

# BUSINESS INVESTMENTS RESPONSE AND INFLUENCE ON CLIMATE CHANGE AND ENVIRONMENT IN ZAMBIA



**POLICY BRIEF**



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# KEY MESSAGES

- Mining and agriculture sectors are leading contributors to environmental degradation, including deforestation, water pollution, and greenhouse gas emissions, yet, they also hold potential for climate-smart innovation if properly incentivized.
- Policy frameworks are robust but fragmented, with overlaps and enforcement gaps across institutions such as ZEMA, ZDA, and sectoral ministries, undermining effective regulation implementation.
- Green financing mechanisms (e.g., green bonds, carbon credits, weather-indexed insurance) are emerging as critical tools to support sustainable business transitions, but access remains limited, especially for SMEs.
- Climate-smart agriculture and renewable energy adoption are underutilized, largely due to weak extension services, low technical capacity, and inadequate financial support.

## SUMMARY

The study reveals that mining and agriculture sectors are the most significant contributors to deforestation, water pollution, and greenhouse gas emissions. These sectors, while crucial for Zambia's economy, often operate with weak waste management systems and inadequate integration of climate risk into operational planning, leading to widespread environmental degradation. Compliance with environmental regulations varies widely across businesses, with larger companies generally performing better than small and medium-sized enterprises (SMEs). This disparity is largely due to the financial and technical constraints faced by SMEs, which limit their ability to adopt sustainable practices. Additionally, resilience-enhancing interventions, such as climate-smart agriculture and renewable energy projects, face limited uptake due to inadequate financing and weak extension services. Despite these challenges, the energy sector shows potential for positive environmental impacts through the adoption of renewable energy sources, which could significantly reduce Zambia's carbon footprint. To address these issues, the study recommends strengthening the enforcement capacity of regulatory bodies such as the Zambia Environmental Management Agency (ZEMA) to ensure compliance with environmental regulations. It also emphasizes the need to integrate climate risk assessment and environmental due diligence into licensing and monitoring processes, ensuring that businesses operate in an environmentally responsible manner. Promoting incentives for sustainable and climate-smart business practices, expanding access to green financing, and enhancing stakeholder engagement with local communities, civil society, and the private sector are critical steps toward achieving a sustainable and climate-resilient economy.

# 1.0 INTRODUCTION

Zambia stands at a critical crossroads where economic development, driven largely by business investments in key sectors, intersects with pressing environmental and climate challenges (Kazhila, 2024). This Policy Brief examines how business activities in mining, agriculture, energy, and manufacturing sectors influence and are influenced by climate change and environmental sustainability in Zambia. While business investments are vital for economic growth and job creation, they also contribute significantly to environmental degradation, including deforestation, water pollution, and greenhouse gas emissions. At the same time, businesses are increasingly recognized as essential actors in driving climate resilience through green technologies, sustainable practices, and compliance with evolving environmental policies.

***“Zambia stands at critical crossroads where economic development, driven largely by business investments in key sectors, intersects with pressing environmental and climate challenges.”***

Zambia has developed a robust policy framework aimed at balancing economic growth with environmental stewardship, including the Environmental Management Act, the National Policy on Climate Change, and the Green Economy and Climate Change Act (GRZ 2011, 2016; 2023; 2024). However, implementation gaps, weak enforcement, and limited capacity especially among SMEs hinder progress. This report synthesizes findings from sectoral analyses, policy reviews, and case studies to provide actionable recommendations for enhancing sustainable business practices, strengthening regulatory coherence, and fostering a climate-resilient economy in Zambia.

## 2.0 OBJECTIVES

- To evaluate the environmental and climate-related impacts of business investments in key sectors, identifying areas where operations contribute to environmental degradation or climate resilience.
- To review existing policies, legal frameworks, and regulations governing business activities in relation to environmental protection and climate change mitigation, assessing their effectiveness in promoting sustainable practices.
- To assess the effectiveness of these frameworks in ensuring compliance by businesses, particularly in sectors with high environmental impact.
- To provide actionable recommendations for policymakers, businesses, and stakeholders to enhance environmental sustainability and climate resilience in Zambia.

## 3.0 METHODOLOGY

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## 4.0 POLICY FRAMEWORK ANALYSIS

### 4.1 CURRENT POLICIES

**Zambia Development Agency Act of 2006.** The Zambia Development Agency Act of 2006 is designed to promote investment and economic development, with a particular focus on green investments and sustainable business practices (GRZ 2006). The Act provides tax incentives for green businesses, encouraging the adoption of environmentally friendly technologies and practices. It also establishes Special Economic Zones (SEZs) for green

industries, creating hubs for sustainable economic activities. Additionally, the Act introduces sustainability-linked investment licensing, ensuring that businesses adhere to environmental standards as a condition for operation. Public-Private Partnerships (PPPs) for climate action are also promoted under this Act, fostering collaboration between the government and private sector to address climate change challenges.

**National Policy on Climate Change (NPCC) 2016.** The National Policy on Climate Change (NPCC) 2016 provides a national framework for climate change response, promoting climate-resilient infrastructure and sustainable practices (GRZ 2016). The policy emphasizes climate-resilient investments, ensuring that infrastructure projects are designed to withstand the impacts of climate change. It also focuses on sustainable land use planning, reducing deforestation and promoting biodiversity conservation. Public awareness and education on climate change are key components of the NPCC, aiming to build a more informed and resilient society. Monitoring and evaluation mechanisms are also established to track the progress of climate change programs and ensure accountability.

Policy/Act	Objective	Relevance to Climate/Environment
<b>ZDA Act (2006)</b>	Promotes investment and economic development	Supports green investment, offers incentives for sustainable businesses
<b>NPCC (2016)</b>	National framework for climate change response	Promotes climate-resilient infrastructure and sustainable practices
<b>Green Economy and Climate Change Act (2024)</b>	Establishes financing and regulatory framework for low carbon development	Supports carbon trading, green bonds, and technology transfer
<b>EMA (2023)</b>	Enhances environmental protection and compliance	Mandates EIAs, promotes CSR and safer practices
<b>NAP (2023)</b>	Outlines adaptation plans for climate-sensitive sectors	Encourages climate-smart investments
<b>National Industrial Policy (2018–2027)</b>	Industrial growth and value addition	Encourages green manufacturing
<b>NEP (2019)</b>	Sustainable energy development	Promotes renewable energy and climate resilience
<b>Forestry Act (2015)</b>	Sustainable forest resource management	Community participation and biodiversity protection
<b>WRM Act (2011)</b>	Sustainable use of water resources	Supports climate change adaptation and pollution control
<b>Mines and Minerals Development Act (Amendment) Act, No. 29 of 2022</b>	Regulate mining operations in Zambia	Mandate for Environmental Impact Assessments (EIAs), pollution control, and post-mining rehabilitation

**Table 1. Summary of Key Environmental and Investment Policies in Zambia**

**Environmental Management No 12 Of 2011 and the Environmental Amendment Act of 2023.** The Environmental Management (Amendment) Act of 2023 enhances environmental protection and compliance by mandating Environmental Impact Assessments (EIAs) for all major development projects. The Act introduces stricter pollution control and waste management standards, ensuring that businesses minimize their environmental footprint (GRZ 2011; GRZ 2023). Incentives for eco-friendly industrial practices are also provided, encouraging businesses to adopt sustainable technologies. Public awareness and education on environmental issues are prioritized, fostering a culture of environmental responsibility among businesses and communities.

**Green Economy and Climate Change Act (No. 18 of 2024).** The Green Economy and Climate Change Act (No. 18 of 2024) establishes a financing and regulatory framework for low carbon development, supporting carbon trading and green bonds. The Act introduces carbon market regulation, enabling businesses to trade carbon credits and invest in carbon offset projects (GRZ 2024). Environmental and social safeguards are also included to ensure that business investments do not harm the environment or local communities. The Act establishes the Green Climate Fund to mobilize financial resources for climate change actions, providing businesses with access to funding for sustainable projects.

**National Green Growth Strategy (2024-2030).** The National Green Growth Strategy (2024-2030) aims to shift Zambia's development trajectory towards sustainability and environmental responsibility (GRZ 2024). The strategy includes training and awareness programs for sustainable practices, equipping businesses and communities with the knowledge and skills needed to adopt green technologies. Incentives for green technologies and sustainable infrastructure are provided, encouraging businesses to invest in renewable energy and resource-efficient practices. The strategy also promotes resource-efficient practices and social inclusiveness, ensuring that economic growth benefits all segments of society.

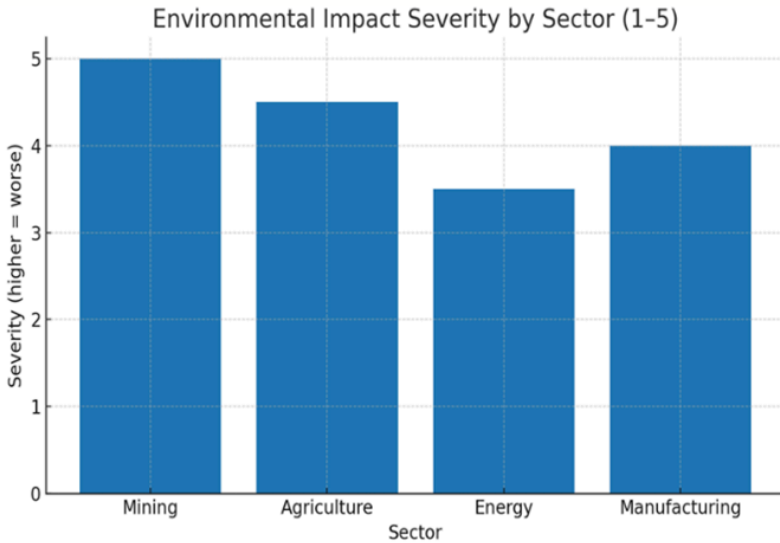
## 4.2 GAPS AND OVERLAPS

Despite the robust policy framework, several gaps and overlaps exist that hinder effective implementation. Inconsistent enforcement of environmental regulations remains a significant challenge, with regulatory bodies often lacking the resources and capacity to monitor compliance. Institutional overlaps and coordination failures among regulatory agencies lead to fragmented efforts and inefficiencies. Limited technical and financial capacity, particularly among SMEs, further exacerbates these challenges, making it difficult for businesses to comply with environmental regulations. Weak monitoring and evaluation mechanisms also limit the ability to track progress and ensure accountability, undermining the effectiveness of existing policies.

## 4.3 SECTORIAL ANALYSIS

### 4.3.1 MINING SECTOR

The mining sector is a major contributor to Zambia's economy but also a significant source of environmental degradation. Air and water pollution, biodiversity loss, greenhouse gas emissions, and legacy contamination from tailings are among the key environmental impacts associated with mining activities. Regulatory enforcement in the mining sector remains weak, and legacy contamination from past mining operations persists, posing ongoing risks to the environment and public health.



**Figure 1: Environmental Impact Severity by Sector**

Opportunities for improvement include the adoption of renewable-powered mining, reducing the sector's reliance on fossil fuels and lowering its carbon footprint. Smelter upgrades can also improve energy efficiency and reduce emissions, while mine reclamation and reforestation projects can restore degraded lands and promote biodiversity conservation.

#### 4.3.2 AGRICULTURE SECTOR

Agriculture is another critical sector for Zambia's economy, but it also contributes to environmental degradation through **deforestation, soil erosion, and water pollution from chemical overuse**. Climate-smart practices, such as conservation agriculture and agroforestry, are not widely adopted due to limited extension services and financial barriers. However, these practices offer significant potential to enhance resilience to climate change and improve soil health.

**Green finance programs** can provide the necessary funding to support the adoption of climate-smart agriculture practices, enabling farmers to transition to more sustainable farming methods. By investing in these practices, Zambia can reduce the environmental impact of agriculture while improving food security and livelihoods.

#### 4.3.3 ENERGY SECTOR

The energy sector in Zambia is heavily reliant on hydropower, which is vulnerable to climate-induced droughts. Deforestation linked to biomass use and methane emissions from reservoirs are additional environmental challenges. Weak biomass monitoring and

limited infrastructure hinder compliance with renewable energy goals, but there are opportunities to expand the use of solar and wind energy, particularly in rural areas. Mini grids for rural electrification can provide clean and reliable energy to off-grid communities, while green hydrogen exploration offers a promising avenue for sustainable energy production.

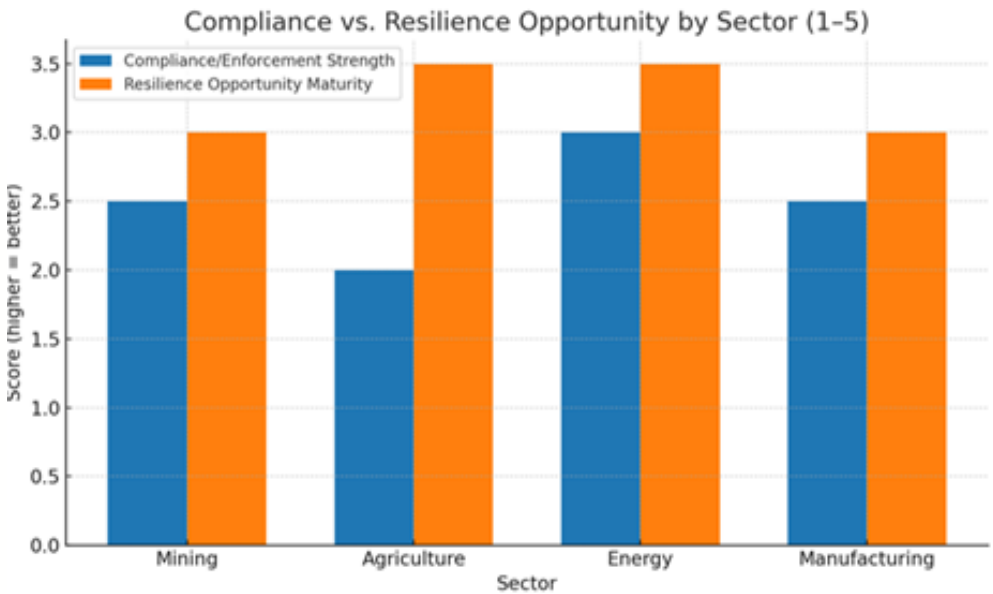
#### **4.3.4 MANUFACTURING SECTOR**

The manufacturing sector contributes to water and air pollution, industrial effluent, and cumulative pollution in key basins. ZEMA's limited capacity and the informal status of many SMEs hinder effective environmental regulation in this sector. However, circular economy initiatives, such as waste-to-energy projects and eco-packaging, can reduce waste and promote resource efficiency. The adoption of green technology can further enhance sustainability, reducing the sector's environmental footprint.

#### **4.3.5 SECTORIAL COMPLIANCE VS RESILIENCE**

Regulatory compliance is comparatively more robust in the energy sector than in agriculture, mining, or manufacturing, largely due to the introduction of recent statutory instruments and policy updates (GRZ, 2018; 2023). However, implementation remains uneven particularly among small and medium enterprises (SMEs) and in the management of electronic waste—while enforcement in the mining sector continues to depend heavily on capacity-building initiatives rather than systematic regulatory oversight.

In contrast, the concept of “resilience opportunity” is advancing most rapidly within energy and agriculture. This is demonstrated by significant investments in grid-scale and dedicated solar projects, including Bangweulu (54 MW), Ngonye (34 MW), and the newly commissioned 100 MW Chisamba plant supplying First Quantum Minerals (FQM). Complementing these are rural mini-grid expansions and landscape-level interventions such as climate-smart agriculture initiatives under the Zambia Integrated Forest Landscape Project, which collectively signal a shift toward more adaptive, low-carbon development pathways.



*Figure 2: Compliance Strength vs. Resilience Opportunity Maturity*

## 5.0 STRATEGIES FOR PROMOTING SUSTAINABLE BUSINESS PRACTICES

**Adopt Renewable Energy Technologies** Encouraging businesses to transition to renewable energy sources, such as solar and wind power, can significantly reduce Zambia's carbon footprint. Incentives for investments in renewable energy projects can accelerate this transition, while partnerships between businesses and renewable energy providers can facilitate the adoption of clean energy technologies.

**Implement Circular Economy Practices** Promoting waste reduction, recycling, and resource efficiency can minimize the environmental impact of business operations. Encouraging businesses to design products for durability, reparability, and recyclability can further enhance sustainability. Developing infrastructure for waste management can support these efforts, ensuring that waste is properly managed and recycled.

**Promote Climate-Smart Agriculture** Climate-smart agriculture practices, such as conservation agriculture and agroforestry, can enhance resilience to climate change and improve soil health (GRZ 2011). Providing training and resources to smallholder farmers can support the adoption of these practices, while private sector initiatives can promote sustainable agriculture and improve food security.

**Enhance Corporate Social Responsibility (CSR) Initiatives** Encouraging businesses to develop and implement CSR initiatives aligned with environmental sustainability goals can enhance their social license to operate. Ensuring that CSR initiatives are sustainable, impactful, and aligned with community needs can maximize their benefits. Recognizing and rewarding businesses that demonstrate excellence in CSR can also incentivize other businesses to follow suit.

## 6.0 STAKEHOLDER ENGAGEMENT AND ADVOCACY

**Establish Multi-Stakeholder Platforms** Creating platforms for dialogue, collaboration, and decision-making on environmental sustainability can foster inclusive and participatory governance. Ensuring that these platforms are inclusive and representative of diverse interests can enhance their effectiveness. Establishing a secretariat or coordinating body to manage the platforms can ensure that they operate efficiently and achieve their objectives.

**Strengthen Public-Private Partnerships (PPPs)** PPPs can leverage the strengths of both the public and private sectors to promote environmental sustainability. Developing and implementing PPP projects that address environmental challenges can provide innovative solutions to complex problems. Providing technical assistance and capacity-building support can encourage private sector participation in PPPs, ensuring that businesses contribute to sustainable development.

**Advocate for Policy Reforms** Conducting research and analysis to identify gaps in existing policies and regulations can inform the development of more effective environmental governance frameworks. Engaging with policymakers, businesses, and the public to build support for policy reforms can ensure that these reforms are widely accepted and implemented.

**Empower Local Communities** Providing local communities with the knowledge, skills, and resources to participate in environmental governance can enhance their ability to advocate for their rights and contribute to sustainable development. Developing and delivering capacity-building programs can empower communities to engage in environmental decision-making. Establishing community funds or grant programs can support local initiatives that promote sustainability and resilience.

## 7.0 CONCLUSION

Zambia stands at a critical juncture where aligning business investments with environmental sustainability and climate resilience is both a necessity and an opportunity. Strengthening enforcement, harmonizing policies, expanding access to green finance, and fostering inclusive stakeholder engagement are essential steps toward achieving the RISE project's vision of a prosperous, sustainable, and climate-resilient Zambia. By implementing the recommendations outlined in this policy brief, Zambia can balance economic growth with environmental protection, advancing towards a sustainable and prosperous future.

## 8.0 POLICY RECOMMENDATIONS

**Strengthen Enforcement of Environmental Regulations** To improve compliance with environmental regulations, regulatory bodies like ZEMA must be empowered with additional resources and technical expertise. A centralized database should be established to track compliance records and violations, ensuring transparency and accountability. Implementing a tiered penalty system for non-compliance can also deter environmental violations and encourage businesses to adopt sustainable practices.

**Harmonize Policy Frameworks Across Sectors** Developing a unified policy framework that aligns environmental regulations across sectors can reduce overlaps and improve coordination. Establishing a cross-sectoral task force to address policy overlaps and coordination failures can further enhance the effectiveness of environmental governance.

**Promote Green Financing Mechanisms** Green financing instruments, such as green bonds and blended finance models, can mobilize resources for sustainable investments. Collaborating with international organizations to mobilize resources for green financing initiatives can provide businesses with the funding needed to adopt green technologies. Tax incentives and subsidies for businesses adopting green technologies can further encourage sustainable practices.

**Enhance Public Awareness and Education** Educational programs to raise awareness about environmental regulations and sustainable practices are essential for building a culture of environmental responsibility. Partnering with civil society organizations and academic institutions to design and deliver educational content can ensure that businesses and communities are well-informed about environmental issues.

# 9.0 ACTIONABLE RECOMMENDATIONS

## For the Government and Policymakers

- Enhance ZEMA's capacity with adequate funding, technical tools, and personnel.
- Implement a digital compliance tracking system and tiered penalty structure for violations.
- Integrate climate risk assessments into all sectoral planning and investment approvals.
- Develop green bonds, blended finance models, and risk-sharing instruments to support sustainable investments.
- Offer tax incentives for renewable energy, energy efficiency, and circular economy initiatives.
- Launch national campaigns on environmental compliance and climate resilience.

## For the Private Sector

- Invest in renewable energy, waste reduction, and water recycling technologies.
- Participate in public-private partnerships for green infrastructure and climate adaptation projects.
- Support community-based conservation and CSR programs that align with national sustainability goals.

## For Civil Society and Development Partners

- Support independent monitoring and reporting of environmental compliance.
- Facilitate community-led environmental audits and grievance mechanisms.
- Provide training and resources to SMEs, farmers, and local governments on sustainable practices.
- Promote gender-inclusive and youth-focused climate action programs.

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