

However, the financing was not unsecured and was only granted when Foxdale Court provided the bank 150% collateral cover of the loan value.

9.1.3 Assessment and Lessons Learned

The system worked well and was able to significantly reduce fuel consumption during daytime loadshedding. However, during the night-time loadshedding, with no battery bank to store excess energy obtained during the day, the diesel generator would take up more of the building's load.

Therefore, the forecasted payback and financial savings of the system were somewhat diminished due to the unpredictable loadshedding schedule. However, the payback and returns of the system could have been improved if a net metering policy was in place, with excess energy produced by the system but not used by the building being exported to the grid. Net metering is discussed further in Section 10.2.2.

In hindsight, the system would have benefited from having a battery bank installed from the start. This would have eliminated the need for the generator completely, with the battery bank providing the base load. However, this would have doubled the cost of the system, and the collateral cover requirements of the lender would not have been met (Mwanza, 2023). If the bank had provided the loan on an asset finance basis, i.e., the loan being secured by the solar asset only, then integrating a battery bank would have been possible.

In addition, when Foxdale Court's management was asked whether they would have preferred to own the system or would have leased it under an Energy as a Service (EaaS) PPA, with the EaaS company owning the system and Foxdale paying a tariff per kilowatt hour (kWh) drawn, Foxdale Court management stated that they would have preferred not to have incurred the upfront CAPEX and could have signed an EaaS PPA if the option was available, but at the time, there were no known EaaS companies operational in Zambia.

However, the case for an EaaS business model largely depends on the cost of debt and the tenor that can be obtained, and the willingness to pay the resultant tariff by the offtaker.

Foxdale Court was able to obtain somewhat favourable terms to finance its solar system. However, the macroeconomic and monetary policy landscape has significantly evolved from 2016 to 2024. The current secured overnight financing rate (SOFR), at the time of this report's compilation, is ~5.3%.

It is therefore unlikely that, in the current environment, an EaaS company would be able to obtain an interest rate of 7.5% from a local commercial bank. Additionally, in recent years, local commercial banks have seldom offered loan tenors extending beyond five years.

The research team's conversations with industry experts revealed that this duration aligns closely with the average term of deposits held by these banks, which are predominantly short-term. Banks must balance their loan offerings with the nature of their deposits to maintain adequate liquidity. By matching the term of loans with the average term of deposits, banks aim to mitigate liquidity risk and ensure they have sufficient funds to meet their obligations. Another layer to this cautious approach is the assessment of Return on Assets (ROA) over extended periods. The industry acknowledges the diminishing returns that can occur over longer tenors than 5 years due to factors such as market volatility and interest rate risks.

The current viability of an Energy as a Service (EaaS) business model in Zambia heavily relies on the availability of concessional debt and extended tenors.

9.2 Fast Charge Electric Vehicle Charging Station

9.2.1 Background and Objectives

In 2023, Foxdale Court undertook the installation of Zambia's first fast charge DC charging station (rated 60 kW.) The rationale behind the charging station was as follows.

- The installation was consistent with Foxdale's environmental focus and follows a precedent set by Foxdale Court in pioneering green initiatives, even when their contribution to the company's overall bottom line was initially unclear.
- The company hoped to spark the EV industry in Zambia and took a “build it and they will come” approach, anticipating some niche demand from EV owners who would have been incentivised by the waiver of customs duty on electric vehicles.
- A secondary reason for the installation of the charging station was to support an electric taxi service that was being piloted at Foxdale Court.

Figure 17: Foxdale Court's 60 kW fast DC EV charger



The charging station was installed with full understanding by Foxdale's management that it might not yield a commercial return or payback.

9.2.2 Financing Mechanism

The charging station was financed entirely through equity, as obtaining interest-bearing debt for a potentially unprofitable venture would not have been sensible.

9.2.3 Assessment and Lessons learned

The station was utilized by the electric taxi service that was being piloted at Foxdale Court throughout 2023.

However, there was not much uptake from other electric vehicles in Lusaka. This is perhaps because Foxdale Court did not market the station heavily on social media. One of the reasons for this was the lack of a front-end payment platform software that could be integrated user's mobile devices and debit cards.

The cost of the payment platform software was prohibitive for Foxdale Court, and they approached a few development aid organizations seeking grant funding for the same. However, these organizations had no available funding for such initiatives.

The charging station case is noteworthy because it was initiated by Foxdale Court, reflecting their ethos of sustainability and environmental friendliness. Normally, such cutting-edge infrastructure projects would be undertaken by the government. However, with the government facing budgetary challenges, the development aid sector stands out as the only viable candidate to pursue such innovative and experimental projects.

10 Recommendations to Key Stakeholders

This section is dedicated to offering targeted recommendations to key stakeholders involved in Climate compatible investments in Zambia. It covers the various eco-system actors, including the government, market enablers, regulators, institutional investors, the development sector, the private equity sector, and the banking sector. Each group occupies a pivotal position within the ecosystem, contributing uniquely to the advancement of Climate compatible investments in Zambia. The aim is to provide actionable insights that can collectively drive a more sustainable investment climate, aligning Zambia's economic development goals with environmental sustainability and climate resilience.

Kukula and Tandem applied their institutional knowledge and experience as a filter to synthesize insights from desktop research, surveys, focus group discussions, and stakeholder interviews to formulate their recommendations.

10.1 Governmental Parties



10.1.1 Utilize the NDC Framework to Boost Climate compatible investments

This recommendation focuses on enhancing the National Determined Contributions (NDC) Framework to effectively integrate private sector investments into climate-friendly projects across various sectors in Zambia. The government's role encompasses leveraging the NDC Framework to facilitate private sector engagement in climate-compatible investments through policy development, incentives, and strategic planning. The government's engagement is crucial as it holds the regulatory authority and policy-making capabilities essential for shaping a favourable investment landscape.

The government can leverage the NDC Framework more effectively to boost Climate compatible investments through:

Recommendation

Detailing finance mechanisms:

- The NDC implementation framework should develop a strategy to harness blended finance and integrate it into its sector specific strategies. By detailing the financial incentives, support structures, and risk mitigation measures available, the framework can make a compelling case for private investors to channel their resources into Zambia's green economy.
- For example, in the agricultural sector, research has shown that farmers transitioning to climate-smart agriculture practices face significant barriers, primarily due to high upfront CAPEX costs. The NDC Framework could address a challenge like this by emphasising a blended finance approach that encourages asset finance/leasing companies to participate by reducing perceived risks. One effective strategy could involve collaborating with the development aid sector to create guarantee schemes tailored toward agricultural equipment leasing companies.

Blended finance has been recognized as a key strategy to address the funding gap in implementing Nationally Determined Contributions (Commonwealth Secretariat, 2021). Yet, there is a distinct lack of a specific approach for its integration within the NDC framework.

By implementing the recommendation stated, the government can demonstrate a clear pathway for private sector engagement in Zambia's green transformation.

10.1.2 Establishment of a Natural Capital Accounting Database for Informed Investment Decisions

Recommendation

This recommendation proposes the creation of a comprehensive online Natural Capital Accounting (NCA) database by the Zambian government backed by donor funding. Aimed at quantifying and monetizing the environmental and social impacts of investments, this initiative seeks to facilitate more informed and climate-friendly investment decisions. The lack of a systematic approach to quantify and monetize the environmental and social impacts of projects hampers informed investment in Zambia's climate-friendly projects.

The government's role involves establishing and maintaining a centralized online NCA database that quantifies and monetizes the environmental and social impacts of projects. This database will serve as a crucial tool for comparing Climate compatible investments with traditional ones.

For this recommendation to materialize the government must:

- *Defining Scope:* Clearly articulate the goals of the NCA database. This should set out the geographical scope (national, regional, or local) and the types of natural capital to be included i.e. water, forests, minerals, biodiversity etc.
- *Database Development:* Initiate the development of the NCA database by gathering relevant data on Zambia's natural capital and the impacts of various investment projects.
- *GIS Mapping:* Gather comprehensive spatial data on land use patterns, water resources, biodiversity hotspots, and areas vulnerable to climate change impacts. This requires a blend of satellite imagery for a broad overview and localized ground survey for accuracy, ensuring the data accurately reflects Zambia's environmental assets and vulnerabilities. Once collected, this spatial data must be seamlessly integrated into the NCA database using advanced GIS mapping and spatial analysis techniques. The integration would enable the visualization of Zambia's natural assets.
- *Stakeholder Engagement:* Collaborate with environmental experts, economists, and industry stakeholders to ensure the database accurately reflects the value of natural capital.
- *Public Accessibility:* Ensure the database is in a digital format, user-friendly, interactive and publicly accessible, providing clear guidelines on how to interpret and use the data for investment decisions. Such a tool would sit at the Ministry of Green Economy and Environment's website.

There is precedent for the government establishing a digital tool similar to the one proposed. The government previously created a public portal that offers a spatial view of the Zambian mining cadastre. This portal displays all mining tenements, identifies the holders of these tenements, and shows the mining resources that have been geologically mapped within them.

<https://portals.landfolio.com/zambia/>

10.1.3 Fiscal Policy

The sections outlined below detail strategic fiscal recommendations intended to facilitate growth in Zambia. These recommendations focus on offering tax reductions for companies that issue green bonds, providing tax deductions or credits for the costs incurred in issuing green securities, and considering the taxation on dividends.

10.1.3.1 Corporate income tax reductions for companies investing in climate compatible projects

The proposal outlines tax incentives for companies that invest in climate compatible projects, aiming to stimulate sustainable finance in Zambia. The current challenge is the absence of financial motivations for firms to undertake environmentally beneficial projects, which limits green finance growth due to economic constraints.

Although, there are certain exceptions and reductions in the corporate tax rate for specific sectors and activities, the current standard corporate income tax rate for companies in Zambia is 30% (PWC, 2023). This rate applies to the annual net income of a company.

Recommendation

Our proposal is that corporate income tax for climate-compatible projects and companies be reduced to match that of agro-processing and farming, which currently stands at 10%.

To address this, we suggest that Government should:

- *Policy Review:* Develop a clear corporate income tax policy for climate compatible projects and sustainable practice companies.
- *Eligibility:* Develop a set of eligibility criteria and a certification process to determine what projects qualify and can be considered as “climate compatible” in order to avoid greenwashing. The UNDP and BIOFIN commissioned the development of Zambia’s national green finance taxonomy in 2024 (BIOFIN, 2024). However, rather than reinventing the wheel they could consider utilizing a taxonomy similar to the EU's or Kenya’s (Central Bank of Kenya, 2024), modified to suit the Zambian context.
- *Stakeholder Engagement:* Engage stakeholders, including businesses, environmental experts, and financial entities, to ensure the tax incentive scheme's efficacy.
- *MEL:* Implementing a monitoring and evaluation framework to assess the policy's impact on sustainable activities, making adjustments as necessary.

Corporate income tax reductions for companies involved in climate compatible will lower the financial barriers to sustainable investments, encouraging a wider range of companies to participate.

10.1.3.2 Tax Deductions or Credits for issuance costs

This recommendation advocates for the introduction of tax deductions or credits for companies that incur costs in issuing green securities like green bonds. One of the major obstacles to the expansion of sustainable finance is the high financial burden associated with the issuance of green securities. These costs can deter companies from pursuing green financing options.

A tax deduction reduces the taxable income of a company. For example, if a company has ZMW 1,000,000 in issuance costs and is in a 20% tax bracket, a deduction of these costs would save the company ZMW 200,000 in taxes (ZMW1,000,000 deduction * 20% tax rate).

A tax credit provides a reduction in the amount of tax owed. Unlike deductions, which lower the taxable income, credits directly reduce the tax liability. For instance, if the company is eligible for a ZMW

1,000,000 tax credit and owes ZMW 5,000,000 in taxes, the tax liability would be reduced to ZMW 4,000,000.

Recommendation

Government, regulators, and the Zambia Revenue Authority hold key roles in crafting and enforcing tax policies that can alleviate financial pressures on companies issuing green securities. By offering tax deductions or credits, they can significantly lower the cost barrier to entry for sustainable investments.

These actors can actively;

- *Legislation Amendment:* Draft and pass amendments to the current tax legislation to include provisions for tax deductions or credits specifically aimed at covering the issuance costs of green securities.
- *Eligibility Criteria:* Define clear and stringent criteria for what qualifies as green securities and the specific issuance costs that are eligible for deductions or credits.
- *Implementation Guidelines:* Develop detailed guidelines for companies on how to apply for and calculate the tax deductions or credits related to the issuance of green securities.

Implementing tax deductions or credits for issuance costs will lower the financial barriers for companies considering green securities. This will encourage a broader spectrum of companies to participate in green financing, diversifying, and expanding the capital markets of Zambia.

10.1.3.3 Taxation on dividends and interest

In Zambia, dividends issued by companies to their shareholders are subject to a 20% withholding tax (WHT). This means that the dividends are taxed at a rate of 20% prior to distribution.

However, the current WHT on dividends for mining companies is 0% (Zambia Revenue Authority, n.d.).

We suggest that Government extend the same withholding tax exemption, currently enjoyed by mining companies at a rate of 0%, to enterprises engaged in climate-compatible projects and businesses, a move which would demonstrate Government's conviction in the fight against climate change by aligning fiscal policy with environmental sustainability goals.

In addition, the current withholding tax (WHT) on interest earned on bonds and debt instruments in Zambia is 15% for both Zambian residents and non-residents. Interest on green bonds listed on the Lusaka Securities Exchange with a maturity greater than three years is 0% (PwC Zambia, 2023).

Recommendation

We recommend that the withholding tax (WHT) on dividends issued by climate compatible businesses are zero rated. In addition, we recommend that interest earned from green bonds be zero-rated, regardless of whether the bond is listed on the Lusaka Securities Exchange or if its maturity is less than 3 years.

Further research and financial modelling are required to predict the effect that could be expected with fiscal changes.

10.1.4 Non-Fiscal Policy

10.1.4.1 Enhanced Public-Private Partnerships (PPPs)

The Public-Private Partnership Act No. 14 of 2009, as amended by Act No. 9 of 2018, and under draft amendment as of 2021, governs and seeks to promote PPPs in Zambia. Historically, Zambia's PPP implementation has been strongly focused on the energy and road infrastructure sectors.

Examples of past PPP successes include;

- The Scaling Solar program launched in 2015 as a partnership between ZESCO, IDC and a range of development banks and finance institutions. Through the scaling solar project, 75.7 MW of power was successfully added to the grid by the end of 2019, setting a record low for solar power tariffs in Zambia.
- The 750MW Kafue Gorge mega hydropower plant was funded under a PPP model by the Sino-Hydro Corporation and ZESCO.

Despite a generally strong framework, PPPs in the energy sector remain vulnerable because Zambia's electricity market centres around the vertically integrated public utility, ZESCO, often disincentivizing more participation from the private sector. However, hurdles such as grid infrastructure are also a hurdle, where in some areas the grid may not have the capacity to handle a significant increase in distributed generation, particularly from intermittent sources like solar and wind. There are also agreements such as Use of System Agreement and System Operations Agreements that an IPP would need sign with ZESCO to use the grid for wheeling power. These agreements are often complex and negotiating them often becomes a protracted affair.

Looking to the forestry and conservation sector, one PPP that has massive potential is the partnership between Wilderness Safaris and Carbon Ark. Wilderness, an ecotourism pioneer, and Carbon Ark, a carbon offset developer, have entered into a partnership with the Zambian government aimed at protecting millions of acres of threatened forest and "rewilding" areas of biodiversity that have been damaged by human activity. This partnership intends to empower local communities and expand habitats for endangered wildlife through a high-integrity carbon sequestration project. Carbon Ark projects that

over \$500 million will be deployed in operational investments, creating more than 1,000 jobs for the community. The partnership is supported by U.S. impact investing firm TPG Rise, Bank of America, and Jet Blue Ventures through Rubicon Carbon (The White House, 2023).

The Economic Intelligence Unit provides focus areas to strengthen Zambia’s PPP enabling environment;

Table 7: The Economist’s recommendations on strengthening Zambia’s PPP enabling environment

Focus Areas	Effort	Impact	Time Frame
Strengthen inter-agency PPP coordination, stakeholder engagement, investment promotion, and harmonised guidelines for...	High	High	Medium term
Develop a public registry for PPPs, featuring a tracking process for PPP projects	High	High	Short term
Earmark budgets for the establishment of a PPP project preparation facility for all sectors, or a project development...	High	High	Long term
Increase operational efficiency in managing unsolicited proposal procedures including strengthening the framework for...	High	High	Short term
Continue strengthening planning frameworks and accounting for contingent liabilities	High	High	Medium term
Establish regulatory framework requirements to publish contracts and project evaluations	Medium	High	Medium term
Make consultation process and findings with communities affected by PPP projects available to the public	Medium	Medium	Short term
Publish reports on current and future concession projects that go beyond the tender submission phase	Low	Medium	Short term

(The Economist Intelligence Unit, 2019)

Coordination of sustainable PPPs should be undertaken by the Ministry of Green Economy. This would involve communication with various ministries to identify opportunities and subsequently funnelling this information to the PPP unit within the Ministry of Finance.

10.1.4.2 Development of a Green Fund

Although Zambia has received approval for funding projects from the Green Climate Fund, the country lacks a dedicated local vehicle for climate investments or climate-compatible projects.

A dedicated green fund could potentially leverage more significant amounts of co-financing from both the public and private sectors.

The Government has stated, in the NDC Implementation Framework, that it will setup a climate change fund.

The existence of a national fund with clear objectives and governance structures can attract additional investments from international donors, private entities, asset managers and other partners interested in supporting climate action and climate compatible investments.

A national Green Climate Fund could act as a strategic avenue for institutional investors, such as the National Pension Scheme Authority (NAPSA), to meet their allocations and diversify their investment portfolios by channelling funds into climate-compatible projects.

Nonetheless, it requires careful consideration to determine whether such an initiative should be operated by the government or by the private sector with governmental backing.

The track record of Zambian government run funds, such as the CDF and the Citizens Economic Empowerment Commission (CEEC) fund has been mixed.

The CDF Fund has been beset implementation challenges as on the ground barriers such as political influence, a lack of transparency and accountability, lack of monitoring and evaluation, and lack of clear CDF funding guidelines result in a slowed down process flow (Mubuyaeta , et al., 2023).

The Citizens Economic Empowerment Commission (CEEC) has similarly faced challenges in terms of insufficient funding, a lack of skilled manpower to run the fund, political influence and a lack of transparency and accountability (Hampompwe, et al., 2021).Recent research by a CCG Team from the

Recommendation

Kukula's own recommendation is for enhanced private public partnerships to be driven by Local Government, who should proactively engage with the private sector, as there is strong potential in other industries such as sustainable agriculture and circular economy. This could be done via a call for concepts issued by individual municipalities or commercial utilities.

Anecdotally, Kukula has come across numerous projects where collaboration with commercial farmers to construct permanent water infrastructure, such as dams and canals, could allow for enhanced water sustainability and increased hydro capacity, illustrating the significant potential for sustainable PPPs beyond the traditional sectors of roads and energy. For such a water infrastructure project, the special purpose vehicle for the PPP could benefit by being granted special status by the Government, allowing it to sell water, which is currently only legally permitted to be done by Commercial Utilities under regulation by the National Water and Sanitation Council (NWASCO.)

University of Oxford suggests that despite these challenges, the Constituency Development Fund's (CDF) attributes could be leveraged to mobilize external funding into projects that are sustainable and climate compatible (Money & Carew-Jones, 2023).

Recommendation

We recommend that should the Government decide to incorporate sustainability and climate adaptation as a thematic focus within the CDF, or alternatively **establish a separate local climate-compatible investment fund**, management of the fund should be entrusted to a private sector asset or fund manager. This approach would ensure independent operation, leverage the private sector's efficiency, enhance transparency, and incentivise performance.

In order to setup a National Green Fund, the Government would have to undertake a series of methodical steps;

- I. *Define the Fund's objectives and scopes* : Including the sector focus, desired outcomes, specific impact targets, its hurdle rate, its operational guidelines etcetera.
- II. *Legislative and regulatory framework development*: Conduct a thorough review of the existing legislative framework governing funds to identify any amendments required to incorporate sustainability and climate adaptation as a thematic focus or to establish a new fund.
- III. *Stakeholder Consultation*: To gather input on the fund's design, objectives, and management structure, from SMEs, environmental groups, Fund Managers, and development aid sector partners, ensuring buy-in and support.
- IV. *Selection of a Private Sector Fund Manager*: Selecting a private sector asset or fund manager through a transparent tender process.
- V. *Fund Establishment and Capitalization*: Identify sources of capital for the fund, which may include allocations from the national budget, contributions from local municipalities, international donor funding, development finance institutions and private sector investments.

10.1.4.3 Specifically related to the EV Sector: Insights from ZEMIA

The following curated recommendations, detailed by the Zambia Electric Mobility Innovation Alliance (ZEMIA) and reported by CleanTechnica (CleanTechnica, n.d.), show how Zambia could incentivize a transition to e-mobility;

Recommendation

- *Special Electricity Tariffs:* ZEMIA proposes implementing special tariffs for electricity used in EV charging could significantly lower the cost of EV ownership and promote the transition to renewable energy sources.

However, these tariffs will need to be subsidized and offered on concessional terms for a period of time in order to enhance the appeal of electric vehicles over internal combustion engine vehicles, as ZESCO plans to adjust tariffs to reflect cost-reflectivity over the next five years (Kukula Analysis, n.d.).

- *Waiving Road Tax and Road Tolls for EVs for Five Years:* Temporarily exempting EV owners from road tax and tolls would make EVs attractive from a financial total cost of ownership perspective.
- *Electrifying the Government Fleet:* By ensuring that at least 50% of all government vehicle purchases are electric vehicles, the government can demonstrate a strong commitment to environmental sustainability and spark demand for EVs.

In order to develop a special electricity tariff for electric vehicle charging, ZESCO would need to conduct a market analysis to assess the projected demand in an upside-case scenario, where mass adoption of EVs occurs. ZESCO would then need to conduct an infrastructure review to determine whether the existing infrastructure would be adequate to support increased demand from EV charging and identify areas that may require upgrades and expansion. At the same time, ZESCO would need to evaluate the cost versus the benefit of implementing special EV charging tariffs, considering the cost of generating and distributing the electricity versus the potential benefits to the country. ZESCO would then have to design a pricing structure that is attractive to consumers while covering the cost of electricity and infrastructure. In order to make this a win-win scenario, for both consumer and utility, ZESCO could consider implementing time-of-use tariffs that would encourage EV charging during off-peak hours to balance the grid's load.

A pilot program, utilizing time-of-use tariffs for EV charging in selected areas and to a limited number of consumers, could test the scheme's effectiveness, and ZESCO would be able to make adjustments based on feedback and observed outcomes.



10.2 Market Enablers and Regulators

10.2.1 Capacity Building for Local Green Certification

This recommendation addresses the critical need to enhance the capacity of Zambian firms in certifying green bonds and projects.

As part of the Green Bond Guidelines of 2019, governed by the Securities Act (Act No. 41 of 2016) any issuer of a Green Bond shall appoint an Independent Reviewer to carry out a pre-issuance review which could include a second party opinion, verification, certification, green bond scoring/rating.

The guidelines state that an Independent Reviewer will be an entity;

- That specializes in assessing the framework of Green Bond's environmental objectives with sufficient environmental, financial and market specific expertise to perform a comprehensive assessment of the use of proceeds.
- With significant and appropriate expertise needed for providing independent reviews on green bonds.

(Securities and Exchange Commission, 2019)

There are currently no local firms or consultants certified to serve as Independent Reviewers in Zambia. The Independent Reviewer for Zambia's first locally issued Green Bond, issued by CEC Renewables, was Morningstar Sustainalytics, a global firm based in London (Sustainalytics, 2023).

The involvement of local consultants in certifying green bonds could have several advantages, such as reduced issuance costs and increased familiarity with the local context and specific sustainability finance requirements. This approach could lead to more effective and efficient green bond issuance processes, as local consultants would have a better understanding of the local market and the specific needs of the issuing entity. Additionally, local consultants could provide valuable insights into the local regulatory environment and help ensure that the green bond issuance complies with all relevant regulations and standards. This could help to reduce the risk of greenwashing and ensure that the green bond issuance aligns with the Zambia's goals of sustainable development.

By focusing on the development and accreditation of local consultants familiar with Zambia's specific sustainable finance requirements, market enablers can play a pivotal role in closing the existing capacity gap, thus facilitating the growth of the green finance sector within the country, and driving economic growth by building complex capacity in local firms.

Certification as an independent reviewer can be obtained through several organizations, with the Climate Bonds Initiative (CBI) and the International Capital Market Association (ICMA) being two of the most renowned.

Recommendation

Market enablers can offer capacity building and training programs, as well as financial support to cover the costs associated with the certification process and specialized software for project evaluation.

10.2.2 Net Metering

A critical factor observed in working with solar and other renewable energy producers is the historically low electricity tariffs in Zambia compared to the actual costs of generation and distribution.

ZESCO, Zambia's state-owned utility responsible for the generation, transmission, distribution, and supply of electricity, has historically subsidized the country's power supply. This practice has created market distortions and challenges for stakeholders across the value chain.

ZESCO has grappled with financial difficulties, for the better part of a decade, partly due to these low tariffs (CUTS International, 2020). These tariffs mean that ZESCO can barely cover its production costs, leaving no margin for asset maintenance or expansion.

This situation leads to several knock-on impacts, including a reluctance to sign power purchase agreements with renewable energy developers, whose generation costs exceed ZESCO's selling price for power. It also leads to capacity constraints, increased transmission and distribution losses, and balance sheet constraints.

The government has taken steps to address this issue through a Cost-of-Service Study (CoSS), initiated in the fourth quarter of 2019 with financial support from the African Development Bank (AfDB). Following its completion in late 2021, the Government of the Republic of Zambia (GRZ) published a green paper in August 2022, highlighting proposed measures. This green paper provides clarity regarding GRZ's position on tariff escalation (ERB, 2021). The CoSS suggests two methods for increasing tariffs: an aggressive increase in the first year of implementation and a more gradual increase spread evenly over five years. GRZ proposes a gradual migration, resulting in an upward tariff adjustment spread over a period of five years. The implementation process will be guided by the Energy Regulation Board (ERB). Government have taken steps to address this through A Cost-of-Service Study ("CoSS"), which was initiated in the fourth quarter of 2019 with the financial support of the African Development Bank ("AfDB"). Following its completion in late 2021, GRZ subsequently published a green paper in August 2022 highlighting proposed measures. The green paper provides clarity regarding GRZ's position on tariff escalation. The CoSS presents two methods of tariff increase. An aggressive increase in energy tariffs in the first year of implementation and a more gradual tariff spread out evenly over 5 years. GRZ proposes a gradual migration. The result will see an upward tariff

adjustment spread over a period of five years. The implementation process will be guided by the Energy Regulation Board (“ERB”).

However, an additional step the government and regulators can take to incentivize the increase of solar generation capacity in Zambia is the finalization and enactment of net metering regulations.

Net metering is an electric billing mechanism designed for consumers who generate their own electricity, often through renewable sources like solar panels. It allows these consumers to use the electricity they generate at any time, not just when it's being produced. This system enables any excess energy that solar panels generate, and that the consumer does not immediately use to be sent back to the electric grid. This process effectively "stores" the energy for later use. When a solar system produces more electricity than the consumer uses, this excess is fed back into the grid, causing the electric meter to run in reverse. On the other hand, when the consumer's energy use exceeds what the solar panels generate, they draw electricity from the grid, which makes the meter run forward. At the end of each billing period, consumers are billed only for the "net" electricity they consume—calculated as the difference between the energy sent to the grid and the energy drawn from it (Zientara, n.d.). The

The Energy Regulation Board has published draft net metering regulations and instituted a stakeholder consultation process (ERB, 2022) and submitted findings to the Ministry of Energy.

However, the Ministry returned the regulations to the ERB for revision, leading to a new stakeholder consultation process that concluded in February 2024.

The updated regulations allow for net metering projects over 15 kilowatts up to a total of 100 MW, and an unrestricted number of projects under 15 kilowatts.

The net metering regulations await the Ministry of Justice's approval before proceeding to the Cabinet Office for final ratification.

Recommendation

At the time of this report's compilation, it is clear that in light of the prevailing load-shedding affecting households and industrial sectors, the Government should prioritize the acceleration of the complete implementation of net metering regulations. This action is essential for sparking the domestic, commercial, and industrial solar PV sectors and for enhancing Zambia's capacity for renewable energy generation.

10.3 Local Institutional Investors

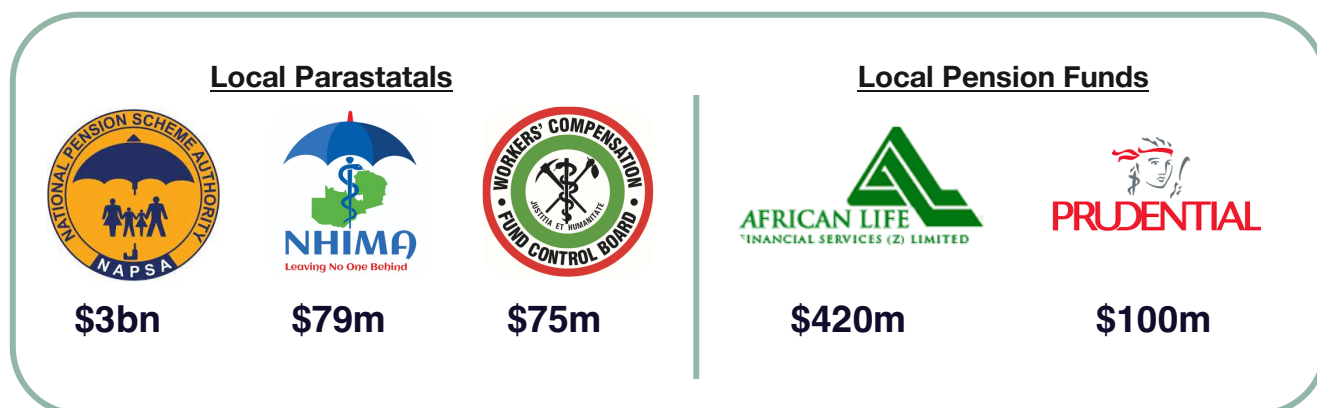


Local institutional investors represent a critical investor segment for the long-term sustainability of green investments in Zambia as they control substantial pools of capital, have longer investment horizons, and more modest return expectations than other investors.

10.3.1 Mandate green investment allocation

Increased involvement of local institutional investors in green, climate-compatible investments is significant for several reasons. It minimizes foreign exchange risk, ensures the retention of capital locally, supports national policies, aligns with local economic cycles and needs, and can act as an immediate financial backstop to mitigate environmental impacts.

Figure 18: Estimated portfolio values of selected local institutional investors in Zambia (2022)



Source: Kukula Analysis

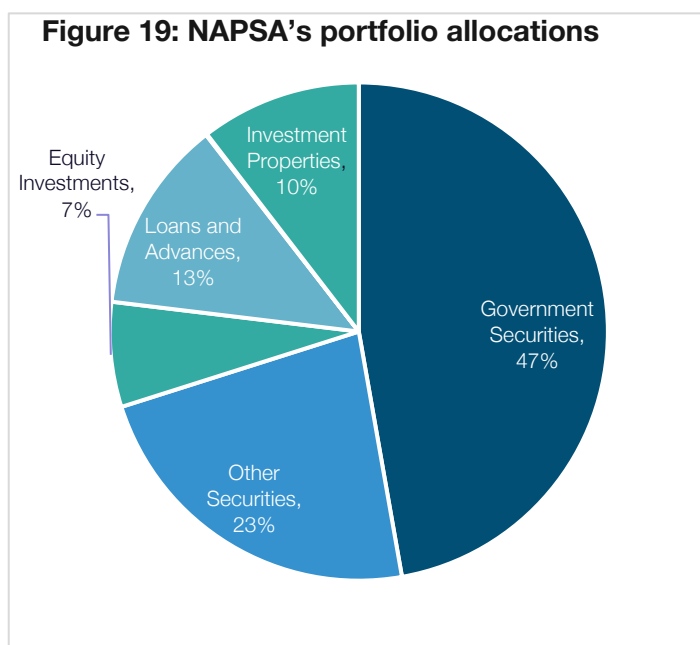
Historically, Zambian public pension funds have had limited participation in climate compatible investments;

- NAPSA, co-funded the Kafue Gorge Hydro Project through a 20-year debt instrument of \$190 million.
- NAPSA holds a majority stake in the Zambia Industrial Commercial Bank (ZICB), which has been used as a vehicle to facilitate the financing of green initiatives by Prospero and FCDO. Additionally, through the Industrial Development Corporation, NAPSA has invested in sustainable projects like the Bangweulu and Ngonye Power Projects.
- NAPSA has also recognized solar energy as a real asset under infrastructure and has committed to financing future solar projects including CEC Renewable Energy's 40 MW Riverside Park project in Kitwe (NAPSA, n.d.).

- In August 2023, NAPSA announced an intention to make catalytic and strategic investments in commercially viable renewable energy, including those that would have synergies with its real estate portfolio (NAPSA, 2023).

Nonetheless, what is currently missing is a mandated climate compatible investment portfolio allocation supported by a formalized investment strategy that outlines objectives and roadmaps for channelling more capital towards green projects. NAPSA could, for instance, recognize renewable energy solar and renewable energy yieldcos (whose risk and return profile aligns with their return expectations after commissioning) as specific asset classes and develop an investment strategy focused on sourcing and financing these projects.

It is also fair to point out that pension fund managers may struggle to find sufficient green investment opportunities. A clear example of this is evident in NAPSA’s investment portfolio, where 70% of the portfolio currently sits in government securities and companies listed on the Lusaka Stock Exchange (other securities) as illustrated to the right. The need for increased flow of green investments has been elaborated upon in other sections of the report, with collaboration required from all players in the market. The potential for collaboration becomes clear in the issuance of a green bond, where NAPSA can play a pivotal role by underwriting the bond. For instance, if a fixed coupon green bond were listed on the Lusaka Securities Exchange, NAPSA could find their return expectations in local currency aligned with the bond's coupon, something an international investor might avoid due to the currency risk associated with the kwacha devaluing.



Source: NAPSA investment portfolio composition (2022 financials)

Recommendation

It is thus our recommendation that large public pension funds should have portfolio allocation targets for strategic green investments, which preferably increase over time. Further, these investments should be reported on consistently and transparently to all stakeholders to encourage participation – the latest annual report currently available on the date of this reports publication (April 2024) on IDC’s website is from 2018, for example.

Secondly, Africa's private equity sectors are relatively small compared to those in other regions, but they have the potential to play a significant role in supporting young, innovative firms and emerging industries. They provide patient and risk capital and invest in smaller amounts that larger institutional investors or Development Finance Institutions (DFIs) might not have the mandate to consider.

This gives private equity and venture capital funds an important role in bolstering emerging sectors like renewable energy in Africa. Nevertheless, PE and VC funds depend on institutional capital to invest in their funds as limited partners.

Local Zambian institutional investors have demonstrated a reluctance to invest in private equity funds, with entities like NAPSA never having invested in a local private equity fund, opting instead for listed public equities on the Lusaka Securities Exchange. While smaller pension funds, such as the Kwacha Pension Fund, have invested in local private equity, the predominant trend has been a preference for government securities, debt for government infrastructure projects, and real estate, which is considered a safe haven despite its lacklustre return history over the last ten years.

Looking elsewhere on the continent, in Nigeria, the National Pension Commission (PENCOM) imposes a regulation that limits private equity investments to 5%. Additionally, a private equity fund that receives investment from PENCOM must invest at least 60% of the fund within Nigeria (African Private Equity and Venture Capital Association, 2021).

If local pension funds are to become a viable source of capital for PE, they need to have the ability and willingness to invest in unlisted companies. The ability is affected by regulation, are they allowed to invest in alternative assets? If so, under what conditions and how much of their AUM can they allocate.

Recommendation

Our second recommendation is that local institutional investors specifically allocate portions of their portfolios to private equity funds, with an emphasis on those that focus on climate-compatible investments. Furthermore, pension funds should be looking at fund managers that have raised their fund or beyond, because investing in a first-time fund manager is a high-risk strategy.

To put our first and second recommendations into practice, a local institutional investor like NAPSA, would need to adjust its portfolio allocation to accommodate investments in green bonds, climate-compatible infrastructure, and private equity. As shown in figure 19, 47% of NAPSA's investment portfolio is invested in government securities. The high returns on government securities have distorted the Zambian capital markets (Bank of Zambia, 2023), crowding out other asset classes and driving up the cost of debt (Kukula Analysis, n.d.).

Recommendation

Our third recommendation is that NAPSA and other institutional pension funds cap their investments in government securities at 25% to make more funds available for investment in climate compatible asset classes. This approach would release approximately \$600 million for climate-compatible investments. However, relatively speaking and in the broader context, this amount is minimal and falls significantly short of the \$17.2 billion required by Zambia to meet its Nationally Determined Contributions.

Pension funds globally have set precedents for climate-compatible investments, with Norway's Government Pension Fund Global (GPF) serving as a leading example (Halvorssen, 2023). As one of the world's largest sovereign wealth funds, the GPF has been mandated by the Norwegian parliament to allocate a significant portion of its portfolio to environmentally friendly economic activities. Additionally, its investment strategy includes divesting from coal and fossil fuel holdings and actively investing in green bonds. The GPF also incorporates environmental risk assessments into its investment analysis, significantly influencing its selection of companies and projects for investment.

10.4 Development Sector



Recommendation

The development/foreign aid sector can mobilize private sector finance for climate action and green growth by offering incentives and guarantees to lower perceived risk for investors, especially in Zambia where issues like exchange rate risk perturb foreign investors.

The development aid sector has tried to implement guarantee schemes with local commercial banks, but as mentioned in section 8.2.1, the results have been mixed. This could be because banks adhere to strict credit and underwriting policies that are not easily bypassed, even with guarantee schemes in place. We recommend that development aid actors instead consider collaborating with private debt funds when utilizing guarantee schemes. Private debt funds typically have more agile and flexible investment policies compared to commercial banks and also offer quicker turnaround times.

10.4.1 Blended Finance Fund

As mentioned in Section 8 of the report, despite using blended finance in Zambia, its scale has been relatively small, making it clear that a significant increase is needed to obtain the funding required for Zambia to meet its Nationally Determined Contributions (NDCs). To better achieve Zambia's climate goals, there's a need to greatly expand blended finance efforts, making more efficient use of both public and private investments.

A blended finance fund can act as an investment vehicle for the development sector, combining concessional capital, which accepts higher risk, with capital seeking market-rate returns. It would then serve as an intermediary and invest this capital in smaller amounts into SMEs and projects through the fund.

Such a fund could receive support from the development sector as follows;

10.4.1.1 Fund Setup Costs

Development agencies can offer grants to cover the initial setup costs of climate-compatible funds. These costs can encompass market analysis, legal fees, fund design, deal origination, pipeline development, and the Fund Manager's 1% commitment fee.

However, it would be important for the development sector to tailor its support according to the experience of the fund managers. Established fund managers, with a proven track record and existing infrastructure, may not need financial help for setting up a fund. First-time or emerging fund managers, dealing with the challenges of starting a new fund, could greatly benefit from this kind of support.

10.4.1.2 Subsidizing the Fund Manager's fee

Emerging or first-time fund managers often struggle to attract investments due to their limited or non-existent track record. This situation can make it difficult for them to reach their second closing or reach their targeted Assets Under Management (AUM), which are critical for the fund's growth and sustainability. As a result, the fund manager's management fees may be lower than expected. These diminished fees can significantly affect the fund manager's ability to operate effectively, impacting its management and strategy implementation.

Kukula Capital's management of two private equity funds in Zambia, each under \$20 million in size, has highlighted significant operational challenges within the Zambian PE investment sector. The main issues are the small ticket sizes and a limited Small and Medium Enterprises (SMEs) investment pipeline, making small funds economically unviable. This experience has led us to conclude that if a fund is to be operationally viable and strategically effective in Zambia, it needs to be larger than \$30 million USD in AUM.

If a fund doesn't reach this critical size, it's necessary to look into alternative financial strategies to keep the fund running effectively and achieve its impact goals.

These strategies could involve increasing fund management fees or seeking external subsidies.

These measures aim to develop the fund manager's capacity and track record. The goal is to ensure that once the fund manager has built up a track record, future funding rounds or the creation of a second fund can attract more investors and be larger in scale.

We recommend that the foreign aid / development sector take a strategic approach to support the growth and effectiveness of impact funds. This means offering targeted financial assistance by covering part of the fund manager's fees to bridge the gap between the current and targeted Assets Under Management (AUM) of the Fund.

10.4.1.3 Technical Assistance Side Car

A technical assistance (TA) facility or side car could be an invaluable tool to help private equity fund managers as follows;

- a) Mitigates risk by improving the operational capacity of their portfolio companies
- b) Fund managers can use TA side cars to support portfolio companies grow and scale by improving their financial management and access to market.

-
- c) The Technical Assistance (TA) sidecar can be utilized to incorporate Environmental, Social, and Governance (ESG) principles into business operations. This ensures that companies genuinely achieve green outcomes and helps reduce the risk of greenwashing.

TA side cars are often sized according to the specific needs of the SMEs or enterprises that require the technical assistance. According to Convergence’s HDD analysis, TA investments typically constitute about 7% of total financial deal size (Convergence, 2023). Further analysis, as presented in an investment and trade report by USAID, reveals a broader range of TA-fund size ratios, spanning from 5% to 30% with a median of 6.8% (USAID, 2022).

We recommend that the development sector focus on identifying climate-compatible impact funds in Zambia and support them by providing technical assistance facilities attached to the fund.

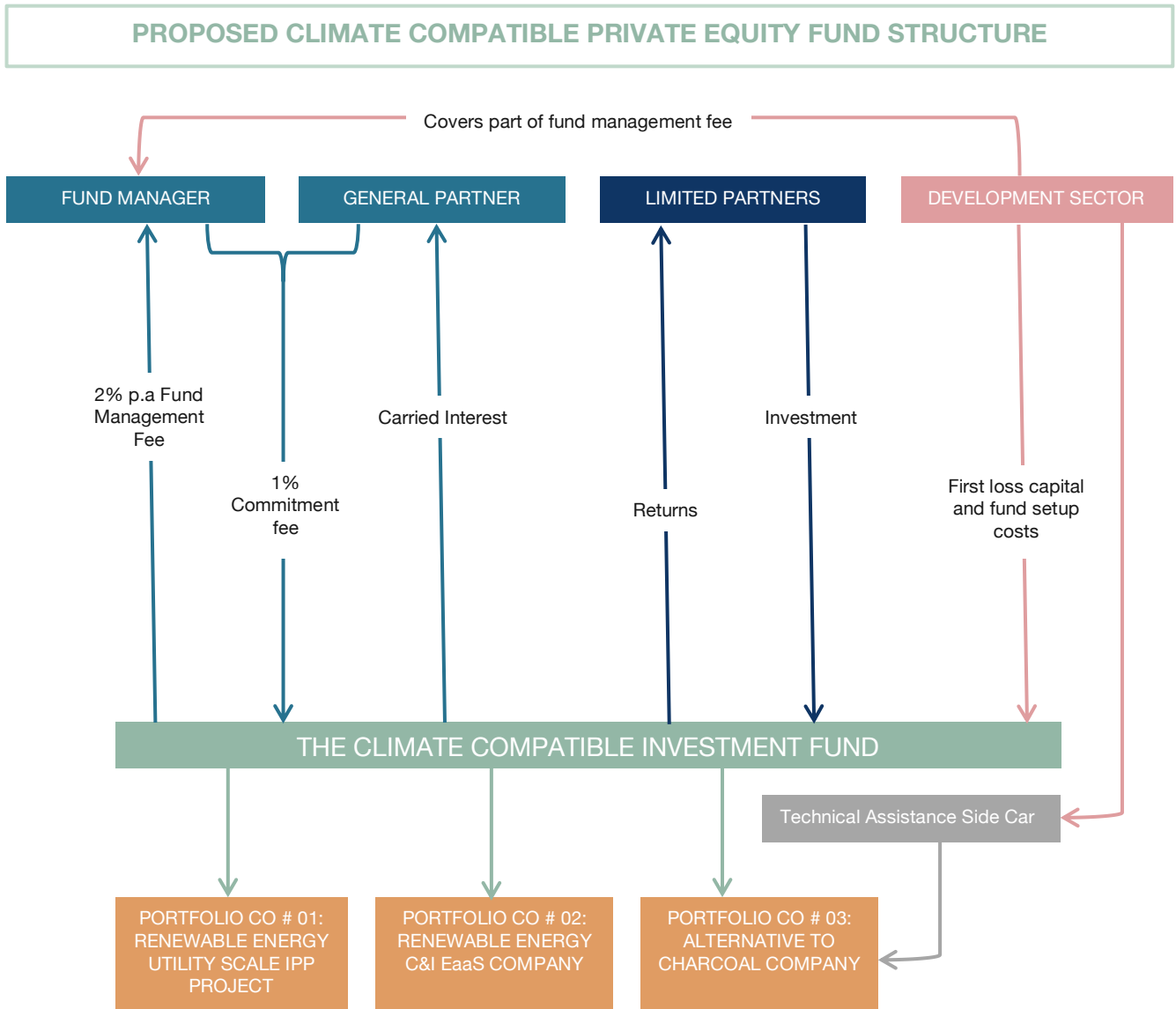
10.4.1.4 Provision of Catalytic Capital

Catalytic capital can strategically be used as first-loss capital by assuming a subordinate position in a blended finance structure, effectively mitigating risks for private sector participants.

This could work in a fund as follows;

- First loss capital is placed at the base of the capital stack, absorbing losses first before impacting other investors. This positioning reduces risks for senior investors, acting as a financial buffer against underperformance or losses.
- By offering a protective layer against losses, catalytic capital as first-loss capital significantly reduces perceived risks for private equity fund limited partners
- With the safety net provided by the catalytic capital, investors would be more inclined to come in as limited partners in a climate compatible fund.
- First loss could cover normal operational losses or cover exchange rate losses

Figure 20: Climate PE Fund Structure



10.4.2 Concessional Debt

The development and foreign aid sector can significantly increase the flow of capital into climate-compatible and green initiatives by providing risk capital in the form of debt financing on concessional terms that are more favorable than current market conditions.

In assessing potential investments, Kukula Capital, through detailed financial modeling and stress testing, has determined that numerous climate-compatible projects, particularly in agroforestry and renewable energy, need interest rates lower than market rates and tenors of up to 10 years to be viable. Local commercial banks in Zambia usually do not provide loan tenors exceeding 5 years.

To provide concessional finance, the development sector would require an investment vehicle, potentially a fund as mentioned in the earlier section, assuming it utilizes debt as a financial instrument. The

funding from the development sector could take the form of a repayable grant or debt placement at concessional rates into the fund. This fund could then provide financing to climate compatible SMEs and projects at reduced interest rates and extended tenors.

Recommendation

Our recommendation is for the development sector to offer repayable grants to debt impact/climate funds, which can then be onward lent out at concessional rates.

10.4.3 New Market Development

The development sector can promote the development of new markets by easing access to international markets for businesses focused on climate compatibility. This facilitation can occur through trade agreements, market access programs, and various trade-related initiatives.

10.4.3.1 Access to Carbon Markets

Deforestation is one of Zambia's biggest environmental threats, with the country losing 0.6% of its forests annually (Interactive Country Fiches, 2014).

One of the key drivers of deforestation in Zambia is the heavy reliance on charcoal and firewood for energy.

The USAID Alternative to Charcoal Program (A2C) has significantly supported Zambian alternatives to charcoal SMEs in enhancing their value chains, developing access to new markets (especially in the biomass and LPG subsectors), and improving their supply chains.

This support has included direct grant funding to A2C businesses and capacity building to enhance their operations and investment appeal through technical assistance (USAID, 2023).

However, a potential game-changer for A2C businesses that could transition them from breaking even to becoming lucrative investments is the opportunity to participate on voluntary carbon markets.

Yet, many A2C enterprises, as noted by the research team, find the path to registration and carbon offset generation daunting. The complexity of the process and the high costs involved deter them from exploring this additional revenue stream.

Recommendation

Kukula's recommendation would be for the establishment of a specialized end to end support programme for A2C businesses to access carbon markets.

This proposed initiative would feature a Knowledge and Support Centre acting as a comprehensive resource for guidance, technical support, and financial assistance, simplifying the voluntary carbon market registration, particularly with standards like Verra and Gold Standards. The key features of the programme would be as follows;

- *Technical Support and Capacity Building:* The center would offer detailed support on measuring, reporting, and verifying (MRV) carbon savings—an important step for generating valid carbon offsets. This includes custom training and access to MRV technological solutions.
- *Market Access Facilitation:* By assisting A2C businesses in connecting with carbon credit buyers and providing insights into market dynamics and sales strategies, the initiative aims to enhance revenue from carbon trading.
- *Sustainability and Scaling Strategy:* Beyond the initial support period, where the centre would receive funding from the donor organization, the center would sustain its operations through, service fees, and would offer a digital platform to extend its reach and improve efficiency.
- *Government and Policy Advocacy:* The program would advocate for policy changes to the Zambian Government to enhance the inclusion and financial success of A2C businesses in carbon markets. Moreover, the center would assist A2C businesses in preparing and submitting concept notes, as well as navigating the Ministry of Green Economy's carbon market guidelines framework, and approval process.
- *Financial Viability Analysis:* To ensure genuine benefits, the center will provide analyses to help businesses navigate the financial aspects of participating in carbon markets including financial modelling of the projects
- *Fronting Registration Costs via a Revenue Share Model:* The Knowledge Center could adopt an approach to alleviate the financial challenges A2C enterprises face by covering the costs associated with registering on voluntary carbon markets, such as Verra and Gold Standard. This strategy would enable businesses to embark on carbon trading without the need for substantial initial capital for registration. The Center would then recoup the advanced costs through a revenue-sharing agreement from the sales of carbon offsets. This model would be supported by initial seed funding from donor organizations, aimed at facilitating the first wave of projects through this process.

10.5 Private Equity Investors



Recommendation

Other than setting up a climate focused investment vehicle, which has been discussed in Section 10.4.1, our recommendations on what sector agnostic or non-thematic PE firms can do to increase the flow of capital into climate compatible projects in Zambia is as follows:

10.5.1 Apply an ESG lens into their pipeline development deal screening

Local Zambian PE firms can integrate ESG criteria into their initial screening process by assessing potential investments against environmental, social, and governance benchmarks. These firms would need to develop a set of ESG criteria relevant to their investment focus and the specific context of Zambia.

Firms can develop ESG criteria by consulting international standards, such as the United Nations Principles for Responsible Investment (United Nations, n.d.), and adapting them to the Zambian context. This might involve focusing on key environmental issues such as water usage and renewable energy, and social issues like community impact and labour standards.

Adapting ESG standards requires understanding local environmental and social challenges, regulatory frameworks, and cultural norms. Firms can engage with local stakeholders, including NGOs, community groups, and government agencies, to identify the most pressing ESG issues in Zambia and tailor their criteria accordingly.

Engagement can take the form of workshops, roundtable discussions, and partnerships with local organizations, such as the Worldwide Fund for Nature Zambia, that have deep insights into Zambia's environmental and social landscape. Through these interactions, PE firms can gather qualitative and quantitative data to inform their ESG criteria.

10.5.2 Engage with existing portfolio companies to drive improvements in ESG performance

PE Firms can initiate ESG performance improvement programs into existing investments that include setting clear ESG goals, providing resources and expertise to achieve these goals, and monitoring progress through regular reporting and audits.

By conducting a baseline ESG assessment of each portfolio company to identify areas for improvement and then working with company management to set achievable, measurable ESG goals. These goals could range from reducing carbon emissions to increasing the amount of renewable energy used in each PortCo.

PE firms should focus on training their staff to become proficient in conducting basic ESG evaluations and establishing structured ESG reporting frameworks. These frameworks should obligate portfolio companies to frequently report on their ESG performance. A simple straightforward suggestion

for a firm to achieve this is by mandating its portfolio managers to complete the CFA Institute's Certificate in ESG Investing course.

10.5.3 Work with the development sector to develop blended finance mechanisms and fund structure

PE Firms should proactively engage with the development sector actors such as FCDO, MCC, USAID etcetera to explore innovate finance structures such as the ones mentioned in Section 10.

In addition, PE Firms should establish a legal and operational framework for a blended finance vehicle, to give confidence to LPs when later on trying to secure commitments from development partners and private investors.

This involves choosing a legal form that allows for flexibility in accepting different types of capital and offers clarity on tax implications and investor liabilities.

Setting up a Fund as an onshore structure as a Collective Investment Scheme, domiciled in Zambia, and regulated by the Securities and Exchange Commission, would provide more confidence to development sector actors rather than setting up an offshore structure in say a country like Mauritius.

10.5.4 Incorporate ESG to aid stronger fundraising

The Private Equity sector in Africa has faced several challenges, including a history of modest returns, smaller markets, low development of the broader financial landscape and a lack of sufficient exit opportunities. This makes fundraising significantly more challenging than in the developed world.

This does present an opportunity in some respects, in that ESG is a strong consideration of development finance institutions. By providing tangible evidence of the firm's commitment to ESG and its ability to manage ESG risks and opportunities effectively, PE firms can differentiate themselves in a competitive fundraising market. Demonstrating a proactive approach to ESG can appeal to LPs increasingly mandated to invest responsibly, thereby attracting more commitments from LPs who value sustainability alongside financial returns.

During fundraising and roadshows, PE firms can enhance their pitchbooks with case studies that showcase previous successes where integrating ESG practices led to positive investment outcomes and impactful results.

After deployment, PE firms could provide quarterly ESG reports, as part of their reporting to LPs, detailing specific instances of ESG-driven value creation within their portfolio companies and outlining strategies to address key ESG themes that align with LPs' interests. As outlined in Section 10.5.2, establishing clear ESG performance metrics and consistently monitoring and reporting on these metrics should become standard practice.

10.6 Banking Sector



Although international institutions are the major source of capital for climate related projects, the main providers of capital to the private sector in Zambia are commercial banks. Therefore, the largest supplier of finance to the private sector is not actually providing commensurate climate compatible finance, meaning there is strong potential for the banking sector to do more and to increase its contribution towards achieving Zambia's Nationally Determined Contributions under the Paris agreement.

A primary issue with banks not providing climate compatible finance lies in the fact that the public sector crowds out the private sector, meaning banks choose to put their money in public debt rather than lend to private businesses. This is even more so the case in periods of high inflation, interest rates and uncertainty, as is the case in Zambia currently in 2024, with banks turning to safer assets, as illustrated in the figure below. Lack of development of local financial markets in Zambia also means that sovereign bills and bonds are the dominant investment securities (100% in most cases) in banks securities portfolios. So long as loan books continue to increase in value then the nominal amount lent to the private sector will increase. However, this is by a significantly lower magnitude than would be the case if the private sector took more capital proportionally versus investment securities.

Figure 21: Distribution of loans to customers versus investments in securities, as per 2022 financials of selected banks operating in Zambia



Source:Kukula Analysis (n.d)

The Zambian government facing fiscal deficits over the past years, compounded by lack of access to international markets due to debt default, are driving this need for local funding. Therefore, this phenomenon is likely to continue for the medium-term at least, with stronger government budgets the critical factor in reversing this trend.

10.6.1 Develop stronger pipeline through collaboration

Nonetheless, we still feel there are actions banks can take. For example, local Zambian banks have indicated through discussions that a lack of bankable pipeline is a secondary issue causing lower volumes of loans to green projects, as well as the private sector more generally.

Recommendation

Our recommendation for improving this pipeline is for banks to be more proactive in their collaboration with relevant stakeholders to source green financing opportunities, such as the Ministry of Green Economy, private equity and venture capital firms, green economy focused consultancies and micro-finance firms. This concept could be expanded by developing a virtual deal room for climate compatible projects. Here, developers would be able to present their projects for banks and financiers to assess, streamlining the pipeline building process.

Collaboration between commercial banks, advisory and micro-finance firms is of strong importance as it is often the latter two that serve an important function in helping businesses to become 'bankable'. With banks citing lack of collateral, credit history and investable projects as the main constraints on expanding their lending, particularly to the MSME segment, these collaborations could be effective in unlocking more projects.

An example of a successful execution of this is the Green Compact Agreement signed between the UK and Zambian Governments, where Prospero Limited (UK Aid funded development organization) and Zambia Industrial Commercial Bank (ZICB) launched the Climate Finance Facility to provide concessional loans to Zambian SMEs to mitigate and build resilience against climate change. A scaling up of this project, where advisory firms, MFI's and banks work together to develop pipeline and deploy concessional funding, would be effective in our view.

11 Conclusions and Recommendations for Future Research

As we conclude this report, we can assert that a substantial influx of investment—amounting to billions of dollars—is required for Zambia to meet its Nationally Determined Contributions by 2030.

Local pension funds must intensify their efforts to finance climate-compatible projects in Zambia. Yet, it is evident that even with full buy in from these local institutional investors, the domestic capital markets alone are insufficient to bridge this funding gap.

However, foreign investors often perceive climate-compatible projects in Zambia as high-risk, due to exchange rate volatility, untested business models, and high-risk premiums—compounded by the other inherent risks of investing in SMEs within a frontier economy.

The Zambian government can introduce additional fiscal policies and other regulatory reforms to encourage climate-compatible investments. While these measures may enhance the profitability of SMEs and projects, they may not necessarily be enough to de-risk the investments for financiers.

A critical challenge in scaling up climate-compatible investments in Zambia is the "chicken and egg" problem i.e. determining whether a strong pipeline of bankable projects needs to be established first, or if the availability of patient, favorable finance must be prioritized to foster these projects.

This dilemma poses a significant barrier to accelerating sustainable development, particularly in sectors like sustainable agriculture and off-grid renewable energy.

Our recommendations detailed in Section 10 have aimed to strategically address this issue from multiple perspectives.

At this juncture, the development and foreign aid sectors have the potential to play a pivotal role through blended finance. Strengthening the framework for developing bankable projects is essential.

This can be achieved by supporting local enterprises through capacity building and technical assistance to ensure projects are investment-ready, compliant with environmental standards, and financially viable.

Simultaneously, it is crucial to enhance access to patient and concessionary finance options. Initiatives such as creating climate-compatible private equity and venture funds, as well as deploying concessional debt and first loss capital facilities, can provide the necessary financial conditions to nurture early-stage projects and reduce perceived risks for investors.

By tackling the problem from both ends, Zambia can create a conducive environment that not only attracts more significant investment into climate-compatible projects but also ensures a steady stream of bankable projects ready for such investments. Further research into the efficacy of blended finance models in this context could provide valuable insights into optimizing these strategies, potentially offering a blueprint for replication and scaling in Zambia.

12Bibliography

NGFS, 2023. *Scaling Up Blended Finance for Climate Mitigation and Adaptation in Emerging Market and Developing Economies (EMDEs)*, s.l.: Network for Greening the Financial System Technical document.

Ministry of Energy, 2023. *THE INTEGRATED RESOURCE PLAN (IRP)*. [Online]

Available at: <https://www.moe.gov.zm/irp/>

[Accessed 22 February 2024].

U.S. Department of State, 2022. *2022 Investment Climate Statements: Zambia*. [Online]

Available at: <https://www.state.gov/reports/2022-investment-climate-statements/zambia/>

[Accessed 26 February 2024].

Ministry of Green Economy, n.d. *About Us*. [Online]

Available at:

https://www.mgee.gov.zm/?page_id=197#:~:text=His%20Excellency%2C%20Mr%20Hakainde%20Hichilema,to%20a%20green%20growth%20pathway.

[Accessed 27 February 2024].

Ministry of Green Economy, 2023. *GOVERNMENT LAUNCHES GUIDELINES TO STRENGTHEN THE INTERIM GUIDELINES FOR HANDLING CARBON MARKETS*. [Online]

Available at: <https://www.mgee.gov.zm/?p=1282>

[Accessed 27 February 2024].

National Assembly of Zambia, n.d. *The Environmental Management(Amendment) Bill, 2023*. [Online]

Available at:

[https://www.parliament.gov.zm/node/10967#:~:text=THE%20ENVIRONMENTAL%20MANAGEMENT%20\(AMENDMENT\)%20BILL%2C%202023%20MEMORANDUM%20The%20object,the%20Solid%20Waste%20Regulation%20and](https://www.parliament.gov.zm/node/10967#:~:text=THE%20ENVIRONMENTAL%20MANAGEMENT%20(AMENDMENT)%20BILL%2C%202023%20MEMORANDUM%20The%20object,the%20Solid%20Waste%20Regulation%20and)

[Accessed 27 February 2024].

PMRC, 2017. *National Policy on Climate Change - Unlocking Zambia's Potential*, Lusaka: Policy Monitoring and Research Centre (PMRC).

Wealth Accounting and the Valuation of Ecosystem Services, n.d. *Zambia*. [Online]

Available at: <https://www.wavespartnership.org/en/edit-partner-countries-zambia>

[Accessed 27 February 2024].

African Development Bank Group, 2023. *ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF) ZAMBIA RENEWABLE ENERGY FINANCING FRAMEWORK*, s.l.: Republic of Zambia.

Modern Energy Cooking Services, 2022. *Modern Energy Cooking Brief: Zambia*, s.l.: May.

World Bank, 2019. *Zambia Climate-Smart Agriculture Investment Plan: Analyses to Support the Climate-Smart Development of Zambia's Agriculture Sector*, Washington, DC: World Bank.

Fortune Business Insights, 2020. *Solid Waste Management Market Size, Share & Industry Analysis*, s.l.: Fortune Business Insights.

CIFOR, 2023. *Project launch: Zambia for Agroforestry, Biodiversity and Climate (Z4ABC)*. [Online]

Available at: <https://www.cifor-icraf.org/news/corporate-news/project-launch-zambia-for-agroforestry-biodiversity-and-climate-z4abc/>

Reuters, 2024. *www.reuters.com*. [Online]

Available at: <https://www.reuters.com/business/environment/zambia-plans-import-ration-electricity-due-drought-2024-02-29/>

[Accessed 1st March 2024].

Bank of Zambia, 2023. *www.boz.zm*. [Online]
Available at: [https://www.boz.zm/Public Notice DBZ.pdf](https://www.boz.zm/Public%20Notice%20DBZ.pdf)
[Accessed 25th February 2024].

ZANACO, 2024. [Interview] (28th February 2024).

Analysis, K., 2024. [Interview] (28th February 2024).

Kukula, 2024. [Interview] (28th February 2024).

NDC Partnership, 2023. *www.ndcpartnership.org*. [Online]
Available at: <https://ndcpartnership.org/news/zambia-launches-integrated-path-climate-action-through-its-ndc-implementation-framework>
[Accessed 15th February 2024].

World Bank WAVES, 2020. *www.wavespartnership.org*. [Online]
Available at: <https://www.wavespartnership.org/en/knowledge-center/zambia%E2%80%99s-natural-capital-accounts-informing-key-policy-priorities>
[Accessed 16th February 2024].

Rural Electrification Authority, 2023. *www.rea.org.zm*. [Online]
Available at: <https://www.rea.org.zm/bring-back-esap/>
[Accessed 16th February 2024].

United Nations Framework on Climate Change, n.d. *https://unfccc.int*. [Online]
Available at:
<https://unfccc.int/resource/ccsites/zambia/coord/composit.htm#:~:text=The%20National%20Climate%20Change%20Steering,Training%2C%20and%20Agriculture%20Food%20and>
[Accessed 17th February 2024].

Government of Zambia, 2020. *https://unfccc.int*. [Online]
Available at: [https://unfccc.int/sites/default/files/NDC/2022-06/Final%20Zambia Revised%20and%20Updated NDC 2021 .pdf](https://unfccc.int/sites/default/files/NDC/2022-06/Final%20Zambia%20Revised%20and%20Updated%20NDC%202021.pdf)
[Accessed 16th February 2024].

BIOFIN Zambia, 2022. *www.biofin.org*. [Online]
Available at: <https://www.biofin.org/index.php/news-and-media/zambia-reduces-minimum-investment-threshold-attract-incentives-local-green>
[Accessed 20th February 2024].

United Nations Economic Commission for Africa, 2021. *https://repository.uneca.org*. [Online]
Available at:
<https://repository.uneca.org/bitstream/handle/10855/46746/Regulatory%20Review%20of%20the%20Electricity%20Market%20in%20Zambia.pdf?sequence=1&isAllowed=y>
[Accessed 21st February 2024].

Energy Regulation Board, 2019. [Online]
Available at: <https://beyondthegrid.africa/wp-content/uploads/ZAM-Energy-Regulation-Board-Mini-grid-Regulations.pdf>

Energy Regulation Board, 2023. *https://www.erb.org.zm*. [Online]
Available at: <https://www.erb.org.zm/wp-content/uploads/statutoryinstrumentno41.pdf>

Convergence, n.d. [Online]
Available at: <https://www.convergence.finance/blended-finance>

USAID, 2022. *www.usaid.gov*. [Online]
Available at: <https://www.usaid.gov/zambia/speeches/jun-16-2022-usaid-launches-dfcabsa-loan-guaranty-project>

Propsero Limited, 2021. *https://prospero.co.zm*. [Online]
Available at: <https://prospero.co.zm/news/climate-finance-press-release/>

Centre for Affordable Housing Finance in Africa, 2019. *https://housingfinanceafrica.org*. [Online]
Available at: <https://housingfinanceafrica.org/documents/blended-finance-housing-deal-a-study-on-fsd-africa-and-sofala-capital/>

FSD Africa, n.d. <https://fsdafrica.org>. [Online]
Available at: <https://fsdafrica.org/investment/sofala-capital/>

SAPP, 2023. <https://www.sapp.co.zw>. [Online]
Available at:
<https://www.sapp.co.zw/sites/default/files/SAPP%20Market%20Performance%20Report%20-%20December%202023.pdf>

Bloomberg, 2023. <https://www.bloomberg.com>. [Online]
Available at: <https://www.bloomberg.com/news/articles/2023-09-11/zambia-plans-c02-offset-venture-to-cover-5-of-its-landmass>

Eco Systems Market Place, 2023. <https://www.ecosystemmarketplace.com>. [Online]
Available at: <https://www.ecosystemmarketplace.com/articles/new-state-of-the-voluntary-carbon-markets-2023-finds-vcm-demand-concentrating-around-pricier-high-integrity-credits/>

Afrieximbank, n.d. <https://www.afreximbank.com/>. [Online]
Available at: <https://www.afreximbank.com/afreximbank-and-eca-sign-framework-agreement-towards-establishing-special-economic-zones-for-the-production-of-battery-electric-vehicles-in-drc-and-zambia%EF%BF%BC/>

afreximbank, 2023. <https://www.afreximbank.com/afreximbank-and-eca-sign-framework-agreement-towards-establishing-special-economic-zones-for-the-production-of-battery-electric-vehicles-in-drc-and-zambia%EF%BF%BC/>. [Online]
Available at: <https://www.afreximbank.com/>

Fu, X. B. D. G. G. C. G. R. R. K. R. B. M. B. C. & O. E., 2020. Perspectives on Cobalt Supply through 2030 in the Face of Changing Demand. *Environmental Science & Technology*.

PMRC, n.d. <https://www.pmrzambia.com>. [Online]
Available at: <https://www.pmrzambia.com/wp-content/uploads/2018/03/Understanding-Currency-Dynamics.pdf>

Lusaka Times, 2021. <https://www.lusakatimes.com/>. [Online]
Available at: <https://www.lusakatimes.com/2021/04/30/zambia-spends-us1-2-bn-on-fuel-importation-annually-nkhuwa/>

Kojima, M. & Bacon, R., 2011. [Online]
Available at:
<https://documents1.worldbank.org/curated/es/627831468159915345/pdf/827320WP0emplo00Box379875B00PUBLIC0.pdf>

PWC, 2023. [Online]
Available at: <https://taxsummaries.pwc.com/zambia/corporate/taxes-on-corporate-income>

Zambia Revenue Authority, n.d. <https://www.zra.org>. [Online]
Available at: <https://www.zra.org.zm/wp-content/uploads/2020/01/Withholding-Taxes.pdf>

Mubuyaeta, J., Mwange, A., Moose, J. & Simui, F., 2023. Low Uptake of Constituency Development Fund among Small and Medium Enterprise in Kafue, Zambia. *International Journal of Research and Innovation in Social Science*, Volume vol. 7, pp. 138-152.

Hampompwe, C., Kukano, C. & Sichoongwe, K., 2021. Challenges And Opportunities For Loan Financing Of Small And Medium Enterprises (SMEs) Through Citizens Economic Empowerment Fund, LusakaZambia. *International Journal of Scientific and Research Publications*, 11(4), pp. 379-386.

CleanTechnica, n.d. www.cleantechnica.com. [Online]
Available at: <https://cleantechnica.com/2023/10/02/zambia-proposes-removing-customs-duty-on-battery-electric-vehicles-charging-systems/>

Kukula Analysis, n.d. [Online].

Money, A. & Carew-Jones, G., 2023. <https://www.smithschool.ox.ac.uk>. [Online]
Available at: https://www.smithschool.ox.ac.uk/sites/default/files/2023-06/Mobilising-investment-for-Climate-Compatible-Growth-Zambia-%20Exec-Summary_0.pdf

Securities and Exchange Commission, 2019. www.seczambia.org.zm. [Online]
Available at: <https://www.seczambia.org.zm/wp-content/uploads/2020/01/The-Securities-Green-Bonds-Guidelines-2019.pdf>

Sustainalytics, 2023. <https://www.sustainalytics.com>. [Online]
Available at: [https://www.sustainalytics.com/corporate-solutions/sustainable-finance-and-lending/published-projects/project/cec-renewables-limited/cec-renewables-limited-green-bond-framework-second-party-opinion-\(2024\)/cec-renewables-limited-green-bond-framework-second](https://www.sustainalytics.com/corporate-solutions/sustainable-finance-and-lending/published-projects/project/cec-renewables-limited/cec-renewables-limited-green-bond-framework-second-party-opinion-(2024)/cec-renewables-limited-green-bond-framework-second)

PwC Zambia, 2023. [Online]
Available at: <https://taxsummaries.pwc.com/zambia/corporate/withholding-taxes>

CUTS International, 2020. <https://cuts-lusaka.org>. [Online]
Available at: <https://cuts-lusaka.org/pdf/policy-brief-targeting-residential-electricity-subsidies-in-zambia.pdf>

ERB, 2021. <https://www.erb.org.zm>. [Online]
Available at: <https://www.erb.org.zm/wp-content/uploads/files/CoSS/Green-Paper-on-CoSS.pdf>

Zientara, B., n.d. <https://www.solarreviews.com>. [Online]
Available at: <https://www.solarreviews.com/blog/what-is-net-metering-and-how-does-it-work>

ERB, 2022. www.erb.com. [Online]
Available at: <https://www.erb.org.zm/public-consultations-for-the-net-metering-regulations>

Kabemba, C. a. K. M., 2024. Effects of Public Debt on Economic Growth: An Empirical Evidence from Zambia (2011-2021). *American Journal of Industrial and Business Management*, pp. 165-183.

NAPSA, n.d. www.napsa.co.zm. [Online]
Available at: <https://www.napsa.co.zm/real-assets/>

NAPSA, 2023. <https://www.napsa.co.zm>. [Online]
Available at: <https://www.napsa.co.zm/download/call-for-investment-proposals-in-renewable-energy/>

MOE, 2024. <https://www.moe.gov.zm>. [Online]
Available at: <https://www.moe.gov.zm/irp/?wpdmpro=summary-report>

Bank of Zambia, 2023. <https://www.boz.zm>. [Online]
Available at:
<https://www.boz.zm/DynamicsofSovereignSecuritiesHoldingbyCommercialBanksinZambia.pdf>

Kukula Analysis, n.d. s.l.:s.n.

African Private Equity and Venture Capital Association, 2021. <https://www.avca.africa>. [Online]
Available at: <https://www.avca.africa/media/523mzpsh/avca-penop-pension-funds-study-nigeria-2021.pdf>

United Nations, n.d. <https://www.unpri.org>. [Online]
Available at: <https://www.unpri.org/about-us/what-are-the-principles-for-responsible-investment>

The Economist Intelligence Unit, 2019. <https://infrascope.eiu.com>. [Online]
Available at: https://infrascope.eiu.com/wp-content/uploads/2019/11/EIU_MCC_ZAMBIA_Proof_06.pdf

PMRC, 2023. *PMRC-National-Budget-Analysis*. [Online]
Available at: <https://pmrczambia.com/wp-content/uploads/2023/10/PMRC-National-Budget-Analysis-2024.pdf>
[Accessed 31 March 2024].

ERB, 2023. *Statistical Bulletin - January to December 2022*. [Online]
Available at: <https://www.erb.org.zm/wp-content/uploads/statBullet2022.pdf>
[Accessed 31 March 2024].

Zamstats, 2022. *Our Population*. [Online]
Available at: <https://www.zamstats.gov.zm/2022-census/>
[Accessed 31 March 2024].

BoZ, 2024. *Monetary Policy Committee Statement*. [Online]
Available at: https://www.boz.zm/MPC_Statement_Q1_2024.pdf
[Accessed 1 April 2024].

Lusaka Times, 2024. <https://www.lusakatimes.com/>. [Online]
Available at: <https://www.lusakatimes.com/2024/04/01/zesco-implements-staggered-load-shedding-schedule-in-lusaka/>

Ministry of Green Economy and Environment, n.d. *NDC Implementation Framework 2023-2030*, s.l.: s.n.

Andersen, T. et al., 2024. *The Landscape for Climate Compatible Investments in Zambia*, s.l.: Kukula Capital.

Mwanza, C., 2023. *Property Manager, Foxdale Court* [Interview] (5th December 2023).

CEC Investor, 2024. www.cecinvestor.com. [Online]
Available at: <https://cecinvestor.com/over-subscription-of-first-tranche-of-green-bond/#:~:text=29th%20December%202023%2C%20Lusaka%20%E2%80%93%20Subsequent,wa s%20oversubscribed%20by%20over%20178>
[Accessed April 2024].

Ernst & Young, 2020. [Online]
Available at: <https://taxnews.ey.com/news/2020-0073-zambia-amends-vat-legislation>

Chibale, M., 2024. *General Manager* [Interview] (April 2024).

The Conversation, 2023. <https://theconversation.com/eu-poised-to-copy-us-subsidies-for-green-technology-new-evidence-from-china-shows-how-it-could-backfire-199715>. [Online]
Available at: <https://theconversation.com/>

Idos-Research, 2023. <https://www.idos-research.de>. [Online]
Available at: <https://www.idos-research.de/en/the-current-column/article/the-global-race-to-subsidise-green-technologies/>

Lusaka Times, 2024. <https://www.lusakatimes.com/>. [Online]
Available at: <https://www.lusakatimes.com/2024/04/13/chingola/>

The White House, 2023. <https://www.whitehouse.gov/>. [Online]
Available at: <https://www.whitehouse.gov/briefing-room/statements-releases/2023/03/31/fact-sheet-vice-president-harris-announces-over-7-billion-in-private-sector-and-u-s-government-commitments-to-promote-climate-resilience-adaptation-and-mitigation-across-africa/>

Swiss Agency for Development and Cooperation, 2022. [Online]
Available at:
<https://www.shareweb.ch/site/EI/Documents/PSE/PSE%20Toolbox/SDC%20Case%20Study%20C atalytic%20Market%20Facility%20Aceli%20Africa%20%28Aceli%29.pdf>

Capital, K., 2019. *Overhead photo of Foxdale Court shopping centre*. [Art].

Convergence, 2023. <https://assets.ctfassets.net>. [Online]
Available at:
https://assets.ctfassets.net/4cqqqlwde6qy0/1cPyptaju6esN7ktzUO6Pt/721e7e168c43e3e0cf1d22c3bcd265e9/DB_TechnicalAssistance-FINAL-Oct_18_1_.pdf

Halvorssen, A. M., 2023. <https://academic.oup.com>. [Online]
Available at: <https://academic.oup.com/book/46709/chapter/410253097?login=false>

Central Bank of Kenya, 2024. <https://www.centralbank.go.ke>. [Online]
Available at: <https://www.centralbank.go.ke/2024/04/11/10452/>

Ministry of Green Economy and Environment, 2023. *Guidelines for the Submission and Evaluation of Proposed Mitigation Activities under Article 6 of the Paris Agreement*, Lusaka: MINISTRY OF GREEN ECONOMY AND ENVIRONMENT.

World Bank, n.d. *GDP per capita (current US\$) - Zambia*. [Online]
Available at: <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=ZM>
[Accessed 20 March 2024].

IMF, n.d. *Real GDP growth*. [Online]
 Available at: https://www.imf.org/external/datamapper/NGDP_RPC@WEO/ZMB?zoom=ZMB&highlight=ZMB
 [Accessed 20 March 2024].

ZamStats, 2024. *Publications*. [Online]
 Available at: <https://www.zamstats.gov.zm/wp-content/uploads/2024/02/Vol-251-of-2024-The-Monthly-February.pdf>
 [Accessed 20 March 2024].

Bank of Zambia, n.d. *Average exchange rates*. [Online]
 Available at: <https://www.boz.zm/average-exchange-rates.htm>
 [Accessed 20 March 2024].

Commonwealth Secretariat, 2021. <https://production-new-commonwealth-files.s3.eu-west-2.amazonaws.com/>. [Online]
 Available at: https://production-new-commonwealth-files.s3.eu-west-2.amazonaws.com/migrated/inline/Climate_Finance_Mapping_for_Zambia_UPDF.pdf

BIOFIN, 2024. <https://www.biofin.org>. [Online]
 Available at: <https://www.biofin.org/news-and-media/biofin-zambia-driving-transformation-green-finance-launch-three-key-financial>

Marais, N., 2024. *Managing Director* [Interview] 2024.

13 Definitions

13.1 Central actors

Term	Description
Commercial Banks	Refers to the banks in Zambia that are licensed and regulated by the Bank of Zambia (BoZ), which is the central bank of the country. At the time of the compiling of this report, there are 17 international and local banks operating in Zambia, all of which must incorporate locally.
Development / Foreign Aid Sector	<p>The foreign aid sector in Zambia refers to the assistance provided by international organizations, governments, and non-governmental organizations (NGOs) to support the country's development, poverty reduction, and economic growth. This aid has been significant in Zambia's history, particularly during periods of economic shocks and political upheaval.</p> <p>These aid partners include traditional donors such as the World Bank and International Monetary Fund but also include United States Agency for International Development (USAID), Millennium Challenge Corporation (MCC), German Agency for International Cooperation (GIZ), Japan International Cooperation Agency (JICA), Swedish International</p>

	Development and Cooperation Agency (SIDA), United Kingdom Foreign, Commonwealth & Development Office (FCDO) etcetera.
Government	The Government of the Republic of Zambia encompasses the nation's legislative bodies, including all ministries, agencies, and quasi-agencies. These bodies operate collectively to govern, administer, and implement policies and laws for the nation's development and welfare.
Investors	<p>In the context of this report, investors include;</p> <ul style="list-style-type: none"> • <i>Institutional Investors</i>: Includes pension funds, insurance companies, and investment companies, pooling money to purchase securities and other assets. • <i>Private Equity Firms</i>: Collect funds to invest directly in private companies or conduct buyouts, aiming for high returns through various strategies. • <i>Debt Funds</i>: Investment funds that pool capital to lend to companies or invest in debt securities, such as corporate or government bonds. • <i>High Net Worth Individuals (HNWIs)</i>: Individuals with significant assets and disposable income investing in real estate, startups, and local businesses. • <i>Venture Capital Firms</i>: Focus on high-risk, high-potential return investments in startups and early-stage companies with significant growth potential. • <i>Angel Investors</i>: Affluent individuals providing capital to startups, often in early stages, potentially offering mentorship alongside financial investment. • <i>Foreign Direct Investors (FDIs)</i>: Individuals or companies from outside Zambia investing in the country through subsidiaries, acquisitions, or joint ventures. • <i>Retail Investors</i>: Individual investors engaging in stock market trading, mutual funds, and other financial instruments, usually investing smaller amounts of capital.
Market Enablers	

	<p>Market enablers are entities that support the capital markets ecosystem by facilitating its operations, often without directly contributing capital. The key entities that facilitate and support the functioning and growth of the capital markets in Zambia include:</p> <ul style="list-style-type: none"> • <i>Securities and Exchange Commission (SEC) of Zambia:</i> The regulatory authority that oversees and regulates Zambia’s capital markets to ensure integrity, fairness, and efficiency. • <i>Lusaka Stock Exchange (LuSE):</i> The primary securities exchange platform in Zambia, providing a venue for trading financial instruments like stocks and bonds. • <i>Brokerage Firms:</i> Companies that act as intermediaries, facilitating the buying and selling of securities on behalf of investors in the capital markets. • <i>Corporate Finance Firms:</i> Specialize in managing financial activities for corporations, including advice on mergers, acquisitions, and raising capital through the markets. • <i>Investment Bankers:</i> Professionals or firms that act as intermediaries in financial transactions, assisting in the issuance of new securities and advising on investment opportunities.
<p>Regulators</p>	<p>Refers to entities charged with enforcing financial sector rules and supervising market participants. The primary regulators in the financial sector in Zambia are the Securities and Exchange Commission of Zambia and the Bank of Zambia.</p> <p>Other regulators that may intersect with the sector are Zambia Environmental Management Agency.</p>

13.2 Financial terms

Term	Definition
<p>Blended finance</p>	<p>Blended finance refers to the strategic use of public sources of capital to attract private investment in developing countries. It involves blending public capital, such as foreign aid funding or funding by development financial institutions, with private capital to de-risk investment projects, reduce the cost of capital and crowd in additional private</p>

	capital. This approach aims to optimize and maximize the financial resources mobilized.
Climate compatible investments	Climate compatible investments is defined as financial commitments directed towards projects and initiatives that are designed to mitigate and adapt to climate change impacts and foster sustainable development without compromising the ability of future generations to meet their own needs. By aligning financial flows with low-carbon, climate-resilient development pathways, Climate compatible investments aim to support the transition towards a sustainable economy that harmonizes economic growth with ecological balance and social well-being.
GET FIT	GET FIT Zambia is a program crafted to aid the Zambian Government in executing its REFIT Strategy. Aimed at fostering a climate-friendly trajectory and sustainable development in Zambia, this donor-funded initiative endeavours to enhance the regulatory framework and market conditions to encourage private sector engagement in the power sector.
Independent Power Producer	An Independent Power Producer (IPP) is an entity, often a private company, that generates electrical power for sale to utilities or end-users. Unlike traditional utilities that own and operate power generation facilities, IPPs typically develop, finance, and construct power plants independently of government-owned utilities. They may utilize various energy sources such as fossil fuels, renewable resources like wind or solar, or other technologies such as hydroelectric or nuclear power. The key characteristic of an IPP is that it operates independently from the traditional utility grid and sells its generated electricity to consumers or utilities under contractual agreements.
National Capital Accounting Strategy	<p>Natural capital accounting is a systematic approach to evaluating the economic contributions of natural ecosystems. It enables governments to:</p> <ul style="list-style-type: none"> • Gain insights into their economies' dependence on natural systems, • Monitor shifts in natural systems that could affect industries, and • Strategically manage natural resources and ecosystems to preserve their long-term economic benefits.

<p>National Implementing Entity (NIE)</p>	<p>National Implementing Entities are national legal entities nominated by Parties of the UNFCCC, recognized by the Board as meeting the fiduciary standards established by the Board. The NIEs will bear the full responsibility for the overall management of the projects and programmes financed by the Adaptation Fund, and will bear all financial, monitoring, and reporting responsibilities.</p>
<p>REFIT</p>	<p>The REFiT Strategy, endorsed by the Zambian cabinet in 2017 and officially unveiled by the Ministry of Energy, outlines an allocation of 200 MW specifically for small to medium-scale projects, each with a maximum capacity of 20 MW. This allocation is slated for procurement over a three-year period. Eligible technologies under the strategy encompass hydroelectric, solar photovoltaic (PV), geothermal, biomass, waste-to-energy, and wind power.</p>

14 Annex

14.1 Link to survey report

[FRF Survey report.pdf](#)