# IMPACT OF ENVIRONMENTAL POLICY ON ENVIRONMENTAL PERFORMANCE: A SWOT ANALYSIS OF ZAMBIA AIRPORTS CORPORATION LIMITED

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## ABSTRACT

*The Zambia Airports Corporation Limited is a Private Limited Company, which is owned by the Government of the Republic of Zambia. The establishment of the Corporation is reiterated by the Civil Aviation Act No. 5 of 2016, which repealed and replaced the Aviation Act, Chapter 444 of the Laws of Zambia. The purpose of this study was to investigate the effects of the Zambia Airports Corporation Limited's revised Environmental Policy on their Environmental Performance. This was achieved by conducting a SWOT analysis and computing statistical analysis to measure correlations. A mixed methods design was adopted in this study and a purposive sampling procedure was used. A semi-structured questionnaire was administered to the Safety, Health, Environment and Quality department in the Corporation. The results of the study showed that active Corporate Social Responsibility (CSR), certification by SABS in the ISO9001: 2015 – Quality assurance and wildlife hazard management were the strengths of Zambia Airports Corporation Limited's policy. The weaknesses included a lack of monitoring mechanism of environmental performance indicators and hence affecting the quality of environmental data reported in the annual reports. The opportunities included certification in the ISO 14001: 2015 – Environmental Management Systems standard and costing and budgeting for environmental management activities. The threats identified were ineffective implementation of the policy, thereby, compromising the essence of the Corporation's environmental objectives and targets. The study recommended that the Corporation perform Environmental Performance Evaluation (EPE), environmental disclosure or reporting and finally work on getting certified in the ISO 14001:2015 standard. This will promote the Corporation 's corporate image among other environmental sensitive organizations. The study established that there was was a strong, positive and significant correlation between ZACL's Environmental Policy and Environmental Practices and that there was no was no significant correlation between ZACL's Environmental Policy and Environmental Performance.*


**Keywords:** Environmental policy, Environmental performance, SWOT analysis, Zambia Airports Corporation Limited, Corporate social eesponsibility, ISO Standards, Environmental management systems, Environmental performance evaluation.

## INTRODUCTION

Policymakers at all levels, spanning from international to local, are grappling with growing concerns regarding the repercussions of anthropogenic (human-caused) activities on the Earth's climate. The consensus among atmospheric scientists underscores the impact of human activities on elevating atmospheric concentrations of greenhouse gases (GHGs), contributing to the overarching challenge of global temperature rise and its cascading effects on regional and local climates. Notably, among these anthropogenic activities, aviation operations stand out as



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significant contributors to GHG emissions, primarily stemming from the combustion of carbonaceous fuels in aircraft engines.

As the scientific community intensifies its efforts to deepen our understanding of the broader implications of aircraft operations on the global climate, it is imperative not to overlook the specific research needs at the airport level. In response to the escalating environmental concerns, state and local governments are increasingly pressuring airports to not only disclose inventories of GHG emissions but also to take active measures to minimize emissions from sources under their control. It is within this context that this study focuses on the Zambia Airports Corporation Limited (ZACL) and endeavours to investigate the effects of its revised Environmental Policy on environmental performance.

Moreover, beyond the direct emissions from aircraft operations, airports serve as hubs for various other anthropogenic activities contributing to GHGs. These include the combustion of petroleum-based fuels in ground access vehicles, facility electrical power generation, fire training exercises, and various maintenance and operations activities, as highlighted by Klin et al. (2009).

By delving into the intricacies of ZACL's Environmental Policy and its impact on environmental performance, this research aims to contribute valuable insights to the ongoing discourse on sustainable aviation practices. The study not only responds to the immediate needs of ZACL but also aligns with broader global efforts to enhance the environmental sustainability of aviation activities at the regional and local levels.

## LITERATURE REVIEW

Environmental challenges associated with airports pose a multifaceted and intricate landscape, presenting inefficiencies in both the preparation of environmental documentation for proposed development and the assurance of compliance with relevant regulatory, policy, and other standards. This complexity is underscored by the nuanced nature of aviation activities, necessitating a comprehensive understanding of environmental processes to address the evolving challenges effectively.

The heightened attention towards additional capacity at congested airports by the aviation industry and the US Congress in the fall of 2000 marked a pivotal moment in recognizing the need for sustainable airport development. Concurrently, governmental and business entities intensified their efforts to evaluate the efficacy of existing environmental processes within the aviation context. The primary objective was to assess how well these processes aligned with aviation objectives and to identify strategies for more effectively meeting environmental goals (Klin et al., 2009).

Despite commendable efforts to bridge the gap between aviation-related activities and environmental considerations, a substantial knowledge deficit persists in the realm of aviation-related environmental review and compliance processes, as noted by (Klin et al., 2009). This gap underscores the critical importance of continued research and analysis, particularly at the airport level, to enhance our collective understanding of environmental challenges and to facilitate the development of more streamlined and effective processes for sustainable airport operations.

In the context of the Zambia Airports Corporation Limited (ZACL), this study aims to contribute to the on-going discourse on airport-specific environmental challenges by investigating the impact of the revised Environmental Policy on environmental performance. By addressing this knowledge gap, the research seeks not only to benefit ZACL but also to offer insights that can contribute to the broader understanding of sustainable practices within the aviation industry.

The significance of green aviation has garnered attention in contemporary literature, with various studies focusing on developed countries. For instance, Gasco et al., Grampella et al., Skouloudis et al., Upham et al., Lee et al., and Wu et al as cited by Kumar et al. (2020) have



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extensively explored sustainable practices within the aviation industry. However, it is notable that the majority of these studies have primarily cantered around developed nations, leaving a substantial gap in understanding the challenges and opportunities faced by emerging countries, particularly in the context of green aviation.

The existing literature highlights a dearth of studies addressing the long-term viability of various industrial sectors, including aviation, especially in the context of emerging economies. This knowledge gap raises concerns about the applicability and effectiveness of green aviation practices in regions undergoing rapid development and transformation. As the aviation sector in these countries plays a crucial role in economic growth, there is a pressing need for research that comprehensively investigates the environmental policies and practices within these contexts.

Importantly, there is a notable scarcity of studies specifically addressing aviation environmental policy in Zambia. Despite the increasing global emphasis on sustainable aviation practices, the unique challenges and opportunities faced by airports in Zambia have not been thoroughly explored. Recognizing this gap, the current study focuses on the Zambia Airports Corporation Limited (ZACL), contributing to the limited body of research on aviation environmental policy in emerging economies.

## THEORETICAL FRAMEWORK

Theoretical frameworks play a pivotal role in shaping the lens through which environmental policies are evaluated, and in this study, three interconnected theories guide the examination of the Zambia Airports Corporation Limited's (ZACL) Environmental Policy and its impact on environmental performance.

### Corporate Social Responsibility (CSR) Theory

CSR theory serves as a crucial lens through which the study assesses the role of the environmental policy in fulfilling ZACL's commitment to social and environmental responsibility. The focus lies on understanding how the environmental policy actively contributes to ZACL's CSR initiatives, particularly in terms of stakeholder engagement, community relations, and the broader societal impact of the organization's sustainability efforts. This theory provides a framework for evaluating the ethical and social dimensions of the environmental policy, emphasizing the corporation's role as a responsible and conscientious actor in its operational environment.

### Institutional Theory

Institutional theory provides the overarching framework for understanding how organizations respond to external pressures and adopt environmental practices. In the specific context of ZACL, institutional theory guides the examination of how the corporation's environmental policy aligns with institutional norms at both national and international levels. It aids in exploring the external pressures, expectations, and legitimacy concerns that influence the adoption and implementation of the policy. By adopting an institutional perspective, the study gains insights into how ZACL positions itself within the broader environmental context, responding to institutional norms and expectations.

### Stakeholders' Theory (ST)

Stakeholders' theory, as articulated by Friedman (2007), argues that successful businesses must comprehend their interactions not only with traditional groups like suppliers, customers, and



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workers but also with non-traditional groups such as government, environmentalists, and special interest groups. A fundamental concept of this theory is that firms are social actors, compelled to respond to pressures and requests from their stakeholders to achieve strategic goals. In the context of ZACL, Stakeholders' Theory aids in identifying and understanding the diverse groups influencing or influenced by the corporation's environmental policy. It accentuates the importance of considering a broad spectrum of stakeholders in the formulation and implementation of the policy.

The integration of these theories provides a comprehensive framework for examining the effects of the environmental policy on the environmental performance of ZACL. Institutional theory sheds light on external influences and pressures; CSR theory addresses the social and ethical dimensions of the environmental policy, while Stakeholders' theory underscores the importance of a holistic approach considering a diverse range of stakeholders. This triangulated theoretical lens allows for a nuanced understanding of the complex interplay between the environmental policy and the broader organizational and societal dynamics within the context of ZACL.

## METHODOLOGY

This study employs a mixed-methods research design, combining both quantitative and qualitative approaches to holistically investigate the effects of the environmental policy on the environmental performance of Zambia Airports Corporation Limited (ZACL). Additionally, a SWOT analysis is seamlessly incorporated into the research design to offer a strategic evaluation of the environmental policy.

### Qualitative Approach

The qualitative component of this study is analytical and explanatory, facilitating an in-depth investigation into the environmental policy of ZACL. This approach delves into the nuances of the policy, uncovering its strengths, weaknesses, opportunities, and threats. Rubin & Babbie (2005) emphasize that qualitative research provides a profound understanding of phenomena in their natural setting. In this context, the qualitative approach enables the exploration of the intricacies of ZACL's environmental policy and offers explanatory insights into its multifaceted dimensions.

### Quantitative Approach

The quantitative component focuses on investigating the relationship between variables, allowing the testing of objective theories. Monitoring variables through instruments provides numerical data, which can be analysed using statistical processes (Creswell, 2014). This approach is instrumental in objectively assessing the impact of ZACL's environmental policy on its environmental performance.

### Mixed Methods Approach

The mixed-methods approach employed in this study integrates both qualitative and quantitative research methodologies. This approach aligns with Creswell's (2014) framework, encompassing philosophical assumptions, the application of both qualitative and quantitative methodologies, and the strategic integration of these methods within the study. By adopting a mixed-methods approach, this study aims to enrich the depth and breadth of its findings, providing a



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comprehensive understanding of the intricate relationship between the environmental policy and environmental performance at ZACL.

## SWOT Analysis

The SWOT analysis is seamlessly integrated into the overall research design, offering a structured and strategic evaluation of ZACL's environmental policy. This method enhances the comprehensiveness of the study by systematically identifying and analysing the internal strengths and weaknesses, as well as external opportunities and threats related to the environmental policy. The SWOT analysis serves as a valuable tool in shaping the qualitative and quantitative dimensions of the research, providing a strategic lens through which to assess the overall effectiveness of ZACL's environmental policy.

The study population included all international airports in Zambia managed by the Zambia Airports Corporation Limited (ZACL). This encompassed the Kenneth Kaunda International Airport (KKIA) in Lusaka, Simon Mwansa Kapwepwe International Airport (SMKIA) in Ndola, Harry Mwaanga Nkumbula International Airport (HMNIA) in Livingstone, and Mfuwe International Airport (MIA) in Mfuwe, along with associated aerodromes.

## Quantitative Data Collection and Analysis

## Quantitative data analysis

Statistical software was employed for the analysis of quantitative data. Descriptive statistics were used to summarize and interpret numerical findings. Specifically, a Pearson Correlation test was applied to assess the relationship between environmental performance and Zambia Airports Corporation Limited’s environmental policy.

## Qualitative data collection and analysis

Thematic analysis was utilized to identify recurring themes and patterns in the qualitative data obtained from interviews and focus group discussions. Qualitative data were systematically coded, categorized, and interpreted to provide a nuanced understanding of organizational dynamics related to the environmental policy.

## Ethical considerations

Ethical issues, such as informed consent, confidentiality, and consequences for the interviewee, were conscientiously taken into account during qualitative interviews (Kvale, 1996). The study adhered to rigorous ethical standards, ensuring participant confidentiality, obtaining informed consent, and responsibly handling sensitive information. Approval for the study was obtained from the University of Lusaka. Subsequently, through the institution, informed consent was secured from the Zambia Airports Corporation Limited to conduct the study. The ethical considerations undertaken throughout the research process were aligned with established guidelines and standards, prioritizing the well-being and privacy of participants.

This methodological approach, combining rigorous quantitative analysis with thorough qualitative examination, ensured a comprehensive and ethical exploration of the effects of Zambia Airports Corporation Limited’s environmental policy on environmental performance.



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# RESULTS

## SWOT Analysis Results

The comprehensive understanding of Zambia Airports Corporation Limited's (ZACL) environmental policy and its impact on environmental performance was facilitated by data collected through self-observations, structured interviews, and a meticulous study of available annual reports (Table 1).

## Strengths Analysis

**Table 1**
**SWOT ANALYSIS OF ZACL ENVIRONMENTAL POLICY - INTERNAL FACTORS (STRENGTHS)**

| S/N | Internal Factors – Strengths identified |
|---|---|
| 1 | Compliance to environmental legislation |
| 2 | Easy access to accurate and relevant information |
| 3 | Availability of timely data |
| 4 | Corporate Social Responsibility |
| 5 | Regular equipment serviceability checks and timely implementation of corrective action |
| 6 | Developed a comprehensive monitoring mechanism of wildlife activities and strike incidences within the aerodromes |
| 7 | Developed/Reviewed the Wildlife Hazard Management Plans for all international airports and Solwezi |
| 8 | ISO9001:2015 Certification by SABS. Certificate valid from 3rd March 2020 to 2nd March 2023 |
| 9 | Implementation of EMS according to ISO14001:2015 |

Source: Field Data

## Weaknesses Analysis

**Table 2**
**SWOT ANALYSIS OF ZACL ENVIRONMENTAL POLICY - INTERNAL FACTORS (WEAKNESSES)**

| S/N | Internal Factors – Weaknesses identified |
|---|---|
| 1 | No mechanism for measuring environmental performance indicators. |
| 2 | Lack of information in the annual reports stating the environmental aspects emanating from the Corporation's activities and how they are being managed |

Source: Field Data

## Opportunities Analysis

**Table 3**
**SWOT ANALYSIS OF ZACL ENVIRONMENTAL POLICY - EXTERNAL FACTORS (OPPORTUNITIES)**

| S/N | External Factors – Opportunities identified |
|---|---|
| 1 | Improvement in environmental data reporting and presentation in annual reports |
| 2 | Improvement in the quality and content of environmental data in annual reports |
| 3 | Productive, efficient, and effective implementation of the policy |
| 4 | Costing and budget for environmental management activities |
| 5 | ISO 14001:2015 certification |

Source: Field Data



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## Threats Analysis

| Table 4<br>SWOT ANALYSIS OF ZACL ENVIRONMENTAL POLICY - EXTERNAL FACTORS (THREATS) | |
|---|---|
| **S/N** | **External Factors – Threats identified** |
| 1 | Ineffective and inefficient implementation of policy |
| 2 | Inadequate data for environmental reporting |

Source: Field Data

The findings presented in these tables offer a comprehensive overview of the internal and external factors influencing ZACL's environmental policy, providing valuable insights into the organization's strengths, weaknesses, opportunities, and threats. These results serve as a foundation for subsequent discussions and recommendations based on the SWOT analysis outcomes (Table 2, Table 3, Table 4).

## Statistical Test Results

| Table 5<br>TESTS OF NORMALITY TABLE | | |
|---|---|---|
| **Variable** | **Kolmogorov-Smirnov** | **Shapiro-Wilk** |
| Practices | 0.262 (df=4, Sig.) | 0.895 (df=4, .408) |
| Policy | 0.283 (df=4, Sig.) | 0.863 (df=4, .272) |
| Performance | 0.307 (df=4, Sig.) | 0.729 (df=4, .024) |
| a. Lilliefors Significance Correction | | |

The normality tests were conducted using both Kolmogorov-Smirnov and Shapiro-Wilk statistics for the variables - Practices, Policy, and Performance. The results indicate that, for Practices and Policy, the assumption of normality is met ($p > 0.05$). However, for Performance, the Shapiro-Wilk test indicates a significant deviation from normality ($p = 0.024$) (Table 5).

These normality tests are crucial for informing the subsequent statistical analyses. While Practices and Policy can be assumed to follow a normal distribution, the violation of normality for Performance suggests that non-parametric tests or alternative statistical approaches may be more appropriate for this particular variable.

These results contribute valuable insights into the distributional characteristics of the variables under investigation, providing a foundation for the appropriate application of statistical methods in the subsequent analysis of the data.

## Hypothesis Testing

Null Hypothesis (H0): There is no significant correlation between ZACL's environmental policy and their environmental practices.

A Pearson's Correlation was employed to test the null hypothesis. Table 6 presents the results of the analysis.

| TABLE 6<br>PEARSON'S CORRELATION ANALYSIS RESULTS | | |
|---|---|---|
| **Correlations** | **Policy** | **Practices** |
| Policy | 1 | 0.969* |
| | | (0.031) |
| Practices | 0.969* | 1 |
| | (0.031) | |

*Correlation is significant at the 0.05 level (2-tailed).



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The Pearson's Correlation analysis indicates a significant positive correlation between ZACL's environmental policy and their environmental practices (r = 0.969, p = 0.031). The correlation is statistically significant at the 0.05 level (2-tailed), suggesting a strong association between the environmental policy and practices at ZACL.

Null Hypothesis (H0): There is no significant correlation between ZACL's environmental policy and their environmental performance.

A Spearman's Correlation was employed to test the null hypothesis. Table 7 presents the results of the analysis.

**TABLE 7**
**SPEARMAN'S CORRELATION ANALYSIS RESULTS**

| Correlations | Policy | Performance |
|---|---|---|
| Spearman's rho | 1.000 | 0.943 |
| | | (0.057) |
| PERFORMANCE | 0.943 | 1 |
| | (0.057) | |

The Spearman's Correlation analysis indicates a strong positive correlation between ZACL's environmental policy and their environmental performance (ρ = 0.943, p = 0.057). Although the correlation is not statistically significant at the conventional 0.05 level (2-tailed), the positive association suggests a noteworthy relationship between the environmental policy and performance.

These hypothesis testing results provide insights into the associations between ZACL's environmental policy, practices, and performance, offering valuable information for understanding the impact and effectiveness of the environmental policy at Zambia Airports Corporation Limited.

## DISCUSSION

### SWOT Analysis Strengths

#### Compliance and legal framework

The data obtained from key informant interviews and annual report evaluations underscored the Zambia Airports Corporation Limited's (ZACL) commitment to compliance with national and global laws and regulations. The absence of records indicating non-compliance or environmental audits due to suspected non-compliance reflects the Corporation's adherence to legal requirements. ZACL has systematically identified and documented its compliance obligations, including internal and external issues affecting the environmental management system. This proactive approach showcases ZACL's dedication to legal and regulatory responsibilities.

#### Transparency and stakeholder engagement

ZACL's commitment to transparency is evident through the ready availability of information on its website, including annual reports and real-time updates. The Corporation's annual stakeholder meeting further exemplifies its dedication to engaging with stakeholders. Stakeholder engagement, as highlighted by Polonsky (1995), is a vital aspect of organizational strategy development. ZACL's engagement with stakeholders, including aviation authorities, tourism agencies, and airlines, demonstrates a concerted effort to understand and meet stakeholder expectations, fostering a collaborative approach to organizational growth.



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**Corporate social responsibility (CSR)**

ZACL's active involvement in Corporate Social Responsibility is evident from its financial contributions to various initiatives, such as education for orphans and vulnerable children and health through water and sanitation. This commitment, despite financial challenges, reflects ZACL's recognition of its societal responsibilities and its endeavour to contribute positively to the communities it serves.

**ISO certifications and integrated management system (IMS)**

ZACL's attainment of ISO 9001:2015 certification by the South African Bureau of Standards (SABS) showcases a commitment to quality assurance. The potential integration of ISO 9001:2015 with ISO 14001:2015 offers a holistic approach to environmental and quality management. An integrated management system, as defined by the British Standards Institution (BSI), streamlines organizational processes, reducing time and effort required to meet various management system requirements. This integration aligns with ZACL's pursuit of efficiency and excellence in its operations.

**Sustainability and stakeholder consultation**

The study aligns with McManners' (2016) assertion that sustainability in the aviation sector is intertwined with stakeholder consultation. ZACL's engagement with stakeholders and the growing emphasis on Corporate Sustainability and Responsibility reflect an evolving understanding within the aviation industry. The study emphasizes the interconnectedness of sustainability with the three pillars of the economy, environment, and society, as defined by the United Nations' *"Our Common Future"* report (Brundtland Commission, 1987). ZACL's efforts to satisfy expectations in each of these dimensions contribute to its overall sustainability.

**Integrated management system (IMS)**

The study recognizes ZACL's adherence to an integrated management system (IMS) by pursuing ISO certifications. An IMS merges quality and environmental management systems, promoting a cohesive organizational structure. ZACL's commitment to an integrated approach aligns with contemporary management practices aimed at enhancing efficiency and overall performance, (The British Standards Institution, 2016).

In summary, the strengths identified in ZACL's environmental policy, including compliance, transparency, stakeholder engagement, CSR, ISO certifications, and an integrated management system, collectively position the Corporation as a responsible and proactive entity within the aviation industry. These strengths provide ZACL with a competitive advantage and reinforce its commitment to sustainable and responsible business practices.

## Weaknesses

**Lack of mechanism for measuring environmental performance**

One of the key weaknesses identified in the Zambia Airports Corporation Limited's (ZACL) environmental policy is the absence of a mechanism for measuring environmental performance indicators. The study revealed that, while the Corporation has set specific and measurable targets in its environmental policy, there is no established mechanism for quantifying and monitoring progress towards these objectives. The absence of a structured monitoring system hinders ZACL's ability to assess its Environmental Management System (EMS) effectiveness, track progress, and demonstrate commitment to environmental sustainability.

**Insufficient environmental data in annual reports**

The study found that ZACL's annual reports lack essential information on environmental aspects resulting from the Corporation's activities and how these aspects are managed. Despite committing to environmental protection, sustainability, and compliance with applicable environmental laws, the reports do not provide detailed insights into specific environmental



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aspects identified by ZACL. The absence of environmental performance indicators in the reports further limits stakeholders' understanding of ZACL's environmental impact and the Corporation's progress in meeting its environmental objectives.

**Limited monitoring of emissions, discharges, and waste**

The study identified a weakness in ZACL's environmental policy concerning the quantification and evaluation of emissions, discharges, and waste resulting from airport operations. The absence of a monitoring mechanism for environmental aspects related to the transport of employees, passengers, freight, goods, and waste poses challenges in assessing the environmental impact of ZACL's activities. Without robust monitoring, ZACL may face difficulties in understanding the full scope of its environmental footprint and implementing targeted improvements.

**Inefficiency in monitoring and tracking environmental objectives**

While ZACL has established an Environmental Management System (EMS) and defined environmental objectives and targets, the study revealed a lack of effective mechanisms to monitor and track progress. The absence of a structured monitoring system not only limits ZACL's ability to evaluate the success of its environmental strategies but also creates vulnerabilities by overlooking specific areas that require improvement. This inefficiency in monitoring and tracking may compromise ZACL's ability to adapt and respond to evolving environmental challenges.

**Non-Compliance with ISO14001:2015 standards**

The study identified a misalignment between ZACL's environmental policy and the requirements of ISO14001:2015. The standard mandates organizations to establish clear, measurable, monitored, communicated, updated, and resourced environmental objectives and plans. The absence of such mechanisms at ZACL indicates a deviation from ISO14001:2015 standards. This non-compliance may impact ZACL's overall organizational performance and weaken its competitive position compared to competitors who adhere more closely to international environmental management standards.

In summary, the weaknesses identified in ZACL's environmental policy, including the lack of mechanisms for measuring environmental performance, insufficient environmental data in annual reports, limited monitoring of emissions and waste, inefficiency in tracking environmental objectives, and non-compliance with ISO14001:2015 standards highlight areas where the Corporation can enhance its environmental management practices. Addressing these weaknesses presents opportunities for improvement, aligning ZACL more closely with international standards and enhancing its competitiveness in the aviation industry.

## Opportunities

**Detailed environmental reporting**

One of the significant opportunities identified in the Zambia Airports Corporation Limited's (ZACL) environmental policy is the potential for more detailed environmental reporting. The study suggests that ZACL can enhance its environmental reporting practices by providing specific and comprehensive information on key environmental aspects. Detailed reporting can include information on emissions trading schemes, greenhouse gas emissions, energy consumption, water usage, waste management, and environmental policies. By embracing more transparent and thorough reporting, ZACL can not only meet stakeholder expectations but also position itself as a leader in environmental management within the aviation industry.

**Environmental consideration in budgeting**

The study highlights an opportunity for ZACL to incorporate environmental considerations during the budgeting process for company activities. Unlike the current practice of



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allocating funds reactively when environmental incidents occur, integrating environmental budgeting proactively aligns with sustainable business practices. Organizations that embed environmental thinking in their budgetary processes are better positioned to identify opportunities for green technology adoption, innovation, and pollution prevention. This approach contributes to corporate image enhancement and builds trust among stakeholders.

**Certification in ISO 14001:2015 standard**

The study emphasizes the opportunity for ZACL to pursue certification in the ISO 14001:2015 standard. This international standard for Environmental Management Systems (EMS) sets clear guidelines for establishing, implementing, maintaining, and improving environmental performance. Certification in ISO 14001:2015 not only demonstrates ZACL's commitment to environmental responsibility but also aligns its practices with globally recognized standards. Achieving ISO 14001:2015 certification provides a structured framework for environmental management and can enhance ZACL's competitive advantage.

**Investor and stakeholder engagement**

The study underscores the importance of environmental disclosures as a strategic opportunity for ZACL. Investors and stakeholders are increasingly interested in the quality and depth of environmental data reported by organizations. ZACL can capitalize on this opportunity by providing relevant narrative and statistical information regarding environmental risks, management policies, and overall environmental performance. In-depth disclosures, including information on environmental aspects, risks, measures, and contributions to sustainability projects, can positively influence investor sentiment and enhance ZACL's stock market value.

**Compliance and competitiveness**

Porter's (1991) argument that strict environmental legislations foster competitiveness through triggering innovation and upgrading is highlighted as an opportunity for ZACL. Instead of viewing compliance obligations as a mere goal, ZACL can leverage them to drive innovation, promote green technology adoption, and gain a competitive advantage. By committing to pollution prevention and environmental stewardship, ZACL can position itself as an industry leader, attracting positive attention and trust from stakeholders.

In conclusion, the identified opportunities present avenues for ZACL to strengthen its environmental management practices, improve reporting transparency, and enhance its overall competitiveness within the aviation industry. By embracing detailed environmental reporting, integrating environmental considerations into budgeting, pursuing ISO 14001:2015 certification, engaging with investors and stakeholders, and leveraging compliance for competitiveness, ZACL can set a benchmark for sustainable and responsible business practices in the aviation sector.

## Threats

**Non-Whole system approach to policy implementation**

The study identified a critical threat in the Zambia Airports Corporation Limited's (ZACL) environmental policy associated with a non-whole system approach to implementation. The focus on fragmented policy and management approaches, as highlighted in several studies (Janicke, 1990; Ayres, 1994; Rejeski, 1997), poses a risk of problem displacement or shifting instead of effective problem-solving. ZACL's policy may face challenges if it adopts an isolated approach, such as tablconcentrating solely on specific environmental mediums (e.g., air) without considering potential impacts on other mediums like land or water. This non-whole system approach, as supported by McManners (2016), may lead to minor changes in specific aspects and hinder holistic sustainability development.



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**Quality of environmental data and lack of performance indicators**

The absence of environmental performance indicators within ZACL's environmental policy poses a significant threat to its implementation. Without clear indicators, tracking progress becomes challenging, making it difficult to measure the effectiveness of environmental initiatives. The study highlights that this absence affects the quality of environmental data generated, undermining the core objectives of the policy. Quality data is crucial for informed decision-making, stakeholder communication, and overall policy success. The lack of performance indicators not only hinders ZACL's ability to assess its environmental performance but also diminishes the credibility and effectiveness of the environmental policy.

**Problem shifting and displacement risks**

The study points out the risks associated with problem shifting or displacement in environmental policy and management. If ZACL's policy lacks a comprehensive approach and focuses on specific aspects without considering potential consequences in other areas, it may inadvertently lead to the relocation of environmental issues rather than their resolution. For instance, addressing air quality without considering the impact on land or water may result in unintended consequences. This threat aligns with existing literature (Janicke 1990; Anderberg 1998) emphasizing the importance of a holistic and integrated approach to environmental policy and management to avoid unintended negative consequences.

In conclusion, the threats identified in ZACL's environmental policy, including the non-whole system approach to implementation and the absence of environmental performance indicators, underscore the importance of adopting a comprehensive and integrated approach. Addressing these threats is crucial to ensuring the effectiveness of the environmental policy, preventing problem displacement, and maintaining the credibility of ZACL's commitment to environmental sustainability. Holistic policy implementation, coupled with the incorporation of performance indicators, is essential to overcoming these threats and fostering a more sustainable and resilient environmental management system within the aviation sector.

## CONCLUSION

In summary, this study underscores the crucial relationship between ZACL's Environmental Policy and Environmental Practices. The identified correlations and SWOT analysis findings offer practical recommendations for ZACL's environmental management, emphasizing the need for Environmental Performance Evaluation, reporting, and ISO14001:2015 certification. Beyond ZACL, the study contributes to the broader discourse on environmental policy effectiveness within organizational contexts. To build upon the findings of this study, further research is recommended, focusing on assessing the impact of ZACL's environmental policy at each international airport managed by the Corporation. Particularly, a more in-depth investigation into the policy's effectiveness at the main gateway into the country, the Kenneth Kaunda International Airport, could provide valuable insights. This targeted research could explore specific challenges, successes, and areas for improvement at individual airports, allowing for a more nuanced understanding of the policy's influence on environmental performance.

## OVERALL IMPLICATIONS

Addressing the weaknesses identified in this study, such as the absence of performance indicators, is crucial for ZACL to enhance its environmental management practices. Embracing the opportunities presented, especially detailed environmental reporting and proactive budgeting for environmental activities, can contribute to ZACL's commitment to sustainability and



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stakeholder trust. Mitigating threats related to a non-whole system approach requires a holistic strategy that integrates environmental considerations across all facets of airport operations.

In conclusion, the outcomes of this study contribute to the broader discourse on environmental policies within the aviation sector. The recommendations provided offer a pathway for ZACL to strengthen its commitment to environmental responsibility and navigate the evolving landscape of sustainability in the aviation industry.

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