



Zambia Article 6

Readiness and Needs Assessment

A Technical Brief

Zambia Article 6

Readiness and Needs Assessment

A Technical Brief

GGGI Technical Brief

Technical Brief November 2023: Assessing the Readiness and Needs for Zambia's Participation in Article 6 of the Paris Agreement.

Authors

Marshall Brown
Joachim Schnurr

Contributors

Li Cheng
Benjamin Devise
Yliana Ríos

Design & layout

Puntoaparte Editores
www.puntoaparte.com.co

Photo credits

SPAR6C
Page 6-7: Adwo / Shutterstock.com
Page 8: Vadim Petrakov / Shutterstock.com
Page 14: Fabian Junge / Shutterstock.com
Page 14: Alexandre Laprise / Shutterstock.com
Page 14: wavebreakmedia / Shutterstock.com
Page 15: M2020 / Shutterstock.com
Page 15: Ground Picture / Shutterstock.com
Page 15: KANITHAR AIUMLAOR / Shutterstock.com
Page 18: Enric Riera Roma / Shutterstock.com

This technical brief aims to highlight the key recommendations after assessing the readiness and need of Zambia to implement mitigation activities under the Article 6 of the Paris Agreement framework. This assessment is part of the Supporting Preparedness for Article 6 Cooperation (SPAR6C) program, a German-funded initiative led by GGGI with a consortium including Carbon Limits, GFA Consulting, Kommunalkredit Public Consulting, and United Nations Environment Programme Copenhagen Climate Centre.

Digital version



www.gggi.org



SPAR6C

Supporting Preparedness for
Article 6 Cooperation



Zambia Article 6

Readiness and Needs Assessment

A Technical Brief

Copyright © 2023

The Global Green Growth Institute does not: (i) make any warranty, either express or implied; or (ii) assume any legal liability or responsibility for the accuracy, completeness, or any third party's use or the results of such use of any information contained herein; or (iii) represents that its use by any third party would not infringe privately owned rights. The views and opinions of the authors expressed herein do not necessarily state or reflect those of the Global Green Growth Institute.



copenhagen
climate centre



List of Acronyms

CSO	Civil Society Organizations
DBZ	Development Bank of Zambia
EV	Electric Vehicle
GDP	Gross Domestic Product
GHG	Greenhouse Gas
IPCC	Intergovernmental Panel on Climate Change
IPPU	Industrial Process and Product Uses
ITMO	Internationally Transferred Mitigation Outcome
LT-LEDS	Long-term low-emission development pathways
MBT	Mechanical Biological Treatment
MGEE	Ministry of Green Economy and Environment
MtCO _{2e}	Million tonnes of carbon dioxide-equivalent
NAMA	Nationally Appropriate Mitigation Actions
NDC	Nationally Determined Contribution
NMT	Non-Motorized Transport
ODA	Official Development Assistance
PV	Photovoltaics
RNA	Readiness and Needs Assessment
SPAR6C	Supporting Preparedness for Article 6 Cooperation
ZANACO	Zambia National Commercial Bank
ZEMA	Zambia Environmental Management Agency

Assessing Article 6 Readiness



In the context of international carbon markets under the Paris Agreement, the concept of “readiness” refers to the preparedness of a country to effectively engage in Article 6 collaboration. Readiness involves the development of policies, infrastructures, capacities, and systems that enable countries to strategically participate in Article 6 activities¹. This readiness is crucial because it allows both seller and buyer countries to transparently trade and account for the exchange of carbon credits.

The Supporting Preparedness for Article 6 Cooperation (SPAR6C) program aims to enhance climate ambition and to support countries in engaging in cooperative approaches under Article 6 of the Paris Agreement. The SPAR6C program conducted assessments in late 2022 to early 2023, to examine the needs of each country in its portfolio – Colombia, Pakistan, Thailand and Zambia - in terms of context and capacity for carbon market participation under Article 6. The findings helped identify the specific technical assistance and capacity-building activities that the program would take to

enhance a country’s readiness and ability to implement mitigation activities.

To assess a country’s readiness for participation in Article 6, a thorough evaluation was carried out, considering several important aspects:

- 1 Assessment of the country’s alignment with Article 6 of the Paris Agreement and the Paris Rulebook.
- 2 Assessment of the country’s Article 6 institutional framework (including the institutional arrangements and procedures for authorization, transfer, tracking and reporting, and registry design).
- 3 Identification of sectoral opportunities for ITMO-generating mitigation activities.
- 4 Assessment of the readiness of the national finance and investment ecosystem to engage in mitigation activities.

The RNA has been developed after interviewing 105 local stakeholders across 46 national institutions, companies, and Civil Society Organizations (CSOs). The final version of the RNA was validated, reviewed, and endorsed in a national workshop by the Ministry of Green Economy and Environment of Zambia (MGEE).

1. Michaelowa A, Espelage A, Gilde L ’t, et al. (n.d.) Article 6 readiness in updated and second NDCs. Available at: https://www.perspectives.cc/public/fileadmin/user_upload/PCG-CF_Art6_Readiness-NDCs_27.10.21.pdf

Overview of Key Findings






Zambia

Zambia has an ambitious goal of reducing its greenhouse gas emissions by **38 MtCO₂e** in 2030 compared to the **2010 baseline of 120.6 MtCO₂e**. The gap in finance to meet its most ambitious mitigation targets (as shown in the conditional portion of its Nationally Determined Contribution or NDC) has been estimated at \$35 billion. The international carbon markets created under Article 6 of the Paris Agreement may provide Zambia an opportunity to fill this finance gap. To help unlock this potential, the SPAR6C Readiness and Needs Assessment (RNA) for Article 6 implementation in Zambia has identified key gaps and opportunities for the country to benefit from engaging in cooperative approaches under Article 6.



1 Article 6 Participation Requirements

Zambia has fulfilled the basic requirements for participating in Article 6 activities. The country signed the Paris Agreement in September 2016 and submitted its initial NDC in December 2016 as well as an updated NDC in July 2021. In October 2023, Zambia launched Part 1 of its Carbon Market Framework. Remaining gaps include:

-  Developing the infrastructure to authorize, and track Internationally Transferred Mitigation Outcomes (ITMOs)
-  Updating its greenhouse gas inventory – the last inventory was conducted for the year 2016
-  Finalizing the Carbon Market Framework

2 Institutional and Legal Arrangements

Climate change governance is structured around the 2016 *National Policy on Climate Change*, which establishes a coordination framework, including the Steering Committee of Permanent Secretaries and the Technical Committee on Climate Change. These committees advise on policy and program coordination, with the latter serving as the primary technical advisory body. Part 1 of Zambia's Carbon Market Framework provides initial guidance for both government and private sector in the submission and evaluation of proposals. The forthcoming Climate Change Bill will further clarify legal mandates related to carbon markets and NDC updates.

3 Key Article 6 Activity Sectors

The RNA evaluates the potential for Article 6 to support mitigation in six sectors and identifies the following as high potential:

-  Land use and forestry
-  Energy – renewable energy
-  Agriculture – livestock sector
-  Waste – municipal solid waste management
-  Industry Process and Product Uses (IPPU) – cement sector

4 Private Sector

Consultations with the Zambian private sector for the RNA identified key challenges for carbon market participation and investment motivation more broadly. These include:

-  Lack of a carbon market policy framework with clear processes and procedures for private developers
-  Investment challenges associated with high interest rates for loans
-  Limited access to international financing for small and medium enterprises due to low credit ratings and currency volatility
-  Hesitancy among national financial institutions to fully embrace carbon finance as a reliable income source for mitigation projects

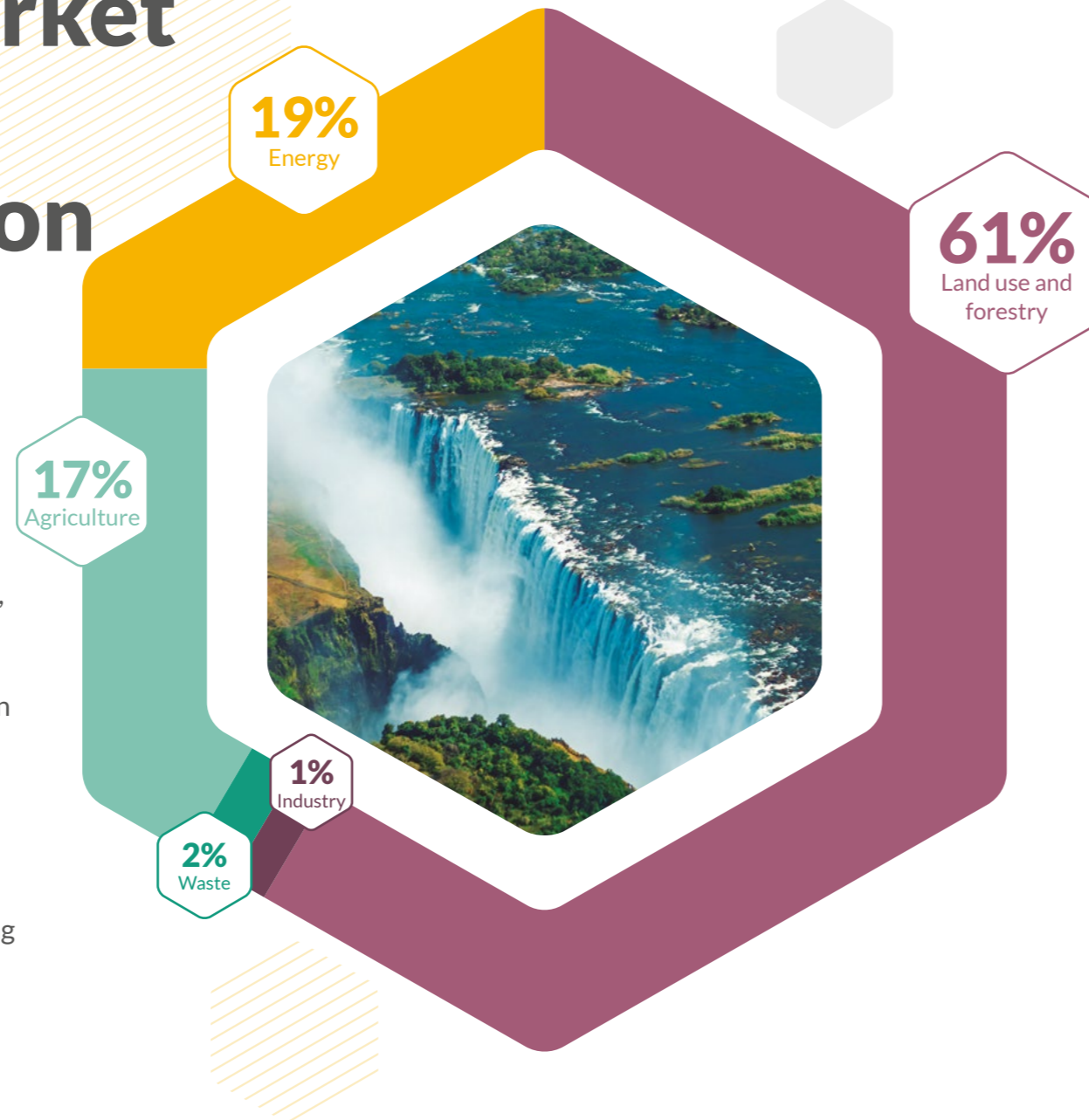
SPAR6C will provide technical assistance and capacity building in Zambia to address its key challenges through:

-  Medium and long term emissions planning support
-  Governance framework development
-  Mitigation activity development

Zambia's Market Objectives and Mitigation Profile

Overview

The Government of Zambia, through MGEE, has demonstrated a strong political will to use international carbon markets to finance its most ambitious climate change mitigation objectives. Zambia actively participates in the global dialogue on Article 6, serving as chair of the African negotiating group to the UNFCCC. Zambia has also developed a National Policy on Climate Change (2016), which provides a framework for coordinating climate change programs. Zambia has signed Memorandums of Understanding with several entities seeking to develop mitigation activities for the international voluntary carbon market and Article 6.



Population (2022) ²	20.0 million
GDP per capita (2022) ³	\$1,487.9
GDP Growth (2022) ⁴	4.7%
GHG Emissions (2016)	126.8 MtCO ₂ e
Finance Gap	\$35 billion USD

NDC Emission Reduction Goal



Unconditional pledge to reduce Greenhouse Gas (GHG) emissions by 20 Mt CO₂e by 2030 against the base year of 2010 (120.6 MtCO₂e) with limited international support.



Conditional pledge to reduce GHG emissions by 38 Mt CO₂e with substantial international support.

Figure 1: Zambia's GHG emissions by sector in 2010⁵

Figure 1 shows a breakdown of Zambia's GHG emissions by sector in 2010. Land-Use and Forestry has the largest contribution to GHG emissions with 61%, followed by energy (including transport) and agriculture. Waste and Industry played smaller roles, accounting for just 2% and 1%, respectively. However, it should be noted that the last GHG inventory was conducted in 2010, and that the sectoral distribution of GHG emissions could have changed since then.

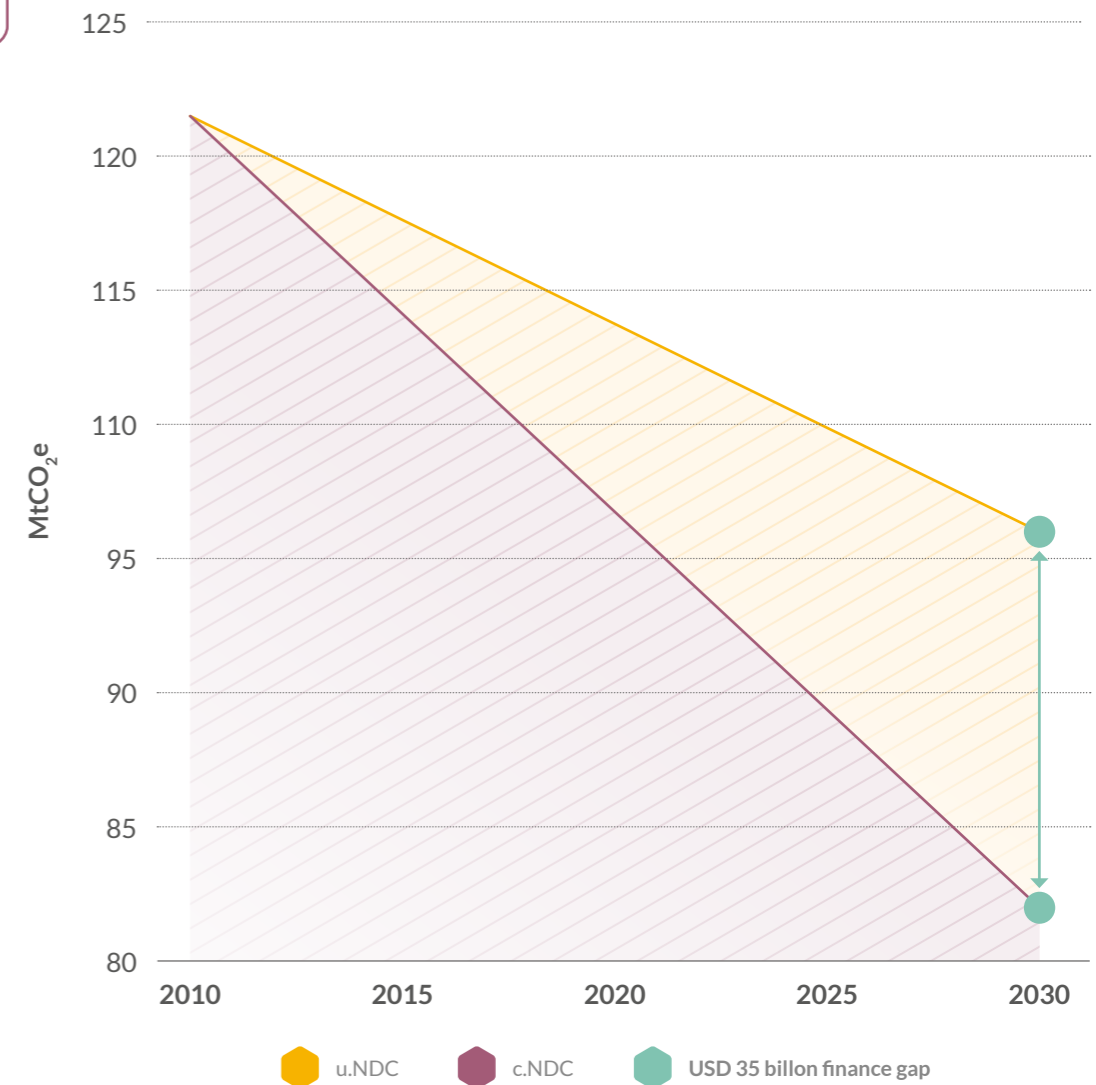


Figure 2: Zambia's GHG emissions reduction pathways to 2030

The emission reduction paths planned by Zambia by 2030 are illustrated in Figure 2. The steeper emission reductions pathway, as shown by the purple line (conditional target), requires a total of USD 50 billion in climate finance over the timeframe up to 2030. The unconditional target, shown as the yellow line, assumes continued international support of USD 15 billion over the time period up to 2030. Thus, there remains a finance gap of USD 35 billion between the conditional and unconditional mitigation targets of Zambia.

2. World Bank. (2022). Total Population (SP.POP.TOTL). World Bank Data. <https://data.worldbank.org/indicator/SP.POP.TOTL>
 3. World Bank. (2022). GDP per capita (constant 2010 US\$) (NY.GDP.PCAP.CD). World Bank Data. <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>
 4. World Bank. (2022). GDP growth rate (annual %) (NY.GDP.MKTP.KD.ZG). World Bank Data. <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>

5. USAID. (2022). Greenhouse Gas Emissions Factsheet Zambia. United States Agency for International Development. https://www.climate-links.org/sites/default/files/asset/document/GHG%20Emissions%20Factsheet%20Zambia_final%20for%20PDF_11-09-15_edited_rev08-18-2016.pdf

Zambia: Article 6 Participation and Initial Report Requirements

Countries that participate in cooperative approaches under Article 6 of the Paris Agreement must ensure that their participation is consistent with the Article 6.2 guidance⁶. This includes:



Meeting the participation requirements listed in paragraph 4 of the Article 6 guidance; and



Submitting an initial report, no later than the authorization of ITMOs (or where practical), which requires countries to communicate specific decisions including the choice of ITMO metrics and an accounting approach for applying corresponding adjustments⁷.

REQUIREMENTS

STATUS CHECK

NOTES



Participation Requirements

It is a party to the Paris Agreement	Yes	Zambia ratified the Paris Agreement in 2016
It has prepared, communicated, and is maintaining an NDC	Yes	Zambia has updated its NDC in 2021
It has arrangements in place for authorizing the use of ITMOs towards achievement of NDCs	In progress	As of October 2023, Zambia has established MGEE as the authorizing entity for Article 6 in Part 1 of its Carbon Market Framework
It has arrangements and infrastructure in place for tracking ITMOs	In progress	Zambia has taken decisions regarding the establishment of a registry, but it is not fully operational yet
It has provided the most recent national inventory report	Yes	The most recent national inventory report submitted to the UNFCCC was in September 2020 through its Third National communication. The TNC mentions the total GHG emissions of 2016 and provides detailed emissions by sector for 2010
Its participation contributes to the implementation of its NDC, LT-LEDS, if it has submitted one, and the long-term goals of the Paris Agreement	No cooperative approaches currently approved	Zambia has not yet submitted an LTS to UNFCCC (cp. UNFCCC, 2022) and is currently not preparing one. During the consultations with the Green Economy and Climate Change Department, MGEE indicates the interest to join the LTS and green growth strategy in one work stream



Initial Report

Choose an ITMO metric and methodology	Yes	CO ₂ e is the metric indicated in the NDC
Choose the method for applying corresponding adjustments (Define accounting approach for single- and multi-year targets)	Partially	Single-year target has been set but no accounting approach has been defined
Describe and quantify the NDC	Yes	Quantitative targets set in NDC

6. UNFCCC Decision 2/CMA.3, Annex, paragraph 3.

7. UNFCCC Decision 2/CMA.3, Annex, Section IV, A (Initial report).

State of Institutional and Legal Arrangements: Key Gaps Identified and Actions Proposed

While Zambia has taken significant steps towards aligning its policies and strategies with the requirements of Article 6 of the Paris Agreement, there are still gaps in terms of legal frameworks, private sector engagement, and institutional capacity. Addressing these gaps will be crucial for the successful implementation of Article 6 transactions and achieving the country's mitigation targets.

Overarching Climate Change Mitigation Policies



Zambia has already adopted some policies related to mitigation. In 2010, Zambia established the National Climate Change Response Strategy which has the goal to achieve sustainable development and protect the most vulnerable sectors of the economy from climate impacts. This was followed by the Zambia National Policy on Climate Change in 2016 which provides a framework for coordinating climate change programs aligned with national development plans. The mitigation efforts contained in these frameworks include sustainable land use planning, Nationally Appropriate Mitigation Actions (NAMAs), alternative energy sources, energy efficiency, conservation, and more. More importantly, the policy also requires the establishment of governmental structures for policy implementation.



Institutional Setup and Capacity

MGEE takes the lead on climate initiatives, and the technical committee on climate change under the ministry has been designed to oversee Article 6 mitigation activities. However, MGEE could benefit from greater engagement with other government agencies such as the Ministry of Energy, Ministry of Agriculture as well as private sector actors. Limited involvement of stakeholders in decision-making could hinder a cohesive approach across ministries and the comprehension of the framework by private entities. Furthermore, although the Zambia Environmental Management Agency (ZEMA) manages GHG accounting and monitoring, there are capacity gaps, particularly in forestry-related emissions accounting, where deforestation figures appear to be underestimated.



Legal and Regulatory Assessment

The Zambian government is currently in the process of formulating a Climate Change Bill to enhance the coordination and oversight of climate change activities, including carbon markets and the distribution of benefits. However, there are notable gaps in defining roles and mandates among various ministries and committees, as well as incorporating legal mechanisms to ensure adherence to guidelines and due process during decision-making.

The country issued early "Interim Guidelines for the Carbon Market", which designate ZEMA as responsible for MRV and Article 6 registry. These guidelines served as the basis for the updated Carbon market Framework, updated in 2023.



Proposed Actions

- 1 Strengthening institutional coordination and capacity building across relevant ministries.
- 2 Further development of MRV systems, registry, and Corresponding Adjustment procedures.
- 3 Establishment of comprehensive climate change legislation and regulations, including legal entities responsible for ensuring compliance.

Sectoral Challenges and Opportunities

Zambia's climate priorities are aligned with both its NDC's focus on six key mitigation sectors and with the Intergovernmental Panel on Climate Change (IPCC) framework: land use and forestry, energy, agriculture, waste, transport and industry process and product uses (IPPU). These sectors have been strategically chosen as they offer significant potential for GHG emissions reduction while fostering sustainable national development and climate resilience.



1

Land-Use and Forestry

The country's forest cover has declined over the years. Nature-based solutions programs hold promise for climate mitigation with co-benefits in adaptation and achieving SDGs. Zambia's rich biodiversity can be leveraged for effective carbon sequestration and ecosystem protection. However, stronger accounting institutions are required as previously evaluated to ensure high environment integrity ITMO. In the last inventory, Land Use and Forestry accounted for 62% of Zambia's GHG emissions.

2

Energy

In 2020, 45% of the population had access to electricity, according to IRENA. Accessibility to clean cooking fuels and technologies remains limited, with only about 10% of the population having access. Renewable energy sources are increasingly being developed, with around 80% of the country's total energy supply coming from renewables in 2019, mostly from hydropower only, creating a non-diversified energy mix. Solar, wind, and other renewables are emerging in Zambia's energy mix and account for less than 1% of total energy generation. Overall, Zambia's energy sector offers robust opportunities. Expanding grid-connected generation, rural off-grid electrification with renewables (PV, small hydropower, wind, biomass) and improving energy efficiency could attract forms of blended finance through carbon finance.

3

Agriculture

In Zambia, one of the key challenges in agriculture is the pressing need to address the adverse effects of changing rainfall patterns, with a significant reduction in rainfall over the past five years. This situation has severe consequences given that agriculture is the socio-economic backbone of the rural population, with 60% being dependent on the sector as the main source of income and livelihood. The sector is not only a source of livelihood but also a major contributor to GHG emissions, representing 17% in 2010 according to the last greenhouse gas inventory. To mitigate these emissions and adapt to climate change, Zambia has identified activities such as promoting efficient fertilizers, improved crop varieties, and conservation agriculture to reduce GHG emissions from farming, as well as introducing pasture conservation and disease control for livestock. Furthermore, the emphasis on improved manure management and biogas production contributes to emissions reduction.

4

Waste

Within waste management, technical expertise and innovative technologies are lacking, necessitating the need for external support and capacity-building to realize emissions reduction potential.

The development of a National Solid Waste Management Strategy in 2004 offered critical suggestions such as minimizing waste generation, promoting re-use and recycling, and introducing a system of levies and incentives. Furthermore, the Environmental Management Act of 2011 highlights the importance of pollution control, including waste management.

The proposed activities in the Nationally Appropriate Mitigation Action (NAMA) for waste management aim to increase collection and disposal of municipal solid waste, promote waste segregation, and improve waste treatment and GHG emissions reduction, emphasizing the development of infrastructure like Mechanical Biological Treatment (MBT) and anaerobic digestion for biogas capture.

5

Transport

With a significant share of the nominal GDP (around 10.9%), the transport sector is a vital component of the economy. However, there is a need for updated policies and strategies focused on mitigation activities.

A Non-Motorized Transport (NMT) Strategy of 2019 promotes sustainable transport modes such as walking, cycling, and public transport. Although the NMT is supported in the Zambian Transport Policy of 2019, there are no explicit policy objectives to support mitigation activities. The Nordic Development Fund has been supporting a sustainable road infrastructure initiative since 2017, aiming to integrate climate change adaptation and resilience considerations into road and transport sector planning and management processes. Moreover, Zambia has identified the promotion of electric vehicles (EVs) as an NDC measure, making it imperative to assess the current vehicle fleet for GHG emissions and model the potential mitigation effects of EVs in detail.

6

Industry Process and Product Uses (IPPU)

The IPPU sector (comprising of coal, steel, and cement sectors) represented 1.35% of the total emissions of GHG in Zambia in 2010. The IPPU sector has been included in the updated scope for mitigation activities under the updated NDCs. Barriers and challenges remain, especially in establishing an efficient MRV system.

Financing Mitigation Activities

The nation's conditional target as written in its NDC would require mobilizing an **additional US\$35 billion to reach the gap between the conditional and the unconditional target by 2030**. It requires a strategic plan of international and domestic funding sources.

Zambia's Third National Communication highlights the necessity of developing robust investment strategies that combine public, private, and blended finance mechanisms. Zambia's recent decision to establish MGEE demonstrates a push

towards mainstreaming green growth and climate into state budgets. This proactive stance strengthens Zambia's appeal for international climate aid and enhances its potential to attract external funds.

An important update came with the Green Climate Fund's accreditation of the Development Bank of Zambia (DBZ) and Zambia National Commercial Bank (ZANACO) as financial intermediaries in 2022. This achievement sets the stage for innovative

financing instruments, fusing concessional and carbon finance, supplemented by Official Development Assistance (ODA) and guarantee mechanisms. This convergence paves the way for large-scale climate projects as it reduces financial risks.

Based on insights gathered from private sector consultations, there are several challenges that need attention in order to encourage funding and investments. These challenges include:



SPAR6C Interventions in Zambia

The lead consortium partner responsible for overseeing the SPAR6C program's operations is GFA Consulting. They have categorized their activities into two main areas: technical tasks and capacity building.



1

Sectoral Studies

Several sectoral studies are scheduled for execution in Zambia, concentrating on the strategic sectors pinpointed in the readiness and needs assessment. The aim is to refine the country's dataset, thus constructing a compelling rationale for involving the private sector in Article 6 mitigation activities. This, in turn, facilitates the mobilization of finance in the designated areas which encompass Livestock (Agriculture), Forestry (Land-Use and Forestry), Waste, Cement (Industry Process and Product Uses), and Biomass (Energy).

2

Article 6 Governance Framework

The SPAR6C program is supporting Zambia in developing a comprehensive Article 6 governance framework the "Zambia Carbon Market Framework". This governance framework is designed hand in hand with the national government, as well as with feedback from key stakeholders from the private sector stakeholders throughout 2023. Consultations with the government continue to underscore that the legislation is on the brink of ratification and adoption into national law.

3

Facilitating the Integration of the National Article 6 Registry and MRV System

SPAR6C is committed to aiding the Zambian national government in enhancing its MRV system's capabilities and successfully establishing an Article 6 registry. This objective will primarily be realized through capacity building sessions, linked also to the sectoral studies conducted by SPAR6C.

4

Supporting Mitigation Initiatives

Zambia is on the cusp of initiating mitigation activities under Article 6, with a specific focus on a carefully selected project. Furthermore, a long list of potential projects is under development. These will continue to be developed throughout the program duration.

5

Community of Practice for Article 6 Implementing Countries (CoP-ASIC)

In conjunction with the technical endeavors, SPAR6C aims to bolster countries' capacity to embrace Article 6 and engage in the international carbon market in the long term. To achieve this, the CoP-ASIC initiative aspires to empower local academic institutions and graduate students in each member country. This involves fostering their keen interest in the subject of carbon markets, enabling them to undertake brief research assignments and internships. 10 students will participate in the SPAR6C Research Mentorship Program, a key component of the national CoP-ASIC.

This technical brief provides a summary of key findings and insights collected between August 2022 and November 2022 as part of the SPAR6C program in the Republic of Zambia. Data collection, consultation, and analysis were conducted in close partnership with the government of Zambia and led by GFA Consulting with the support of the United Nations Environment Programme Copenhagen Climate Centre and local experts.

SPAR6C

Supporting Preparedness for
Article 6 Cooperation