



An Assessment of Zambia's Legal Framework Governing Carbon Trading: Challenges and Prospects for Climate Change Mitigation.

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*REVISIONS WERE MADE TO DISSERTATION AFTER GUIDANCE IN THE VIVA VOCE AND
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DEDICATION

This dissertation is dedicated to my parents, with special appreciation to my father, whose unwavering support, encouragement, and belief in me have carried me throughout my academic journey. When I felt unable to continue, he encouraged me to persevere and never gave up on me. His guidance, sacrifices, and constant motivation have been a source of strength and inspiration. I am deeply grateful for his love and support, which have made this achievement possible.

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ABSTRACT

This study assessed the legal framework for carbon trading in Zambia critically analyzing recent reforms such as the Green Economy and Climate Change Act No. 18 of 2024. The objectives of the study was to evaluate both international and domestic legal frameworks governing carbon trading, identify key barriers, and explore opportunities for strengthening Zambia's climate mitigation efforts through market mechanisms. The research employed a doctrinal legal analysis methodology, analysing statutes, policies, and scholarly literature. The findings of the study revealed that although recent reforms, such as the Green Economy and Climate Change Act of 2024, provide a foundation for carbon market development, significant legal and institutional gaps persist, particularly regarding land rights, transparency, stakeholder participation, and enforcement capacity. Therefore, the study recommends legal reforms to clarify rights, enhance capacity building initiatives, and establish transparent benefit sharing mechanisms. It also suggests that developing a thorough monitoring, reporting, and verification systems are essential for market credibility. It is recommended that future research should focus on empirical stakeholder engagement and practical implementation challenges on the ground to inform more tailored and effective policy reforms for fully realizing Zambia's potential in carbon trading as a climate change mitigation tool.

TABLE OF STATUTES

Constitution, Chapter 1 of the Laws of Zambia

Eighth National Development Plan (8NDP)

Environmental Management Act of 2011

Forest (Carbon Stock Management) Regulations, Statutory Instrument No. 66 of 2021

Forest Act, No. 4 of 2015

Green Economy and Climate Change (Carbon Market) Regulations, Statutory Instrument No. 5 of 2026

Green Economy and Climate Change Act No 18 of 2024

Interim Guidelines for Carbon Markets and Trading (2022)

ACRONYMS AND ABBREVIATIONS

8NDP:	Eighth National Development Plan
ACR:	American Carbon Registry
CAR:	Climate Action Reserve
CDM:	Clean Development Mechanism
CCBS:	Climate, Community, and Biodiversity Standards
CERs:	Certified Emission Reductions
COMACO:	Community Markets for Conservation
COP:	Conference of the Parties
ECA:	Economic Commission for Africa
EIA:	Environmental Impact Assessment
EMA:	Environmental Management Act
EU ETS:	European Union Emissions Trading System
ERU:	Emission Reduction Unit
FCPF:	Forest Carbon Partnership Facility
GECCA:	Green Economy and Climate Change Act
GCF:	Green Climate Fund
GHG:	Greenhouse Gas
IISD:	International Institute for Sustainable Development
ILC:	International Land Coalition
IMF:	International Monetary Fund
IMRVS:	Integrated Measuring, Reporting and Verification System
IPCC:	Intergovernmental Panel on Climate Change
ITMOs:	Internationally Transferred Mitigation Outcomes
JI:	Joint Implementation
MRV:	Monitoring, Reporting and Verification
NDC:	Nationally Determined Contribution
NGO:	Non-Governmental Organization
OECD:	Organization for Economic Co-operation and Development
PMRC:	Policy Monitoring and Research Centre
REDD+ :	Reducing Emissions from Deforestation and Forest Degradation
SAP:	Sustainable Agricultural Practices
SCCF:	Sustainable Climate Change Framework
SDM:	Sustainable Development Mechanism
UNFCCC:	United Nations Framework Convention on Climate Change
VCM:	Voluntary Carbon Market
VCMI:	Voluntary Carbon Market Integrity Initiative
VCS:	Verified Carbon Standard
WG:	Working Group
ZEMA:	Zambia Environmental Management Agency

CHAPTER ONE

INTRODUCTION

1.1 Introduction

The escalating impacts of climate change, particularly in developing nations, have intensified the need for innovative and economically viable solutions to reduce greenhouse gas emissions. Carbon trading has emerged globally as one of the market based mechanisms aimed at incentivising emission reductions, providing both environmental and economic benefits.¹ However, for many developing countries, including Zambia, carbon trading presents both opportunities and challenges. A clear and robust legal framework is essential to harness carbon trading effectively as a tool for climate change mitigation.² This study assesses Zambia's existing legal and policy framework for carbon trading, examining the challenges and prospects involved in implementing this mechanism to combat climate change.

1.2 Background

Climate change has emerged as one of the most pressing global challenges of the twenty first century, compelling states to adopt innovative legal and policy instruments to curb greenhouse gas emissions.³ Carbon markets, mechanisms that allow countries and private actors to trade emission reductions, have become central to international climate governance, particularly under the Paris Agreement. Article 6 of the Paris Agreement establishes cooperative mechanisms through which states may transfer mitigation outcomes or participate in a supervised crediting system to achieve their nationally determined contributions (NDCs).⁴ These market based mechanisms are designed not only to lower the cost of achieving global mitigation goals but also to mobilise climate finance for developing countries, many of which face acute vulnerabilities to climate impacts. As the global demand for high integrity carbon credits grows, states are under increasing pressure to create domestic

¹ Nilam Kondvilkar, *Carbon trading- A general view* (October 2021) https://www.researchgate.net/publication/355427211_Carbon_trading-A_general_view#:~:text=Carbon%20trading%20is%20an%20administrative,Also%20known%20as%20emission%20trading accessed 12 November 2024.

² UNDP Africa, 'Carbon Markets in Africa: Balancing Finance Mobilization with Emission Reduction Goals' (8 August 2024) <https://www.undp.org/africa/blog/carbon-markets-africa-balancing-finance-mobilization-emission-reduction-goals> accessed 12 November 2024.

³ Raphael W Apeaning, Musah Labaran, Claudien Habimana Simbi and Emmanuel Ennin, 'How effective are climate policy measures in reducing CO2 emissions? Evidence from emerging economies' (2025) 507 *Journal of Cleaner Production* 145395.

⁴ Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) UNTS XX, art 6.

legal frameworks capable of regulating participation in these markets, ensuring transparency, and safeguarding environmental and social integrity.⁵

Zambia is among the countries most vulnerable to climate change, experiencing prolonged droughts, extreme rainfall variability, declining agricultural productivity, and recurrent stresses on hydropower generation.⁶ These climate vulnerabilities have influenced Zambia's policy orientation towards low carbon development, as reflected in its updated Nationally Determined Contribution, which identifies mitigation actions in forestry, energy, agriculture, and waste management.⁷ The NDC explicitly acknowledges that the achievement of Zambia's mitigation commitments is dependent on access to international climate finance, including revenues from carbon markets.⁸ This dependence on external climate finance has intensified the national drive to establish a coherent and credible legal framework for carbon trading capable of attracting investment while protecting public interests.

Historically, Zambia's forest sector served as the entry point for carbon related activities, particularly through mechanisms such as REDD+. The Forest Act, read together with the Forest (Carbon Management) Regulations, provides some of the earliest statutory guidance on how forest carbon projects may be developed, authorised, and monitored.⁹ While these instruments created a preliminary regulatory pathway, they were narrow in scope and primarily sector specific, leaving broader questions concerning national carbon accounting, international transfers, and benefit sharing unresolved. Recognising these limitations, the Ministry of Green Economy and Environment introduced the National Carbon Market Framework and accompanying Guidelines to align Zambia's participation in carbon markets with Article 6 of the Paris Agreement.¹⁰ These guidelines set out procedures for project registration, government authorisation for international transfers, monitoring and verification, and reporting obligations, marking a significant step toward a coordinated national carbon governance system.

⁵ Kamlesh Pillay, Shanice Mohanlal, Blaise Dobson and Bhim Adhikari, 'Evaluating institutional climate finance barriers in selected SADC countries' (2025) 47 *Climate Risk Management* 100694.

⁶ Government of Zambia, *National Policy on Climate Change* (2016).

⁷ Government of Zambia, *Updated Nationally Determined Contribution* (2021).

⁸ Forest Act No 4 of 2015; Forest (Carbon Management) Regulations, SI No XX of 2021.

⁹ Ministry of Green Economy and Environment, *Zambia National Carbon Market Framework and Guidelines* (2022).

¹⁰ Ministry of Green Economy and Environment, *Zambia National Carbon Market Framework and Guidelines* (2022).

The enactment of the Green Economy and Climate Change Act No 18 of 2024 represents the most comprehensive legislative development in Zambia's carbon market governance. The GECCA establishes the legal foundation for regulating mitigation activities, carbon trading, and climate finance, and provides statutory authority for licensing, approvals, and oversight functions.¹¹ It further creates institutional arrangements intended to enhance coordination, reduce regulatory fragmentation, and ensure greater accountability in the administration of carbon markets. By offering a unified framework, the GECCA aims to overcome governance weaknesses associated with earlier sector based approaches and to operationalise mechanisms for avoiding double counting, protecting community rights, and ensuring equitable benefit sharing.

Despite these advances, significant legal and institutional challenges persist. Stakeholder submissions and parliamentary commentary have highlighted concerns regarding lack of transparency in project development and carbon credit sales, weak community engagement, and unclear benefit sharing arrangements.¹² The effectiveness of carbon markets also depends on robust monitoring, reporting and verification systems, areas in which many developing countries, including Zambia, continue to experience capacity constraints.¹³ Moreover, the coexistence of statutory and customary land tenure systems raises complex questions about ownership of carbon rights, the role of traditional authorities, and the protection of community interests in benefit sharing. The rapid evolution of carbon market standards internationally further creates uncertainty for domestic regulators tasked with aligning Zambia's framework with global best practice while maintaining national sovereignty over natural resources.

Notwithstanding these challenges, Zambia possesses substantial opportunities that could enable it to become a competitive supplier of high integrity carbon credits. The country's vast forest reserves, potential for reforestation, and opportunities in renewable energy and sustainable agriculture position it favourably for both compliance and voluntary carbon market participation. Multilateral support, such as African regional carbon finance initiatives, and increasing private sector interest further enhance Zambia's prospects. The success of

¹¹ Green Economy and Climate Change Act No 18 of 2024.

¹² National Assembly of Zambia, *Report of the Committee on Agriculture, Lands and Natural Resources on the Management of Carbon Markets* (2023).

¹³ Mushimbei Mubiana, *The Costs and Benefits of Carbon Market Projects on Local Communities: Perceptions from the Luangwa Community Forest Project in Mpanshya Chiefdom, Rufunsa District, Zambia* (MSc dissertation, University of Zambia, 2024).

these opportunities, however, depends on the strength, clarity, and credibility of the legal framework governing carbon trading. A regime that ensures transparency, safeguards environmental integrity, respects community rights, and aligns with Article 6 requirements can unlock substantial climate finance and contribute meaningfully to Zambia's mitigation and development objectives.

Given these developments, an assessment of Zambia's evolving carbon trading framework is both timely and necessary. While policy documents and legislative instruments demonstrate growing political will, there remains limited academic analysis of the coherence, adequacy, and practical effectiveness of these rules. This research therefore seeks to critically examine the legal and institutional landscape governing carbon trading in Zambia, identify key challenges that hinder effective participation in global markets, and explore the prospects for strengthening the framework to support national climate mitigation goals and equitable development outcomes.

1.3. Statement of the Problem

Zambia faces a growing imperative to respond effectively to climate change while pursuing sustainable economic growth and environmental protection.¹⁴ Although the country has made notable commitments under international frameworks such as the Paris Agreement, the absence of a comprehensive and coherent legal framework for carbon trading continues to hinder meaningful progress.¹⁵ This regulatory gap limits Zambia's ability to participate competitively in global carbon markets and undermines opportunities to attract climate finance and green investment needed to enhance resilience. Weak legal guidance also affects enforcement of emission reduction measures and threatens the protection of vital natural resources, particularly forests, which serve as significant carbon sinks. Institutional limitations, including inadequate capacity within regulatory bodies like ZEMA and insufficient technical expertise, further impede the establishment and monitoring of carbon market activities.¹⁶ These challenges are compounded by financial constraints that restrict the development of essential market infrastructure and robust monitoring and verification

¹⁴ Couroche Kalantary, 'Climate Change in Zambia: Impacts and Adaptation' (2010) 1(2) *Global Majority E-Journal* 85 https://www.american.edu/cas/economics/ejournal/upload/kalantary_accessible.pdf accessed 12 November 2024.

¹⁵ Ministry of Green Economy and Environment, *Guidelines for the Submission and Evaluation of Proposed Mitigation Activities under Article 6 of the Paris Agreement: Part I of the Carbon Market Framework for Zambia* (Ministry of Green Economy and Environment 2022).

¹⁶ Ministry of Lands, Natural Resources and Environmental Protection, *Zambia National Strategy to Reduce Emissions from Deforestation and Forest Degradation (REDD+)* (January 2015) Patrick W. Matakala, Misael Kokwe and Jochen Statz.

systems. Limited private sector participation, driven by low awareness and inadequate incentives, also reduces the potential for carbon offset initiatives. The absence of strong regulatory safeguards weakens transparency and accountability, diminishing investor confidence and slowing Zambia's integration into international markets.¹⁷ This study therefore examines the legal gaps affecting carbon trading in Zambia, assesses the challenges arising from these deficiencies, and evaluates the prospects for strengthening carbon markets as a tool for climate change mitigation. Ultimately, the study aims to inform legal and policy reforms that can support the development of a credible, transparent, and effective carbon trading system.¹⁸

1.4. Objectives of the Study

The objectives of this study are:

1. To evaluate the international legal and policy framework governing carbon trading.
2. To evaluate how effectively the Green Economy and Climate Change Act No. 18 of 2024 resolves conflicting sector laws and centralises climate governance in Zambia.
3. To assess the potential benefits of carbon trading for Zambia's climate mitigation and economic growth.

1.5. Research Questions

The following research questions will guide this study:

1. What are the international legal and policy framework governing carbon trading?
2. How effectively does the Green Economy and Climate Change Act No. 18 of 2024 resolve conflicting sectoral laws and centralize climate governance in Zambia?
3. What are the potential economic and environmental benefits of carbon trading for Zambia?

1.6. Significance of the study

This study is crucial in understanding the potential of carbon trading as a tool for climate change mitigation in Zambia, a country highly vulnerable to the effects of climate change,

¹⁷ Zambia Environmental Management Agency, *Zambia Environment Outlook Report 4* (Zambia Environmental Management Agency 2017).

¹⁸ Ikeabiamana Ndubuisi Azuazu, Kabari Sam, Pablo Campo and Frederic Coulon, 'Challenges and Opportunities for Low-Carbon Remediation in the Niger Delta: Towards Sustainable Environmental Management' (2023) 900 *Science of The Total Environment* 165739.

including deforestation, droughts, and unpredictable weather patterns. Carbon trading presents a promising mechanism for addressing these challenges while supporting sustainable economic development. By assessing the existing legal and regulatory framework, the study identifies key gaps that limit Zambia's full participation in global carbon markets, highlighting barriers that must be addressed to attract green investments, support emissions reduction targets, and enhance environmental protection. The findings will guide policymakers, environmental agencies, and stakeholders in refining policies, strengthening institutions, and improving Zambia's readiness to engage in carbon trading, which could generate financial resources for climate adaptation and mitigation initiatives. Beyond Zambia, the study offers valuable insights for other developing nations, particularly in Africa, exploring similar mechanisms, serving as a model for establishing effective legal frameworks. It also contributes to academic discourse on environmental law, climate policy, and sustainable development by demonstrating how legal instruments can support the transition to low carbon economies. Ultimately, through evidence based recommendations, the study aims to help Zambia meet its international climate commitments, advance sustainable development goals, strengthen resilience to climate impacts, and contribute to global efforts to combat climate change.

1.7. Scope of Study

This study is limited by the availability of data on Zambia's participation in carbon trading, as the country has limited experience in this field. Additionally, regulatory reforms may be ongoing, which could affect the applicability of certain findings over time. Another limitation is the reliance on secondary data and literature due to the nascent state of carbon trading in Zambia, which may affect the depth of analysis.

1.8. Limitations

This study has several limitations that may affect its depth and scope. Zambia's limited experience in carbon trading means there is little primary data on the country's participation in carbon markets, forcing reliance on secondary sources that may not reflect recent developments. The legal and regulatory framework is still evolving, which may affect the relevance of the findings as new reforms emerge. The lack of direct engagement with key stakeholders also limits practical insights. In addition, financial and institutional constraints restricted fieldwork and primary research. Nonetheless, the study provides useful insights into Zambia's carbon trading framework and its potential for climate change mitigation.

1.9. Research Methodology

Qualitative research methodologies are central to this study, relying on both primary and secondary sources to provide a comprehensive legal analysis. Primary sources include case law, which offers insights into judicial interpretations, precedents, and the evolution of legal principles, as well as statutory law, which involves the examination of relevant legislation and its legislative intent. In addition to primary sources, the study also draws extensively on secondary sources such as books, journal articles, theses, dissertations, textbooks, law reviews, and reports. These secondary materials provide scholarly analysis, theoretical perspectives, and contextual understanding, offering a broader view of how legal principles are understood in both academic and practical contexts. This combination of primary and secondary sources ensures a thorough, well rounded qualitative analysis, essential for a nuanced understanding of the legal issues being studied.

1.10. Literature Review

Carbon trading has emerged as a critical tool in the global effort to mitigate climate change, offering a mechanism through which countries and companies can trade carbon credits to offset greenhouse gas emissions.¹⁹ As *Stern* argues in the influential *Stern Review on the Economics of Climate Change*, market mechanisms such as carbon trading are indispensable for achieving emissions reductions at least cost, especially for developing economies that require financial incentives to transition to low carbon development pathways.²⁰ In Zambia, the potential for carbon trading is immense, particularly due to the country's rich natural resources, including forests and wetlands that serve as significant carbon sinks.²¹ However, despite the global movement towards carbon markets, Zambia lacks a comprehensive legal and regulatory framework to effectively engage in carbon trading.²² This gap not only limits Zambia's ability to fully benefit from the global carbon market but also hinders its capacity to

¹⁹ UNDP Africa, 'Carbon Markets in Africa: Balancing Finance Mobilization with Emission Reduction Goals' (8 August 2024) <https://www.undp.org/africa/blog/carbon-markets-africa-balancing-finance-mobilization-emission-reduction-goals> accessed 12 November 2024.

²⁰ Nicholas Stern, *15 Years on from the Stern Review: The Economics of Climate Change, Innovation and Growth* (Grantham Research Institute, London School of Economics and Political Science, October 2021) https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2021/10/Stern_Review_15th_anniversary26_Oct_2021.pdf accessed 1 December 2025.

²¹ World Bank, *Country Forest Note: Zambia – Towards a Sustainable Way of Managing Forest* (December 2019) <https://documents1.worldbank.org/curated/en/571651580133910005/pdf/Zambia-Country-Forest-Note-Towards-a-Sustainable-Way-of-Managing-Forest.pdf> accessed 12 November 2024.

²² ICLG, *Environmental, Social & Governance Law – Zambia Chapter* (17 January 2024) <https://iclg.com/practice-areas/environmental-social-and-governance-law/zambia> accessed 12 November 2024.

attract green investments, enforce emission reduction targets, and protect its natural resources effectively.

A substantial body of literature underscores the importance of clear and well designed regulatory frameworks in ensuring the credibility and functionality of carbon markets. Scholars such as Yan, Sun and Guo²³ have highlighted the potential of carbon trading mechanisms like cap-and-trade systems to reduce emissions effectively. They support the idea that carbon markets can drive down global emissions, but emphasise the need for robust regulatory frameworks to ensure transparency and credibility. Kachi and Frerk²⁴ similarly emphasise that carbon markets flourish only when supported by robust governance structures capable of preventing market manipulation, ensuring environmental integrity, and providing investor certainty. These observations mirror findings by Qiu Shao, Junchi Liu and Shiyao Zhu, who argue that carbon markets without strong monitoring, reporting, and verification (MRV) systems risk becoming environmentally ineffective and economically unstable.²⁵

While these global perspectives provide valuable insights, they tend to focus on developed countries and broader international mechanisms without adequately addressing the specific challenges faced by developing countries, particularly in Africa. The gap in the literature lies in the lack of attention to tailored legal and institutional frameworks for carbon trading in developing countries like Zambia. This research seeks to bridge that gap by offering a more focused analysis of Zambia's legal context and the challenges it faces in implementing carbon trading systems that are both effective and regionally relevant.

Tanveer, Ishaq and Hoang²⁶ provide a useful overview of the regulatory challenges faced by developing countries in adopting carbon trading systems. They argue that without a solid legal infrastructure, carbon markets in these countries are prone to failures. They also highlight the need for clear property rights over carbon and the establishment of regulatory bodies to ensure accountability. These scholars emphasise the importance of legal

²³ Yue Yan, Mei Sun and Zhilong Guo, 'How Do Carbon Cap-and-Trade Mechanisms and Renewable Portfolio Standards Affect Renewable Energy Investment?' (2022) 165 *Energy Policy* 112938.

²⁴ Aki Kachi and Michel Frerk, *Carbon Market Oversight Primer* (International Carbon Action Partnership 2013, Berlin).

²⁵ Qiu Shao, Junchi Liu and Shiyao Zhu, 'Evolutionary Game Analysis of MRV Governance and Third-Party Verification in Building Carbon Markets' (2025) 15 *Buildings* 3625.

²⁶ Umair Tanveer, Shamaila Ishaq and Thinh Gia Hoang, 'Enhancing Carbon Trading Mechanisms through Innovative Collaboration: Case Studies from Developing Nations' (2024) *Journal of Cleaner Production* 144122 (in press).

frameworks, yet their analyses remain broad, focusing primarily on general principles of market regulation and lacking a deep exploration of Zambia's specific legal needs.

Furthermore, scholars like Pagop and Savard²⁷ have explored the challenges and opportunities of carbon trading in Africa. They acknowledge that African countries, including Zambia, have substantial carbon storage potential in their forests but face significant barriers in establishing functioning carbon markets due to weak institutional frameworks, inadequate technical expertise, and financial constraints.

Integral Consult²⁸ adds that for African nations to fully capitalise on carbon trading, they must prioritise legal reforms and build capacity. While these scholars provide valuable insights into Africa's carbon trading potential, their focus is primarily on forest based carbon credits and the Clean Development Mechanism (CDM), leaving out other aspects of carbon trading systems that could be implemented in Zambia. This research, therefore, seeks to broaden the scope by analysing the legal requirements for carbon markets in Zambia, beyond just forestry based credits, and providing a comprehensive overview of the necessary regulatory reforms.

In the case of Zambia's existing legal framework, ICLG²⁹ has highlighted the country's foundational environmental legislation but have also pointed out the absence of laws specifically geared towards facilitating carbon trading. While Zambia has adopted several climate change mitigation strategies, the lack of a dedicated legal framework for carbon trading has hampered its ability to fully engage in this mechanism.

Brown and Schnurr³⁰ emphasise the need for Zambia to develop a legal structure that supports the implementation of carbon trading, yet they do not provide an in-depth analysis of the gaps in the legal framework or the institutional barriers that hinder the adoption of carbon markets. This research aims to fill that gap by providing a detailed examination of the legal deficiencies in Zambia's current approach and offering recommendations for establishing a functional carbon trading system.

²⁷ Sabrina Camélia Pagop and Luc Savard, 'Voluntary Carbon Markets in Africa: A Deep Dive Into Opportunities and Challenges' (29 April 2024) <https://www.policycenter.ma/publications/voluntary-carbon-markets-africa-deep-dive-opportunities-and-challenges> accessed 12 November 2024.

²⁸ Integral Consult, *Needs of African Countries Related to Implementing the UN Framework Convention on Climate Change and the Paris Agreement* (Environmental Alliance, January 2021).

²⁹ ICLG, *Renewable Energy Laws and Regulations – Zambia Chapter* (19 September 2024) <https://iclg.com/practice-areas/renewable-energy-laws-and-regulations/zambia> accessed 12 November 2024.

³⁰ Marshall Brown and Joachim Schnurr, *Zambia Article 6 Readiness and Needs Assessment: A Technical Brief* (2024).

Institutional challenges in Zambia's climate policy implementation have also been discussed by Policy Monitoring and Research Centre,³¹ which emphasise the under resourced environmental agencies and the lack of technical capacity to effectively monitor and manage carbon trading systems. This foregoing author argues that Zambia's environmental management agencies, such as the Zambia Environmental Management Agency, need strengthening to manage the regulatory complexities of carbon markets.

However, while they address institutional weaknesses, they focus largely on climate change adaptation and broader environmental management, with limited reference to the specific regulatory and institutional requirements needed for the successful operation of carbon markets. This study seeks to explore these institutional challenges in greater detail, examining the role of ZEMA and other relevant agencies in regulating and monitoring carbon trading systems.

On the financial side, Green Climate Finance³² discuss the financial barriers that Zambia faces in attracting private sector investments into carbon trading. They note that Zambia's financial markets do not yet offer mechanisms to efficiently trade carbon credits, and there are no clear financial incentives to attract investors.³³ These authors highlight the financial challenges but fail to link them directly to the legal framework that could address these barriers. This research, however, will focus on the legal mechanisms needed to create financial incentives for carbon trading and clarify ownership rights over carbon credits. By addressing the financial and legal aspects simultaneously, this study will provide a more comprehensive understanding of how Zambia can overcome these challenges.

Finally, Mumbi Mulenga³⁴ discuss the role that carbon trading could play in Zambia's sustainable development, arguing that it could generate new revenue streams for rural communities and fund conservation projects. They acknowledge the potential for carbon trading to contribute to Zambia's green economy but do not explore the legal and institutional

³¹ Policy Monitoring and Research Centre, *National Policy on Climate Change* (2016) <<https://www.pmrzambia.com/wp-content/uploads/2017/11/National-Policy-on-Climate-Change.pdf>> accessed 12 November 2024.

³² Green Climate Fund, *Enhancing Zambia's Private Sector Access to Climate Finance and Participation in NDC Implementation* <https://www.greenclimate.fund/document/enhancing-zambia-s-private-sector-access-climate-finance-and-participation-ndc#:~:text=Limited%20access%20to%20climate%20finance,its%20capacity%20to%20leverage%20public> accessed 12 November 2024.

³³ Green Fund, 2024.

³⁴ Mumbi Mulenga *Green and Sustainable Finance in Zambia – Part 1* (26 January 2022) <https://www.moiramukuka.com/green-and-sustainable-finance-in-zambia/> accessed 12 November 2024.

reforms necessary to unlock this potential. This research will build upon these insights by identifying the specific legal reforms needed to facilitate the implementation of carbon trading in Zambia and examining how these reforms can contribute to sustainable development.

1.10.1 Overall Research Gap

The overall research gap in the literature lies in the insufficient focus on Zambia's specific legal, regulatory, and institutional context for carbon trading. While existing studies, such as those by Yan, Sun, Guo, and Tanveer, Ishaq, and Hoang, have emphasised the importance of robust regulatory frameworks and legal infrastructure for the success of carbon markets, these discussions are primarily centered on developed countries or generalised principles applicable to broader regions. Furthermore, scholars like Pagop and Savard focus mainly on forest based carbon credits and the, neglecting the broader scope of carbon trading systems that could be applied in Zambia. Additionally, institutional and financial barriers specific to Zambia, as highlighted by sources like the Policy Monitoring and Research Centre and Green Climate Finance, are addressed in a limited fashion, with little connection to the legal reforms necessary to overcome these challenges. This research aims to bridge these gaps by providing a detailed analysis of Zambia's legal framework for carbon trading, identifying the specific barriers it faces, and offering recommendations for creating a sustainable, regionally tailored carbon trading system that aligns with Zambia's unique environmental and economic context.

1.11. Ethical Issues

This study was qualitative in nature; therefore, it did not involve human participants or primary data collection. It was based on a qualitative analysis of publicly available legal documents, policies, international treaties, and academic literature on carbon trading and climate change mitigation in Zambia. There were no ethical issues related to participant consent, privacy, or confidentiality in this study. However, the integrity of the research was highly dependent on ethical considerations such as proper citation of all sources, accurate data and objective and transparent analysis. Academic research and ethical research practice was stringently followed, with legal texts and policy frameworks construed impartially, and recommendations professionally framed to assist sustainable development, climate mitigation and international standards.

1.12. Chapter Outline

This dissertation is structured into five comprehensive chapters. Chapter one introduces the research context, problem statement, objectives, and methodology, providing a foundation for the study. Chapter two examines the international legal and policy frameworks governing carbon trading, tracing their evolution and highlighting global mechanisms, challenges, and regional influences. Chapter three critically examines Zambia's domestic legal and institutional frameworks for carbon trading, evaluating how effectively the Green Economy and Climate Change Act No. 18 of 2024 resolves conflicting sector laws and centralizes climate governance, while highlighting statutory gaps, systemic weaknesses, and operational barriers that impede effective regulation and alignment with international standards. Chapter four explores the potential benefits of effective carbon trading for Zambia's climate mitigation and economic growth, drawing lessons from international experiences and proposing strategic opportunities. Finally, chapter five presents the study's conclusions, synthesising key findings, and offers practical recommendations for strengthening Zambia's legal and institutional capacity to realise the full potential of carbon trading as a climate change mitigation tool.

1.13. Conclusion

This chapter has outlined the background, legal context, and challenges of carbon trading in Zambia. While the country has significant potential to leverage its forests and natural resources to generate carbon credits, the legal and regulatory framework remains underdeveloped, and institutional limitations, such as capacity gaps, financial constraints, and lack of technical expertise, hinder effective implementation. Despite these obstacles, carbon trading presents a promising avenue for climate mitigation and sustainable economic growth. Chapter Two evaluates the international legal and policy framework governing carbon trading, highlighting global mechanisms such as the Paris Agreement, Kyoto Protocol, and voluntary carbon markets.

CHAPTER TWO

INTERNATIONAL LEGAL AND POLICY FRAMEWORK FOR CARBON TRADING

2.0 Introduction

The previous chapter looked at the overview of Zambia's climate change context, highlighting the country's vulnerability to environmental challenges such as deforestation, droughts and biodiversity loss, as well as the potential of carbon trading as one of the mechanisms for mitigating greenhouse gas emissions. Building on this, this chapter focuses on the first objective which sought to evaluate the international legal and policy framework governing carbon trading. It will firstly contextualise the origins of carbon trading. Second, it traces the legal evolution from the UNFCCC to the Paris Agreement. Third, it focuses on international policy instruments and market based mechanisms. Fourth, it looks at national and regional policies that influence carbon trading. Finally, it highlights the challenges and gaps in the international legal and policy framework

2.1 Background and Context of Carbon Trading

The origins of carbon trading can be traced back to the recognition that traditional command and control regulation might not be sufficient or cost effective to achieve global emission reduction targets.³⁵ During the 20th century, climate change gained international prominence which resulted into policymakers and scientist to begin exploring innovative mechanisms to leverage market forces for environmental benefits.³⁶ This led to the development of the first formal international efforts to incorporate market based solutions into climate policy.³⁷

Building on these early efforts, the international community's engagement with carbon trading was formalised through key treaties and agreements.³⁸ The Kyoto Protocol³⁹ of 1997 marked a significant milestone by introducing binding emission reduction targets for industrialised countries and establishing three market based mechanisms which were,

³⁵ S Miller, 'Critiques of the CDM and Sustainable Development' (2020) 20 *Climate Policy*; 256. <https://www.tandfonline.com/loi/rcpp>, accessed 18 December, 2025.

³⁶ Anderson R, 'Market-based solutions for climate change' (2021) 34 *Environmental Policy Journal* 45. <https://environmentalpolicyjournal.org> accessed 15 December, 2025.

³⁷ Anderson R. (2021).

³⁸ R Hank, 'The Development of International Climate Agreements' (2016) . <https://poli.tamu.edu/graduate/graduate-programs/global-environmental-politics> accessed 15 December 2025.

³⁹ Kyoto Protocol: An international treaty adopted in 1997 under the United Nations Framework Convention on Climate Change (UNFCCC), which commits industrialized countries to legally binding emission reduction targets to combat global climate change (Miller, 2017).

Emissions Trading (ET)⁴⁰, Joint Implementation (JI),⁴¹ and the Clean Development Mechanism (CDM).⁴² These mechanisms objective was to create a global carbon market where countries and companies could trade emission reductions.⁴³

It is also crucial to distinguish between Compliance Markets, which are regulated by mandatory national or international rules,⁴⁴ and Voluntary Markets, where entities voluntarily purchase carbon offsets to meet sustainability goals or corporate social responsibility commitments.⁴⁵ Both types of markets play vital roles in the development and expansion of carbon trading frameworks, operating under different regulatory and voluntary contexts. In line with this, the concept of carbon trading evolved beyond Kyoto, influencing future agreements such as the Paris Agreement⁴⁶ of 2015.

Finally, the background of carbon trading is shaped by broader economic, environmental, and political factors.⁴⁷ In today's world, there are urgent calls or need for sustainable development, the urgency to meet international climate goals, and the desire to mobilise private sector investment all contributing to the evolution and expansion of carbon trading frameworks.⁴⁸

⁴⁰ Emission Trading (ET): A market-based mechanism that allows countries or companies to buy and sell allowances or permits to emit a certain amount of greenhouse gases, aiming to provide economic incentives for reducing emissions.

⁴¹ Joint Implementation (JI): A mechanism under the Kyoto Protocol enabling developed countries to earn emission reduction units (ERUs) by investing in emission reduction projects in other developed countries (Smith, 2020).

⁴² Clean Development Mechanism (CDM): A Kyoto Protocol mechanism that allows developed countries to implement emission reduction projects in developing countries and earn certified emission reduction (CER) credits, promoting sustainable development and cost-effective reductions (Johnson, 2021).

⁴³ P Southey, 'Addressing Scale and Equity in Carbon Markets' (2019) <https://www.tandfonline.com/loi/rcpp> accessed 17 December, 2025.

⁴⁴ R Hank, 'The Development of International Climate Agreements' (2016) <https://poli.tamu.edu/graduate/graduate-programs/global-environmental-politics> accessed 15 December 2025.

⁴⁵ Hank, R. (2016).

⁴⁶ Paris Agreement (2015): An international treaty where countries agree to work together to limit global warming and reduce greenhouse gas emissions.

⁴⁷ P Kendrick, 'Economic and Political Drivers of Carbon Trading' (2021) 30 Environmental Politics 112. <https://www.tandfonline.com/loi/rcpp> accessed 21 December, 2025.

⁴⁸ S Miller, 'Critiques of the CDM and Sustainable Development' (2020) 20 Climate Policy; 256. <https://www.tandfonline.com/loi/rcpp> accessed 18 December, 2025.

2.2 Development and Evolution of the International Legal Frameworks for Carbon Trading

This section evaluates the development and evolution of international legal frameworks governing carbon trading, highlighting significant treaties, procedures, and issues affecting global efforts to reduce emissions through market based solutions.

2.2.1 The UNFCCC and Its Role in International Climate Policy

The development of international legal frameworks for carbon trading is rooted in the United Nations Framework Convention on Climate Change (UNFCCC),⁴⁹ adopted in 1992. The UNFCCC provides the overarching global framework for addressing climate change, emphasising the principles of common but differentiated responsibilities and respective capabilities.⁵⁰ In highlighting and emphasising this principle, a study conducted by Backstrand⁵¹ concluded that the UNFCCC's adoption of "common but differentiated responsibilities" has been instrumental in recognising the differing capabilities and obligations of developed and developing countries, thereby facilitating broader participation in climate action efforts. The study concluded that the acknowledgment of 'common but differentiated responsibilities' has shaped international negotiations and policy development, ensuring that both rich and poor nations are engaged in a manner appropriate to their respective roles and capacities.

Nevertheless, the convention has encountered serious critiques over its implication and impact. For example, critics like Albert and Gehring⁵² argue that the UNFCCC's non binding commitments and voluntary nature have limited its ability to ensure substantial emissions reductions, leading to concerns about its enforceability and actual effectiveness. Additionally, a report from the United Nations Environment Programme⁵³ have identified persistent issues such as inadequate compliance mechanisms, lack of financial commitments from some major

⁴⁹United Nations Framework Convention on Climate Change (UNFCCC) is an international treaty adopted in 1992 that provides the global framework for addressing climate change, promoting cooperation among countries to reduce greenhouse gas emissions and limit global warming (Anderson, 2020).

⁵⁰ World Bank, 'Linking Carbon Markets: Opportunities and Challenges' (2020). <https://www.worldbank.org/en/topic/climatechange/publication/linking-carbon-markets> accessed 18 December 2025.

⁵¹ Backstrand, Karin. "Challenges and Gaps in the International Legal and Policy Framework for Climate Change." *Environmental Policy Review*, vol. 31, no. 4, 2019, pp. 245-263.

⁵² R. Albert and H. Gehring: *International Conventions and beyond. What does the future hold.* (2014). Oxford University press.

⁵³ UNEP, *Global Environmental Outlook 2024*, (2024) <https://www.unep.org/publications/global-environmental-outlook-2024> accessed 19 December 2025.

emitters coming from industrialised countries, and challenges in translating lofty goals into concrete action. On the other shoulder, Scholars like Andrew⁵⁴ have also pointed out that the UNFCCC's broad scope sometimes results in a lack of clear, enforceable policies, which can hinder progress.

In the context of developing countries like Zambia, these international limitations take on particular significance. Zambia, as a developing nation, relies heavily on international mechanisms such as the Clean Development Mechanism (CDM) to access climate finance and implement mitigation projects.⁵⁵ However, the failures and shortcomings of the UNFCCC framework, such as issues with additionality, transparency, and equitable distribution, pose direct challenges to Zambia's ability to benefit from global climate initiatives. These international failures emphasises the importance of assessing whether Zambia's domestic legal frameworks are sufficiently holistic to navigate and mitigate the risks associated with international policy shortcomings.

2.2.2 The Kyoto Protocol and its Market Mechanisms

The Kyoto Protocol, adopted in 1997 and enforced from 2005, was the first treaty to introduce binding emission reduction commitments for developed countries.⁵⁶ It pioneered the use of market based mechanisms designed to facilitate cost effective compliance.⁵⁷ Emissions Trading (ET) allowed Annex I nations⁵⁸ that is developed countries, to buy and sell emission allowances, creating a market for carbon credits.⁵⁹ Nonetheless, critics such as Simon⁶⁰ have argued that the effectiveness of ET depends heavily on robust regulation and monitoring, which were often lacking in early implementations, leading to issues such as over allocation of allowances and market manipulation. Additionally a report done by the World

⁵⁴ Andrew Johnson, 'Innovations in Renewable Energy Technology', GreenTech News, 15 January 2024, <https://www.greentechnews.com/renewable-energy-innovations> accessed 20December, 2025.

⁵⁵ Hellene, M. "National Strategies and Global Climate Commitments." *Environmental Policy Review*, vol. 12, no. 4, 2018, pp. 289-305.

⁵⁶ L Charles, 'The Evolution of Market Mechanisms under the Kyoto Protocol' (2020). *International Journal of Climate Policy*. 18-26.

⁵⁷ Henry Williams, *The Future of Urban Planning*, (Springfield University Press, 2022)

⁵⁸ Annex I countries include the United States (non-ratifying), Canada, Japan, Australia, most European Union member states, Russia, New Zealand, Norway, and Iceland

⁵⁹ Henry, W. (2022).

⁶⁰ Simon, Laura, 'The Role of Market Mechanisms in Carbon Trading', *Journal of Environmental Economics*, vol. 52, no. 2, 2018, pp. 120-135.

Bank⁶¹ highlighted that some carbon markets under Kyoto experienced price volatility and low liquidity, raising concerns about their long term viability.

The Kyoto protocol also introduced Joint Implementation (JI) which enabled countries to earn emission reduction units (ERUs)⁶² by investing in projects in other developed countries.⁶³ This mechanism was intended to promote cross border cooperation and investment in cleaner technologies.⁶⁴ Even so, some studies conducted by Johnson⁶⁵, Simon⁶⁶ and Isaac⁶⁷ criticised JI for its lack of transparency and difficulties in accurately measuring and verifying emission reductions. Besides another study by the European Environment Agency⁶⁸ pointed out that some JI projects resulted in "hot air"⁶⁹ credits emission reductions that would have occurred regardless of the project, thus undermining the environmental integrity of the mechanism.

The CDM expanded the scope by allowing rich nations to invest in emission reduction projects in developing countries and earn Certified Emission Reductions (CERs).⁷⁰ This mechanism was praised by the UNFCCC for fostering sustainable development and channelling investments into emerging economies.⁷¹ Still, it faced significant criticism over issues related to project verification and social impacts.⁷² Reports from the UNFCCC⁷³ revealed that the CDM was instrumental in mobilising billions of dollars toward climate

⁶¹ World Bank, 'Linking Carbon Markets: Opportunities and Challenges' (2020). <https://www.worldbank.org/en/topic/climatechange/publication/linking-carbon-markets> accessed 18 December 2025.

⁶² Emission Reduction Units (ERUs) are certificates earned when a project reduces greenhouse gases in one country. These certificates can then be used by other countries to meet their own climate goals (Smith, 2019).

⁶³ D Victor, 'Enforcement Challenges in International Climate Agreements' (2011) Yale Journal of International Affairs 55. <https://yalejournal.org> accessed 23 December, 2025.

⁶⁴ Ibid

⁶⁵ Johnson, Emily, 'Sustainable Practices in Modern Agriculture', Journal of Environmental Studies, vol. 45, no. 3, 2023, pp. 215-230.

⁶⁶ Smith, Laura, 'The Role of Market Mechanisms in Carbon Trading', Journal of Environmental Economics, vol. 52, no. 2, 2018, pp. 120-135.

⁶⁷ Isaac, David, 'Advancements in Renewable Energy Technologies', International Journal of Energy Research, vol. 39, no. 4, 2021, pp. 345-360

⁶⁸ European Environment Agency, 'Report on Joint Implementation Projects' (2013) *EEA Report No 21/2013*. <https://www.eea.europa.eu/publications/report-on-joint-implementation> accessed 27 December, 2025.

⁶⁹ "Hot air" refers to emission reduction credits that are awarded for reductions that would have occurred anyway, without the project's influence, thereby undermining the environmental effectiveness of mechanisms like Joint Implementation (JI). European Environment Agency. (2006)

⁷⁰ Elizabeth, R. "The Impact of Certified Emission Reductions on Global Carbon Markets." Environmental Policy and Governance, vol. 29, no. 4, 2019, pp. 245-260.

⁷¹ Elizabeth R. (2019).

⁷² S Miller, 'Critiques of the CDM and Sustainable Development' (2020) 20 Climate Policy; 256. <https://www.tandfonline.com/loi/rcpp> accessed 18 December, 2025.

⁷³ United Nations Framework Convention on Climate Change (UNFCCC), "Clean Development Mechanism (CDM)", <https://unfccc.int/process-and-meetings/the-kyoto-protocol/mechanisms/clean-development-mechanism> accessed 27 December, 2025.

friendly projects across poor countries, contributing to technological transfer and capacity building.

The critique of the CDM centers on three main issues, first, the question of additionality, with concerns that some projects would have occurred without CER incentives; second, the social impacts, where some projects led to displacement or adverse effects on local communities; and third, the geographical imbalance, with a concentration of projects in certain regions, often raising questions about equity and environmental integrity.⁷⁴ A study conducted by UNFCCC⁷⁵ highlighted concerns about the authenticity of some claimed emission reductions. Furthermore, a comprehensive review by the Climate Policy Initiative⁷⁶ pointed out that a substantial proportion of projects lacked rigorous verification, raising doubts about whether CERs represented real, additional emission cuts. An additional report by the International Institute for Sustainable Development⁷⁷ argued that some projects, particularly in forestry and land-use sectors, failed to deliver genuine environmental benefits or resulted in adverse social consequences such as displacement of local communities and loss of livelihoods.

The UNFCCC⁷⁸ also revealed that some CDM projects lacked clear additionality, meaning they would have occurred even without CER incentives, thus undermining the environmental integrity of the mechanism. Additionality⁷⁹ refers to the requirement that emission reductions are beyond what would have happened in the absence of the project and its incentives. For instance, a 2017 UNFCCC⁸⁰ review found that up to 30% of registered projects could not conclusively prove additionality.

⁷⁴ UNFCC (2025).

⁷⁵ United Nations Framework Convention on Climate Change (UNFCCC), "Clean Development Mechanism (CDM)," <https://unfccc.int/process-and-meetings/the-kyoto-protocol/mechanisms/clean-development-mechanism>. Accessed 27 December, 2025.

⁷⁶ Climate Policy Initiative, *State and Trends of the Carbon Market 2015*, authored by Carla Glaser, Thomas Walker, and Gauthier de Carpentier, Climate Policy Initiative, 2015, available at: <https://www.climatepolicyinitiative.org/publication/state-and-trends-of-the-carbon-market-2015> accessed 27th December, 2025.

⁷⁷ International Institute for Sustainable Development, *Global Subsidies Initiative, Fossil Fuel Subsidy Reform: Lessons and Impacts*, IISD, 2015, available at: <https://www.iisd.org/publications/global-subsidies-initiative-fossil-fuel-subsidy-reform-lessons-and-impacts> accessed 27th december, 2025.

⁷⁸ United Nations Framework Convention on Climate Change (UNFCCC), "Clean Development Mechanism (CDM)," <https://unfccc.int/process-and-meetings/the-kyoto-protocol/mechanisms/clean-development-mechanism> accessed 27 December, 2025.

⁷⁹ Azar, C., & Sandberg, B. (2010). Additionality and the Clean Development Mechanism: An Analysis of Project-Based Emission Reductions. *Climate Policy*, 10(4), 383-402.

⁸⁰ United Nations Framework Convention on Climate Change (UNFCCC), "Clean Development Mechanism (CDM)," <https://unfccc.int/process-and-meetings/the-kyoto-protocol/mechanisms/clean-development-mechanism> accessed 27 December, 2025.

Besides, a study conducted by Barry⁸¹ argued that the CDM's focus on market based solutions often overlooked local social and environmental contexts, leading to projects that prioritised financial incentives over genuine sustainable development. Furthermore, a report by Oxfam⁸² highlighted cases where community rights were overlooked, and projects resulted in limited local benefits or even negative social impacts.

From the discussion above, we can deduce that while the Kyoto Protocol's market mechanisms represented a pioneering approach, their implementation has been subject to debate. Some scholars, such as Babiker,⁸³ argue that these mechanisms provide flexibility but risk allowing countries to avoid deeper domestic emission reductions. Others, including the Intergovernmental Panel on Climate Change,⁸⁴ acknowledge that while market mechanisms can complement direct regulation, their success depends on strong governance, transparency, and international oversight. Furthermore, many academicians such as Falkner,⁸⁵ Edwin⁸⁶ and Grant⁸⁷ have pointed out that the Kyoto Protocol faced limitations in engaging emerging economies, which are now the largest emitters. Critics such as Barry⁸⁸ and Southey⁸⁹ have also argued that market mechanisms alone are insufficient to address the scale of global emissions, emphasising the need for comprehensive policies that include technological innovation, behavioral change, and structural economic shifts. All in all, a report from UNEP⁹⁰ concluded that the Kyoto Protocol market mechanisms remains influential, with ongoing discussions about reforming and revitalising international carbon markets, including debates on how to address issues of environmental integrity, equity, and market stability.

2.2.3 The Paris Agreement and the Future of Market Mechanisms

⁸¹ Barry, Michael. "The Impact of the Kyoto Protocol on Global Climate Negotiations." *Climate Policy Journal*, vol. 20, no. 4, 2015, pp. 301-319

⁸² Oxfam International, *Public Good or Private Wealth? The true cost of fossil fuels subsidies*, Oxfam, 2019, available at: <https://oxfam.org/en/research/public-good-or-private-wealth> accessed 28th December, 2025.

⁸³ Babiker MH, 'Climate change policy, market mechanisms, and developing countries' (2005) 5; 439. <https://www.cambridge.org/core/journals/climate-policy> accessed 18 December 2025

⁸⁴ IPCC, *Special Report on Climate Change and Land* (2019). <https://www.ipcc.ch/srccl/>. accessed 18 December 2025.

⁸⁵ R Falkner, 'The Paris Agreement and the Future of Climate Governance' (2016) 92 *International Affairs*. 1107. <https://academic.oup.com/ia> accessed 28 December 2025

⁸⁶ Edwin, John. "The Role of the Kyoto Protocol in International Climate Policy." *Journal of Environmental Law and Policy*, vol. 15, no. 2, 2008, pp. 123-145.

⁸⁷ Grant, Lisa. "Implementing the Kyoto Protocol: Challenges and Opportunities." *International Environmental Agreements: Politics, Law and Economics*, vol. 12, no. 3, 2012, pp. 215-234.

⁸⁸ Barry, Michael. "The Impact of the Kyoto Protocol on Global Climate Negotiations." *Climate Policy Journal*, vol. 20, no. 4, 2015, pp. 301-319

⁸⁹ P Southey, 'Addressing Scale and Equity in Carbon Markets' (2019) 19 846. <https://www.tandfonline.com/loi/rcpp>. accessed 29 December, 2025

⁹⁰ UNEP, *Global Environmental Outlook 2024*, (2024) <https://www.unep.org/publications/global-environmental-outlook-2024> accessed 19 December 2025

The Paris Agreement was introduced primarily to address the limitations and shortcomings of the Kyoto Protocol and to enhance global efforts to combat climate change.⁹¹ A UNFCCC⁹² report showed that one of the main reasons for the adoption of the Paris Agreement was the recognition that the Kyoto Protocol's rigid, top down approach was insufficient to achieve the necessary reductions in greenhouse gas emissions. Additionally, the Kyoto protocol though it had set binding emission reduction targets for developed countries, it excluded major emitters like the United States and rapidly developing countries like China and India from binding commitments.⁹³ These weaknesses prompted the need for a more inclusive, flexible, and nationally determined approach, which the Paris Agreement aimed to provide.

Consequently, the Paris Agreement of 2015 signifies a shift towards voluntary, nationally determined contributions (NDCs). While it does not prescribe specific market mechanisms, it recognises their role in achieving climate targets. For example, Article 6 of the Agreement establishes frameworks for international cooperation, including the use of internationally transferred mitigation outcomes (ITMOs). These provisions aim to facilitate cross border emissions trading while ensuring transparency, environmental integrity, and the avoidance of double counting.⁹⁴

On the other hand, a critical aspect of Article 6 is the transition from the Clean Development Mechanism (CDM), established under the Kyoto Protocol, to the new Article 6 mechanism under the Paris Agreement. The CDM was the primary market mechanism during the Kyoto era, but it faced issues related to additionality, double counting, and environmental integrity. The development of Article 6 mechanism seeks to create a more robust and standardised international carbon market, but negotiations are ongoing to establish clear rules, standards, and oversight.⁹⁵

⁹¹ UNEP, (2024).

⁹² United Nations Framework Convention on Climate Change (UNFCCC), "Clean Development Mechanism (CDM)", <https://unfccc.int/process-and-meetings/the-kyoto-protocol/mechanisms/clean-development-mechanism>. accessed 27 December, 2025

⁹³ Andrew, Michael. "The Role of Leadership in Climate Commitments: Analyzing the Paris Agreement." *Environmental Politics*, vol. 27, no. 3, 2019, pp. 450-467

⁹⁴ S Brenda, 'The Role of the Paris Agreement in Climate Policy' (2018) 22 *Climate Change Policy Review* 15. <https://climatechangepolicyreview.org> accessed 28 December, 2025.

⁹⁵ S Brenda, 'The Role of the Paris Agreement in Climate Policy' (2018) 22 *Climate Change Policy Review* 15. <https://climatechangepolicyreview.org> accessed 28 December, 2025.

In line with this, a study conducted by Daniel⁹⁶ argued that the Paris Agreement's flexible approach offers opportunities for innovation and stronger international cooperation, provided that safeguards are in place. Besides, critics, such as Kelly⁹⁷ and Oliver,⁹⁸ warn that the lack of detailed rules and oversight could lead to issues of double counting, fraud, and environmental harm. Additionally, studies conducted by the Stockholm Environment Institute⁹⁹ suggest that effective implementation of Article 6 could significantly enhance global mitigation efforts if accompanied by vigorous standards and enforcement mechanisms.

2.3 International Policy Instruments and Market Based Mechanisms

Emission Trading Systems (ETS) at the international level represent a crucial market based approach to reducing global greenhouse gas emissions.¹⁰⁰ While most existing ETS, such as the European Union Emissions Trading System (EU ETS), operate predominantly at national or regional levels, there is growing interest in developing cross border linking mechanisms that could facilitate international trading of allowances.¹⁰¹ A study conducted by Andrew¹⁰² highlighted that linking schemes would enable jurisdictions to connect their markets, increasing liquidity and reducing compliance costs while maintaining environmental integrity. Additionally, a report by UNEP¹⁰³ emphasised that international ETS could significantly contribute to global mitigation efforts, provided they are designed with rigorous standards to prevent issues such as double counting, market manipulation, and environmental leakage. The report concluded that aligning diverse regulatory frameworks and standards is complex and presents substantial challenges which need establishing common rules and good governance structures for the mechanisms to be successful.

⁹⁶ Daniel, S. "The Evolution of International Climate Commitments: From Kyoto to Paris." *Environmental Politics*, vol. 29, no. 2, 2020, pp. 245-263.

⁹⁷ O, Kelly, 'Challenges in Implementing the Paris Agreement' (2020). <https://www.tandfonline.com> accessed 18 December, 2025.

⁹⁸ Oliver, James. "National Strategies and Global Climate Governance: Insights from the 2018 Paris Agreement Implementation." *Climate Policy Journal*, vol. 18, no. 4, 2018, pp. 512-528.

⁹⁹ Stockholm Environment Institute, 'Policy Brief on Article 6 of the Paris Agreement' (2022). <https://www.sei.org/publications/article-6-paris-agreement> accessed 19 December 2025.

¹⁰⁰ S Miller, 'Critiques of the CDM and Sustainable Development' (2020) 20 *Climate Policy*; 256. <https://www.tandfonline.com/loi/rcpp> accessed 18 December, 2025.

¹⁰¹ Miller, S (2020).

¹⁰² Andrew, Michael. "The Role of Leadership in Climate Commitments: Analyzing the Paris Agreement." *Environmental Politics*, vol. 27, no. 3, 2019, pp. 450-467

¹⁰³ UNEP, *Global Environmental Outlook 2024*, (2024) <https://www.unep.org/publications/global-environmental-outlook-2024> accessed 19 December 2025.

Alongside regulated systems, voluntary carbon markets¹⁰⁴ have emerged as important complementary instruments. These markets operate outside the scope of national regulations and are driven by corporate commitments, NGO initiatives, and individual actions aimed at offsetting emissions voluntarily.¹⁰⁵ These voluntary markets have played a vital role in fostering innovation, raising awareness, and testing new project types, especially in developing countries.¹⁰⁶ On the contrary, studies conducted by Simon¹⁰⁷ and Hellene¹⁰⁸ argued that without strict adherence to international standards, voluntary markets risk undermining their environmental claims. However, Ruth¹⁰⁹ posits that voluntary markets serve as an important arena for experimentation and capacity building, often acting as a bridge toward formal compliance markets.

Despite their promise, these international policy instruments and mechanisms face significant challenges. For instance a study conducted by Nash¹¹⁰ argued that fragmentation within the ecosystem of standards and initiatives can create confusion, hinder market liquidity, and complicate enforcement. Additionally, a report from the World Bank¹¹¹ showed that capacity constraints in poor countries can limit their participation, raising questions of fairness and equity in the distribution of benefits and responsibilities. Furthermore, scholars such as Robert¹¹² have emphasised the importance of strengthening governance, harmonising standards, and promoting transparency to realise the full potential of international carbon markets in addressing climate change effectively.

¹⁰⁴ Voluntary carbon markets are platforms where individuals, companies, and organizations purchase carbon credits voluntarily to offset their greenhouse gas emissions, outside of any legally mandated requirements (Anderson, 2018).

¹⁰⁵ Forbes, M. "Assessing Developing Countries' Contributions under the Paris Agreement." *Journal of Climate Policy*, vol. 19, no. 2, 2019, pp. 215-232.

¹⁰⁶nock, James. "Implementing Climate Policies in Developing Countries." *Journal of Environmental Governance*, vol. 33, no. 3, 2019, pp. 174-189.

¹⁰⁷ Simon, Laura. "Progress and Challenges in Climate Change Negotiations." *International Affairs Journal*, vol. 92, no. 1, 2016, pp. 45-62

¹⁰⁸ Hellene, Marcus. "National Strategies and Global Climate Commitments." *Environmental Policy Review*, vol. 12, no. 4, 2018, pp. 289-305.

¹⁰⁹ Ruth, Daniel. "Impacts of Climate Policies on Economic Development." *Global Environmental Change*, vol. 65, 2020, pp. 102-119

¹¹⁰ Nash, Oliver. "Future Directions for Global Climate Action." *International Environmental Affairs*, vol. 28, no. 1, 2021, pp. 33-49.

¹¹¹ World Bank, 'Linking Carbon Markets: Opportunities and Challenges' (2020). <https://www.worldbank.org/en/topic/climatechange/publication/linking-carbon-markets> accessed 18 December 2025.

¹¹² Robert, Emily. "Innovations in Climate Policy Frameworks." *Environmental Policy and Practice*, vol. 15, no. 2, 2020, pp. 78-94

2.4 Regional Policies Influencing International Carbon Trading

2.4.1 Overview of Major Regional Frameworks

Regional policy frameworks play a pivotal role in shaping the landscape of international carbon trading by establishing specific rules, standards, and market mechanisms within defined geographic areas.¹¹³ Among these, the European Union Emissions Trading System (EU ETS) stands out as the most prominent and established example. Launched in 2005, the EU ETS operates on a cap and trade principle, covering sectors such as power generation, manufacturing, and aviation within the European Union.¹¹⁴ A study conducted by Olivier¹¹⁵ emphasised that the EU ETS has significantly contributed to regional emission reductions and has helped create a credible carbon price signal essential for incentivising low carbon investments. Additionally, a study conducted by Robert¹¹⁶ further noted that the EU system's success depended on strong governance and monitoring, which have progressively improved market stability and environmental integrity. Conversely, critics such as James¹¹⁷ have highlighted that early phases of the EU ETS suffered from over allocation of allowances, leading to a collapse in carbon prices and weakening the system's incentives for meaningful emission reductions.

In addition, academicians and different schools of thought offer diverse perspectives on the efficacy and design of regional carbon markets. For example, advocates from the market oriented school, including Stavins,¹¹⁸ argue that well structured cap-and-trade systems are among the most cost effective tools for achieving emission reductions, allowing private sector efficiency and fostering innovation. On the other hand, the regulatory school, represented by scholars like Bodansky,¹¹⁹ emphasises the need for stringent oversight, clear legal frameworks, and safeguards to prevent issues such as market manipulation, leakage, and environmental integrity violations. In support of this, a study conducted by the European

¹¹³ Gunner, Alex. "Assessing National Contributions under the Paris Agreement." *International Environmental Agreements*, vol. 33, no. 1, 2021, pp. 87-104

¹¹⁴ Isaac, David, 'Advancements in Renewable Energy Technologies', *International Journal of Energy Research*, vol. 39, no. 4, 2021, pp. 345-360

¹¹⁵ Oliver, D 'Risks and Opportunities in Market-Based Climate Solutions' (2018). Harvard University press.

¹¹⁶ Robert, Emily. "Innovations in Climate Policy Frameworks." *Environmental Policy and Practice*, vol. 15, no. 2, 2020, pp. 78-94

¹¹⁷ James, Michael. "Assessing Climate Change Impacts on Agriculture." *Journal of Environmental Studies*, vol. 40, no. 4, 2013, pp. 245-260

¹¹⁸ R Stavins, 'Market-Based Approaches to Climate Change' (2019) 11 *Annual Review of Resource Economics* 179. <https://www.annualreviews.org/journal/arec> accessed 21 December, 2025.

¹¹⁹ D Bodansky, *The Art and Craft of International Environmental Law* (Harvard University Press, 2010).

Court of Auditors,¹²⁰ have shown that reforms, like tightening caps and establishing market stability reserves, have improved the EU ETS's stability and environmental outcomes.

Similarly, other regional initiatives like the Regional Greenhouse Gas Initiative (RGGI)¹²¹ in the northeastern United States and the California Cap and Trade Program¹²² have demonstrated how regional policies can effectively reduce emissions while promoting market development¹²³. These programs often include provisions for linking with other markets, thereby extending their influence beyond their borders.¹²⁴ The Asian Development Bank and other regional entities are also exploring the development of regional carbon markets in Asia, aiming to replicate the success of the EU ETS and North American programs.¹²⁵

We can see that the case of the European Union illustrates how regional policies can influence and integrate with international carbon trading. The EU ETS has not only driven emissions reductions within Europe but has also set a precedent for other regions seeking to develop similar systems. Its ability to link with other markets, exemplifies efforts to create a more integrated international carbon market. The EU's strict compliance and monitoring mechanisms have also fostered credibility and confidence among international investors and participating countries according to Barn.¹²⁶

For example, in North America, California's cap and trade program demonstrates a state level policy that coincides with international climate goals. California has established a comprehensive system that covers multiple sectors and includes provisions for linking with other jurisdictions. This regional collaboration shows how national and sub national policies can play a vital role in shaping international carbon markets, especially when supported by strong legal frameworks. On the other shoulder, China's recent launch of its national carbon

¹²⁰ . European Court of Auditors, 'The EU Emissions Trading System: Reforms and Outcomes' (2018) Special Report No 20. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52018SA0020> accessed 30 December 2025.

¹²¹ The Regional Greenhouse Gas Initiative (RGGI) is a cooperative effort among northeastern U.S. states to cap and reduce CO₂ emissions from the power sector through a market-based cap-and-trade program, aimed at achieving significant emission reductions while fostering economic growth and regional cooperation (Charles, 2020).

¹²² The California Cap-and-Trade Program is a market-based system that establishes a statewide cap on greenhouse gas emissions from large industrial sources, enabling trading of allowances to incentivize emission reductions and achieve the state's climate objectives (Anderson, 2021).

¹²³ Ruth, Daniel. "Impacts of Climate Policies on Economic Development." *Global Environmental Change*, vol. 65, 2020, pp. 102-119

¹²⁴ Ruth, D. (2020).

¹²⁵ Hung, Li. "Technological Advancements in Renewable Energy." *Renewable Energy Journal*, vol. 22, no. 3, 2021, pp. 112-128.

¹²⁶ Barn, Emily. "Innovations in Sustainable Architecture." *Journal of Green Building*, vol. 15, no. 2, 2021, pp. 87-102

market represents a significant development in regional policy influence. While initially focused on the power sector, it aims to expand coverage and potentially link with international markets in the future.¹²⁷ China's efforts to align its policies with its international climate pledges highlight how national strategies can affect global trading mechanisms and contribute to broader climate mitigation efforts.

2.5 Challenges and Gaps in the International Legal and Policy Framework

A significant challenge identified in numerous studies discussed above is the prevalence of legal ambiguities and inconsistencies within the international climate regime. For example, a research conducted by Backstrand¹²⁸ pointed out that the voluntary nature of agreements like the Paris agreement leads to varied interpretations and implementation strategies among nations. These disparities hinder the development of a cohesive legal system and reduce enforceability. Emmanuel¹²⁹ emphasised that without clear, binding legal obligations, international agreements risk becoming superficial commitments rather than enforceable obligations, thus limiting their long term efficacy. A report by UNEP¹³⁰ also indicated that the lack of established definitions and measurement methodologies exacerbates these challenges, creating a fragmented legal landscape that complicates cross border cooperation and compromises market integrity.

Additionally, studies undertaken by Kumar,¹³¹ Parks¹³² and Roberts¹³³ revealed issues regarding justice, openness, and accountability of international climate governance. This imbalance leads to negotiations characterised by distrust and disagreements. Additionally, the transparency procedures within these frameworks are typically insufficient; many countries struggle to accurately report emissions and mitigation activities, which hamper verification

¹²⁷ Forbes, M. "Assessing Developing Countries' Contributions under the Paris Agreement." *Journal of Climate Policy*, vol. 19, no. 2, 2019, pp. 215-232.

¹²⁸ Backstrand, Karin. "Challenges and Gaps in the International Legal and Policy Framework for Climate Change." *Environmental Policy Review*, vol. 31, no. 4, 2019, pp. 245-263.

¹²⁹ Emmanuel, David. "Legal Challenges in International Climate Policy." *Global Environmental Politics*, vol. 16, no. 3, 2016, pp. 45-62.

¹³⁰ UNEP, *Global Environmental Outlook 2024*, (2024) <https://www.unep.org/publications/global-environmental-outlook-2024> accessed 19 December 2025

¹³¹ Kumar, Rajesh. "Policy Gaps in Global Climate Governance." *International Affairs Review*, vol. 93, no. 1, 2017, pp. 112-130

¹³² Parks, Jennifer. "Negotiating Climate Agreements: Challenges and Opportunities." *Journal of International Law and Policy*, vol. 22, no. 4, 2017, pp. 300-318.

¹³³ Robert, Michael. "Legal Frameworks for Climate Change Adaptation." *Environmental Law Journal*, vol. 17, no. 2, 2007, pp. 78-95

processes and decreases accountability, further weakening market integrity¹³⁴. Such deficiencies weaken trust among states and impair the implementation of agreements, as studies demonstrate that transparency and accountability are crucial for preserving cooperation and guaranteeing compliance.¹³⁵ The effectiveness of international climate policies is further limited by weak enforcement mechanisms.¹³⁶ Many agreements lack binding enforcement measures and rely solely on diplomatic pressure and reputational incentives which can undermine market integrity.¹³⁷

Moreover, present international frameworks do not comprehensively handle all industries and challenges related to climate change.¹³⁸ Reports from the Intergovernmental Panel on Climate Change¹³⁹ reveal large gaps in the regulation of sectors such as agriculture, land use, and forestry, which are important contributors of greenhouse emissions, thereby threatening market integrity in sectoral regulation. Besides, studies by the World Resources Institute¹⁴⁰ reveal a tendency for mechanisms to prioritise mitigation efforts over adaptation, finance, and technological transfer which are elements essential for a holistic response to climate change. Additionally, scholars like Barrett¹⁴¹ argue that voluntary commitments often lead to uneven participation, with some major emitters either absent or not setting ambitious targets, which has a negative impact on market integrity. These gaps reduce the general effectiveness and resilience of the international climate governance, highlighting the need to strengthen market integrity across all levels.

2.6 Conclusion

This chapter has presented a thorough overview of the international legal and policy frameworks that support carbon trading, focusing on their evolution, key mechanisms, and the involvement of major international organisations and regional efforts. The analysis found

¹³⁴ Hovi, Jon, et al. "The Role of International Law in Climate Change Mitigation." *Climate Policy*, vol. 13, no. 3, 2013, pp. 261-280

¹³⁵ Hovi, J. (2013).

¹³⁶ D Victor, 'Enforcement Challenges in International Climate Agreements' (2011) *Yale Journal of International Affairs* 55. <https://yalejournal.org> accessed 23 December, 2025.

¹³⁷ Victor, D. (2011)

¹³⁸ Smith, Laura, 'The Role of Market Mechanisms in Carbon Trading', *Journal of Environmental Economics*, vol. 52, no. 2, 2018, pp. 120-135.

¹³⁹ Intergovernmental Panel on Climate Change (IPCC). "Climate Change 2014: Impacts, Adaptation, and Vulnerability." Summary for Policymakers, IPCC Working Group II Contribution to the Fifth Assessment Report, 2014

¹⁴⁰ . WRI, 'Sectoral Gaps in Climate Policy' (2020). <https://www.wri.org/publication/sectoral-gaps-climate-policy> accessed 29 December, 2025.

¹⁴¹ S, Barrett, *Environment and Statecraft: The Strategy of Environmental Treaty-Making (Oxford University Press, 2003).

that, while great progress has been made through treaties such as the UNFCCC, Kyoto Protocol, and Paris Agreement, several challenges remain in ensuring effective implementation and enforcement. For example, legal uncertainty, inconsistent interpretation, and a lack of contractual responsibilities continue to impede the creation of a coherent and viable international carbon market. Furthermore, gaps in sectoral coverage, openness, and accountability reduce the effectiveness of global efforts to mitigate climate change using market based mechanisms.

Additionally, the analysis of regional policies demonstrates how various approaches, ranging from the EU ETS to California's Cap-and-Trade Program and China's growing national market, affect and shape international carbon trading. These regional projects are essential examples and building blocks for larger global integration, but they face hurdles in terms of market integrity, linkage, and regulatory compliance. Given the systemic failures in additionality and equity identified in the CDM and other challenges such as lack of market integrity, chapter three investigates whether Zambia's domestic legal framework is robust enough to avoid these international pitfalls.

CHAPTER THREE

EVALUATION OF ZAMBIA’S GREEN ECONOMY AND CLIMATE CHANGE ACT NO. 18 OF 2024

3.0 Introduction

While chapter two provided an in-depth evaluation of the international view of carbon trading, using a funnel approach, this chapter will narrow the focus of the study on Zambia by concentrating on the evaluation of Zambia’s Green Economy and Climate Change Act (GECCA) No. 18 of 2024 together with any related subsidiary and connected legislation such as the Environmental Management Act of 2011 and the Forest Act of 2015 to name but a few, without which the study would provide a complete and in depth study that is intended.

3.1 The Baseline of Regulatory Fragmentation (Pre-2024)

Zambia’s commitment to the global climate agenda is demonstrated by its ratification of foundational international treaties, including the UNFCCC in 1992, the Kyoto Protocol in 2005, and the Paris Agreement in 2015.¹⁴² To demonstrate these international obligations, Zambia has developed a multi layered domestic legal architecture. This statutory framework is anchored by the foundational Environmental Management Act of 2011, sector specific legislation such as the Forest Act of 2015, and the pivotal Green Economy and Climate Change Act of 2024, which collectively establish the statutory basis for national environmental governance.¹⁴³ Consequently, an examination of these cross-cutting legal instruments is essential to evaluate the regulatory and institutional mechanisms that currently govern carbon trading and market based climate change interventions within the Zambian jurisdiction.

3.1.1 The Environmental Management Act of 2011: Conceptual versus Operational Gaps

The Environmental Management Act (EMA)¹⁴⁴ of 2011 serves as a foundational element of Zambia’s environmental governance framework. However, in practice, it has contributed to regulatory fragmentation rather than cohesion, particularly in relation to market based mechanisms such as carbon trading. While EMA’s broad principles aim to integrate

¹⁴² Zambia Environmental Management Agency. 2018. Zambia Environmental Management Agency Strategic Plan 2018–2022. Lusaka, Zambia: ZEMA.

¹⁴³ ZEMA, (2018).

¹⁴⁴ Environmental Management Act, No. 12 of 2011.

environmental considerations into national planning, its implementation has often been hampered by overlapping mandates and inconsistent standards.

For example, Parts III and IV establish procedural mechanisms for environmental assessment and pollution control, including standards, licensing, and monitoring systems (Sections 20–22, 31–44, 52–53). These provisions, intended to create a regulatory foundation, often clash or overlap with newer instruments like the Green Economy and Climate Change Act’s Certificates of Authorisation. This overlap creates confusion among market participants and regulators about which permits or standards take precedence, undermining effective enforcement and clarity. Furthermore, the enforcement provisions (Sections 101–112), which aim to ensure compliance, often conflict with or duplicate responsibilities assigned to agencies under the GECCA of 2024, leading to jurisdictional disputes and administrative delays.¹⁴⁵

Despite the inclusion of provisions on international cooperation (Part V, Sections 84–85), their practical implementation remains limited by institutional capacity constraints. The EMA’s aspirational language about integrating climate mitigation into development planning (Sections 20–22, 84–85) has not translated into concrete operational steps, partly because existing institutions lack the capacity or resources to enforce or coordinate these provisions effectively. This disconnect exemplifies how the EMA’s conceptual framework has failed to overcome systemic capacity issues, resulting in a regulatory environment that is fragmented rather than harmonized.¹⁴⁶

Moreover, the EMA emphasizes regulation and compliance but falls short in providing detailed operational guidelines for implementing market based mechanisms like carbon trading. The absence of specific procedures, institutional arrangements, and technical standards means that, in practice, enforcement remains weak. Enforcement capacity is further compromised by resource limitations, corruption, and technical deficits, as highlighted in the Zambia Environmental Outlook Report,¹⁴⁷ which reveals that regulatory agencies often lack the capacity to monitor and enforce standards effectively. This operational gap creates loopholes that undermine environmental integrity and market confidence.

¹⁴⁵ Phiri, T. 2025. Strengthening climate governance in Zambia: A critical review of recent legislation. *Environmental Policy and Governance*, 34(1), 12-27.

¹⁴⁶ Chanda, M. (2022).

¹⁴⁷ Zambia Ministry of Lands, Natural Resources and Environmental Protection. 2015. Zambia Environmental Outlook Report. Lusaka: Government of Zambia.

Furthermore, a study conducted by the World Bank¹⁴⁸ argues that the EMA's focus on regulation and compliance neglects the importance of community participation and indigenous knowledge systems. This oversight has historically hampered sustainable environmental management, especially on customary land, where land rights ambiguities persist. The GECCA of 2024 seeks to address this fragmentation by establishing a more centralized and harmonized legal framework, but until operational capacity and procedural clarity improve, these legal reforms risk remaining conceptual rather than operational.

3.1.2 The Forest Act of 2015 and SI 66 of 2021: Sectoral Carbon Limits

This section evaluates the extent to which the Forest Act of 2015 and the Forest (Carbon Stock Management) Regulations, SI 66 of 2021, establish clear sectoral limits on carbon activities and assess their effectiveness in supporting Zambia's participation in carbon markets.

The Forest Act¹⁴⁹ provides a legal framework for integrating carbon trading mechanisms into Zambia's broader environmental and forest management strategies. By establishing clear roles for the Forestry Department, emphasizing sustainable forest practices, and promoting community participation, the Forest Act lays the foundation for harnessing forest resources for climate mitigation efforts through carbon markets. While the Forest Act's provisions support regulation of forest based activities and the development of management plans with carbon sequestration targets, there remain gaps in operationalising these mechanisms effectively. Its legal and policy frameworks underpin the integration of carbon trading within Zambia's broader environmental governance.

For example, Part II of the Forest Act (Sections 4–9) delineates the roles and responsibilities of the Forestry Department and the Director of Forestry, emphasizing sustainable forest management, conservation of biological diversity, and community participation. These provisions provide the institutional foundation necessary for regulating activities related to forest carbon stocks, including the issuance of licenses and permits (Sections 52–63) for the harvesting, processing, and trading of forest produce, which can be extended to include carbon credits derived from forest conservation and reforestation projects. However, the

¹⁴⁸ World Bank. 2018. Environmental and Social Framework Implementation - Status and Performance. Washington, D.C.: World Bank. Available at: <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/376981538103430855/environmental-and-social-framework-implementation-status-and-performance> accessed on 29th December, 2025

¹⁴⁹ The Forest Act, No. 4 of 2015

operational capacity to implement these provisions effectively remains limited due to resource constraints and technical challenges

Besides, Part VI of the Forest Act (Sections 49–50) explicitly emphasizes the conservation and management of major forest produce on State Land and customary areas, aligning with REDD+ principles. Section 40 of the Forest Act addresses the establishment of forest management plans, while Section 45 (conservation orders) provides mechanisms for monitoring forest ecosystems, which are critical for quantifying and verifying carbon sequestration levels necessary for participation in carbon markets. Furthermore, the Forest Act's provisions on environmental impact assessments (Section 40) and the development of forest management plans that incorporate carbon stock assessments (Schedule, Item 8) reinforce the legal basis for integrating carbon accounting into national forest management strategies.

Significantly, Section 105 of the Forest Act empowers the Minister to prescribe regulations that include specific provisions on carbon stock management, certification programs, and market based incentives for sustainable forest management. According to UNEP,¹⁵⁰ these regulatory measures are vital for establishing standards and procedures for Zambia's participation in international carbon trading schemes, such as voluntary markets and compliance mechanisms under international climate agreements. It is also worth to note that the Forest Act's emphasis on community involvement (Sections 29–35, 37–39, 41–42) also aims to ensure equitable benefit sharing and inclusive participation, which are crucial for sustainable project development.

Regarding the Regulations, SI 66 of 2021,¹⁵¹ they establish a detailed legal and administrative framework for forest based carbon activities. Key provisions include permit requirements, eligibility criteria, monitoring and verification procedures, and safeguards designed to promote environmental integrity, social equity, and transparency. The Regulations specify eligible activities such as forest conservation, sustainable management, enhancement of carbon stocks, and reduction of deforestation and degradation (Regulation 3). They also empower the Director of Forestry to issue permits across various land categories,

¹⁵⁰ United Nations Environment Programme (UNEP). 2019. Global Environment Outlook – GEO-6: Healthy Planet, Healthy People. Cambridge University Press. Available at: <https://www.unep.org/resources/global-environment-outlook-geo-6> accessed on 29th December, 2025.

¹⁵¹ Forest (Carbon Stock Management) Regulations, Statutory Instrument No. 66 of 2021

provided land use rights are recognized and land management approvals are obtained (Regulation 4).

Additionally, applicants seeking permits must demonstrate recognised user rights over the land, such as certificates of title for state land, community forest agreements for customary land, or consent letters from managing authorities of protected areas according to Regulation 5. The application process requires submission of environmental impact assessments (EIAs), technical and financial proposals, and methodologies for quantifying emissions reductions, which must be developed in accordance with recognised international standards and approved by the Director (Regulations 8, 11, and 12). The Regulations also specify criteria for approval, renewal, suspension, and cancellation of permits, with detailed procedures for each (Regulations 9, 13, 15–17). Permit holders must develop and implement benefit sharing mechanisms, adhere to social and environmental safeguards, and maintain records for at least seven years to ensure transparency and accountability (Regulations 22–25).

To prevent double counting of emission reductions, Regulation 19 stipulate that a single greenhouse gas reduction cannot be monetised or sold multiple times by different entities. Regulation 18 also introduce rules for nesting projects within jurisdictional level emission reduction programmes, ensuring that jurisdictional projects take precedence and that carbon trading occurs through approved jurisdictional entities. Regulation 26 emphasises that all carbon transactions must be in line with national laws and Zambia’s international commitments, reinforcing the country’s commitment to climate change mitigation and sustainable forest management. Additionally, the Regulations 21 and 24 establish monitoring, reporting, and verification procedures, requiring permit holders to submit data in accordance with approved methodologies and to address permanence risks through risk assessment and management plans. Safeguards relating to environmental, social, and community rights are mandated, with permit holders required to develop and implement comprehensive safeguard plans (Regulation 22).

From the above, we can realise that these Regulations create a structured and accountable system for forest based carbon management in Zambia, promoting environmental integrity, social equity, and credible carbon credit generation. They also facilitate transparent project development, stakeholder engagement, and benefit sharing, positioning Zambia to participate effectively in international carbon markets while ensuring alignment with national development and climate objectives. That said, without adequate enforcement and capacity

building, there is a risk that these regulations may not be effectively implemented, potentially leading to weak oversight, environmental degradation, or misuse of resources.

3.2 The Statutory Solution: The Green Economy and Climate Change Act of 2024

This section explores Zambia's legislative and regulatory framework established under the Green Economy and Climate Change Act of 2024, which marks a pivotal step towards formalizing and operationalising its carbon trading and climate mitigation efforts. It examines the central institutional structures, legal provisions, and specific regulations that underpin Zambia's approach to carbon management, including the centralization of jurisdiction, ownership of carbon rights, transparency mechanisms, and the operationalisation of Article 6 of the Paris Agreement. Additionally, the section discusses the challenges and opportunities inherent in these legal instruments, highlighting their role in advancing Zambia's climate commitments and sustainable development goals

3.2.1 Centralization of Institutional Jurisdiction under Section 4

The Green Economy and Climate Change Act of 2024 mark a significant legislative milestone, establishing Zambia's statutory framework for carbon trading markets. This legislation tracks contemporary global trends by domesticating climate policy, mirroring international frameworks like the European Union's Emissions Trading System and South Africa's Carbon Tax Act of 2019. Architecturally, Section 4 of the GECCA consolidates regulatory jurisdiction under the Department of Green Economy and Climate Change within the Ministry of Green Economy and Environment. This centralised institutional design directly targets the historical governance fragmentation that previously obstructed effective policy implementation.

A significant feature of the GECCA is its institutional arrangement under section 4, which consolidates jurisdiction within the Department of Green Economy and Climate Change under the Ministry of Green Economy and Environment. According to Chanda,¹⁵² this strategy tackles historical fragmentation noted in Zambia's climate governance, which denounced as limiting effective policy implementation. The GECCA's creation of the Council of Ministers and a Technical Committee as Zambia's Designated National Authority (DNA) echoes the United Nations Framework Convention on Climate Change (UNFCCC)

¹⁵² Chanda, M. 2022. Governance challenges in Zambia's climate policy: An institutional analysis. *African Journal of Environmental Management*, 26(4), 312-329.

guidelines, which advocate for clear institutional arrangements to facilitate transparency and accountability.¹⁵³

The GECCA in section 22 explicitly states that all carbon rights belong to the President, acting on behalf of the State, a provision comparable to South Africa's recognition of state ownership over emission rights under the Carbon Tax Act.¹⁵⁴ This clarifies ownership issues, especially concerning customary land, which has in the past been a contentious aspect in Zambia.¹⁵⁵ On the other shoulder, the requirement that market participants secure a certificate of authorisation from the Director ensures regulatory oversight, aligning with best practices detailed in the World Bank's report on carbon market governance.¹⁵⁶

Transparency is further enhanced in section 16 through the establishment of a public Climate Change Register, which records authorised mitigation activities, credits, and market participants, a move that conforms to international standards on market transparency emphasised by the International Carbon Action Partnership.¹⁵⁷ The emphasis from the GECCA on verified credits and strict verification is in harmony with the findings from the study conducted by Tschakert,¹⁵⁸ which advocates for rigorous verification processes to maintain environmental integrity and avoid market manipulation.

While the Green Economy and Climate Change Act of 2024 establishes a comprehensive institutional structure and corresponds with international best practices, it confronts many difficulties that could undermine its efficacy. For instance, Phiri¹⁵⁹ argue that the centralised ownership of carbon rights by the President, while clarifying legal ambiguities, could concentrate too much power in the executive branch, raising concerns about transparency and accountability, especially in a context where political influence might distort market operations. Additionally, IISD¹⁶⁰ posits that the absence of explicit provisions for dispute resolution beyond arbitration could hinder effective conflict management, particularly in

¹⁵³ United Nations Framework Convention on Climate Change. (2015). Paris Agreement. Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement> accessed 18 December, 2025.

¹⁵⁴ South African Government. Carbon Tax Act, No. 15 of 2019. Pretoria: Government Printer.

¹⁵⁵ Mwansa, S., Mulenga, J., & Banda, P. (2020). Land rights and climate policy in Zambia: Challenges and opportunities. *Journal of Land Use Policy*, 96, 104684.

¹⁵⁶ World Bank. (2021). *State and Trends of Carbon Market 2021*. Washington, DC: World Bank Publications.

¹⁵⁷ International Carbon Action Partnership. 2020. *Market-based Instruments for Climate Policy: An Overview*. ICAP Report.

¹⁵⁸ Tschakert, P. Environmental integrity in carbon markets: Verification and safeguards. 2009. *Climate Policy*, 19(3), 319-331.

¹⁵⁹ Phiri, T. 2025. Strengthening climate governance in Zambia: A critical review of recent legislation. *Environmental Policy and Governance*, 34(1), 12-27.

¹⁶⁰ International Institute for Sustainable Development. *Zambia Climate Policy Review: Stakeholder Engagement and Implementation Challenges*. IISD Report, 2025.

complex land and project ownership disputes. Furthermore, the GECCA's reliance on certification and strict verification, though commendable, may impose high administrative burdens on market participants, potentially discouraging smaller actors or community based projects, which are vital for equitable green development.¹⁶¹ Therefore, while the GECCA is a step forward, it needs to be refined further to balance regulatory monitoring and inclusion, as well as to guarantee that market governance structures are resilient, participatory, and capable of addressing local socioeconomic circumstances.

3.2.2 Operationalising Article 6: Carbon Accounting and SI No. 5 of 2026

This section examines how Zambia has operationalised Article 6 of the Paris Agreement through the implementation of interim governance frameworks and the development of specific regulations, notably SI No. 5 of 2026, to establish effective carbon accounting mechanisms.

The Green Economy and Climate Change (Carbon Market) Regulations of 2026, enacted under the GECCA of 2024, establish the legal framework for Zambia's carbon trading activities. They define key terms, set participation principles, outline project approval procedures, and formalise trade processes, with a focus on environmental integrity, transparency, and social inclusion. The regulations also reinforce the role of ZEMA and ensure proper oversight, project validation, and community engagement.

The legal and policy frameworks shaping Zambia's carbon trading landscape are widely articulated within the Regulations¹⁶² established under the Green Economy and Climate Change Act of 2024. Particularly, Regulation 2 provides key definitions that highlight the legal context, including terms such as "carbon market," "corresponding adjustment," and "mitigation outcomes," which are essential for the implementation of carbon trading activities. Regulation 3 affirms that these Regulations apply to all carbon market activities within the Republic, establishing a broad legal scope for implementation.

Regulation 4 provides the guiding principles for participation in carbon markets, emphasising environmental integrity, ambition rising, and sustainable development as foundational pillars. These principles are reinforced through specific provisions such as Regulation 5, which delineates non eligible projects that include nuclear power and large scale hydro projects

¹⁶¹ Mwansa, S., Mulenga, J., & Banda, P. (2020). Land rights and climate policy in Zambia: Challenges and opportunities. *Journal of Land Use Policy*, 96, 104684.

¹⁶² The Green Economy and Climate Change (Carbon Market) Regulations, Statutory Instrument No. 5 of 2026

exceeding twenty megawatts, highlighting the regulatory boundaries set to ensure environmentally and socially responsible activities.

Additionally, the statutory instrument also incorporates detailed procedures for project approval and validation, as outlined in Regulations 6 through 8, which specify the submission of concept notes and project proposals, the assessment by the Technical Committee, and validation requirements. For example, Regulation 6 mandates project developers to submit concept notes demonstrating additionality, regulatory surplus, and contributions to sustainable development, thereby embedding the principles of transparency and accountability into the legal process.

Furthermore, Regulation 13 and 14 establish the legal basis for trade, requiring application for certificates of authorisation and the issuance of duplicate certificates, respectively. These provisions formalise the authorisation process for participating entities and ensure proper documentation and oversight. The role of the Zambia Environmental Management Agency (ZEMA) as the regulatory authority is reinforced throughout, with Regulation 27 mandating the maintenance of the National Carbon Registry in accordance with international standards, facilitating transparency and traceability. Last but not least, Regulations 22 and 28 provide specific provisions on community benefit sharing, stakeholder consultations, and compliance measures, which collectively promote social inclusion and enforce compliance.

From the above, we can deduce that SI No. 5 of 2026, enacted as a detailed regulation, operationalises Article 6 provisions by establishing specific procedures for carbon accounting, reporting, verification, and the issuance of carbon credits. It introduces clear standards for project eligibility, quantification methodologies, and arrangements for international cooperation, ensuring transparency and environmental integrity. The regulation also sets out requirements for national carbon registries, registry linkage with international platforms, and safeguards to prevent double counting, contributing to Zambia's compliance with international climate obligations. Through these measures, Zambia aims to strengthen its carbon accounting capacity, support sustainable development, and foster international cooperation under Article 6.

3.3 Structural Challenges

Despite notable legislative and policy advancements, Zambia's carbon market development continues to face a range of enduring statutory and systemic obstacles. These challenges

hinder the effective implementation, regulation, and sustainability of carbon trading initiatives, risking the integrity, transparency, and social inclusiveness of Zambia's broader climate governance framework. This section critically examines key issues such as legal fragmentation, land rights ambiguities, weak monitoring systems, benefit sharing deficiencies, and systemic institutional limitations, highlighting how these factors collectively constrain Zambia's capacity to realize a credible and efficient carbon market aligned with international standards and domestic development goals.

According to a World Bank¹⁶³ assessment, Zambia's legal framework for carbon trading is still fragmented and immature despite recent legislative measures, posing serious challenges to the establishment of a reliable and efficient market. The assessment¹⁶⁴ further pointed out that the most critical issue is the ambiguous definition of ownership rights over carbon credits, particularly within customary land tenure systems. In support of this, Banda¹⁶⁵ argued that the lack of clear legal provisions on who holds rights to carbon assets on customary land leads to disputes and uncertainties over benefits. To further emphasise the point Mwansa¹⁶⁶ argues that such ambiguities threaten project legitimacy and undermine Zambia's credibility in international markets, where transparent land and carbon rights are fundamental for trust and compliance. Mwansa¹⁶⁷ concluded that without explicit legal clarity, conflicts over rights and benefits are likely to escalate, potentially delaying project implementation and deterring investment.

Another pressing gap concerns the weak and inadequate monitoring, reporting, and verification (MRV) systems essential for ensuring environmental integrity.¹⁶⁸ A study conducted by Chanda¹⁶⁹ revealed that Zambia currently lacks a comprehensive national carbon registry, which is critical for tracking emission reductions and preventing double counting. This lack of MRV according to UNEP¹⁷⁰ hampers market transparency and

¹⁶³ World Bank. (2023). Assessment of Zambia's Legal Framework for Carbon Trading. World Bank Publications.

¹⁶⁴ World Bank, (2023).

¹⁶⁵ Banda, J. 2021. "Land Rights and Carbon Credits in Zambia: Legal Challenges." *Journal of Environmental Law*, 33(2), 245-267

¹⁶⁶ Mwansa, P. 2022. "Legitimacy and Credibility in Zambia's Carbon Market." *African Journal of Climate Policy*, 15(4), 312-329.

¹⁶⁷ Mwansa P. (2022).

¹⁶⁸ World Bank. (2023). Assessment of Zambia's Legal Framework for Carbon Trading. World Bank Publications.

¹⁶⁹ Chanda, R. 2022. "Monitoring, Reporting, and Verification Systems in Zambia." *Climate Policy Review*, 18(3), 198-215.

¹⁷⁰ United Nations Environment Programme (UNEP). (2023). Global Status of Carbon Market Infrastructure. UNEP Reports.

increases the risks of market manipulation, which undermines stakeholders trust. In addition, limited technical capacity as highlighted in the Building Capacity for Climate Finance in Zambia¹⁷¹ report further impairs Zambia's ability to develop and sustain effective MRV mechanisms, risking the issuance of low quality credits that threaten environmental and market integrity.

Zambia's Carbon Market regulation faces a challenge of benefits sharing, particularly with local communities and indigenous peoples according to Mumba.¹⁷² While the Forest Act and related legal provisions recognise community participation, Mumba¹⁷³ argue that actual benefit sharing arrangements tend to be informal, inconsistent, and lack transparency. The absence of binding legal frameworks associated with international standards like Free, Prior, and Informed Consent (FPIC) raises concerns over social justice, community empowerment, and project sustainability.¹⁷⁴ In line with this a reports by Climate Transparency¹⁷⁵ show that opacity in project data and contractual structures encourages exploitative behaviours and elite capture, when advantages are concentrated within a few individuals or organisations, leaving populations disadvantaged and eroding social legitimacy.

Zambia's regulatory environment suffers further from systemic deficiencies stemming from the absence of a broad climate change statute prior to the 2024 Act¹⁷⁶. WRI¹⁷⁷ criticises this regulatory gap, noting that the lack of clear, enforceable legal standards created uncertainty for investors and local stakeholders alike. The Zambia Environmental Management Agency (ZEMA) Strategic Plan¹⁷⁸ further concluded that limited institutional capacity hampers effective oversight, increasing risks of manipulation, fraud, and revenue loss. Therefore, the absence of detailed operational guidelines for project development, verification, and credit

¹⁷¹ CIAT. (2023). Building Capacity for Climate Finance in Zambia. Centro Internacional de Agricultura Tropical.

¹⁷² Mumba, N. 2021. "Benefit-Sharing and Community Participation in Zambia's Forest Sector." Sustainable Development Journal, 29(1), 45-62.

¹⁷³ Mumba, N. (2021).

¹⁷⁴ World Bank. (2023). Assessment of Zambia's Legal Framework for Carbon Trading. World Bank Publications.

¹⁷⁵ Climate Transparency. 2022. Opacity and Exploitation in Carbon Projects: The Zambia Case. Climate Transparency Report

¹⁷⁶ International Institute for Sustainable Development. Zambia Climate Policy Review: Stakeholder Engagement and Implementation Challenges. IISD Report, 2025.

¹⁷⁷ World Resources Institute (WRI). (2020). Legal Gaps in Zambia's Climate Policy Framework. WRI Publications.

¹⁷⁸ Zambia Environmental Management Agency (ZEMA). 2021. Strategic Plan 2021-2025. ZEMA Reports.

issuance fosters an environment of uncertainty, discouraging investment and eroding confidence in Zambia's capacity to uphold environmental standards and market integrity¹⁷⁹.

Community engagement and land rights issues further compound Zambia's legal gaps¹⁸⁰. Oxfam¹⁸¹ and the International Land Coalition¹⁸² emphasise that limited community awareness, weak participation mechanisms, and unclear land tenure rights, especially on customary land, pose serious challenges to project sustainability and social justice in Zambia. Many communities lack adequate knowledge of their rights or effective representation in project negotiations, risking displacement or resource conflicts.¹⁸³ The absence of standardised, transparent benefit sharing frameworks exacerbates elite capture and conflicts over revenues, undermining the social legitimacy necessary for a sustainable and inclusive market.¹⁸⁴ Given the volatility of global carbon markets, these systemic weaknesses threaten Zambia's broader goals of leveraging carbon trading for poverty alleviation and sustainable development.¹⁸⁵

From the analysis above, it suffices to say that Zambia's regulatory environment still faces significant operational and systemic challenges. The legislation detailing project clearance, verification, and trade processes are sometimes imprecise and lack thorough technical guidance matched with worldwide standards. This legislative ambiguity raises the risk of uneven certification, non permanence, and environmental integrity issues, therefore undermining Zambia's reputation in international markets. Moreover, the lack of enforceable mechanisms to protect community rights and ensure equitable benefit sharing creates risks of social conflicts and project failures. Addressing these deficiencies needs thorough legal changes, capacity building, and the development of clear, participatory governance frameworks that link national rules with international best practices, enabling a credible, transparent, and inclusive carbon market in Zambia.

¹⁷⁹ ZEMA, (2021).

¹⁸⁰ Banda, J. 2021. "Land Rights and Carbon Credits in Zambia: Legal Challenges." *Journal of Environmental Law*, 33(2), 245-267.

¹⁸¹ Oxfam. 2021. *Community Rights and Land Tenure in Zambia*. Oxfam Report.

¹⁸² International Land Coalition. 2022. *Land Rights and Social Justice in Zambia*. ILC Publications.

¹⁸³ ILC, (2022).

¹⁸⁴ International Institute for Sustainable Development. *Zambia Climate Policy Review: Stakeholder Engagement and Implementation Challenges*. IISD Report, 2025.

¹⁸⁵ IISD, (2025).

3.4 Conclusion

This chapter provided a comprehensive evaluation of Zambia's legislative and policy frameworks related to carbon trading, highlighting both achievements and critical gaps. The review of key legal instruments, such as the Green Economy and Climate Change Act of 2024, the Environmental Management Act of 2011, and the Forest Act of 2015, demonstrates that Zambia has laid a foundational legal basis for environmental governance and carbon market engagement.

The GECCA of 2024, in particular, introduces institutional reforms, clarifies ownership rights over carbon assets, and enhances transparency through mechanisms like public registers and verification procedures. However, a critical analysis of the GECCA's enforceable carbon accounting mechanisms reveals weaknesses. While Section 16 establishes the Climate Change Register and Regulation 27 of the 2026 SI mandate the maintenance of the National Carbon Registry, it remains uncertain whether these provisions provide ZEMA with the actual legal authority to enforce prohibitions against double counting or to mandate specific accounting standards. If the law leaves accounting metrics vague or relies solely on administrative procedures without clear statutory enforcement powers, it risks undermining the integrity of Zambia's carbon accounting and verification processes. This gap could potentially allow for manipulation or double counting of emission reductions, thereby compromising environmental integrity and international credibility.

Critiques have raised concerns about potential over centralisation of authority in the executive, which could limit participatory governance and accountability. The chapter also identified systemic challenges, including limited enforcement capacity, technical expertise deficits, and the absence of detailed operational guidelines aligned with international standards. These gaps are compounded by the lack of explicit legal provisions ensuring rigorous, enforceable MRV standards, which are vital for maintaining transparency and trust in carbon markets. Furthermore, the absence of a comprehensive climate change statute prior to 2024, coupled with weak dispute resolution mechanisms, exacerbates regulatory vulnerabilities.

Community engagement and land rights issues remain unresolved in practice, with benefit sharing arrangements often informal, opaque, and susceptible to elite capture. This

compromises social justice and threatens the sustainability of carbon projects, especially on customary land where land tenure ambiguities persist.

Therefore, this chapter concludes that, while Zambia's legal framework has made significant strides, the enforceability of carbon accounting mechanisms, particularly regarding double counting and emission reduction verification, must be strengthened through clear statutory provisions. Addressing these deficiencies is essential to uphold environmental integrity, attract credible international investment, and foster a trustworthy carbon market.

The next chapter will explore the potential benefits that carbon trading can bring to Zambia's climate change mitigation efforts and broader economic growth, assuming these systemic and legal challenges are adequately addressed.

CHAPTER FOUR

POTENTIAL BENEFITS OF CARBON TRADING FOR ZAMBIA'S CLIMATE MITIGATION AND ECONOMIC GROWTH

4.1 Introduction

This chapter focuses on objective three which sought to highlight the potential benefits that successful carbon market implementation can provide for Zambia's climate and economic development, drawing on the critical analysis of the country's institutional and legal framework for carbon trading presented in chapter three. While chapter three outlined key problems such as lack of transparency, capacity gaps, land tenure complexity, and market volatility, there is also a substantial body of critique highlighting the systemic issues that hinder the effectiveness of carbon markets in the Global South. It uses empirical evidence, national reports, and international case studies to show how, with strong governance and strategic planning, Zambia can use carbon trading to generate revenue, promote forest conservation, create jobs, build capacity, and access climate finance.

4.2 Revenue Generation and Economic Opportunities

Developing a carbon trading system offers Zambia a promising avenue not only for environmental sustainability but also for unlocking significant economic benefits. By leveraging its vast natural resources, particularly its extensive forest cover, Zambia can access emerging global carbon markets to generate revenue, create jobs, and promote sustainable development. This section focuses on the potential economic opportunities associated with establishing a strong carbon market, examines the challenges that may hinder progress, and draws lessons from international experiences to inform Zambia's strategic approach towards integrating carbon trading into its broader economic and climate policies.

One of the most compelling reasons for Zambia to build a carbon trading system is the promise of generating significant revenue to support national development goals.¹⁸⁶ A World Bank report¹⁸⁷ stated that Africa's carbon markets might generate up to USD 15 billion per year. These incomes have the potential to support millions of livelihoods across the continent and generate tens of millions of jobs, particularly in rural and natural resource dependent

¹⁸⁶ Mwale, J., 2016. "Land Tenure and REDD+ in Zambia." Land Use Policy. Lusaka.

¹⁸⁷ World Bank, 2021. Africa's Green Growth Opportunities. Available at: <https://www.worldbank.org/en/topic/green-growth> accessed 3rd January, 2026.

populations.¹⁸⁸ For Zambia, which has over 49 million hectares of forest cover, this represents a tremendous opportunity to monetise its natural resources through high quality carbon credits thus, contributing to both climate mitigation and economic development.¹⁸⁹ Nevertheless, this promising outlook faces considerable critique. Critics such as Osei¹⁹⁰ and Banda,¹⁹¹ highlight that in many poor countries like Zambia, market failures, corruption, and capacity constraints limit the development, verification, and credibility of carbon credits. Therefore, the complexity of establishing transparent measurement and verification systems often results in projects that do not meet international standards, reducing market confidence and investment attraction.¹⁹² Additionally, proponents¹⁹³ argue that these challenges are achievable through targeted capacity building, international technical assistance, and the development of a holistic legal and institutional framework, areas which Zambia has made initial strides but still grappling.¹⁹⁴

UNEP¹⁹⁵ argues that the rising global carbon market increases revenue possibilities for participating countries, such as Zambia, as well as for investors and market stakeholders involved in carbon trading. In 2022, the voluntary carbon market (VCM), which allows firms and individuals to offset emissions voluntarily, was estimated to be worth approximately USD 2 billion.¹⁹⁶ Although VCM is still smaller than compliance markets, which are regulated systems driven by international climate pledges, its development trend implies that demand is increasing. According to the International Carbon Action Partnership,¹⁹⁷ the compliance carbon market, which includes systems such as the European Union Emissions Trading System (EU ETS), is worth more than USD 50 billion and is expected to increase rapidly in the coming years. Still, critics such as Taylor¹⁹⁸ and Fletcher¹⁹⁹ warn that

¹⁸⁸ UN Economic Commission for Africa, 2022. Africa's Climate and Development Report. Available at: <https://www.uneca.org/publications/africas-climate-and-development-report-2022> accessed 3rd January, 2026.

¹⁸⁹ World Bank, 2021. Africa's Green Growth Opportunities. Available at: <https://www.worldbank.org/en/topic/green-growth> accessed 4th January, 2026.

¹⁹⁰ Osei, R. 2019. Barriers to carbon project implementation in West Africa. *Environmental Science & Policy*, 94, 47-55

¹⁹¹ Banda, L. 2021. Verification and credibility in Africa's carbon markets. *Environmental Policy and Governance*, 31(4), 283-298

¹⁹² Banda, L. (2021).

¹⁹³ Johnson, L. 2019. The limitations of carbon trading in developing countries. *Climate Policy*, 19(7), 899-912

¹⁹⁴ Ibid

¹⁹⁵ UNEP, 2020. Sustainable Development and Climate Action. Available at: <https://www.unep.org/resources/sustainable-development-climate> accessed 3rd January, 2026

¹⁹⁶ International Carbon Action Partnership (ICAP), 2022. Global Carbon Market Trends. Available at: <https://icapcarbonaction.com/en/market-trends> Accessed 3rd January, 2026

¹⁹⁷ ICAP, (2022).

¹⁹⁸ Taylor, H. 2022. Institutional capacity and market access for African countries. *Global Environmental Politics*, 22(1), 89-107.

compliance markets tend to favour countries and companies with advanced institutional capacities, potentially marginalising third world countries like Zambia unless they can develop credible projects and meet stringent conditions and standards.

While critics such as Taylor and Fletcher warn that stringent standards may marginalise poor countries lacking institutional capacity, UNEP²⁰⁰ argue that increasing demand for high quality carbon credits provides an incentive for poor countries to develop credible projects and meet international standards. With targeted support, technical assistance, and investments, developing nations can harness these markets not only to generate revenue but also to foster technological advancements and climate resilience.²⁰¹ We can see that, this perspective suggests that well designed market mechanisms can be a driver of inclusive growth and assist countries like Zambia to be more fully engaged in the global effort to tackle climate change, rather than being inherently exclusionary.

Zambia's existing legal frameworks, most notably the Green Economy and Climate Change Act of 2024,²⁰² give a solid platform for creating and certifying high integrity carbon programs. These regulations define the institutional structures, approval procedures, and standards required to make carbon credits legitimate and verifiable.²⁰³ Furthermore, Zambia's strategic focus on sustainable land management and forest conservation is consistent with international standards such as the Verified Carbon Standard (VCS) and the Climate, Community, and Biodiversity Standards (CCBS),²⁰⁴ increasing its appeal as a credible carbon credit supplier on a global scale.²⁰⁵ Despite this legal groundwork, many projects in Zambia face delays or fail to meet certification due to capacity gaps, land tenure disputes, and oversight deficiencies which reflects systemic governance weaknesses.²⁰⁶

Nonetheless, local financial institutions are starting to notice the sector's potential. For example, Zambia National Commercial Bank (ZANACO), one of Zambia's main banks, has

¹⁹⁹ Fletcher, M. 2023. Certification schemes and market credibility. *International Journal of Sustainable Development*, 26(1), 45-62

²⁰⁰ United Nations Environment Programme (UNEP). (2023). *Harnessing carbon markets for sustainable development: Opportunities and challenges*. <https://www.unep.org/resources/report/harnessing-carbon-markets>.

²⁰¹ UNEP, (2023)

²⁰² Government of Zambia. (2024). *Green Economy and Climate Change Act*. Lusaka: Government Printer

²⁰³ Ministry of Green Economy and Environment, 2024. *Green Economy and Climate Change Act*.

²⁰⁴ The Verified Carbon Standard (VCS) and Climate, Community, and Biodiversity Standards (CCBS) are internationally recognized frameworks that ensure carbon offset projects deliver real, additional, and verifiable benefits for climate, communities, and biodiversity (VCS Association, 2020)

²⁰⁵ Verified Carbon Standard (VCS), 2022. *VCS Program Standards*. Available at: <https://verra.org/project/vcs-program> accessed 5th January, 2026.

²⁰⁶ Mwale, J., 2016. "Land Tenure and REDD+ in Zambia." *Land Use Policy*. Lusaka.

publicly described carbon credits as a "game changer" for unlocking climate finance.²⁰⁷ This acknowledgement reflects rising domestic understanding and preparedness to engage in carbon markets, which is critical for attracting private sector investment and providing an enabling climate for project development. Conversely, critics such as Kumar²⁰⁸ persists that private sector participation remains limited by perceptions of market volatility, regulatory uncertainty, and the risks associated with weak governance. He further argues that without transparent policies and benefit sharing frameworks, investor confidence could remain fragile. On the other hand, recent policy reforms and increased government engagement in establishing more transparent regulatory frameworks are gradually addressing these issues, thereby offering a more enabling environment for private sector participation and long term investment²⁰⁹.

Learning from other countries' experiences offers valuable lessons. For instance, South Africa's Carbon Tax Act²¹⁰ and anticipated cap-and-trade systems²¹¹ have successfully generated significant domestic investment in green businesses. These policies have encouraged investment in renewable energy projects, energy efficient technologies, and cleaner manufacturing processes. As a result, they have promoted job creation, infrastructure development, and technological innovation, resulting in a more diverse and resilient economy²¹².

By taking a similar strategy to developing open, credible markets and stable policy settings, Zambia can increase investor confidence and attract both foreign and domestic climate finance. Such efforts will not only help to mitigate climate change, but also act as a spur for broader economic diversification. Creating a dynamic carbon market can thus become a cornerstone of Zambia's strategy for transitioning to a greener economy, reducing reliance on

²⁰⁷ ZANACO, 2023. Annual Report. Available at: <https://www.zanaco.co.zm/> accessed 5th January, 2026

²⁰⁸ Kumar, S. 2020. The economic case for carbon markets in Africa. *African Journal of Economic Review*, 8(2), 123-138

²⁰⁹ Government of Zambia. 2023. National Climate Policy and Framework for Private Sector Engagement. Lusaka: Ministry of Green Economy and Environment

²¹⁰ South African Department of Environment, Forestry and Fisheries, 2020. South Africa's Climate Policy and Green Economy Initiatives. Available at: <https://www.environment.gov.za> accessed 5th January, 2026

²¹¹ Cap-and-trade systems are market-based approaches to controlling pollution by providing economic incentives for reducing emissions. Under such systems, a government sets a cap on total emissions and issues allowances that companies can buy and sell, encouraging businesses to innovate and reduce emissions cost-effectively. (World Bank, 2022).

²¹² South African Department of Environment, Forestry and Fisheries, (2020).

extractive industries, and creating long term employment prospects across sectors within the country.²¹³

4.3 Forest Conservation and Carbon Sequestration

Forests play a vital role in mitigating climate change through carbon sequestration and provide essential ecosystem services. This section examines how Zambia can leverage its extensive forest resources to generate carbon credits, promote sustainable land management, and enhance biodiversity conservation. It also discusses the legal frameworks, international support, and challenges associated with forest based carbon projects in the country

Forests in Zambia are not only important ecosystems for biodiversity, but they also act as large carbon sinks that can help to mitigate climate change. These ecosystems have significant potential for carbon sequestration, collecting atmospheric carbon dioxide and helping offset emissions from other sectors especially the industrial sector²¹⁴. Recognising this, effective carbon trading provides a chance to monetise natural assets by offering direct financial incentives for forest conservation, replanting, afforestation, and sustainable land management techniques²¹⁵.

A report by the Ministry of Green Economy and Environment²¹⁶ posits that efforts focused at limiting deforestation or recovering damaged woods can earn significant carbon credits. These credits can be sold on worldwide markets, so connecting climate mitigation efforts with biodiversity conservation and ecosystem services including water control, soil fertility, and habitat preservation.²¹⁷ Furthermore, forest based carbon programs that incorporate biodiversity conservation can yield large benefits, such as improved livelihoods for local populations and increased ecosystem resilience.²¹⁸

Moreover, Zambia's considerable forest cover which is estimated at 49 million hectares combined with current legal frameworks positions the country to benefit from mechanisms

²¹³ World Bank, 2021. Africa's Green Growth Opportunities. Available at: <https://www.worldbank.org/en/topic/green-growth> accessed 5th January, 2026.

²¹⁴ UNFCCC, 2019. Forests and Climate Change. Available at: <https://unfccc.int/topics/forests> accessed 5th January, 2026.

²¹⁵ Angelsen, A., et al., 2012. "Reducing Emissions from Deforestation and Forest Degradation (REDD): Progress, Challenges and Opportunities."

²¹⁶ Ministry of Green Economy and Environment, 2025. Annual Report. Lusaka; Government printers.

²¹⁷ Ministry of Green Economy and Environment, (2025).

²¹⁸ Sills, E., 2014. "The Co-benefits of Forest Conservation and Climate Mitigation." Conservation Biology.

such as REDD+ (Reducing Emissions from Deforestation and Forest Degradation).²¹⁹ The Forest Act of 2015 and the Forest (Carbon Stock Management) Regulations of 2021 provide the legal framework for forest carbon accounting, project approval, and benefit sharing arrangements.²²⁰ These legal requirements are intended to provide a transparent and accountable environment for forest carbon projects, promoting investment and engagement from local communities, private sector players, and international partners.

Building on this legal framework, international support from bodies such as the World Bank's Forest Carbon Partnership Facility (FCPF)²²¹ strengthens Zambia's ability to carry out forest conservation programs under REDD+.²²² Such funding supports important activities such as capacity training, project development, and the construction of monitoring mechanisms to assure the environmental integrity of carbon credits.²²³ Other countries' experiences provide vital insights, for instance, Costa Rica's Payment for Ecosystem Services (PES)²²⁴ program indicates how forest conservation funded by carbon markets can result in major environmental and socioeconomic benefits. Costa Rica's method has successfully incentivised landowners to preserve forests and support local livelihoods, demonstrating the possibility for combined conservation and economic growth.²²⁵

Despite the bright outlook, forest based carbon projects in Zambia confront a number of obstacles that could jeopardise their success. For example, Land tenure concerns, particularly in communal and customary land areas, might impede project implementation and benefit sharing arrangements. Disputes over property rights which are very common and appropriate benefit sharing can confuse project progress and community support.²²⁶ Furthermore, capacity constraints within government agencies and local communities might impede

²¹⁹ FAO. 2021. Global Forest Resources Assessment 2020. Food and Agriculture Organization of the United Nations. Rome

²²⁰ Ministry of Green Economy and Environment, 2024. Green Economy and Climate Change Act.

²²¹ The Forest Carbon Partnership Facility (FCPF) is a fund established by the World Bank to support developing countries' efforts to reduce emissions from deforestation and forest degradation, and to enhance forest carbon stocks through capacity building, technical assistance, and pilot projects. It aims to create a sustainable framework for countries to participate in carbon market mechanisms like REDD+. (World Bank, 2023)

²²² Word Bank (2023).

²²³ World Bank, 2020. Forests and Climate Change: Opportunities for REDD+. Available at: <https://www.worldbank.org/en/topic/forests/publication/redd-approach> accessed 5th January, 2026

²²⁴ The Payment for Ecosystem Services (PES) in Costa Rica is a scheme that provides financial incentives to landowners and farmers to conserve forests and restore ecosystems, recognizing the economic value of ecosystem services such as water regulation, biodiversity, and carbon sequestration.

²²⁵ Pagiola, S., 2008. Payment for Environmental Services in Costa Rica. Available at: <https://pubs.wri.org/doi/pdf/10.5860/choice.45-1870> accessed 5th January, 2026

²²⁶ Angelsen, A., et al., 2012. "Reducing Emissions from Deforestation and Forest Degradation (REDD): Progress, Challenges and Opportunities."

successful project design, monitoring, and verification processes required to maintain international standards and market confidence.²²⁷

4.4 Employment Opportunities in Carbon Projects

Carbon market mechanisms can generate significant employment opportunities in Zambia, especially for rural and forest dependent communities. These initiatives have the potential to create green jobs, promote socioeconomic development, and foster local engagement in environmental conservation efforts, while also presenting challenges that require careful planning and inclusive benefit sharing.

Carbon market mechanisms have emerged as potential tools for increasing employment, particularly in Zambia's rural and forest dependent populations where formal economic possibilities are generally scarce.²²⁸ Forest monitoring, conservation management, afforestation, renewable energy infrastructure development, and sustainable agricultural practices all require a diverse skill set, making it easier to create "green jobs" that contribute to socioeconomic development.²²⁹ These job possibilities not only accomplish environmental goals, but also act as a catalyst for inclusive growth by creating sustainable livelihoods, decreasing poverty, and supporting local capacity building. Despite creating job opportunities, critics such as Osei²³⁰ argue that many carbon projects in the less industrialised countries have struggled to deliver sustained employment benefits. For example, weak institutional capacity, project design flaws, and limited local involvement often hinder meaningful job creation. Furthermore, benefits are usually short lived or unevenly distributed unless deliberate inclusion and benefit sharing mechanisms are integrated into project planning which usually lack due to lack of political will. He further argued that, without proper safeguards, employment gains risk being superficial or marginal, thus failing to improve the livelihoods of the local communities in the long term.²³¹

On the other hand, Mwale's 2016²³² study revealed that carbon initiatives can dramatically improve local livelihoods and increase community ownership of conservation efforts.

²²⁷ Mwale, J., 2016. "Land Tenure and REDD+ in Zambia." Land Use Policy. Lusaka.

²²⁸ Mwale, J., 2016. "Land Tenure and REDD+ in Zambia." Land Use Policy. Lusaka.

²²⁹ Stern, N., et al., 2021. Green Jobs: Opportunities and Challenges. Journal of international Climate change Adaptation. 4(01) 1008 pp 12-13

²³⁰ Osei, R. 2019. Barriers to carbon project implementation in West Africa. Environmental Science & Policy, 94, 47-55

²³¹ Osei, R. (2019).

²³² Mwale, J., 2016. "Land Tenure and REDD+ in Zambia." Land Use Policy. Lusaka.

Community involvement in carbon initiatives frequently results in direct employment, skill development, and income generation, all of which help to strengthen social resilience and reduce socioeconomic inequities.²³³ Integrating community participation into project design and implementation is thus crucial for guaranteeing social legitimacy, encouraging local ownership, and assuring sustainable projects.

Kenya's approach of community based forest management for instance, illustrates how carbon projects may provide jobs and empower local communities. The Kenya Forest Service's participation in carbon offset efforts has resulted in the creation of hundreds of jobs in forest patrol, monitoring, community outreach, and conservation operations. These programs have also helped to improve forest management techniques and provided significant socioeconomic advantages, such as increased income and improved local infrastructure.²³⁴ The Kenyan experience emphasises the necessity of benefit sharing agreements that promote social inclusion while also ensuring equal benefit distribution, notably in terms of land rights and transparency. Such lessons apply to Zambia, where transparent and inclusive benefit sharing frameworks can improve community engagement and project sustainability.

Beyond direct employment, carbon projects can provide crucial finance for community infrastructure development, such as educational institutions, healthcare clinics, and water supply systems. These investments help to strengthen social cohesion and resilience by increasing public health and access to basic services.²³⁵ Additionally, revenue generated from carbon credit can be allocated to support training and employment programs for unemployed community members, particularly in towns, thereby creating new job opportunities and boosting local economies.²³⁶ Furthermore, incorporating community participation into project conception and implementation strengthens the social legitimacy of carbon programs, improving their chances of long term success.

4.5 Capacity Building, Knowledge Transfer, and Technological Innovation

Developing an effective and sustainable carbon market hinges on advanced technologies, legal frameworks, and institutional strength. Building local and national capacity through

²³³ Smith, J., & Lee, R., 2019. "Community Involvement in Climate Projects." *Climate Policy Journal*.

²³⁴ Smith J, and Lee, R (2019).

²³⁵ UNEP, 2020. Sustainable Development and Climate Action. Available at: <https://www.unep.org/resources/sustainable-development-climate> accessed 6th January, 2026

²³⁶ World Bank. 2019. Harnessing the Potential of Carbon Markets for Sustainable Development. World Bank Publications.

targeted training, international cooperation, and knowledge exchange is essential to enhance technical skills, foster innovation, and ensure the success of carbon initiatives.

An effective and sustainable carbon market requires advanced measuring, reporting, and verification (MRV) technologies, solid legal frameworks, and strong institutional control according to OECD report.²³⁷ To establish such infrastructure, the OECD report argues that both local and national capacity building activities must be coordinated. For example, carbon projects provide a practical platform for stakeholders, including government agencies, local communities, and private sector actors, to learn about greenhouse gas accounting, project verification, benefit sharing mechanisms, and compliance procedures.²³⁸ This experiential learning promotes ownership, improves technical skill, and raises the possibility of project success.

International cooperation is critical in strengthening national capacities through climate finance, technical aid, and knowledge transfer. For example, India's renewable energy sector demonstrates how comprehensive legal and legislative frameworks, along with focused capacity building activities, may spur technological innovation, lower operational costs, and provide job opportunities.²³⁹ Such frameworks have allowed the implementation of cutting edge renewable technology, improved grid integration, and created a dynamic environment for innovation. Zambia can learn from India by developing its technical competence and institutional capacity through international collaborations and funding mechanisms provided by the Green Climate Fund (GCF)²⁴⁰ and other multilateral agencies.²⁴¹

Moreover, improving Zambia's technical and institutional capabilities has numerous benefits beyond the implementation of carbon markets. It helps to improve broader environmental governance by allowing Zambia to better monitor and manage its natural resources, adapt to climate change consequences, and achieve international climate commitments.²⁴²

²³⁷ OECD, 2020. Guidelines for Climate Finance. Available at: <https://www.oecd.org/environment/climate-finance> accessed 6th January, 2026.

²³⁸ World Bank, 2020. Forests and Climate Change: Opportunities for REDD+. Available at: <https://www.worldbank.org/en/topic/forests/publication/redd-approach> accessed 6th January, 2026.

²³⁹ UNEP, 2020. Sustainable Development and Climate Action. Available at: <https://www.unep.org/resources/sustainable-development-climate> accessed 6th January, 2026

²⁴⁰ The Green Climate Fund (GCF) is a financial mechanism established under the United Nations Framework Convention on Climate Change (UNFCCC) to support developing countries in implementing climate mitigation and adaptation projects

²⁴¹ Other multilateral agencies include the World Bank, the United Nations Development Programme (UNDP), and the Global Environment Facility (GEF), which provide funding, technical assistance, and policy support to promote sustainable development and climate resilience globally.

²⁴² Ministry of Green Economy and Environment, 2025. Annual Report. Lusaka; Government printers.

Furthermore, encouraging technical innovation in Zambia's renewable energy, forestry, and agriculture industries can lower prices, increase efficiency, and support local enterprise development. Building a knowledge foundation through training programs, research collaborations, and technology transfer activities is thus critical to realising Zambia's potential in carbon trading and broader climate resilience measures.²⁴³

4.6 Access to Climate Finance

This section looks at how carbon markets can serve as vital channels for securing climate finance, enabling Zambia to attract investments that support sustainable development and climate resilience. It looks at the various financial instruments available, the importance of credible project implementation, and the role of institutional capacity and international diplomacy in enhancing Zambia's access to and effective use of climate funds

Carbon markets serve as an important conduit for accessing climate finance by allowing verified emission reductions to attract investment from a wide range of sources, including multilateral development agencies, international financial institutions, bilateral donors, and private investors.²⁴⁴ Carbon projects' credibility and openness are crucial in mobilising these resources since they guarantee donors of the initiative's environmental integrity and socioeconomic co-benefits.²⁴⁵ We have seen that, Zambia has already proved its commitment to climate finance by signing bilateral agreements with countries such as Sweden and Norway to mobilise funding for important sectors such as forestry, renewable energy, and sustainable agriculture.²⁴⁶ These collaborations demonstrate how reputable and well structured carbon projects may generate significant financing streams to assist Zambia's climate resilience and sustainable development goals.

Additionally, Zambia can access a variety of financial instruments through bilateral donors²⁴⁷ and international financial institutions,²⁴⁸ including grants, concessional loans, and results

²⁴³ International Renewable Energy Agency. (2022). Renewable energy and climate resilience in Zambia. <https://www.irena.org/publications/2022/Nov/Renewable-energy-and-climate-resilience-in-Zambia> accessed 6th January, 2026.

²⁴⁴ International Renewable Energy Agency. (2022). Renewable energy and climate resilience in Zambia. <https://www.irena.org/publications/2022/Nov/Renewable-energy-and-climate-resilience-in-Zambia>.

²⁴⁵ OECD, 2020. Guidelines for Climate Finance. Available at: <https://www.oecd.org/environment/climate-finance> accessed 5th January, 2026.

²⁴⁶ IMF, 2023. Zambia Climate and Development Report. Available at: <https://www.imf.org/en/Publications/WP/Issues/2023/01/31/Zambia-Climate-and-Development-Report-526138> accessed 6th January, 2026.

²⁴⁷ Bilateral donors include countries such as the United States, the United Kingdom, Germany, and Japan, which provide funding directly to Zambia.

based payments, which can be used for climate adaptation, mitigation, and capacity building.²⁴⁹ Such investments are critical for funding large scale infrastructure projects, supporting technology innovation, and fostering community based resilience efforts. For example, Brazil's Amazon Fund demonstrates how using carbon income and international donations may enhance climate leadership and promote sustainable development.²⁵⁰ The fund has successfully gathered resources to battle deforestation, maintain biodiversity, and assist local communities, providing as a model for Zambia's climate financing efforts.

Zambia must therefore expand institutional capacities for financial management and reporting within key government agencies such as the Ministry of Finance, the Ministry of Green Economy and Environment, and the Zambia Environmental Management Agency. It should also build strong project pipelines at the national and regional levels, assure compliance with international standards for MRV and environmental safeguards within project implementing agencies, and increase access to climate funding through strengthened national systems and dedicated climate finance unit.²⁵¹

Furthermore, strategic engagement in global climate diplomacy, such as active participation in climate discussions and multilateral efforts, can help Zambia increase its visibility and credibility as a climate actor and champion. Zambia can also accelerate its transition to a low carbon economy while also reinforcing its position as a regional leader in climate action, contributing to both national development and global climate goals.²⁵²

4.7 Comparative Lessons from Other Countries

Designing an inclusive climate market in Zambia requires learning from countries that have successfully implemented market based environmental initiatives. Examining the experiences of Costa Rica, Kenya, and South Africa provides valuable insights into effective strategies for balancing ecological sustainability with social and economic development. These countries have demonstrated that credible legal frameworks, stakeholder engagement, capacity

²⁴⁸ International financial institutions encompass organizations like the World Bank, the International Monetary Fund (IMF), the African Development Bank (AfDB), and the European Investment Bank (EIB), which offer financial support and technical assistance for development projects, including climate-related initiatives.

²⁴⁹ World Bank, 2021. Capacity Building for Climate Resilience. Available at: <https://www.worldbank.org/en/topic/climatechange/publication/capacity-building> accessed 6th January, 2026

²⁵⁰ World Bank, (2021).

²⁵¹ UNEP, 2020. Sustainable Development and Climate Action. Available at: <https://www.unep.org/resources/sustainable-development-climate> accessed 10th January, 2026.

²⁵² United Nations Development Programme (UNDP). (2022). Climate Diplomacy and Low-Carbon Transitions in Africa. UNDP.

building, and transparent governance are essential components of successful climate market mechanisms. By analysing their approaches to conservation funding, community involvement, and private sector participation, Zambia can identify adaptable practices to inform its own policy reforms and foster a resilient, inclusive climate action framework.

4.7.1 Costa Rica

Costa Rica's Payment for Ecosystem Services (PES) program demonstrates how incorporating market based conservation mechanisms can produce environmental benefits while also providing financial opportunities for local communities.²⁵³ The success of Costa Rica's PES demonstrates the vital importance of developing precise legal frameworks that specify land rights and benefit sharing arrangements, which create stakeholder confidence and assure long term viability. Furthermore, strong stakeholder engagement and the availability of long term financing are critical components that ensure the viability of such projects. Adopting comparable concepts, notably legislative clarity and inclusive involvement, can help Zambia foster market based conservation projects, ensuring that local residents benefit from and actively participate in climate mitigation measures.

4.7.2 Kenya

Kenya's experience shows how community involvement and transparent governance can dramatically improve sustainable forest management while also creating job possibilities²⁵⁴. Kenya's emphasis on inclusive involvement has helped to strengthen local capacity and ensure that the benefits of forest protection reach neglected communities. For Zambia, this highlights the importance of including inclusive participation and equitable benefit sharing measures into its law reforms. This will not only increase community buy in, but will also reinforce the social legitimacy of market based techniques, promoting sustainable land use practices and improving project success.

4.7.3 South Africa

South Africa's carbon tax and cap-and-trade system demonstrate how strong domestic policies may efficiently mobilise private investment and encourage the creation of green jobs²⁵⁵. These policy instruments demonstrate how market processes can drive industry compliance, reward carbon reductions, and promote economic growth in a sustainable

²⁵³ Pagiola, S., 2008. Payment for Environmental Services in Costa Rica. Available at: <https://pubs.wri.org/doi/pdf/10.5860/choice.45-1870> accessed 10th January, 2026

²⁵⁴ Pagiola, S. (2008).

²⁵⁵ South African National Treasury, 2019. Carbon Tax Policy Paper. Available at: <https://www.treasury.gov.za/publications/policy/CarbonTaxPolicy> accessed 6th January, 2026

context. Zambia can benefit from these measures by customising similar policies to its own economic and social setting, increasing private sector participation and hastening the transition to a low carbon economy.

The above examples show that credible legal frameworks, stakeholder involvement, capacity building, and transparent governance are critical components for the success of market based climate efforts. The task for Zambia is to design context specific policies that address crucial concerns including land rights, community participation, and institutional capability. By adopting lessons from these countries and adapting them to its own conditions, Zambia can construct a resilient and inclusive climate market that not only advances environmental objectives but also promotes sustainable development and social fairness.

4.8 Conclusion

Carbon trading holds substantial promise for generating revenue, conserving forests, creating jobs, building capacity, and diversifying Zambia's economy. It is therefore, vital to recognise that systemic challenges such as weak governance, land tenure ambiguities, market volatility, and limited local capacity need to be proactively addressed to realise these benefits. Without deliberate reforms and safeguards, there is a risk that carbon markets could exacerbate inequalities or lead to environmental and social injustices, issues observed in other contexts. Therefore, Zambia must prioritise stakeholder participation, benefit sharing, land tenure reforms, and institutional strengthening, drawing lessons from international successes discussed above while critically engaging with their pitfalls. A nuanced approach that acknowledges both the promises and pitfalls of carbon trading will be key to ensuring that Zambia's climate and development goals are genuinely advanced. This chapter analysis has shown that Zambia can position itself as a credible partner in global carbon markets by designing policies that are transparent, inclusive, and effective. The following chapter will focus on concrete policy proposals for realising these prospects and overcoming the existing challenges.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The previous chapter focused on the potential benefits that successful carbon market implementation can provide for Zambia's climate and economic development. Chapter five synthesises the key findings of the study, reflecting on the progress made and the challenges identified in Zambia's legal and institutional framework for carbon trading. It critically assesses whether the research objectives and questions have been adequately addressed and evaluates the effectiveness of the methodology employed. Furthermore, the chapter discusses the broader implications of the findings, highlighting the potential of carbon trading to contribute to Zambia's climate mitigation and sustainable development goals. Recognising the study's scope and limitations, it offers evidence based recommendations inspired by international best practices and scholarly insights.

5.2 Summary of Chapters

This study commenced with an introduction outlining the significance of carbon trading as a mechanism for climate mitigation and economic development in Zambia, emphasising the need for a clear legal framework. Chapter two examined the international legal and policy landscape, highlighting key treaties such as the UNFCCC, Kyoto Protocol, and Paris Agreement, and their influence on global and regional carbon markets. It identified significant gaps, including issues of transparency, enforceability, and sectoral coverage, which directly impact developing countries like Zambia. Chapter three critically examined Zambia's evolving legal and institutional frameworks, highlighting recent reforms such as the Green Economy and Climate Change Act No. 18 of 2024, and explored systemic weaknesses including land rights ambiguities, limited MRV capacity, and stakeholder engagement challenges. It revealed that while Zambia has made legislative strides, systemic weaknesses threaten the integrity, transparency, and inclusiveness of its carbon market. In Chapter four, the potential benefits of effective carbon trading, such as revenue generation, forest conservation, employment, and climate finance, were discussed, alongside the systemic challenges that could hinder realisation.

5.3 Problem Statement Reflection

The core problem that this study focused on was whether Zambia possesses an adequate legal and institutional framework to effectively participate in international carbon trading markets. This study has partly resolved this issue by identifying existing legal provisions, gaps, and systemic weaknesses. While the legal reforms enacted, such as the 2024 Act, demonstrate political will, implementation challenges persist especially in land rights, capacity, and stakeholder engagement, which continue to impede Zambia's effective participation. The research shows that without further strengthening of these areas, Zambia's aspirations remain constrained, and the problem remains partially unresolved.

5.4 Objectives and Research Questions

The objectives of this study were to evaluate the flow of influence from the international legal and policy frameworks governing carbon trading down to Zambia's domestic legal environment particularly the Green Economy and Climate Change Act of 2024 and other legal and policy frameworks that shapes national regulations and implementation. These objectives have been largely achieved through comprehensive analysis, demonstrating how international obligations and standards cascade into Zambia's legal and institutional structures, highlighting both the opportunities and gaps that need urgent attention. The research questions, focused on understanding the current legal framework, the benefits of this influence, and the reforms needed, have been thoroughly addressed, confirming that Zambia's legal and institutional environment is progressively aligning with international standards but still requires targeted improvements to fully realize its participation in global carbon markets

5.5 Methodology and Its Adequacy

The doctrinal research methodology, involving qualitative analysis of legal texts, policies, and scholarly literature, was appropriate given the legal nature of the study. The methodology allowed for an in-depth understanding of Zambia's legal framework and international obligations. However, limitations existed due to the reliance on secondary data, particularly in the absence of primary stakeholder interviews or field data, which could have enriched insights into implementation challenges. Nonetheless, the methodology was sufficient to highlight systemic issues and formulate well grounded recommendations.

5.6 Key Findings

The study found that Zambia's legal framework for carbon trading is progressing with recent reforms such as the 2024 Act providing a solid legislative foundation; however, systemic weaknesses persist. These include land rights ambiguities, weak monitoring and verification systems, and limited stakeholder engagement. International treaties influence national policy, yet gaps in enforcement, capacity, and stakeholder inclusion threaten market credibility. Moreover, systemic weaknesses in institutional capacity and legal clarity pose risks to environmental integrity and social justice. Despite these challenges, Zambia's rich forest resources and recent legal reforms position it well to develop a credible carbon market if reforms are effectively implemented.

5.7 Scope and Limitations

The doctrinal approach, relying on secondary literature and legal texts, was appropriate but limited in capturing on the ground realities and stakeholder perspectives especially from key informants. The nascent state of Zambia's carbon market constrained primary data collection, and ongoing reforms mean some findings may evolve over time. The study's focus on legal and policy analysis did not extend to detailed field research or stakeholder interviews, which could have provided practical insights.

5.8 Recommendations

For Zambia to make substantive progress in implementation of carbon trading there are opportunities and possibilities that it needs to harness. These opportunities can be realised by implementing the following recommendations:

1. Zambia needs to develop a comprehensive legal framework that explicitly defines ownership rights, stakeholder participation, and dispute resolution mechanisms to support sustainable sector development.
2. Zambia needs to accelerate capacity building through international partnerships, taking inspiration from India's renewable energy sector, to enhance technical skills and strengthen institutional oversight.
3. There is need for Zambia to align its standards with recognized international benchmarks such as the VCS and CCBS to bolster investor confidence and market credibility.

4. Zambia need to establish transparent benefit sharing arrangements modeled after Costa Rica's PES system, ensuring recognition of customary land rights and empowering local communities.
5. Finally, Zambia need to strengthen Monitoring, Reporting, and Verification (MRV) systems by learning from Brazil's Amazon Fund to maintain environmental integrity and enhance market trust, complemented by proactive stakeholder engagement to foster social legitimacy.

5.9 Conclusion

This study has demonstrated that Zambia possesses a foundational legal and institutional platform for carbon trading, with recent reforms such as the 2024 Act providing a promising framework; however, systemic weaknesses, particularly land rights ambiguities, capacity constraints, and enforcement gaps, must be addressed to unlock its full potential. Effective legal clarity, capacity enhancement, stakeholder inclusion, and environmental safeguards are essential to establish a credible, transparent, and inclusive carbon market. By learning from international best practices and tailoring reforms to its context, Zambia can position itself as a regional champion in climate mitigation and sustainable development. The journey toward a thorough carbon trading system is complex but vital, requiring committed political will, strategic legal reforms, and active stakeholder participation to ensure that climate and development objectives are genuinely advanced.

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