

Exploring Eswatini's environmental compliance management, monitoring, and enforcement issues of construction projects

by

MASON ISAAC MANYATSI

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SUPERVISOR: PROF J A WESSELS

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DECLARATION

I declare that this dissertation, submitted in fulfilment of the requirements for the Master of Science in Environmental Management at the University of South Africa, is entirely my own work. It has not been submitted before, by me or anyone else, for any degree at UNISA or any other institution. Where I have made use of work done by others, whether in the form of text, images, data, or any other material, I have given full credit to the original sources.

A handwritten signature in blue ink, appearing to read 'Mason Isaac Manyatsi', with a stylized flourish at the end.

Mason Isaac Manyatsi

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ABSTRACT

This study explored issues of environmental compliance management, enforcement, and monitoring in Eswatini's construction industry, focusing on case study construction projects in the Hhohho Region. Although legal frameworks do exist, Eswatini still experiences widespread environmental non-compliance in the construction industry, leading to environmental degradation and threatening efforts of environmental protection. The purpose of the research study was to answer the main research question: What are the environmental compliance management, enforcement, and monitoring issues of construction projects in Eswatini? The mechanism for answering the main research question was through the formulation of four sub-questions focusing on global environmental compliance mechanisms, Eswatini's Environmental Impact Assessment (EIA) obligations, issues experienced by EIA follow-up parties of construction projects, and measures of environmental compliance enhancement.

The study employed a qualitative research approach, using an exploratory multiple case study design. Data was collected from four (4) construction projects in the Hhohho Region through in-depth interviews with 21 purposively sampled key informants. The key informants included first, second, and third EIA follow-up parties at the selected construction projects. Secondary data gathered for the study included legal and institutional frameworks and policy documents. Data was analysed with the support of ATLAS.ti software to identify themes and patterns from the data.

Findings addressing sub-question 1 show that environmental compliance globally relies on an integrated regulatory cycle encompassing planning, implementation, monitoring, enforcement, and adaptive feedback mechanisms. In response to sub-question 2, the study discovered that while Eswatini has established environmental laws and institutional frameworks governing construction projects, there are constraints due to weak enforcement capacity and limited coordination. Results addressing the sub-question 3 showed that first, second, and third EIA follow-up parties experience challenges including limited financial and human resources, poor compliance attitudes among developers and contractors, political interference, and inadequate authority to enforce compliance. Addressing sub-question 4 identified capacity building measures through training and awareness, as well as the adoption of technological advancements for monitoring and policy reform key measures that can enhance environmental compliance at construction projects.

An examination of the findings shows a divide between the application of environmental compliance procedures and policy rules. Environmental compliance management, enforcement, and monitoring across construction projects is compromised by weak institutional capacity, dispersed governance systems, and inadequate accountability mechanisms.

The study makes a meaningful contribution by providing practical, evidence-based insights into the key factors affecting environmental compliance in Eswatini's construction sector. The study demonstrates how challenges such as weak enforcement capacity, fragmented governance structures, and limited accountability work together to hinder effective environmental compliance and EIA follow-up. In addition, the study adds to existing knowledge by offering a clearer understanding of these issues within a developing country context, where resource and institutional constraints are common. It also proposes practical ways to improve environmental compliance, including strengthening institutional capacity, improving coordination between stakeholders, and making better use of technology for monitoring and reporting. These contributions are relevant not only for Eswatini, but also for other developing countries facing similar challenges.

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LIST OF ACRONYMS

AfDB	African Development Bank
CIC	Construction Industry Council
CMP	Comprehensive Mitigation Plan
EEA	Eswatini Environment Authority
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ENTC	Eswatini National Trust Commission
ESIA	Environmental and Social Impact Assessment
IA	Impact Assessment
ESMP	Environmental and Social Management Plan
IEE	Initial Environmental Evaluation
INECE	International Network for Environmental Compliance and Enforcement
NGOs	Non-Governmental Organisations
OECD	The Organisation for Economic Co-operation and Development
PCR	Project Compliance Report
SDGs	Sustainable Development Goals
UN	United Nations
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
WHO	World Health Organisation

LIST OF KEY TERMS

Term	Definition (as used in this study)
Environmental Compliance	Adherence to environmental laws, regulations, standards, and permit conditions governing project implementation, as required under Eswatini's Environmental Management Act (2002) and associated EIA regulations.
Environmental Monitoring	A continuous process of collecting, analysing, and interpreting environmental data to assess whether project activities conform to approved mitigation measures and regulatory standards.
Environmental Enforcement	The set of actions taken by regulatory authorities to ensure compliance with environmental legislation, including inspections, penalties, and corrective measures for non-compliance.
Environmental Impact Assessment (EIA)	A systematic process used to identify, predict, and evaluate the potential environmental effects of proposed projects prior to decision-making, to ensure that development is environmentally sustainable.
EIA Follow-up	The post-decision stage of the EIA process that includes monitoring, compliance auditing, and enforcement to verify whether predicted impacts and mitigation measures are effectively managed.
Environmental Compliance Management (ECM)	The coordinated framework of institutional procedures, monitoring tools, and enforcement mechanisms designed to promote and ensure adherence to environmental regulations throughout the project lifecycle.
Construction Projects	Infrastructure or building developments that involve land disturbance and resource use, subject to EIA approval and compliance monitoring under Eswatini's environmental legislation.
Governance Structures	The institutional arrangements, policies, and relationships among state and non-state actors that determine how

	environmental compliance is managed, implemented, and enforced.
Non-Compliance	Failure to meet legal or regulatory requirements, permit conditions, or environmental standards, either intentionally or due to negligence, resulting in environmental harm or procedural breaches.
Institutional Capacity	The availability of resources, expertise, and organisational systems within regulatory bodies and project proponents necessary to implement, monitor, and enforce environmental compliance effectively.
Stakeholders	Individuals, groups, or institutions affected by or involved in environmental compliance management, including government agencies, contractors, consultants, and local communities.

1 INTRODUCTION AND BACKGROUND

1.1 Introduction

The environment can be referred to as the natural and human-made surroundings in which people, plants, animals, and other living organisms exist and interact. (Eswatini Environment Authority, 2013). The United Nations Development Programme (UNDP) is a United Nations agency that plays a crucial role in international development, and their work aims to eliminate poverty and reduce inequality by promoting sustainable development across nations (UNDP, 2023). The UNDP, using the 17 Sustainable Development Goals, aims to facilitate and promote economic development by sustaining the environment without destroying the environment that is to be used by generations to come (UNDP, 2023).

Environmental compliance management, monitoring, and enforcement are integral components of any construction project to ensure sustainable development. Recent trends show that the world is currently facing extreme pressure with the degradation of the environment because of continued economic development, making it imperative to ensure that environmental compliance measures are undertaken at construction projects (Fei et al., 2021). It is important that regulators are present to ensure the enforcement of local and international regulations and that there is environmental monitoring of construction projects (Fei et al., 2021). Globally, construction activities have been a key contributor to the degradation and destruction of natural resources. These activities include deforestation, degradation of critical wetlands, indiscriminate waste disposal, and the destruction of ecosystems essential for sustaining life, thereby underscoring the paramount importance of implementing effective mitigation measures to minimise the adverse environmental impacts of construction activities and to promote sustainable development (Zhang et al., 2022).

From an African perspective, wherein most African countries are developing countries, there has been significant efforts to improve economic development through the incorporation of large amounts of construction projects which pose a major threat to the environment if they do not comply environmentally (Güneralp et al., 2017). The United Nations Environment Programme (UNEP) is the leading global authority on environment matters (UNEP, 2023). The mission of the United Nations Environment

Programme is to “inspire, inform, and enable nations and peoples to improve their quality of life without compromising that of future generations” (UNEP, 2023). As highlighted by The United Nations Environmental Programme, large parts of Africa are undeveloped, meaning various natural resources and ecosystems are untouched and undisturbed, making it important to ensure that development through construction projects is effectively managed for the preservation of the environment (UNEP, 2023).

As a developing country, attempts to fast-track development in Eswatini pose a threat to the environment of the country (Eswatini Environment Authority, 2021). Pollution from industrial activities and improper waste management pose a threat to both human health and the environment (Nxumalo et al., 2020). Moreover, the above statement is justified by Eswatini Environment Authority in the State of Environment Report of 2020 that highlights that issues of pollution, waste, and water quality remain prevalent in the country of Eswatini (Eswatini Environment Authority, 2021).

Evidence from the Eswatini Environment Authority’s State of the Environment Report highlights persistent issues related to water quality deterioration, ineffective waste management practices, and increasing land degradation (Eswatini Environment Authority, 2021). For instance, land degradation remains a significant concern, with approximately 11% of land already degraded and broader areas showing signs of declining productivity due to unsustainable land use practices and weak regulatory frameworks (Eswatini Environment Authority, 2021). In addition, water quality management faces multiple challenges, including limited monitoring capacity, insufficient laboratory resources, and weak enforcement mechanisms, as evidenced by low conviction rates for pollution-related offences and inadequate regulation of emerging pollutants (Eswatini Environment Authority, 2021). Waste management systems also present environmental risks, particularly due to gaps such as the absence of groundwater monitoring around landfill sites, which increases the risk of contamination (Eswatini Environment Authority, 2021).

The construction sector in Eswatini is a key driver of economic development, supported by infrastructure expansion, urbanisation, and public–private investment, with growth of approximately 34% in 2023 highlighting its national significance (Africa Press, 2024a). Activities are largely concentrated in economically active areas,

particularly the Hhohho Region, including Mbabane and surrounding peri-urban zones, which intensifies pressure on land, water resources, and ecosystems (Eswatini Review, 2025). However, the sector is also associated with environmental risks such as land degradation, sedimentation, water pollution, and poor waste management, while climate-related events like heavy rainfall have exposed weaknesses in construction practices and environmental oversight (Eswatini Observer, 2025). These challenges underscore the need to strengthen environmental compliance management, monitoring, and enforcement, particularly in rapidly developing regions such as Hhohho (UNDP, 2025).

Environmental compliance involves the development and subsequent implementation of strategies, policies or procedures that are in place to ensure that works carried out do not breach environmental regulations (Fitzmaurice, 2018). Environmental compliance management covers a range of topics from its initial planning and design to execution and completion. These include Environmental Impact Assessments (EIAs), permit acquisition, waste management actions, and pollution prevention measures (Mareddy, 2018). Also, monitoring is important for the life cycle of a construction project to check compliance with environmental regulations (Callistus & Clinton, 2017). The use of effective monitoring systems to gather real-time data on key environmental indicators enables project managers and regulatory agencies to observe deviations from the norm, evaluate mitigation measures, and correct any shortcomings as required (Callistus & Clinton, 2017).

Finally, it is essential to ensure the presence of enforcement agencies to promote environmental compliance (OECD, 2009). These agencies are in place to provide the necessary enforcement of local and international regulations to actively combat environmental non-compliance at construction projects.

1.2 Background of the study

Global development has been seen to have a major impact on the receiving environment. This includes extensive pollution (of water, land, and air), deforestation, and climate change (Wigand et al., 2022). Industrialisation is widely regarded as a

major contributor to the degradation of the environment, leading to instances of air and water pollution, and land degradation (Montt et al., 2018).

In the African context, while the processes of development and industrialisation are essential for economic growth, they often come at the expense of the environment (Bekabil, 2020). Bekabil (2020) states that industrialisation plays a major role in the environmental degradation that affects the ecosystems and natural resources such as water, air, and soil. Moreover, industries on the African continent place tremendous stress on the environment through the extensive use of natural resources and energy for production while producing waste and polluting the environment (Bekabil, 2020).

Eswatini is no exception to environmental issues. As a developing country, industries, including the construction industry, have intensified economic growth to meet the growing needs and demands of Eswatini and this has applied tremendous stress on the environment of the country (Cele, 2022). Furthermore, even though Eswatini has been dealing with environmental issues for over 25 years, the country still has issues with environmental compliance management, enforcement, and monitoring in various industries. Failure to adhere to environmental regulations remains a major problem in the country which has led to environmental degradation (Cele, 2022). Environmental non-compliance in Eswatini is reflected in documented cases that highlight both project-level failures and broader governance challenges. For example, illegal mining activities in the Malolotja Nature Reserve proceeded without required environmental authorisation, exposing the area to biodiversity loss and land degradation, thereby illustrating weaknesses in regulatory enforcement and monitoring (Africa Press, 2024b).

Similarly, the legacy of the Havelock asbestos mine in Bulembu demonstrates inadequate mine closure and rehabilitation, with elevated levels of hazardous elements such as arsenic and chromium recorded in nearby water sources, posing risks to human health and ecosystems (Wolkersdorfer et al., 2024). Information regarding environmental compliance in Eswatini is difficult to obtain, highlighting a significant knowledge gap related to the research topic. Compliance challenges are attributed to limited industry awareness of environmental regulatory requirements, the poor quality of Environmental Impact Statements for proposed projects, and

inadequate monitoring of construction activities (Cele, 2022; Mlipha & Mondlane, 2003).

The Hhohho Region was selected as the focus area for this study due to its administrative and economic importance within Eswatini, and the concentration of construction activities occurring within the region (Ndlela, 2025). Ndlela (2025) discusses the unveiling of development projects in the Hhohho area emphasising Eswatini's commitment to economic empowerment and sustainable development. The Hhohho Region hosts the capital city of the country, Mbabane. Along with other cities like Ezulwini, Pigg's Peak, and Buhleni, development in these areas has increased the pressure on the natural receiving environment and increases the risk of environmental degradation if not monitored. From a methodological standpoint, the accessibility of active construction projects and relevant stakeholders in the Hhohho Region facilitated in-depth qualitative data collection. Focusing on the Hhohho Region, therefore, provided a suitable and analytically robust case study setting for exploring environmental compliance management, monitoring, and enforcement issues within Eswatini's construction sector.

1.3 Statement of the problem

Environmental compliance can be referred to as extent to which an enterprise adheres to government environmental laws and regulations (Liu et al., 2021). In Eswatini, as well as various other countries, different environmental rules and regulations provide different procedures to consider in dealing with environmental issues in the development activities of the country (Haque, 2015). Eswatini implemented the Environmental Management Act of 2002 and the Environmental Assessment Regulations of 2022 to idealistically ensure environmental compliance.

To facilitate and expand economic growth, Eswatini has had major challenges in complying with existing environmental regulations and policies in various industries, especially the construction industry (Cele, 2022; Eswatini Environment Authority, 2021). Non-compliance to environmental regulations and policies can have major financial implications on developers, funders, and the country of Eswatini as developers are fined for non-compliant procedures. Eswatini could possibly have funders such as the World Bank and the African Development Bank revoke funds for projects due to the lack of adherence to environmental regulations and policies, thus

affecting the economic growth and development of the country. Furthermore, there is limited information and literature with regards to environmental compliance management, enforcement, and monitoring of construction projects in Eswatini (Cele, 2022). From a scholarly perspective, however, this gap extends beyond limited documentation to a lack of empirical insight into how environmental compliance is implemented in practice, particularly during post-approval EIA follow-up stages. There is insufficient understanding of the day-to-day realities of monitoring and enforcement at construction sites, including the effectiveness of mitigation measures and the practical constraints faced by regulatory authorities. In addition, the interactions between key compliance actors such as regulators, developers, consultants, and contractors and how these influence compliance outcomes remain underexplored within the Eswatini context.

Cele (2022) suggests that attempts to solve the environmental compliance issues may be in the form of improved environmental awareness, improved environmental monitoring of on-going projects, provision of general environmental education training, and overall improvement of the quality of Environmental Impact Assessments (EIAs).

The problem statement discussed above leads to the following research question and related sub-questions:

1.4 Research question

What are the environmental compliance management, monitoring and enforcement issues of construction projects in Eswatini within the Hhohho Region?

1.4.1 Sub-questions

To aid the answering of the research question, the following research sub-questions are asked:

1. What are the global elements of the regulatory cycle for effective environmental compliance management, enforcement, and monitoring?
2. Which applicable EIA compliance obligations and related governance structures exist in Eswatini to manage, enforce, and monitor environmental compliance at construction sites?
3. What are the issues experienced by first, second and third EIA follow-up parties involved in environmental compliance management, enforcement and

monitoring at four (4) selected case studies within the Hhohho Region of Eswatini?

4. How can environmental compliance management, enforcement and monitoring be improved at construction projects in Eswatini?

1.5 Justification for research

As previously stated in the problem statement, Eswatini's efforts to facilitate and expand economic growth have presented major challenges in complying with existing environmental regulations and policies in various industries like the construction industry. Studies and national reports highlight the continuous challenges faced by Eswatini in ensuring environmental compliance and in combating environmental degradation although legislation and regulatory frameworks do exist in the country (Eswatini Environment Authority, 2021; Nxumalo et al., 2020; Mlipha & Mondlane, 2003). The State of the Environment Report further notes that weak enforcement capacity, limited inter-institutional coordination, and inadequate follow-up mechanisms continue to undermine effective environmental management in development projects (Eswatini Environment Authority, 2021). This study assisted in highlighting environmental compliance management, enforcement, and monitoring issues of construction projects in Eswatini.

Moreover, through the review of literature, information on Eswatini's compliance with environmental policies proved difficult to acquire, highlighting a gap in literature with regards to environmental compliance management, enforcement, and monitoring of construction projects in Eswatini (Cele, 2022). This statement is further justified by Mkhathshwa and Russell (2025) as well as Mlipha and Mondlane (2003) who highlight that existing studies mostly focus on environmental degradation, pollution, or policy frameworks in isolation and lack focus on compliance and EIA follow-up practices at construction sites after project authorisation by regulators. This study contributes to the existing body of knowledge and can assist relevant practitioners such as developers, contractors, and project managers on how environmental compliance management, enforcement, and monitoring can be improved at construction project sites within the Eswatini context.

1.6 Structure of dissertation

This section of the dissertation provides an overview of the chapters included in the study.

1.6.1 Chapter One: Introduction

The first chapter presents the research topic and background of the study. The background of the study explored environmental issues and environmental compliance in a global context and in relation to Eswatini. The chapter also presents the problem statement, which informed the formulation of the study's research question and sub-questions, which are also presented. Lastly, the justification of the study is presented in this chapter outlining the importance of conducting the study. The justification of the study highlights the gap in existing literature with regards to environmental compliance in Eswatini.

1.6.2 Chapter Two: Literature Review

The literature review is composed of literature in relation to the topic of the study. A theoretical framework is outlined in this chapter, along with global elements of environmental compliance management, enforcement and monitoring and EIA follow-up. The chapter also discusses Eswatini's national and international EIA obligations, along with the governance structures relevant to construction projects. Also presented in this chapter is a discussion of how the literature review influenced the research design and data collection as well as gaps identified during the literature review. The chapter concludes with a conclusion of the literature review.

1.6.3 Chapter Three: Methodology

This chapter of the dissertation presents the methodology and the research design of the study. It provides an overview of the research methods used by the researcher to attain the study's objectives. The methods of data collection, analysis and interpretation used by the researcher to answer the study's research question and sub-questions are outlined in this chapter. Additionally, methods of ensuring data validity are provided in this chapter along with ethical considerations and limitations of the study.

1.6.4 Chapter Four: Results and Discussion

This chapter presents the findings from the collected data and discusses them in relation to the study's research sub-questions.

1.6.5 Chapter Five: Conclusion and Recommendations

This chapter of the dissertation presents the concluding remarks on the research sub-questions by summarizing the study's major findings. In conclusion, the chapter provides recommendations to practice and recommendations for further research.

1.6.6 References:

This component of the dissertation includes all the relevant literature of the studies that were used to compile this dissertation.

1.6.7 Annexures

This section contains all supporting documents for the study, including permission letters, interview guide, consent forms, example of transcript, ethical clearance, and the grammatical editor's certificate.

2 LITERATURE REVIEW

2.1 Introduction

A literature review is a summary of information and data gathered in relation to a particular topic being studied (Du Plooy-Cilliers et al., 2014). Furthermore, the purpose of the literature review is to examine information related to the research topic, identify sources that can strengthen the study, and uncover gaps in the existing literature that the research aims to address. This chapter provides a review of literature relevant to environmental compliance management, enforcement, and monitoring, with a specific focus on the construction sector. This chapter consists of a qualitative content analysis review of literature about Eswatini's environmental compliance management, enforcement, and monitoring issues of construction projects [see section 3.4 and sub-section 3.6.1 for further information on the review process]. The literature review provides useful conceptual links which were used in constructing the methodologies of this study. Essentially, the review aims to answer sub-questions 1 and 2. These are:

- 1. What are the global elements of the regulatory cycle for effective environmental compliance management, enforcement, and monitoring?*
- 2. Which applicable EIA compliance obligations and related governance structures exist in Eswatini to manage, enforce, and monitor environmental compliance at construction sites?*

Firstly, the review provides analytical and theoretical perspectives (section 2.2) through the discussion of the regulatory cycle (sub-section 2.2.1), the centralisation and decentralisation of environmental governance (sub-section 2.2.2), and self-regulation and voluntary standards (sub-section 2.2.3). In addition, a discussion on global perspectives of environmental compliance is provided (in section 2.3), including discussions on environmental compliance management (sub-section 2.3.1), environmental compliance enforcement (sub-section 2.3.2), environmental compliance monitoring (sub-section 2.3.3) and EIA follow-up (sub-section 2.3.4). The review also provides a discussion on environmental compliance and governance in a regional perspective with focus on the Southern African Development Community (section 2.4). Section 2.5 focuses on Eswatini's environmental compliance obligations and related governance structures, focusing on the Eswatini Environment Authority

and Eswatini environmental law (sub-section 2.5.1), other international obligations (sub-section 2.5.2) and an analysis of the effectiveness of EIA governance in Eswatini. In addition, a breakdown on how the literature review informed the development of interview questions (section 2.6) and a conceptual framework is presented in section 2.7. A discussion on the gap the literature review tried to fill is provided (section 2.9) and finally, a conclusion to the review is provided in section 2.8.

2.2 Analytical and theoretical perspectives

This section outlines key ideas used to understand environmental governance and compliance. Not all of these are formal theories; some are analytical frameworks. The regulatory cycle is used here to map and explain the steps in environmental regulation, rather than to predict outcomes. Governance approaches such as centralisation, decentralisation, and federal systems help explain how roles and responsibilities are shared in environmental management. Self-regulation and voluntary standards are also included as complementary ways that private actors support compliance beyond formal laws. Together, these perspectives are used to interpret environmental compliance and EIA follow-up processes, helping to move the study from description to deeper analysis.

2.2.1 The regulatory cycle

The concept of the regulatory cycle theory seeks to explain that regulation is a never-ending cycle. Baldwin et al. (2012) argue that it is a process that is continuous and improves over time through learning and adaptation. The regulatory cycle has 5 steps, namely, Agenda Setting, Policy Formulation, Implementation, Monitoring, and Evaluation and Revision (Baldwin et al., 2012). All these steps interlink to learn and improve from earlier implementation. This process is beneficial to environmental management as it ensures that regulations are flexible and can be updated in the future to ensure that they address current problems and challenges. Figure 1 below is self-generated illustration of the regulatory cycle using an ATLAS.ti network.

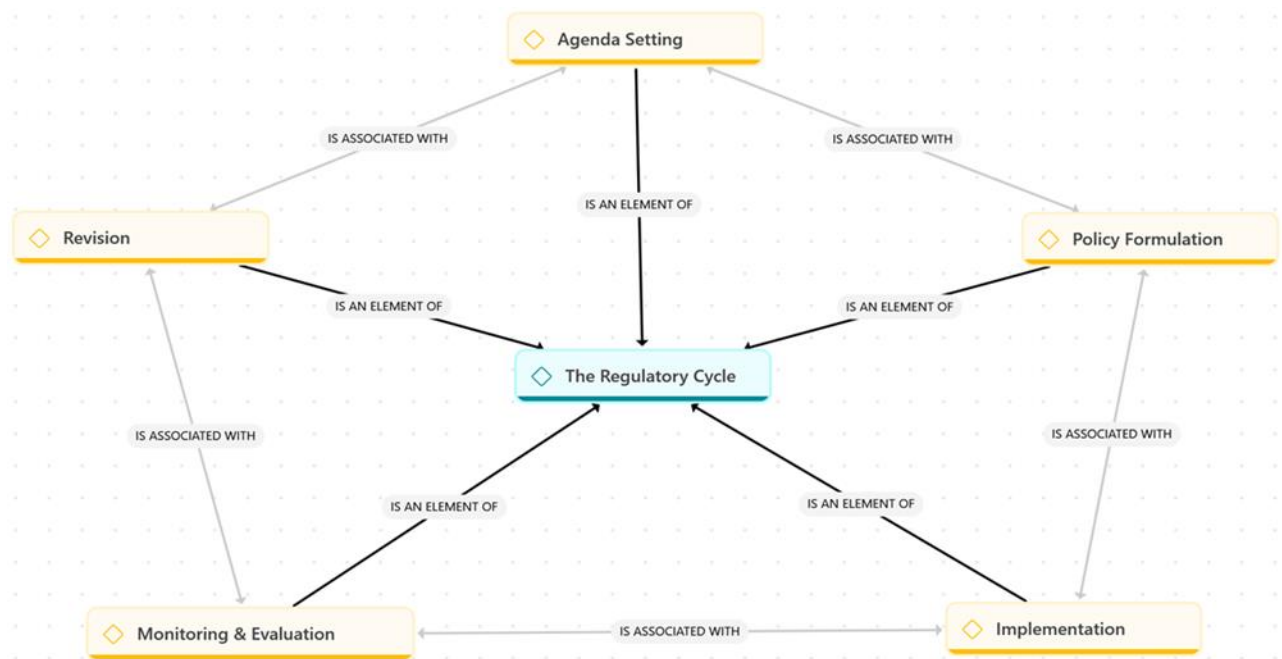


Figure 1: The Regulatory Cycle (ATLAS.ti network)

Figure 1 illustrates the elements of the regulatory cycle analysed in this study to demonstrate how the regulatory cycle operates in practice. A discussion of the elements of the regulatory cycle is given below.

2.2.1.1 Agenda Setting

Brasil and Jones (2020) describe agenda setting as the mechanism through which issues move from the private sphere into public debate and ultimately become priorities for government action. In essence, it is the process of identifying existing problems and providing resolutions to prioritised issues. As an example, if poor waste management in an area or town continues to be a public concern, government, regulators and policy makers then see it necessary to implement policy to combat poor waste management issues.

2.2.1.2 Policy Formulation

This stage involves the creation of regulations, policies, and laws that govern environmental management. Various countries around the world have passed laws to manage and promote sustainable development. Eswatini has the Environmental Management Act of 2002 and the Environmental Assessment Regulations of 2022 along with other supporting legislation to manage and enforce environmental requirements. Manazir (2025) argues that policy formulation is often influenced by

international standards that tend not to fit local needs and reality, thus making it difficult to implement. This highlights the importance of tailor making policy to fit current challenges.

2.2.1.3 Implementation

In the regulatory cycle, implementation is the process of executing the rules formulated in the policy formulation stage and these rules can include policies, regulations, Environmental Impact Assessments (EIAs), audits, and site inspections (Baldwin et al., 2012). Developed countries have advanced technology that enables them to boast the success of implementation using drones and sensors that support implementation. In contrast, Eswatini, as a developing country, lacks such technology and implementation is mostly dependent on Eswatini Environment Authority (EEA) as mandated. Due to the EEA's lack of staff and financial resources, EIA follow-up often lacks and implementation falls through.

2.2.1.4 Monitoring and Evaluation

This state of the regulatory cycle in environmental management involves checking whether environmental rules and regulations are being implemented and followed to achieve their intended purpose (Waylen et al., 2019). In most cases, it involves the measuring of environmental indicators like pollution levels, air quality, and measures of waste management. Globally, particularly in developed countries, monitoring is executed using technologically advanced devices such as drones, satellites, and Geographic Information Systems (GIS), as they help track compliance effectively (Dritsas & Trigka, 2025). However, less developed countries have limited tracking coverage as they mainly still rely on manual inspections. This remains true in Eswatini to date.

Furthermore, evaluation is the process of scrutinising and checking whether regulations are working as intended and assists policy and decision makers to establish whether regulations should be maintained, updated for improvement, or replaced (Waylen et al., 2019). Evaluations can be in the form of audits and assessments. Without evaluations, it may be difficult to ascertain whether imposed regulations are achieving the intended purpose. In the context of Eswatini, inadequate or inconsistent evaluation of environmental compliance at construction projects limits

the ability of regulators and project proponents to identify shortcomings in environmental compliance management, enforcement, and monitoring practices.

2.2.1.5 Revision

In environmental management, this stage of the regulatory cycle involves the updating and improving of rules and regulations based on learning outcomes from the monitoring and evaluation stage (Waylen et al., 2019). This stage of the regulatory cycle is important as it assists countries implement regulations that are relevant and effective to meet current trends and challenges. It is an important stage that closes the cycle, turning learning outcomes into more rigorous and adaptive systems. Eswatini recently promulgated the Environmental Assessment Regulations of 2022 to address the gaps of the Environmental Audit, Assessment and Review Regulations of 2000 previously used. This shows the country's effort in trying to learn from implementation challenges and enforcement limitations.

2.2.2 Centralisation and Decentralisation Environmental Governance

The centralisation and decentralisation theory focuses on where decision-making power lies within systems of governance. Environmental management systems rely heavily on establishing on which parties are responsible for making rules and decisions, who enforces those rules, and who attempts to resolve problems that occur (Pezzoli, 2000). A centralised governance model is characterised by the concentration of decision-making and oversight within a single national authority, while decentralisation entails the division of governance and regulatory duties among different governmental entities (Rychkova et al., 2013). Moreover, there is also a federated governance model that strikes a balance and incorporates elements of both centralised and decentralised governance models (Rychkova et al., 2013). The following figure (Figure 2) is an illustration of centralised, decentralised, and federated governance models.

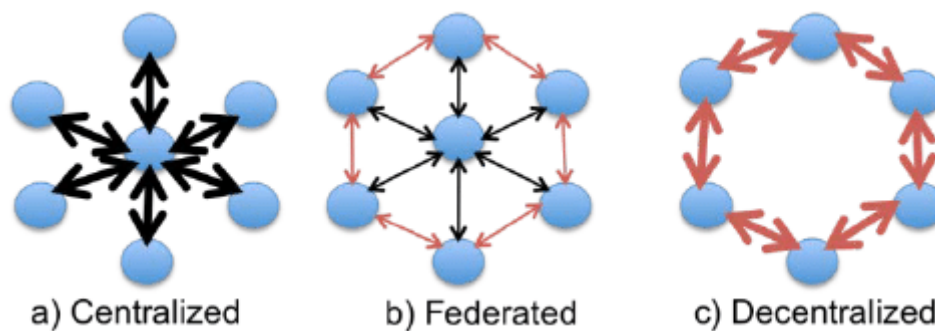


Figure 2: An illustration of centralised, decentralised and federated governance models (Rychkova et al., 2013)

Figure 2 illustrates centralised, federated, and decentralised governance models, and the following sections unpack these models further. The models applicable to Eswatini show a mix of both centralised and federated approaches. The Eswatini Environment Authority (EEA) acts as the main national body responsible for environmental governance, setting standards and overseeing compliance. At the same time, a federated element exists where municipalities have jurisdiction, as they play a role in monitoring activities and reporting back to the EEA. This setup is important because it shapes how environmental management happens in practice. On one hand, having a central authority helps ensure consistency and accountability across the country. On the other hand, involving municipalities allows for better attention to local conditions and challenges. However, in areas without municipal jurisdiction, the EEA takes on full responsibility, which can stretch its capacity and reduce local-level oversight. This mix of roles highlights the need for strong coordination between national and local authorities and helps explain some of the challenges and gaps identified in this study.

2.2.2.1 Centralisation

The centralised governance model is a top-down approach which allows for clear and uniform rules and standards where a single authority is tasked with setting and enforcing governance frameworks across the country (Witesman, 2020). In the case of Eswatini, EEA plays this role. In this model, decisions relating to data governance are centralised, with data activities being overseen and monitored by a specialised governance unit. Centralisation ensures that decisions on governance are made, with a specialised governance team overseeing and regulating all activities (Witesman, 2020). Consistency is the strength of this approach as it is applied across the country, encouraging integrity, quality, and uniformity (Witesman, 2020). Moreover, this

approach ensures control for the authority in charge as it enables it to enforce policies and monitor compliance. However, drawbacks of this approach are that it can create delays and lacks flexibility as all decisions must pass through one office, resulting in various unresolved and pending issues (Witesman, 2020).

2.2.2.2 Decentralisation

Decentralised governance is a model whereby decision making is distributed amongst various government institutions based on their specific functional and jurisdictional scope (Witesman, 2020). More power is given to local and regional authorities, making environmental management more responsive and participatory. Institutions function autonomously, with limited supervision or coordination from a central authority (Witesman, 2020). This approach ensures flexibility and faster decision making as there are no hurdles of requirements from a central governing body, and expertise is localised as local councils better understand community needs and are more willing to engage with industry stakeholders (Witesman, 2020). However, the approach is not without flaws. Lack of control and inconsistency is attributed to this approach as there is no single authority to regulate and enforce standards (Witesman, 2020).

2.2.2.3 Federated

The federated governance model combines characteristics of both centralised and decentralised governance models (Rychkova et al., 2013). Unlike the decentralised governance model, federated governance allows the local and regional regulatory authorities to enforce and make decisions within their jurisdictions e.g., municipalities. This enforcement is all conducted under the umbrella framework of a central authority (Rychkova et al., 2013). All municipalities in Eswatini work under the umbrella of EEA and report back to them. Strengths of this model include flexibility of decision making and the sharing of expertise between regions that can be tailored to fit local requirements (Rychkova et al., 2013). However, challenges may arise when there are clashes and disputes between local authorities and the central authority.

2.2.3 Self-regulation and voluntary Standards

Self-regulation is characterised by industries or professional organisations assuming responsibility for setting, monitoring, and enforcing rules that guide the conduct of their

members (Des Places, 2006). Voluntary standards are known as guidelines for products, services, and practices that organisations can choose to follow (Marx et al., 2022). These two aspects are seen as innovative measures to solve issues arising from rapid economic development. These standards are often given praise for promoting sustainable practices in the corporate space, thus closing gaps in places where government has limited impact.

However, critics of these approaches argue that their success is overstated and that voluntary standards such as ISO certifications are reliant on voluntary compliance and poor monitoring (Garbely & Steiner, 2022). Moreover, self-regulation and voluntary standards are often accused of being used as measures to avoid adherence to local and public legislation and of promoting corporate social responsibility through greenwashing (Garbely & Steiner, 2022). The biggest concern of these standards lies in the uneven adoption as larger corporations can afford to incorporate and implement them while smaller corporations are marginalised. This argument informs the debate that voluntary standards tend to be less functional and are not an adequate substitute for public legislation. In Eswatini, the effectiveness of self-regulation and voluntary standards is limited, as they depend largely on voluntary compliance, operate within a context of weak monitoring capacity, and are more easily adopted by larger companies, therefore, reducing their ability to meaningfully support statutory environmental legislation and EIA follow-up processes.

2.3 Global perspectives on environmental compliance, enforcement & monitoring

Globally, environmental compliance can be defined as the collective act of conformance by countries, organisations, and individuals to international legal environmental requirements, legislation, and policies set by governmental and other regulatory bodies with the aim of preserving and sustaining the environment (Bregman & Edell, 2016). This section provides a global benchmark against which Eswatini's environmental compliance management, enforcement, and monitoring practices are assessed, enabling the identification of gaps, constraints, and context-specific challenges within the country's construction sector. Figure 3 below is an ATLAS.ti network illustrating the integrated functions of global environmental compliance management, monitoring, enforcement, and EIA follow-up. The data was derived from

the analysis of the literature review of this study (section 2.3) on global perspectives on environmental compliance, enforcement and monitoring.

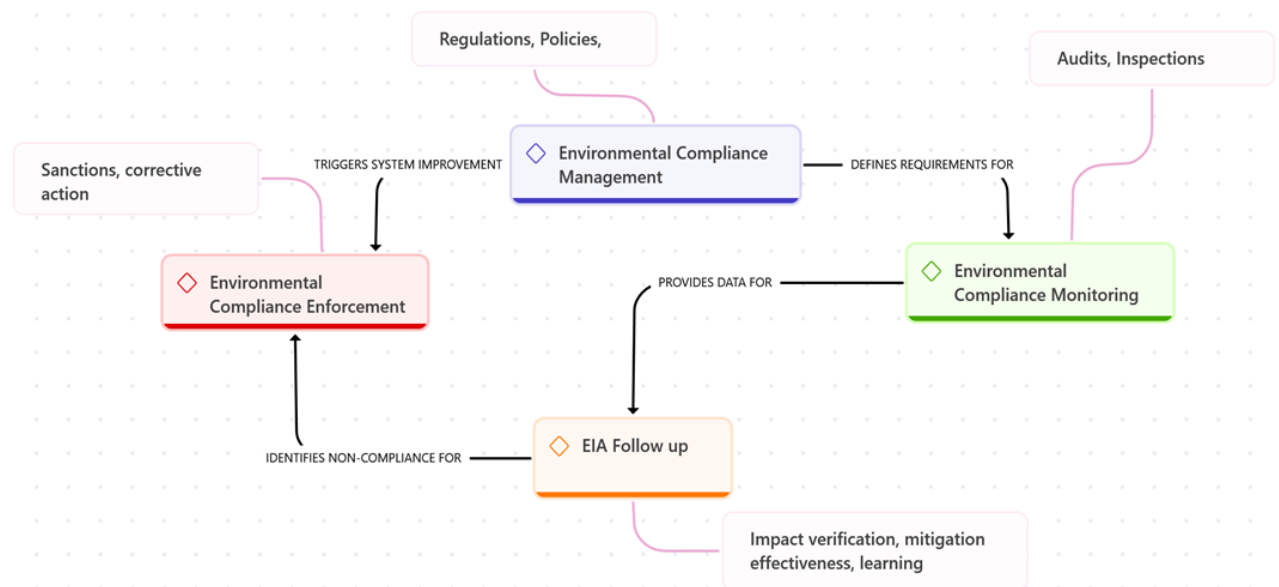


Figure 3: Global environmental compliance network showing management, monitoring, enforcement, and EIA follow-up (ATLAS.ti network)

The elements illustrated in Figure 3 above are important for global environmental compliance and their implementation is crucial for global environmental protection and sustainable development. The following is an overview of environmental compliance in relation to management, enforcement, monitoring, and EIA follow-up. This section explored how global environmental compliance principles are applied, adapted, or constrained within Eswatini which assisted in understanding the country's environmental governance challenges. Therefore, global perspectives were used to inform the assessment of environmental compliance management, enforcement, and monitoring practices within construction projects in Eswatini, with particular emphasis on the experiences of EIA follow-up parties at selected case studies in the Hhohho Region.

2.3.1 Environmental compliance management

In the global context, environmental compliance management is referred to as the efforts to develop and implement effective measures to protect the environment we live in (Zhang et al., 2022). There are various environmental problems affecting the world currently. These include air and water pollution, deforestation, waste accumulation, and climate change (Zhang et al., 2022). Even though economic growth

is important, sustenance of the earth we live in is crucial for the present and future generations (Lizuka, 2000). Various institutions still rely heavily on the world's natural resources for the production of day-to-day living activities. However, it is important to note that their use should not be at a rate that totally depletes them and cannot be replenished. Recent trends show that there is increasing awareness through various media forms about environmental issues and the importance of environmental protection (Fallah Shayan et al., 2022). Institutions are being encouraged to adopt sustainable environmental practices in efforts of achieving global sustainable development (Fallah Shayan et al., 2022).

Environmental issues are transboundary, meaning that all countries are affected by these issues, thus making it important for countries to work hand in hand in dealing with widespread environmental problems (United Nations, 2023). This is significant given the critical role of the public and local communities in ensuring effective environmental compliance management (Johnstone, 2021). Communities and the public play a vital role in minimising environmental impacts through the adaptation of sustainable practices such as effective waste disposal measures, reducing reliance on plastic, and water conservation (Johnstone, 2021). Communities must be educated about environmental management and conservation, thus further improving awareness of global environmental issues and measures that can be established to effectively manage them (Debrah et al., 2021).

2.3.2 Environmental compliance enforcement

Global environmental compliance enforcement can be defined as the act by international regulatory authorities in ensuring that entities and institutions comply with environmental regulations. This is to mitigate the adverse impacts on the environment caused by various human activities (INECE, 2009). Global environmental compliance enforcement is mainly conducted by international regulators such as government institutions and international agencies such as the UNDP, and their aim is to make sure that environmental regulations are adhered to and that penalties are imposed for non-compliance (INECE, 2009).

Regulatory authorities responsible for enforcing environmental regulations fulfil this mandate through multiple mechanisms, including requiring Environmental Impact Assessments (EIAs) prior to the commencement of construction activities, conducting

compliance inspections to evaluate adherence to environmental requirements, and imposing sanctions for regulatory violations (INECE, 2009; UNEP, 2014). Penalties imposed can be financial, wherein a fine is paid for non-compliance, or through the suspension or revoking of a license to construct (INECE, 2009; UNEP, 2014). Moreover, the public is vital for the enforcement of environmental law. The public can report and whistle blow to regulators if they experience or encounter any instances of non-compliance as their day-to-day observations provide valuable insight into operations (Johnstone, 2021).

Currently, new technologies such as drones are being used by many countries to monitor and enforce environmental compliance (UNEP, 2014). However, there are limitations with regards to these new technologies as less developed countries either do not own such equipment or cannot afford to acquire it (UNEP, 2014). Effective global environmental compliance enforcement can assist in the reduction of environmental degradation and can push forward the quest for international sustainable development (WHO, 2021).

2.3.3 Environmental compliance monitoring

Global environmental compliance refers to the measures put in place to effectively collect data using various systems across many environmental parameters to assess the level of environmental compliance (INECE, 2009). Environmental monitoring plays an important role in comprehending environmental problems the world faces and in developing strategies to combat them (UNECE, 2023). Environmental monitoring is done through assessing environmental indicators such emissions of greenhouse gases, pollution, natural resource depletion, and the loss of biodiversity (UNECE, 2023). These indicators assist in monitoring the level of impact of human activities on the receiving environment.

Environmental compliance monitoring now is implemented using various strategies. Developed countries are now using drones and satellites to assess changes on the ground from an elevated point of view (UNECE, 2023). Some countries use software programs like Google Earth to monitor environmental compliance. However, this program is highly limited to the rate at which satellite images are updated. (UNECE, 2023). In most cases, environmental compliance monitoring activities are conducted on the ground through inspections and environment audits, enabling regulators to

track the rate of environmental compliance (UNECE, 2023). Data collected from environmental monitoring activities are then used to devise strategies, policies, and measures to lessen the toll that human activities have on the environment (UNECE, 2023). For example, data collected from monitoring waste management practices can assist in developing policies to better and effectively manage waste (UNECE, 2023).

2.3.4 EIA follow-up

EIA follow-up encompasses the range of actions carried out after project approval to monitor, assess, manage, and report on actual environmental outcomes arising from the implementation of a project (Arts et al., 2012). EIA follow-up plays an important role in identifying and minimising adverse impacts identified by Environmental Impact Assessments during the construction and operational phase of a project. It also provides an opportunity to improve practices of EIA (Arts & Morrison-Saunders, 2022; Arts et al., 2012). EIA follow-up is believed to encompass five key activities. These are:

1. *Monitoring*: This involves the collection of data via site visits to compare it with stipulations and expectations of environmental standards and regulations (Arts & Morrison-Saunders, 2022; Arts et al., 2012).
2. *Evaluation*: This involves the act of assessing compliance with stipulations and expectations of environmental standards and regulations as well as assessing the environmental performance of the activity (Arts & Morrison-Saunders, 2022; Arts et al., 2012).
3. *Management*: This includes the decisions and corrective action measures put in place to correct issues arising from monitoring and evaluation activities (Arts & Morrison-Saunders, 2022; Arts et al., 2012).
4. *Engagement and Communication*: This involves community engagement whereby relevant stakeholders, and the public are informed about the results of EIA follow-up (Arts & Morrison-Saunders, 2022; Arts et al., 2012).
5. *Governance*: This concept encompasses the establishment and coordination of the structures, mechanisms, and processes needed to operationalise EIA follow-up (Arts & Morrison-Saunders, 2022).

EIA follow-up helps provide information about the possible environmental impacts that construction and operational activities may have and it assists in verifying compliance with environmental requirements (Arts et al., 2012; Morrison-Saunders et al., 2021). Moreover, it strengthens the stakeholders' and public's knowledge of environmental systems, how construction activities can affect the environment, what mitigation measures can be employed, and the use of construction techniques that do not harm the environment (Arts et al., 2012; Morrison-Saunders et al., 2021). Furthermore, it helps improve the quality of future EIAs by learning from previous mistakes and improves public awareness about the actual effects of development projects on the environment. It ensures accountability from project proponents and requires them to employ corrective measures for non-compliant activities (Arts et al., 2012; Morrison-Saunders et al., 2021). While it is important to understand what EIA follow-up is, it is also important to know the implementors of EIA follow-up. Follow-up is done by:

1. Project proponents: Responsible for the implementation of mitigation measures, monitoring and ensuring compliance of projects (Morrison-Saunders & Arts et al., 2024).
2. Impact Assessment (IA) regulators: Oversee and enforce compliance as per regulations and EIA approval conditions (Morrison-Saunders & Arts et al., 2024).
3. Community: Contribute to EIA follow-up through reporting concerns and non-compliance and whistleblowing (Morrison-Saunders & Arts et al., 2024).
4. Indigenous people: Monitor impacts and culturally significant resources and provide knowledge on specific cultural knowledge (Morrison-Saunders & Arts et al., 2024).
5. Individuals or groups (independent): Support EIA follow-up through independent monitoring and audits (Morrison-Saunders & Arts et al., 2024).

2.3.4.1 EIA follow-up principles

There are four categories or groups of principles that are attached to EIA follow-up and each of them is important for its success (Morrison-Saunders et al., 2007). They are known as the why, what, who, and how of EIA follow-up (Morrison-Saunders et al., 2007). Each aspect of EIA follow-up is linked to guiding or operating principles that

help define its purpose, scope, and implementation (Morrison-Saunders et al., 2007). In general:

- **Purpose (“Why”):** The guiding principles emphasize that follow-up is a core component of EIA, ensuring transparency, openness, and a clear commitment to monitoring outcomes.
- **Nature (“What”):** Follow-up activities should be tailored to the societal and cultural context of the EIA, consider cumulative effects and sustainability, and be timely, adaptable, and action oriented.
- **Roles and Responsibilities (“Who”):** Key stakeholders, including project proponents, regulators, and communities have specific roles in EIA follow-up. Collaboration and accountability are critical, and lessons learned should feed into future practice.
- **Implementation (“How”):** Follow-up should be structured with clear roles and objectives, be practical and purposeful, have defined performance criteria, continue throughout the project’s life, and be adequately resourced to ensure effectiveness.

2.3.4.1.1 Updated international best practice principles for EIA follow-up

Although the principles in sub-section 2.3.4.1 are outlined to better understand foundations of EIA follow-up, it is essential to note that these principles have recently been revised and refined to fit current times. This fits the EIA follow-up model of learning from the outcomes of its implementation. Morrison-Saunders et al., (2021) emphasise that EIA follow-up should be understood as an integrated and adaptive process that encompasses monitoring, evaluation, management, communication, and enforcement across the project life cycle rather than as a stand-alone monitoring activity.

Firstly, follow-up activities should be driven by clearly defined objectives, ensuring that both individual actions and the overall follow-up programme are goal-oriented (Morrison-Saunders et al., 2024; Arts & Morrison-Saunders, 2022). The design of EIA follow-up should further be responsive to the specific project context, impact significance, and institutional environment within which it is implemented (Morrison-

Saunders et al., 2024; Arts & Morrison-Saunders, 2022). Effective follow-up planning must begin early in the EIA process, ideally during screening and scoping, to allow sufficient integration into subsequent decision-making stages (Morrison-Saunders et al., 2024; Arts & Morrison-Saunders, 2022).

EIA follow-up is not a once-off exercise, but rather an iterative process that should continue from project approval through implementation and operation (Morrison-Saunders et al., 2024; Arts & Morrison-Saunders, 2022). Transparency is central to this process, requiring that follow-up arrangements, actions, and results are publicly disclosed, with stakeholders receiving appropriate feedback (Morrison-Saunders et al., 2024; Arts & Morrison-Saunders, 2022). In addition, follow-up information should be readily accessible and presented in a manner that is understandable to all relevant stakeholders, supported by effective systems for data archiving and retrieval (Morrison-Saunders et al., 2024; Arts & Morrison-Saunders, 2022).

Clear governance arrangements are also essential. Responsibilities for EIA follow-up must be explicitly defined, with well-justified and measurable performance criteria established in advance (Morrison-Saunders et al., 2024; Arts & Morrison-Saunders, 2022). To ensure compliance, follow-up provisions should include enforcement mechanisms that specify consequences for non-adherence, alongside incentives that promote responsible practice (Morrison-Saunders et al., 2024; Arts & Morrison-Saunders, 2022).

Best practice EIA follow-up further supports continuous learning by incorporating feedback mechanisms that inform future assessments and decision-making (Morrison-Saunders et al., 2024; Arts & Morrison-Saunders, 2022). This learning-oriented approach underpins adaptive management, allowing mitigation measures and management actions to be adjusted in response to monitoring outcomes and changing circumstances (Morrison-Saunders et al., 2024; Arts & Morrison-Saunders, 2022). Flexibility is therefore necessary to accommodate emerging environmental, regulatory, or stakeholder considerations.

Finally, EIA follow-up should operate across multiple decision-making levels, facilitating information exchange between strategic and project-level assessments (Morrison-Saunders et al., 2024; Arts & Morrison-Saunders, 2022). It should also address cumulative impacts by considering the combined effects of multiple activities

within a region (Morrison-Saunders et al., 2024; Arts & Morrison-Saunders, 2022). A holistic perspective is required, whereby the overall outcomes of a project or plan are evaluated in terms of how individual impacts interact and contribute to sustainable development objectives (Morrison-Saunders et al., 2024; Arts & Morrison-Saunders, 2022).

2.3.4.2 EIA follow-up parties

There are three categories of parties involved in EIA follow-up. They consist of first (1st), second (2nd), and third (3rd) parties wherein each party has its own responsibilities with regards to EIA follow-up (Morrison-Saunders et al., 2021). First parties of EIA follow-up are known as the institutions or companies that conduct and own the EIA document that is compiled for a proposed project (Wessels, 2015). These first parties can be project proponents, developers, contractors, and project managers (Wessels, 2015). Their responsibilities in EIA include ensuring environmental compliance with relevant environmental regulations, monitoring, and implementation of stipulated mitigation measures in the EIA document. Further responsibilities include conducting regular inspections for monitoring purposes and developing and implementing corrective measures for non-compliance (Wessels, 2015).

Second parties of EIA follow-up are known as the regulatory bodies of the EIA process which oversee enforcing compliance with environmental regulations (Wessels, 2015). These can be government departments, parastatals, municipalities, and international institutions like the World Bank. Their duties include the issuing of licenses and permits, reviewing EIA documents, and enforcing adherence to them (Wessels, 2015). They also review monitoring data provided by first parties and conduct site visits to assess compliance.

Third parties of EIA follow-up are the public and communities. They can consist of non-governmental organisations (NGOs), environmental practitioners, interested public parties, and projected affected parties (Morrison-Saunders et al., 2021). They play the role of “whistleblowers” as they ensure transparency and accountability in the EIA process while also ensuring adherence to environmental regulations (Wessels, 2015).

2.3.4.3 Community perspectives in EIA follow-up (secondary evidence)

Although communities are recognised as important third parties in Environmental Impact Assessment (EIA) follow-up, evidence from developing countries shows that their involvement is often limited. Research indicates that many communities struggle to participate effectively in EIA follow-up due to structural and institutional barriers, such as poor access to project information, low technical capacity to understand EIA reports, and weak responses from authorities when concerns are raised (Moriah, 2025; Maphanga et al., 2022; Ulibarri et al., 2022). These challenges make it difficult for communities to play a meaningful role in environmental compliance. Maphanga et al. (2022) argue that poverty and low literacy levels in South Africa often constrain meaningful public participation in development projects, as affected communities may struggle to engage with highly technical Environmental Impact Assessment (EIA) documentation. In many instances, this challenge is compounded by the use of complex language and formats that are not accessible to the general public, resulting in the marginalisation of local communities from decision-making processes (Maphanga et al., 2022).

Evidence from other SADC countries shows a similar pattern. Even though EIA laws require public participation, this is often more about meeting formal requirements than genuinely involving communities (Ruppel, 2022). In most cases, communities are only consulted during the early approval stages of projects and are rarely involved in monitoring or enforcement afterwards (Vanclay et al., 2015). This means that valuable local knowledge, which could help identify environmental impacts or non-compliance, is often overlooked. As a result, several problems arise. Environmental violations may go unreported because communities lack the means or platforms to raise concerns (David, 2021). Accountability is also weakened, as developers and regulators are not consistently monitored by affected communities and overall monitoring and enforcement become less effective, especially in contexts where regulatory systems are already stretched (OECD, 2025).

Power imbalances further complicate the public participation whereby project developers and regulatory authorities hold decision making power, thus leaving local communities with little to no influence on projects (Maphanga et al., 2022). This is exacerbated by socio-economic challenges such as poverty and limited education,

which reduce communities' ability to engage with complex EIA processes (Maphanga et al., 2022). While the literature highlights the important role communities can play in improving transparency and accountability, in practice their involvement in EIA follow-up remains limited. This gap points to the need for more inclusive and practical approaches that better support meaningful community participation in environmental monitoring and enforcement.

2.4 Environmental compliance and governance within the Southern African Development Community (SADC)

SADC refers to the Southern African Development Community, a regional body made up of 16 member countries, namely, South Africa, Angola, Eswatini, Zimbabwe, Zambia, Tanzania, Botswana, Namibia, Mauritius, Madagascar, Lesotho, Comoros, Democratic Republic of Congo, Malawi, Mozambique, and Seychelles (Southern African Development Community, 2019). SADC aims to promote regional development, peace, and security, while fostering economic growth. Its broader goal is to reduce poverty, improve the quality of life of people in Southern Africa, and support vulnerable groups through regional cooperation grounded in democratic values and fair, sustainable development (Southern African Development Community, 2019). Environmental governance within the SADC Region has evolved significantly over the past two decades due to the threat that industrialisation has on the region's rich biodiversity and natural resources (Southern African Development Community, 2015a). This reflects the growing recognition of the shared nature of the region's environmental challenges, highlighting the need for stringent legal requirements.

Ruppel (2022) argues that, similarly to the protection of human rights, the protection of the environment and environmental concerns are not a major priority of regional economic communities (RECs) like the SADC. However, Ruppel (2022) illustrates that legal frameworks for environmental concerns do exist in the SADC and that they do cater for environmental protection. The SADC Treaty lays out objectives in the aim of achieving sustainable development. Article 5 (g) of the SADC Treaty illustrates the objective to "achieve sustainable utilisation of natural resources and effective protection of the environment" (Southern African Development Community, 2015b, p.6). This objective of the Treaty calls for the harmonisation of political and social policies of SADC member states in the aim to raise awareness for environmental

protection (Ruppel, 2022). Moreover, in achieving the objectives of the SADC Treaty, there are also protocols in place. Protocols are procedures or systems in the SADC that come into force once two thirds of SADC member states have ratified it (Ruppel, 2022). Table 1 below shows the protocols of SADC in relation to environmental matters.

Table 1: SADC protocols (Ruppel, 2022, P. 160)

Protocol	Date of entry into force
Protocol on Energy	17/04/1998
Protocol on Environmental Management for Sustainable Development	–
Protocol on Fisheries	08/08/2003
Protocol on Forestry	17/07/2009
Protocol on Health	14/08/2004
Protocol on Mining	10/02/2000
Protocol on Shared Watercourse Systems	28/09/1998
Revised Protocol on Shared Watercourses	22/09/2003
Protocol on Tourism	26/11/2002
Protocol on Trade	25/01/2000
Protocol on Transport, Communications and Meteorology	06/07/1998
Protocol on Wildlife Conservation and Law Enforcement	30/11/2003

The SADC Protocol on Environmental Management for Sustainable Development, signed in 2014, is a key instrument for harmonising environmental governance in the region. However, this protocol is yet to be ratified as Namibia and Eswatini are the only member states to ratify the Protocol showcasing the gap in concern for environmental protection in the region (Ruppel, 2022). The SADC Executive Secretary has since called for the expedited ratification of this protocol to achieve sustainable use and management of the environment (Ruppel, 2022). Other protocols, such as the SADC Protocol on Shared Watercourses, encourage cooperation on water resources. For Eswatini in particular, the Incomati and Maputo Watercourse Commission (INMACOM) looks over the Incomati and Maputo River basins that are shared by Eswatini, Mozambique, and South Africa (Ruppel, 2022).

Although legal frameworks for environmental protection exist in the region, their effectiveness and environmental compliance is constrained by several interrelated challenges. Drawing on Zimbabwe as a representative case for the region, several obstacles can be seen to undermine efforts to promote environmental sustainability, especially in the construction sector (Njere & Moyo, 2025). Njere and Moyo (2025)

contend that weaknesses in legislation are a central driver of environmental non-compliance. Although environmental laws are in place, they argue that the existing regulatory system is not enforced with sufficient rigour in practice. Consequently, strengthening is required through more effective management approaches, shifts in organisational culture, and improvements to existing procedures to enhance environmental protection (Njere & Moyo, 2025). Moreover, the study also suggests that a key limitation is the lack of awareness on environmental matters. This is a challenge for environmental protection and further highlights the previous argument by Ruppel which suggests that environmental concerns are not a priority to regulators (Njere & Moyo, 2025; Ruppel, 2022). This then creates a gap between policy and implementation wherein legislation exists but is not effectively implemented.

Although emerging trends do show shifts towards strengthening environmental governance in the SADC Region, climate change is now a globally recognised phenomenon that needs urgent attention. The SADC Region is especially vulnerable to climate change phenomena such as intense droughts, floods, and cyclones that threaten the livelihood of the people through food insecurity. SADC countries have agreed to follow a shared path of sustainable development and to enhance their responses to climate change (OECD, 2023). In addition, SADC has encouraged and pushed its member states to subscribe to international standards like the United Nations Sustainable Development Goals and the Paris Agreement in a bid improve environmental governance in the region (Ruppel, 2022). Furthermore, with technological advancements, there is also a shift towards digital monitoring in some member states that aims for better data collection for compliance monitoring (Southern African Development Community, 2023). Lastly, while legal frameworks are improving and new technologies for monitoring are emerging, actual enforcement remains the weakest link in the SADC Region for effective environmental protection.

2.5 Eswatini's EIA obligations and related governance structures of construction projects

In Eswatini, all construction projects must fulfil their EIA obligations before, during, and after a project. Compliance covers both legally binding duties and additional requirements arising from legislation, contracts, codes of practice, and voluntary industry standards (Green Spark, 2018). Figure 4 below is an ATLAS.ti network showing Eswatini's EIA obligations framework. This data was derived from the analysis

of the literature review of this study (section 2.5) on Eswatini's EIA obligations and related governance structures of construction projects.

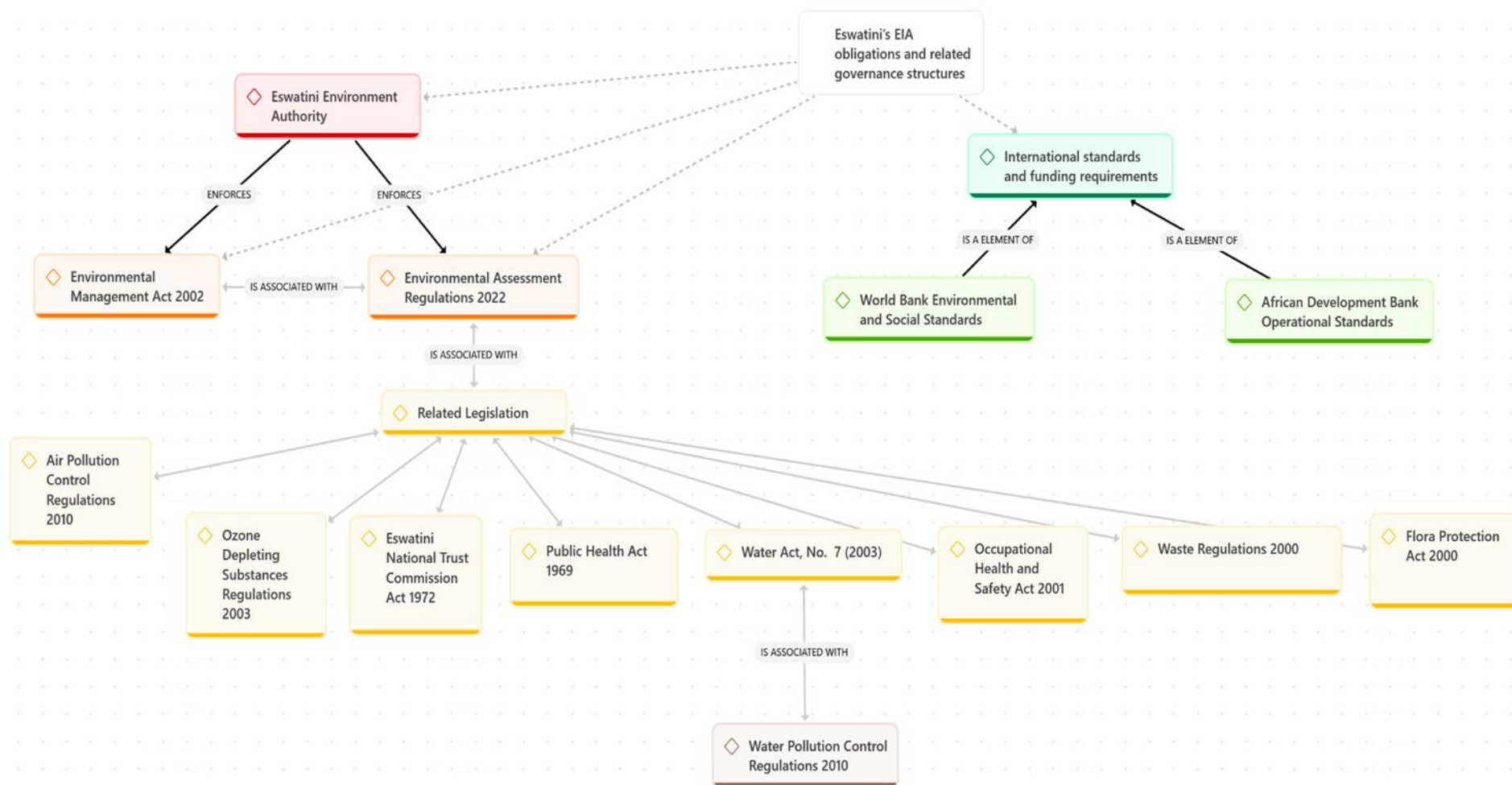


Figure 4: Eswatini's EIA obligations framework (ATLAS.ti network)

Sub-section 2.5.1 to follow discusses governing bodies of construction projects, namely, the Eswatini Environment Authority and the Eswatini Environmental Law. Sub-section 2.5.2 then discusses international EIA obligations, which for this study, are the World Bank Environmental and Social Standards as well as the African Development Bank Environmental and Social Operational Safeguards. Moreover, sub-section 2.5.3 analyses the effectiveness of EIA governance in Eswatini.

2.5.1 Eswatini Environment Authority and Environmental law governing EIA processes for construction projects

2.5.1.1 *Eswatini Environment Authority*

The Eswatini Environment Authority (EEA) is the country's primary environmental regulator, responsible for overseeing environmental issues through regulation, monitoring, and enforcement (Eswatini Environment Authority, 2022). EEA aims to safeguard and conserve the environment while supporting sustainable natural resource management where relevant (Eswatini Environment Authority, 2022). In addition to the Eswatini Environment Authority as the principal environmental regulator, environmental compliance for construction projects in Eswatini is also supported by several sector-specific regulatory institutions. The other regulatory institutions are sector-specific, depending on the type of construction projects and the sector that they affect. For projects that are water-related, the Department of Water Affairs, under the Ministry of Natural Resources and Energy, ensures that water-related activities, such as water abstraction and effluent discharge, are all conducted in compliance with the Water Act No. 7 of 2003 (Eswatini Government, 2003a). Moreover, the Construction Industry Council of Eswatini ensures that all construction works are conducted under the guidelines of the National Construction Industry Policy (Ministry of Public Works and Transport, 2024). Lastly, the Ministry of Labour and Social Security uses the Occupational Health and Safety Act of 2001, stipulating that construction activities should not harm the workers of projects and the surrounding communities (Eswatini Government, 2001).

The EEA operates as a government parastatal under the Ministry of Tourism and Environmental Affairs of Eswatini which is tasked with spearheading sound environmental management issues in the country. The Authority has wide-ranging powers and responsibilities which include policy and legislation development,

environmental monitoring and management, environmental awareness, and setting environmental standards (Eswatini Environment Authority, 2022). Figure 5 below also illustrates the organisational structure of the Eswatini Environment Authority:



Figure 5: Organisational structure of Eswatini Environment Authority (Walmsley & Patel, 2012)

The Eswatini Environment Authority (EEA) are the entity responsible for assessing and reviewing environmental assessments in accordance with the relevant provisions of the Environmental Assessment Regulations of 2022. All proposed construction projects are subject to environmental screening, and a project brief must be submitted to Eswatini Environment Authority, detailing the proposed project (Eswatini Government, 2022). Thereafter, Eswatini Environment Authority assigns a project category based on the level of impact the project will have on the baseline environment. Once a category assigned, EEA requires project proponents to submit an environmental assessment based on the category, which is reviewed before the Authority issues an authorisation letter. The categories are as follows (Eswatini Government, 2022):

1. Category 1 (lowest): Environmental Management Plan (EMP)
2. Category 2: Initial Environmental Evaluation and Comprehensive Mitigation Plan (IEE/CMP)

3. Category 3 (highest): Environmental and Social Impact Assessment and Comprehensive Mitigation Plan (ESIA/CMP)

Figure 6 below illustrates the Environmental Impact Assessment flow in Eswatini as discussed.

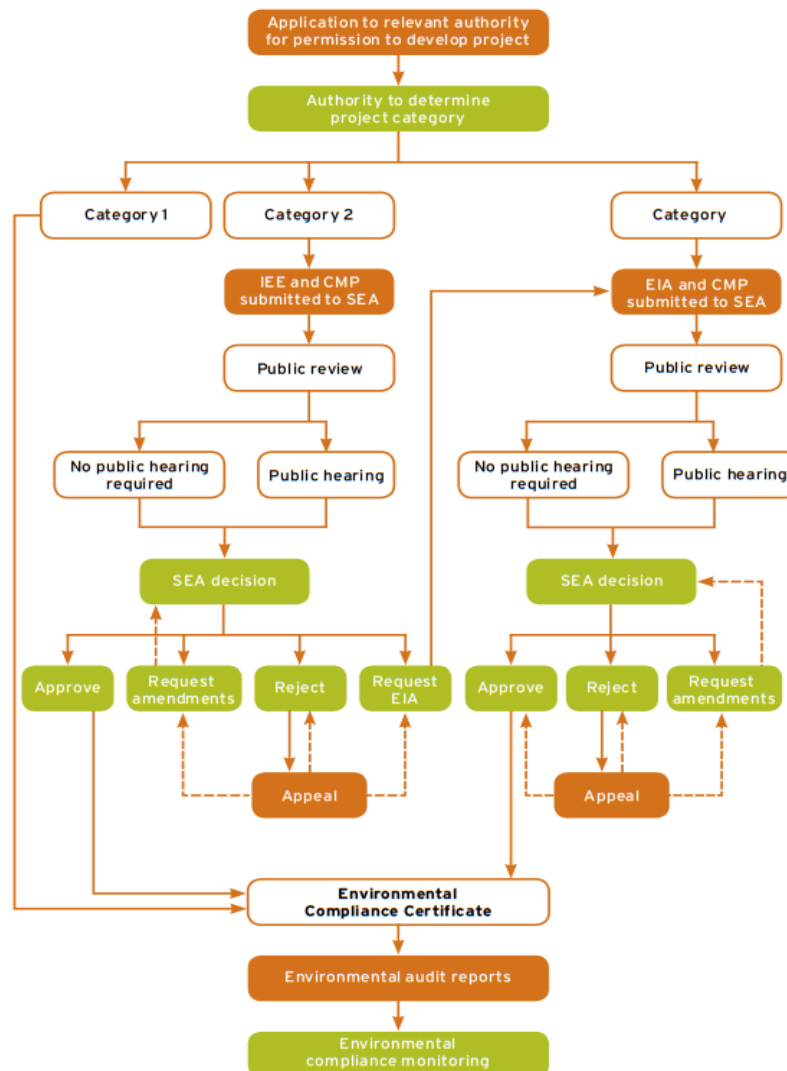


Figure 6: Eswatini Environmental Impact Assessment flow (Walmsley & Patel, 2012).

2.5.1.2 The Environmental Management Act, 2002

The Environmental Management Act provides the legal framework for environmental governance in Eswatini. It establishes the institutional structure for national environmental management and outlines the tools, processes, and mechanisms for managing the environment, pollution, waste, and public participation (Eswatini Government, 2002a). The Act also sets out provisions for compliance and enforcement, with the overarching purpose of promoting the protection, conservation,

and sustainable management of natural resources for present and future generations (Eswatini Government, 2002a).

To achieve these goals, the Act incorporates several guiding principles. It recognises the environment as a shared heritage that must be preserved for future generations and emphasises the prevention and minimisation of adverse impacts through integrated, long-term planning and coordinated efforts (Eswatini Government, 2002a). The precautionary principle is applied to manage risks even in the absence of complete scientific certainty, while the polluter-pays principle ensures that those responsible for environmental harm bear the full social and environmental costs of mitigation or remediation. The Act further promotes prudent use of non-renewable resources, sustainable utilisation of renewable resources and ecosystems, and minimisation of waste, with preference given to reuse, recycling, recovery, and safe disposal in ways that avoid or minimise environmental harm (Eswatini Government, 2002a).

The main objectives of the Act include providing a comprehensive framework for environmental protection and integrated natural resource management, transforming the Eswatini Environment Authority into a corporate body, establishing the Swaziland Environment Fund, and addressing other matters necessary to support these aims (Eswatini Government, 2002a).

2.5.1.3 Environmental Audit, Assessment and Review Regulations (EAARR), 2000 and The Environmental Assessment Regulations 2022

The process of conducting Environmental Impact Assessments (EIAs) in Eswatini is guided by national legislation. Previously, the Environmental Audit, Assessment and Review Regulations (EAARR) of 2000 provided an overview of the processes and criteria for project screening, categorization, public participation, and environmental audits for operations of concern to the Eswatini Environmental Authority (EEA) (Eswatini Government, 2000a). These regulations also specified the formats and procedures for compiling environmental audits, EIAs, Initial Environmental Evaluations (IEEs), and Comprehensive Mitigation Plans (CMPs), and remained in effect for twenty-two years. On the 30th of December 2022, the Eswatini Government promulgated updated legislation, known as the Environmental Assessment Regulations of 2022, which currently govern the EIA process (Eswatini Government,

2022). Under these regulations, the Eswatini Environmental Authority categorizes projects into three levels based on the anticipated environmental impacts and the level of assessment detail required.

2.5.1.3.1 Category One of EIA applications

These are projects that require only a project brief, and the project may be approved outright without the preparation of a full environmental report (Eswatini Government, 2022).

2.5.1.3.2 Category Two of EIA applications

Category Two projects involve greater potential impacts, although these are relatively predictable and do not necessitate an in-depth assessment. For these projects, the proponent prepares an Initial Environmental Evaluation (IEE) accompanied by a Comprehensive Mitigation Plan (CMP) (Eswatini Government, 2022). Following submission, the Eswatini Environmental Authority reviews the documents and may either issue approval directly or, if deemed necessary, release the documents for public review (Eswatini Government, 2022). Any comments raised during the public review must be addressed by the project proponent before final approval is granted (Eswatini Government, 2022).

2.5.1.3.3 Category Three of EIA applications

Category Three projects are those considered to have significant environmental impacts due to their location, proposed activities, or operational nature. The process for these projects begins with a scoping phase, during which critical environmental and social issues are identified, and relevant stakeholders are consulted (Eswatini Government, 2022). This phase includes both preliminary stakeholder consultations and a publicly advertised meeting to ensure all interested parties are identified and their concerns are captured (Eswatini Government, 2022). The scoping report, once approved by the Eswatini Environmental Authority, serves as the Terms of Reference for the full EIA and outlines the required studies (Eswatini Government, 2022).

Following approval of the scoping report, the proponent conducts detailed EIA surveys, consultations, and specialist studies. The results are compiled into a full Environmental Impact Assessment Report, accompanied by a Comprehensive Mitigation Plan detailing strategies to address identified adverse impacts (Eswatini Government,

2022). Upon submission to the Eswatini Environmental Authority, the report is reviewed internally and, when deemed satisfactory, is released for public review.

2.5.1.3.4 Public review of EIA applications

During this stage, notices are published in the media, and reports are made accessible at strategic locations to facilitate stakeholder engagement (Eswatini Government, 2022). Stakeholder comments are then considered, and the report may be revised and resubmitted (Eswatini Government, 2022). Once both the Eswatini Environmental Authority and the public are satisfied that all issues have been adequately addressed, environmental authorisation for the project is granted.

2.5.1.3.5 Existing Projects of EIA applications

With regards to existing projects, project proponents must submit an Environmental Audit (EA) and a Comprehensive Mitigation Plan (CMP) to the Eswatini Environment Authority for review (Eswatini Government, 2022). Once the EEA approves the submission, the project undergoes a public review before an Environmental Compliance Certificate is issued (Eswatini Government, 2022).

2.5.1.3.6 Strategic Environmental Assessments of EIA applications

Any project proponent intending to introduce a bill, regulation, public policy, programme, or plan that may result in adverse effects on environmental protection, conservation, enhancement, or the sustainable use of natural resources is required to formally notify the Eswatini Environment Authority prior to its introduction (Eswatini Government, 2022). In circumstances where a strategic environmental assessment is triggered, the proponent is further obligated to prepare and submit the required assessment documentation to the Authority for consideration (Eswatini Government, 2022).

2.5.1.3.7 Public hearing of EIA applications

Following the conclusion of the public review period, the Eswatini Environment Authority is required to determine, within a prescribed timeframe, whether a public hearing is warranted (Eswatini Government, 2022). This determination is informed by an evaluation of the submitted documentation and reports, particularly where the proposed project is considered environmentally sensitive, or where substantial public concern has been raised (Eswatini Government, 2022). In cases where written and

well-substantiated objections are numerous, the Authority may require that a public hearing be convened to allow for further stakeholder input (Eswatini Government, 2022).

2.5.1.3.8 Decision of proposed project of EIA applications

After the public review period, the Eswatini Environment Authority (EEA) decides whether a public hearing is needed, based on project sensitivity and public concern. Within twenty days, the Authority either approves the project, issuing an environmental compliance certificate, or halts it if the environmental impacts are unacceptable or mitigation measures are insufficient. If halted, the proponent can submit revised documents for review. The decision is communicated through notices to authorities, media publication, and public display, ensuring that all stakeholders, including those who raised comments or objections, are informed (Eswatini Government, 2022).

2.5.1.3.9 Appeals of EIA applications

Any individual dissatisfied with a decision by the Eswatini Environment Authority (EEA) or the outcome of a public hearing may appeal to the Minister of Tourism and Environmental Affairs within fifteen days, subject to payment of the prescribed fee. Once the Ministry has reviewed the appeal, its decision is final (Eswatini Government, 2022).

2.5.1.4 *Other relevant legislation applicable to EIA obligations of construction projects in Eswatini*

Table 2 below summarises other key legislation and regulations that are relevant to the planning, implementation, and management of construction projects in Eswatini.

Table 2: Key legislation applicable to construction projects in Eswatini

Regulation / Act	Relevance to Construction Projects in Eswatini
Waste Regulations, 2000	These regulations govern management of all types of waste. Construction projects must comply with requirements for storage, collection, transport, and disposal of waste, both in urban and non-urban areas, ensuring proper waste

Regulation / Act	Relevance to Construction Projects in Eswatini
	management during construction activities (Eswatini Government, 2000b).
Water Act No. 7, 2003	This Act provides the legal framework for water use and management (Eswatini Government, 2003a). Construction projects must obtain water use permits, adhere to water resource planning, and ensure sustainable utilisation of surface and groundwater resources.
Water Pollution Control Regulations, 2010	These regulations protect water quality by setting effluent standards. Construction projects must prevent discharge of pollutants into water bodies, monitor effluent at fixed points, keep records, and report to authorities (Eswatini Government, 2010a).
Air Pollution Control Regulations, 2010	These regulations set air quality standards and controls emissions. Construction projects must manage dust and emissions from machinery, vehicles, and other construction activities to comply with air quality requirements (Eswatini Government, 2010b).
Occupational Health and Safety Act, 2001	This Act establishes responsibilities for employers, employees, and government regarding workplace health and safety. Construction projects must implement safety measures, provide training, and ensure compliance through health and safety committees (Eswatini Government, 2001).
Ozone Depleting Substances Regulations, 2003	These regulations control production, use, and trade of ozone-depleting substances. Construction projects must avoid harmful chemicals and promote use of ozone-friendly products and technologies (Eswatini Government, 2003b).
Flora Protection Act, 2000	This Act protects indigenous flora. Construction projects must avoid damaging protected plants, and any vegetation

Regulation / Act	Relevance to Construction Projects in Eswatini
	clearance must comply with legal provisions (Eswatini Government, 2002b).
Public Health Act, 1969	This Act regulates public health, sanitation, and disease control. Construction projects must prevent environmental nuisances, maintain clean sites, and avoid water pollution affecting communities (Eswatini Government, 1969).
Eswatini National Trust Commission Act, 1972	This Act protects cultural and natural heritage. Construction projects near heritage sites, national parks, monuments, or reserves must comply with conservation rules and coordinate with the ENTC (Eswatini Government, 1972).

2.5.1.5 Sectorial and professional agencies allied to the Eswatini Environment Authority

While Eswatini Environment Authority (EEA) is the principal environmental agency that regulates Environmental Impact Assessment (EIA) processes in Eswatini, environmental compliance of construction projects is also dependent on the contribution of other regulatory agencies such as the Ministry of Labour and Social Security and the Construction Industry Council (CIC). Environmental compliance in construction is inherently multi-sectoral, requiring coordination between environmental regulators and agencies responsible for labour conditions, occupational safety, construction standards, and professional conduct.

2.5.1.5.1 Ministry of Labour and Social Security and Social Security

The Ministry of Labour and Social Security of Eswatini have an important role of ensuring environmental compliance through the enforcement of occupational health and safety standards under the Occupational Health and Safety Act of 2001 (Eswatini Government, 2001). Although the Ministry is not the primary environmental regulator, construction-related environmental compliance cannot be separated from worker health, site safety, and community protection, particularly where dust emissions, hazardous waste handling, noise pollution, unsafe excavations, and chemical exposure are involved.

The Occupational Health and Safety Act of 2001 seek to ensure that construction activities do not endanger employees or surrounding communities (Eswatini Government, 2001). This aligns closely with EIA follow-up requirements, particularly where mitigation measures relate to hazardous materials management, pollution prevention, waste disposal, and emergency preparedness (Arts & Morrison-Saunders, 2022; Arts et al., 2012). In practice, poor occupational safety often reflects broader environmental non-compliance, especially where contractors fail to implement approved Environmental Management Plans (EMPs).

However, research shows that the Ministry of Labour and Social Security has significant pitfalls in ensuring the enforcement of environmental compliance. The Ministry of Labour and Social Security's Annual Report for 2024/25 revealed a 12% decline in labour inspections across the country (Ntshakala, 2025). These constraints include limited resources, transport challenges, and a shortage of personnel which are further discussed in the results and discussion chapter (chapter 4) of this study (Ntshakala, 2025). A significant challenge identified in the report is the severe shortage of labour inspectors, with the Ministry of Labour and Social Security's General Inspectorate Unit operating with only 13 inspectors responsible for monitoring and enforcing compliance across more than 20,000 work establishments nationwide (Ntshakala, 2025). This gap highlights the major and alarming gap in ensuring environmental compliance at construction projects to limited resources and supports discussions in section 4.3.1 of this study.

This institutional fragmentation weakens EIA follow-up by reducing accountability and creating enforcement gaps. Therefore, stronger integration between the Ministry of Labour and Social Security and EEA is necessary to improve compliance monitoring at construction sites.

2.5.1.5.2 Construction Industry Council (CIC)

The Construction Industry Council (CIC) of Eswatini is a professional regulatory body responsible for promoting standards, professionalism, and accountability within the construction sector under the National Construction Industry Policy (Ministry of Public Works and Transport, 2024). The Council's role is important in ensuring environmental compliance of construction projects as construction standards affected environmental performance. The Construction Industry Council (CIC) supports environmental

governance by ensuring that contractors are qualified, follow professional standards, and comply with approved project specifications, which helps improve the implementation of EIA mitigation measures, proper budgeting for environmental issues, and environmental representation on construction sites (Ministry of Public Works and Transport, 2024).

However, literature suggests that the Construction Industry Council has its own flaws. Literature suggests weaknesses/limitation in the legislative framework in Eswatini's construction industry spearheaded by the Construction Industry Council (Hlatshwayo et al., 2025). Hlatshwayo et al., (2025) stipulate that the construction industry's legislative frameworks lack effective due to various issues, including unequal opportunities among contractors, corruption within the tendering system, and inconsistencies within the regulatory framework. These concerns are echoed in recent media reports, which highlight tensions between government and local contractors regarding fairness and access to opportunities in the sector (Africa Press, 2024). Furthermore, the study highlights that the largely top-down approach to regulation and the limited capacity to enforce compliance undermine the ability of the Council to adequately address stakeholder needs and achieve its intended mandate.

2.5.2 International obligations

As a developing country, Eswatini sometimes struggles with funding for the implementation of projects. This leads to the country having to borrow funds from various banks including the World Bank and African Development Bank. These banks have certain environment and social standards that need to be met during the implementation of these projects. Projects are implored to apply the above standards for internationally funded projects, ensuring full compliance while leaving both the environment and the community in a better condition than they were found.

Table 3 outlines the international environmental and social standards that are relevant to construction projects in Eswatini.

Table 3: International Environmental and Social Standards relevant to construction projects in Eswatini

Framework / Standard	Relevance to construction projects in Eswatini
World Bank Environmental and Social Framework	The World Bank ESF establishes a set of environmental and social standards to help manage risks and promote sustainable development outcomes (World Bank, 2023). Construction projects must assess and manage environmental and social risks throughout the project life cycle, ensure safe and fair labour practices, use natural resources efficiently, prevent pollution, and protect community health and safety (World Bank, 2023). Projects must also respect land rights, safeguard biodiversity, consider the rights of indigenous peoples and historically underserved communities, protect cultural heritage, ensure financial accountability, and actively engage with stakeholders while disclosing relevant information (World Bank, 2023).
African Development Bank Operational Standards	The AfDB Operational Standards provide safeguards to maximise positive project outcomes while minimising environmental and social risks, including those related to climate change (African Development Bank Group, 2023). Construction projects financed or supported by AfDB are required to implement thorough environmental and social risk assessments, maintain safe labour conditions, manage resources efficiently, and prevent pollution (African Development Bank Group, 2023). They must also protect community health, address land acquisition, and resettlement responsibly, conserve biodiversity and habitats, protect vulnerable groups, safeguard cultural heritage, ensure responsible management of financial intermediaries, and maintain effective stakeholder engagement and transparency

	throughout the project (African Development Bank Group, 2023).
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2.5.3 Analysis of the effectiveness of EIA governance in Eswatini

While Eswatini has established a comprehensive legal and institutional framework for environmental compliance driven by the Environmental Management Act (2002) and the Environmental Assessment Regulations (2022), the effectiveness of these frameworks in practice remains a subject of concern. The mere existence of legislation does not guarantee effective environmental governance. Key challenges identified include limited institutional capacity, inadequate financial and human resources, and weak enforcement mechanisms (discussed in section 4.3.1 of this study). These constraints reduce the ability of regulatory authorities, particularly the Eswatini Environment Authority (EEA), to effectively monitor and enforce compliance at construction project sites.

Furthermore, the governance structure, while clearly defined on paper, appears to face coordination challenges between different institutions involved in environmental management (discussed in section 4.3.1.2.2 of this study). This results in overlaps in responsibility, delays in decision-making, and gaps in enforcement. In addition, monitoring approaches remain largely reactive and dependent on manual inspections, which limits the consistency and frequency of compliance oversight. Another critical issue relates to the enforcement of penalties. Although regulatory provisions for enforcement exist, their effectiveness is often undermined by inconsistent application and limited deterrence (discussed in section 4.3.1.2.3 of this study). This creates an environment where non-compliance may persist despite the existence of legal consequences.

In practice, environmental compliance is also shaped by stakeholder interactions and incentive structures within construction projects. Developers and contractors often operate under financial and time pressures, which can lead to cost-cutting on environmental mitigation measures or prioritising project completion over full adherence to Environmental Management Plans (Glasson & Therivel, 2019; Zhang et al., 2008). Compliance is therefore not only a legal requirement but also a strategic response to economic pressures and perceived enforcement risks (Potoski & Prakash,

2005). At the same time, third-party actors such as local communities, although formally included in Environmental Impact Assessment (EIA) follow-up processes, often face barriers such as limited access to information, low technical capacity, and weak institutional responsiveness, which constrain their ability to monitor, report, or challenge non-compliance (Kantamaturapoj et al., 2023). These dynamics complicate enforcement and demonstrate that compliance outcomes are shaped not only by formal regulatory frameworks but also by broader socio-institutional contexts, including power relations, capacity constraints, and stakeholder incentives (Adomako & Tran, 2026).

These challenges point to a broader gap between policy and practice, where environmental compliance systems are well-developed in theory but less effective in implementation. This gap highlights the need for a deeper, context-specific investigation into how environmental compliance management, monitoring, and enforcement function in practice within Eswatini's construction sector. It is within this context that the present study is positioned, aiming to move beyond a descriptive understanding of governance structures and to explore the real-world challenges experienced by EIA follow-up parties.

2.6 Influence of the literature review on research design and data collection

One of the central aims of the literature review was to inform the development of specific research questions. Rather than formulating the interview guide (Annexure B) independently, the researcher used the literature review to formulate interview questions based on main ideas that emerged from the literature. These included issues of environmental compliance management, the effectiveness of environmental enforcement, and global monitoring practices. These aspects were translated into defined interview sections and questions. The review of Eswatini's legal and institutional framework highlighted some of Eswatini's challenges regarding compliance with EIA approval conditions. This also shaped the focus of the interview questions in Annexure B. The following table displays which questions were formulated using the literature review and the rationale behind them.

Table 4: Literature informed interview questions used in the study

Question number (Annexure B)	Source from literature	Rationale for question development
2.1	Environmental compliance management challenges (section 2.4 & sub-section 2.3.1)	The literature identified compliance management weaknesses in developing countries prompting the need to explore the current state of environmental compliance in Eswatini's construction industry
2.3	Gaps in EIA follow-up implementation (sub-section 2.3.4)	Studies show gaps in the implementation of mitigation measures after EIA approval, informing questions on compliance challenges
3.1	Effectiveness of environmental enforcement (sub-section 2.3.2)	The literature highlights weaknesses in enforcement measures, especially in developing countries with lack of resources. This called for the evaluation of enforcement effectiveness
3.3	Institutional roles and governance (section 2.5)	The literature identifies fragmented and individualistic institutional responsibilities and approaches. This informed questions on the roles of regulatory bodies of enforcement in Eswatini
3.4	Punitive systems for non-compliance (sub-section 2.3.2)	Weak and inconsistent penalties for non-compliance were identified as a compliance barrier, prompting the question.
4.1	Construction monitoring (sub-section 2.3.3)	Studies show inadequate monitoring of construction projects in developing

Question number (Annexure B)	Source from literature	Rationale for question development
		countries, prompting the question to discover monitoring barriers
4.3	Monitoring capacity (sub-section 2.3.3)	Studies consistently cite resource and technical limitations affecting monitoring effectiveness.
6.2	Capacity building needs (sub-sections 2.3.1 & 2.5)	Capacity constraints identified in literature informed questions on training and capacity-building needs.

2.7 Conceptual framing of the study

The preceding sections of the literature review are synthesised into a conceptual framework that guides the analytical approach of the study. In this research, the conceptual framework is understood as an analytical tool that identifies key concepts and illustrates the relationships between them within the context of environmental compliance in construction projects. Environmental compliance is positioned as the central outcome, shaped by the interaction between environmental compliance management, monitoring, and enforcement systems. These operational mechanisms are influenced by broader governance structures, including institutional arrangements and the distribution of regulatory authority, which determine how compliance systems are organised and implemented in practice. The following conceptual framework in Figure 7 illustrates the relationships between governance structures, institutional capacity, environmental compliance mechanisms, EIA follow-up parties, and environmental compliance outcomes

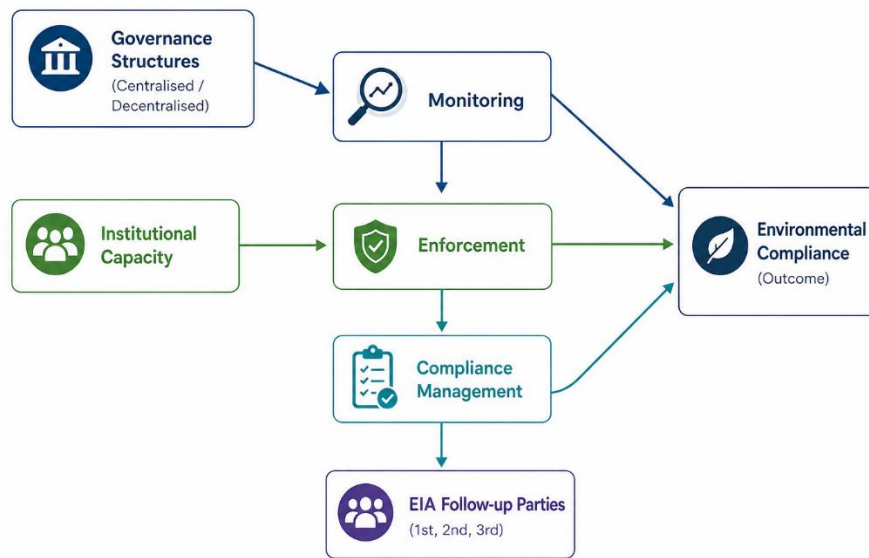


Figure 7: Conceptual framework

Figure 7 illustrates how the effectiveness of environmental compliance mechanisms is further shaped by institutional capacity and the roles of EIA follow-up parties. Institutional capacity, including financial, technical, and human resources, constrains or enables the ability of regulators and project proponents to monitor and enforce compliance. At the same time, first, second, and third EIA follow-up parties influence implementation, oversight, and accountability within the system. EIA follow-up therefore represents the critical stage where these interactions converge, ultimately determining environmental compliance outcomes. This conceptual framing provides a structured basis for analysing how governance, capacity, compliance mechanisms, and stakeholder roles interact to produce observed compliance challenges within construction projects in Eswatini.

2.8 Identified literature gap in relation to the study focus

The literature review identified gaps in the literature in relation to environmental compliance management, enforcement, and monitoring in the context of construction projects in Eswatini. The reviewed literature mainly focuses on aspects of environmental regulations and EIA compliance systems prior to EIA approval as opposed to incorporating literature on post-approval phases. The literature in relation to environmental compliance in Eswatini is limited and primarily focuses on environmental degradation and legislative frameworks. Furthermore, the literature

review exposed the absence of information regarding environmental compliance management, enforcement, and monitoring of all phases of construction projects. Significantly, information on experiences of EIA follow-up parties is limited. This limits the ability of existing literature to clearly explain where, how, and why environmental compliance challenges arise at project level. Consequently, a gap exists in context-specific, post-approval studies that examine environmental compliance management, enforcement, and monitoring together within construction projects in Eswatini.

This literature review therefore aimed to address this gap by drawing together relevant theory, global and regional empirical studies, and the limited national literature to establish a clear analytical foundation for examining post-approval environmental compliance processes in Eswatini's construction sector.

2.9 Conclusion to the literature review

In conclusion, this literature review aimed to answer two sub-questions of the study:

- 1. What are the global elements of the regulatory cycle for effective environmental compliance management, enforcement, and monitoring?*
- 2. Which applicable EIA compliance obligations and related governance structures exist in Eswatini to manage, enforce, and monitor environmental compliance at construction sites?*

In response to Sub-question 1, the international literature reviewed in sections 2.2 and 2.3 shows that effective environmental compliance is an ongoing process rather than a once-off requirement at the approval stage. The literature explains that this process involves setting clear environmental rules, incorporating compliance conditions in project approvals, conducting regular monitoring and site inspections, responding to non-compliance, and using feedback to improve future practice. These key elements of the regulatory cycle are visually illustrated through the ATLAS.ti network analysis presented in Figure 3, which highlights how the main global compliance themes are interconnected.

With regards to Sub-question 2, the review of Eswatini's legislation, policies, and institutional arrangements in sections 2.4 and 2.5 demonstrates that there are clear compliance obligations and governance structures that apply to construction projects. These include conditions attached to EIA approvals, legal responsibilities placed on developers and contractors, and defined roles for authorities responsible for

monitoring and enforcement. The relationships between these obligations and governance actors are captured in the ATLAS.ti network visual shown in Figure 4, which reflects how environmental compliance is structured and managed within the Eswatini context.

The next chapter provides a description of the research design, methodology and methods used in this study to answer the research questions.

3 RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter outlines the research approach and methods used to explore environmental compliance management, enforcement, and monitoring issues in construction projects within the Hhohho Region of Eswatini. It explains the overall research design, including the qualitative approach and multiple case study strategy adopted for this study. The chapter further describes how data was collected and analysed, including the selection of participants, data collection tools, and procedures followed during the research process. It also discusses the steps taken to ensure the credibility and reliability of the findings. Lastly, ethical considerations and limitations of the study are presented to provide a clear and transparent account of how the research was conducted.

3.2 Methodology

According to Sreekumar (2023), research methodology refers to the methods and processes employed to gather and examine information on a particular research subject. Moreover, a research methodology is the process by which a researcher achieves their research objectives through various research instruments and is crucial in providing a framework for the researcher to define their research questions and objectives (Sreekumar, 2023). This chapter illustrates the research methods the researcher used to answer the research questions of the study (see section 1.4 for the research questions). Moreover, it also describes the methods that the researcher used to identify the sample population for the study and the methods of data collection and data analysis to answer the research questions are discussed in this section. Lastly, sections on ethical considerations and limitations of the study are discussed.

3.3 Research paradigm

The researcher of the study employed constructivism as the study's philosophical stance. Constructivism focuses on how individuals actively create their own understanding of reality through cognitive processes, leading to the existence of multiple realities (Shannon-Baker, 2022). Constructivism was selected by the researcher as it aimed to explore the lived experiences, perceptions, and interpretations of various stakeholders involved in environmental compliance management, monitoring, and enforcement of construction projects in Eswatini. The

researcher deemed constructivism as the appropriate paradigm as it allowed for the researcher to understand social realities that pose challenges and issues for environmental governance.

Nonetheless, limitations of this approach do exist in the form of subjectivity related to researcher bias as interpretations of data can be formed between the study's participants and the researcher (Lim, 2025). To minimise this risk, the researcher ensured transparency by clearly documenting each stage of the research process, including how data were collected, coded, and interpreted. In addition, the researcher maintained detailed field notes and a reflexive journal to reflect on personal assumptions and how these may have influenced the analysis. Consistency in the use of interview guides across participants was also applied to reduce variability in data collection, while verbatim quotations were used in the presentation of findings to accurately represent participants' views. These steps helped to strengthen the credibility of the study and reduce the likelihood of bias influencing the results.

3.4 Research design

The research design is a crucial part of a research study as it informs the structure and strategy the researcher employs to conduct a research study (Ranganathan & Aggarwal, 2018). A research design is essentially the blueprint that guides the researcher in establishing the research problem, data collection, analysis, and interpretation methods to be employed of a study (Ranganathan & Aggarwal, 2018). For this study, the researcher ensured that the research design aligned with the research questions and sub-questions, methodological methods and data sources that assisted in ensuring consistency and coherence (see Figure 8 below).

The study adopted a qualitative multiple case study research design. The case study design was selected as it allows for an in-depth investigation of environmental compliance management, enforcement, and monitoring within real-life construction project settings. The use of multiple case studies, involving four (4) selected construction projects in the Hhohho Region, enabled the researcher to explore patterns, similarities, and differences across cases, thereby providing a more comprehensive understanding of the issues under investigation.

The qualitative nature of this design supports an exploratory approach, which seeks to develop an in-depth understanding of social phenomena within their natural setting,

focusing not only on the “what” but also on the “why” of such phenomena (Ahmad et al., 2019; Creswell, 2014). This was particularly appropriate for the study, as environmental compliance in construction projects in Eswatini remains an area with limited prior research. As such, the approach allowed for a deeper exploration of stakeholder experiences and the underlying factors influencing compliance outcomes.

In addition, the researcher collected and analysed both secondary [see process description in sub-section 3.6.1] and primary data [see process description in sub-section 3.6.2] as data sources for the study. Secondary data can be in the form of government reports, policy documents, academic journal articles and books. Primary data is data directly collected by a researcher for the purpose of a study through different ways such as interviews [the data collection method used in this study to collect primary data] and focus groups, whereas secondary data is data collected by someone else other than the researcher to be used for a study (Du Plooy-Cilliers, Davis & Bezuidenhout, 2014).

Figure 8 below shows an illustration of the research design and analytical process of the study and is followed by a brief description of the study area (section 3.5), a discussion of methods used (section 3.6), ethical considerations for the study (section 3.7) and a discussion of limitations of the study (section 3.8).

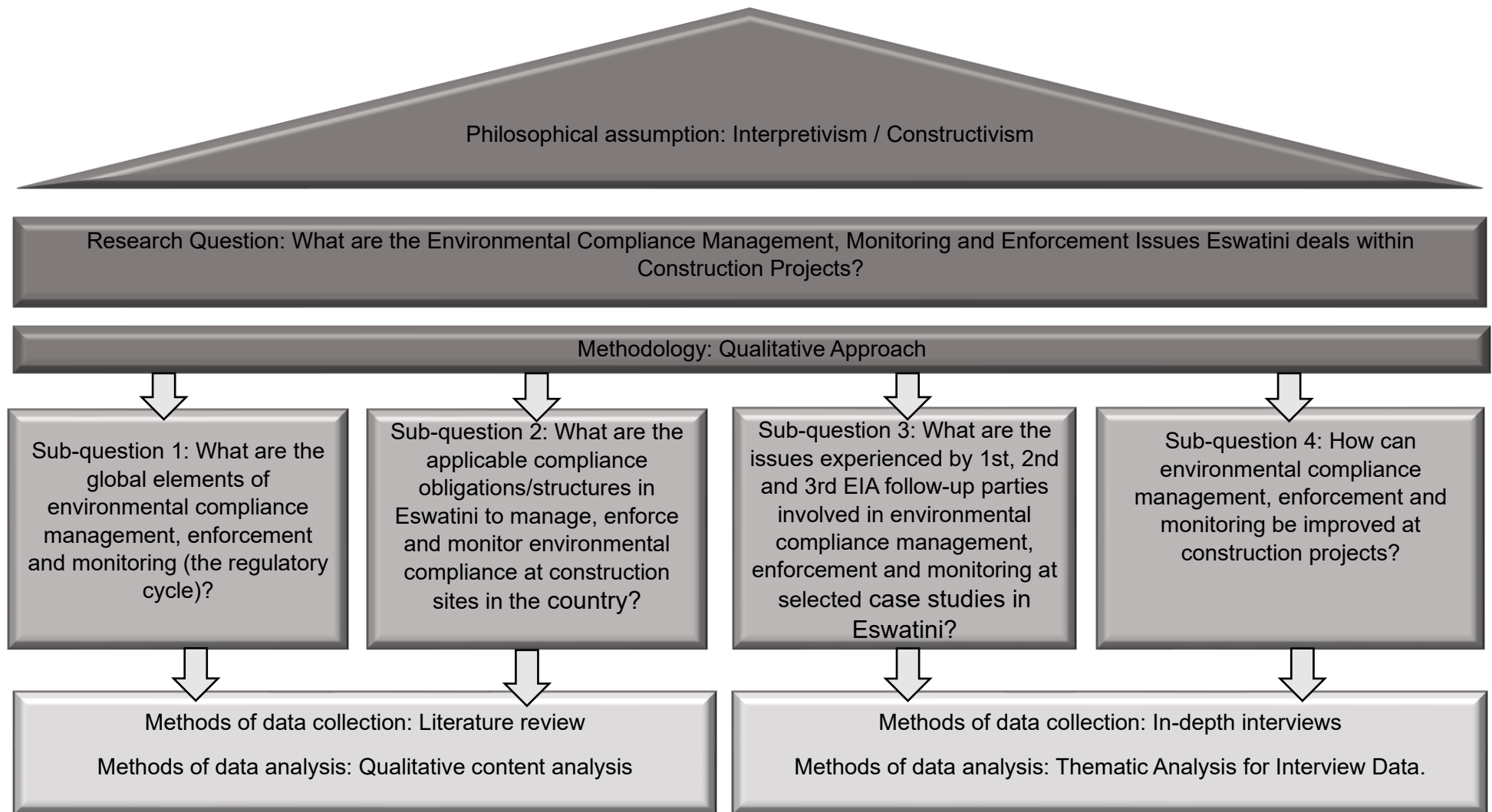


Figure 8: Research design and analytical process (Adapted from Wessels, 2015).

3.5 Description of study area

This study was carried out in the Kingdom of Eswatini, a small, landlocked country in Southern Africa, primarily bordered by South Africa to the North, West, and South, and by Mozambique to the East (World Bank, 2025). With a population of approximately 1.2 million people, Eswatini is still a developing country that faces multiple development challenges preventing inclusive, sustainable, and resilient economic development growth with an estimated per capita Gross Domestic Product of \$4,089 in 2024 (World Bank, 2025). Eswatini is divided into four Regions, namely, the Hhohho, Manzini, Shiselweni, and Lubombo Regions as shown in Figure 9 below.

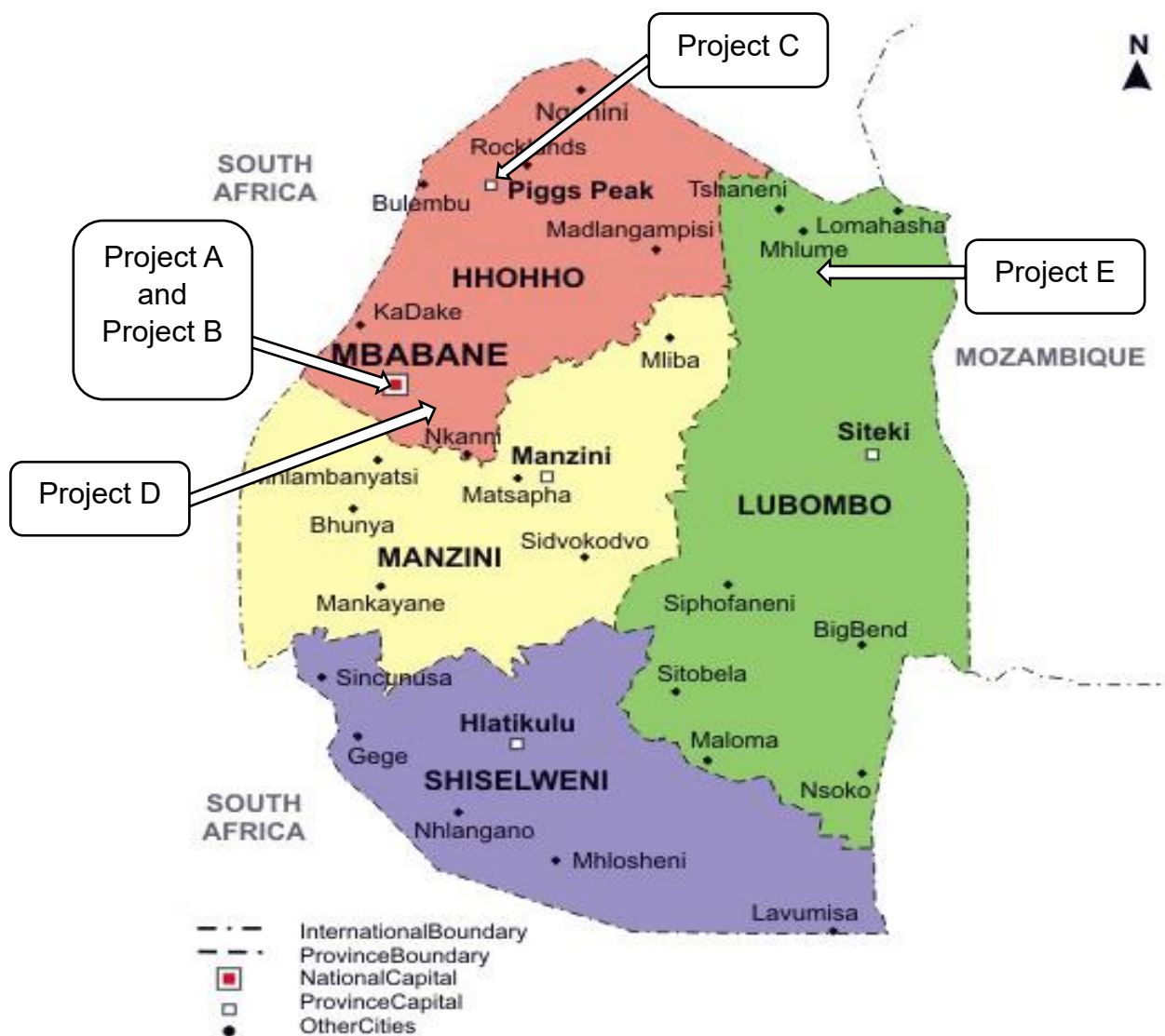


Figure 9: Map of Eswatini (Vidiani.com, 2011)

In the context of this study, the focus was mainly on the Hhohho Region. The Figure below shows the location of the Hhohho Region within Eswatini



Figure 10: Location of the Hhohho Region within Eswatini (UNICEF, 2024, p.14)

The Hhohho Region is home to the capital city of Eswatini called Mbabane. It is the main region for government and commerce services (UNICEF, 2024). Moreover, the region is characterised by mountainous terrain, cold climate, and a vast biodiversity (UNICEF, 2024). Due to its economic significance and environmental sensitivity, the Hhohho Region was a good case to explore issues of environmental compliance management, enforcement, and monitoring to provide valuable information and insight to promote environmental protection and sustainable development.

3.6 Methods

3.6.1 Methods for secondary data collection, analysis and interpretation to answer research sub-questions 1 and 2

The answering of sub-questions 1 and 2 was achieved through the literature review in chapter 2 of this study. This was done through a 'qualitative content analysis' (Grant & Booth, 2009) of literature related to Environmental Compliance Management, Enforcement and Monitoring issues in construction projects in Eswatini. To answer Sub-question 1 and 2, a literature review was conducted using the research of key words searched from relevant databases, specifically the UNISA Library, Google Scholar, Science Direct, and the Swazi Legal Information Institute website for Eswatini government publications related to the research study. The key words include environmental compliance management; environmental compliance enforcement; and environmental compliance monitoring. The researcher made use of the content analysis software "ATLAS.ti" to assist the researcher to organise, manage, and code the data in a more efficient manner. When the data had been reviewed, and coded according to themes and key points, the data were then exported to Excel for visual analysis and tracking themes and sub-themes which could be related to (as shown in Figure 3 and 4). This process strengthened the credibility of the findings by ensuring that the conclusions drawn were firmly grounded in the reviewed literature and directly relevant to the Eswatini context.

3.6.2 Methods for primary data collection, analysis and interpretation for answering research sub-questions 3 and 4

3.6.2.1 *Sampling strategy for collecting data*

Sampling is the strategy of selecting or choosing a subset of individuals from a larger population to establish inferences about a larger group (Bhardwaj, 2019). The sample gathered from the sampling process was used to collect the data to answer the research questions.

The target population for this study comprised construction projects within the Hhohho Region of Eswatini that are subject to Environmental Impact Assessment (EIA) requirements, as well as key stakeholders involved in EIA follow-up processes, including project proponents, regulators, and environmental consultants.

A purposive sampling strategy was adopted to select both the case study projects and study participants. Purposive sampling was appropriate for qualitative research as it allows the researcher to deliberately select cases that are information-rich and relevant to the research objectives. In this study, the aim was not to achieve statistical representation, but rather to gain an in-depth understanding of environmental compliance management, enforcement, and monitoring practices within selected construction projects.

The selection of case study projects was guided by specific inclusion criteria. These included:

- a) Projects located within the Hhohho Region
- b) Projects that had undergone the EIA process and received approval,
- c) Projects at implementation or operational stage where compliance monitoring could be assessed
- d) Availability of accessible documentation and stakeholders willing to participate in the study.

In the context of this study, the unit of analysis was four (4) construction projects that were case studies in the Hhohho Region of Eswatini with one (1) additional construction project that was a pilot case study situated in the Lubombo Region. Details of the case studies used for the study are illustrated below and details of their location with Eswatini are shown in Figure 9:

1. Project A: The completion of Du-Van Office Park
 - i. Type: Commercial building
 - ii. Location: Mbabane
 - iii. Scale: Large-scale
 - iv. EIA category: Existing project (Environmental Audit)
2. Project B: The extension of Mbabane Heights apartments
 - i. Type: Residential housing
 - ii. Location: Mbabane
 - iii. Scale: Medium scale
 - iv. EIA category: Category 2
3. Project C: The construction of Eswatini Electricity Company staff houses

- i. Type: Residential housing
 - ii. Location: Piggs' Peak
 - iii. Scale: Medium scale
 - iv. EIA category: Category 2
- 4. Project D: The construction of Eswatini Communications Commission office block
 - i. Type: Commercial building
 - ii. Location: Ezulwini
 - iii. Scale: Large-scale
 - iv. EIA category: Category 2
- 5. Project E (Pilot study): The construction Vuvulane Civic Offices (Lubombo Region)
 - i. Type: Commercial building
 - ii. Location: Vuvulane
 - iii. Scale: Medium scale
 - iv. EIA category: Category 2

The initial identification of potential case study projects was facilitated through access to EIA documentation obtained from MTK Sustainable Technologies, an environmental consultancy in Eswatini. However, the selection was not limited to MTK-affiliated projects alone. Rather, the available documentation served as an entry point for identifying eligible projects that met the study criteria. The final selection of five (5) case study projects was therefore based on their suitability in meeting the inclusion criteria and their ability to provide relevant and diverse insights into environmental compliance practices.

The researcher divided key informants into first, second, and third EIA follow-up parties' subgroups from the selected case study's construction projects. The researcher again used purposive sampling to gather informants from the EIA follow-up party subgroups (first, second, and third EIA follow-up parties). Two (2) key informants were selected for each subgroup per project. Thus, the intent was to sample 24 informants (six per case study). The selection of six key informants per case study was justified by the institutional structure of EIA follow-up arrangements within each construction project. Each case study included one project manager and one contractor, constituting two first-party participants. Similarly, the second category

of EIA follow-up actors (regulators) comprises one principal regulator (EEA) and one municipal regulator relevant to the project location. The third category included one appointed environmental consultant, as each project typically has a single external monitoring consultant, with one additional environmental practitioner included per project to strengthen the professional perspective.

Please note that only 21 of the informants approached were available for data collection. Table 5 below summarises the key informants. Please note that the areas highlighted in red show informants who were not available for data collection.

Table 5: Key Informants of the study

Project A	Project B	Project C	Project D
First Party			
1. Project Manager	1. Contractors Environmental Officer	1. Contractor's Safety Officer	1. Contractor's Safety Officer
2. Contractor's Safety Officer	N/A	N/A	2. Project Manager
Second Party			
1. EEA Staff Member	1. EEA Staff Member	1. EEA Staff Member	1. EEA Staff Member
N/A	2. Municipal Council of Mbabane Staff Member	2. Piggs' Peak Town Board Staff Member	2. Ezulwini Municipality staff member
Third Party			
1. Environmental Compliance Officer	1. Environmental Compliance Officer	1. Environmental Compliance Officer	1. Environmental Compliance Officer
2. Environmental Specialist	2. Environmentalist	2. SHERQ Manager	2. Assistant Environmental Officer

3.6.2.2 Methods used for primary data collection

To answer Sub-questions 3 and 4, the researcher conducted in-depth interviews with key informants as per Table 5 above. Please see Annexure B for the interview guide.

The data gathered assisted the researcher understand issues experienced by EIA follow-up parties involved in environmental compliance management, enforcement and monitoring in Eswatini and established how environmental compliance management, enforcement and monitoring can be improved at construction projects (see questions 2.1; 2.3; 3.1; 3.3; 3.4; 4.1; 4.3 and 6.2 of Annexure B). All participants were be informed about the purpose, scope and confidentiality of the study by obtaining written consent from participants prior to the interviews (see Annexure C).

Furthermore, before interviews commenced, the researcher conducted pilot interviews with a smaller sample to identify any ambiguities, refine the interview questions, and ensure clarity and relevance (see Annexure B for the interview questions). A detailed discussion of the piloting process is provided in sub-section 3.6.2.4.3 below. Ten (10) of the 21 interviews were conducted in person, in a private setting to make the participant comfortable and to minimise disturbances. In addition, the researcher further conducted eleven (11) interviews through virtual meetings using Microsoft Teams. Virtual meetings provided more convenience in terms of travelling costs and availability for both the researcher and participants. The researcher audio recorded all interviews, after asking for permission, to ensure accurate data capture. Detailed notes were also taken, and the researcher transcribed the information gathered immediately after the interview (refer to Annexure D for an example of the interview transcript).

3.6.2.3 Methods used for analysis and interpretation of data

The data analysis method that was used was thematic analysis. The researcher again made use of the content analysis software “ATLAS.ti” that assisted the researcher to organise, manage, and code the data in a more efficient manner. Once all the data had been reviewed and coded according to themes and key points, the data were exported to Excel for visual analysis and tracking themes and sub-themes which participants related to. The researcher applied thematic analysis to identify patterns in the text by organizing it into words, concepts, and themes, and then verified the coding for consistency and reliability (Woods et al., 2016; Hilal & Alabri, 2013). The researcher interpreted the coded data by making sense of the identified themes and categories,

examining relationships between them, explaining patterns, and comparing them across the entire dataset (Bengtsson, 2016). Finally, the researcher then provided a report of findings from the formulated themes and categories. The report on findings assisted in answering the formulated research questions. Other matrices for presenting the data, such as graphs, charts, tables, and conceptual networks, were used to help interpret the data.

3.6.2.4 Data validity

Data validity refers the extent to which an observation accurately represents the intended concept or construct being studied (Anderson, 2010). The following are the steps the researcher took to ensure data validity:

3.6.2.4.1 Secondary data validity

- **Source Credibility:** Chosen secondary data sources had the highest credibility and reliability. Preference was given to data from peer-reviewed journals, reputable databases such as the UNISA Library, and Google Scholar (Kington et al., 2021).

3.6.2.4.2 Interview validity

- **Interviewer training:** The researcher first chose the interview method and format. The researcher further placed himself in an interview setting to practise his interview skills and improve his techniques to limit making participants uncomfortable. This enabled the researcher to collect more objective data and limit bias (Bergelson et al., 2022).
- **Pilot testing (Case study E):** A pilot test was done by the researcher before the main interviews began. These pilot interviews helped the researcher test whether the interview questions were effective or not and whether they enable the collection of useful data from participants. After the feedback, where necessary, the researcher refined the interview questions which improved the validity of the data collected (In, 2017). See the next section's discussion on Pilot Study Analysis for findings, improvements and recommendations made.

3.6.2.4.3 Pilot study analysis

A pilot study is a study conducted to test procedures and methods of a larger study to assess their effectiveness in achieving the desired outcome. It is also used to refine research methods. (Yin, 2018). The researcher in this study used a pilot study (Case study E) to test interview questions of the study and to identify possible ambiguities.

3.6.2.4.3.1 Findings and improvements from pilot study

1. Limited information from EIA follow-up first parties: A major observation gathered from the pilot study was a lack of or limited information provided by EIA follow-up first parties interviewed during the pilot study. Most seemed to lack the understanding of environmental matters and environmental requirements in association with construction projects in Eswatini. Participants answered by either saying “I don’t know” or “I am not well versed in that department.” These responses may be attributed to factors such as a lack of knowledge of environmental requirements in Eswatini and being selective with responses due to the sensitivity of the information.
2. Job interview-like questions: During the interviews, some participants felt uneasy with some of the interview questions being asked by the researcher. They described the questions as job interview-like questions which made them feel like they were being interviewed for a job. This affected the type of responses received from the participants due to their anxiety. Research interviews are meant to be an exchange of ideas as opposed to participants feeling like they are under scrutiny from the responses they provide. Feedback from the pilot study showed the need for the researcher to refine the interview questions by making them more interactive and less formal.
3. Intellectual property and idea appropriation: A concern that was discovered during one of the interviews of the pilot study was one regarding intellectual property. The participant highlighted that the researcher, who is an environmentalist by trade, employed by a competitor of the participant, might use ideas discussed during the interview as his own. This caused inconsistent communication, resulting in the respondent providing limited information to protect their professional knowledge. An approach to address this concern is through building trust and being transparent with participants.

3.6.2.4.3.2 Recommendations

1. Improvement of interview questions: The researcher revised the interview questions by making them more open ended and less formal, which encouraged an exchange of ideas during the interviews. The researcher also included opening statements for questions to provide clarity to participants and reduce uncertainty within questions.
2. Trust building and transparency: The researcher aimed to build trust and rapport with participants by explaining the purpose of the study to participants and highlighting that the data collected would only be used for this study. The researcher also made participants sign consent forms before participating in the study which detailed what the study was about and its purpose; what the data collected would be used for; and how it will be stored. The researcher also explained to the participants their right to withdraw from the study at any time they felt the need to so do. This helped the researcher to build trust with the participants.

3.7 Ethical considerations

Laryeafio and Ogbewe (2023) highlight that when qualitative research involves people, it is important to put safeguards in place, so participants are protected and feel comfortable giving honest answers during data collection. The researcher submitted details of the research study to the University of South Africa Ethics Committee, and an ethical clearance certificate was granted on the 4th of March 2024. The certificate's reference number is 2023/CAES_HREC/2404 (see Annexure E). Aspects of the ethics application covered the following items as ethical considerations:

1. Gateway permission requests were requested and granted from Eswatini Environment Authority, the Construction Industry Council as well as the four (4) case study construction projects data was collected from (see Annexure A for the permission letters).
2. Moreover, all participants who participated were approached to be part of the study and permission was granted by 21 of 24 (refer to Annexure C for the consent form used). All participants were informed that their involvement was voluntary and that they could withdraw from the study at any time. Before interviews commenced, permission was requested to audio record interviews for transcription purposes, and a consent form was signed by all participants.

3. The researcher also assured participants that they remained anonymous to protect their privacy, and all collected data remained confidential throughout the study.

3.8 Limitations of the study

In a research study, the researcher has a responsibility to transparently report all limitations of the study to the academic community (Ross & Bibler Zaidi, 2019). Research study limitations are aspects of the study design that may affect the results and the conclusions drawn (Ross & Bibler Zaidi, 2019; Price & Murnan, 2004). Also, limitations can also be unanticipated challenges experienced while conducting the study (Price & Murnan, 2004). The limitations of this study are discussed below along with the mitigation measures employed by the researcher to limit risks.

The study was limited to just construction projects in the Hhohho Region and did not consider other regions [except for the Pilot Case Study E situated in the Lubombo Region]. In response to this limitation, the researcher selected the Hhohho Region due to its environment sensitivity and economic importance and the findings of this study can be a foundation for studies in other regions in the future.

Moreover, the study interviewed a total of 21 participants drawn from the three EIA follow-up parties. Although this sample provided valuable insights for the study, it does not represent the views of all stakeholders within the construction industry. To enhance the relevance and breadth of the data, purposive sampling was used to select key informants from each of the three EIA follow-up parties, ensuring that perspectives from all relevant institutional categories were included.

Furthermore, the study relied mainly on a qualitative research methodology using key informant interviews. While this approach was suitable for exploring the experiences and challenges of EIA follow-up parties, the use of additional methods such as questionnaires, direct observations, or quantitative assessments could have strengthened methods and data triangulation, thereby improving validity and reliability. To reduce this limitation, secondary data from legal frameworks, policy documents, EIA regulations, and institutional reports were used alongside interview data. In addition, purposive sampling, pilot testing of interview questions, and thematic analysis supported by ATLAS.ti helped strengthen the credibility and trustworthiness of the findings.

Moreover, access to information was a limitation especially with EIA follow-up first parties who lacked information on environmental matters and had perceived sensitivity of the information they may provide. The researcher limited this risk by being transparent with participants and built trust through the reassurance that the data provided was confidential and anonymous. Participants were also made to sign consent forms before interviews commenced. They were informed that their involvement in the study was voluntary, and they are free to withdraw from the study at any time.

The researcher also experienced limitations due to travel costs, having to travel to meet participants for interviews. This was mitigated by using the virtual meeting program Microsoft Teams to conduct interviews which was more convenient as it limited travel costs for both the researcher and the participants.

In conclusion, although these limitations were present during the study, the researcher implemented mitigation measures to limit potential impacts, and this ensured that findings of the study were robust and credible and can assist in the improvement of environmental compliance practices in Eswatini's construction industry.

3.9 Conclusion to the methodology

This chapter outlined the research methodology the researcher used to answer the research question.

- 1. What is the Environmental Compliance Management, Enforcement and Monitoring issues of construction projects in Eswatini within the Hhohho Region?*

The study employed qualitative research method approach and explorative in nature, using a multiple case study design. Data was collected from four (4) construction projects in the Hhohho Region through in-depth interviews with 21 purposively sampled key informants. The key informants included first, second, and third EIA follow-up parties at the selected construction projects. Secondary data gathered for the study included legal and institutional frameworks and policy documents. Data was analysed with the support of ATLAS.ti software to identify themes and patterns from the data.

Chapter 4 below presents the results and provides a discussion to answer sub-questions 3 and 4.

4 RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the findings of the study and discusses them in relation to the research question and sub-questions. The results are based on data collected from selected construction project case studies in the Hhohho Region and are supported by insights gathered from interviews and document analysis.

The chapter is structured into two main sections: the presentation of results [Section 4.2] and the discussion of these results [Section 4.3], which together address sub-questions 3 and 4 of the study. These are:

3. What are the issues experienced by first, second, and third EIA follow-up parties involved in environmental compliance management, enforcement, and monitoring at four (4) selected case studies within the Hhohho Region of Eswatini?
4. How can environmental compliance management, enforcement, and monitoring be improved at construction projects in Eswatini?

Beyond presenting the findings, the chapter also interprets them by linking the results to the literature reviewed in earlier chapters. Key themes and patterns are identified, particularly those relating to environmental compliance challenges, enforcement gaps, and monitoring practices. Through this discussion, the chapter provides a deeper understanding of the issues affecting environmental compliance in Eswatini's construction sector. Brief conclusions on the results and discussion are provided at the end of the chapter [Section 4.4].

4.2 Results

During the preliminary data analysis, the researcher used the ATLAS.ti concept mining tool to upload and analyse interview transcripts (see Annexure D as an example of a transcribed interview; additional transcripts are available on request) to identify key concepts, which subsequently informed the development of codes for the collected data, as illustrated in Figure 11.



Figure 11: ATLAS.ti concept cloud of issues experienced by EIA follow-up parties

From these key concepts and reviewing the data, the researcher was then able to develop codes from the data collected using the interview guide (Annexure B). Table 6 below displays an Excel spreadsheet exported using ATLAS.ti, reflecting the codes developed from data collected. The table also shows groundedness and density which is discussed in the next step.

Table 6: ATLAS.ti Excel export of codes

Code	Grounded	Density
● EIA Follow up 1st Party Issues	89	0
● Lack of awareness and knowledge	67	2
● Poor attitudes towards environmental requirements	63	1
● Cost cutting and budget constraints	23	1
● Poor contractor environmental representation	12	1
● Lack of EIA ownership	7	0
● Lack of incentives	3	1
● EIA Follow up 2nd Party Issues	79	0
● Inadequate monitoring and enforcement	43	1
● Poor coordination of regulators	31	0
● Lack of resources	30	2
● Inefficient penalties	16	1
● Lack of green funding	13	0
● Outdated regulations	7	1
● Staff turnover	7	1
● Political influence	6	0
● EIA Follow up 3rd Party Issues	36	0
● Lack of resources and funding	17	1
● Inefficient monitoring	12	1
● Lack of enforcement authority	10	1
● Lack of independence and bias	5	0
● Lack of regulatory support	3	1
● Measures to enhance environmental compliance of construction projects in Eswatini	81	0
● Capacity building, training and awareness	51	0
● Policy and institutional strengthening	37	0
● Adoption of technology for monitoring and reporting	8	0

The researcher then colour-coded the codes according to their respective subgroups (EIA follow-up first, second, and third parties) to minimize confusion and enhance clarity. In ATLAS.ti, groundedness was used to indicate the frequency with which a code appeared across the data set. Density, on the other hand, referred to the number of meaningful links a code had with other codes, categories, or themes, thereby indicating its analytical significance within the coding network. For example, a code such as “lack of awareness and knowledge” exhibited higher density because it was linked to multiple related codes, including “poor attitudes towards environmental requirements,” and “lack of EIA ownership.” This high density demonstrates that the issue was not only frequently mentioned but also strongly interconnected with other challenges experienced. The codes displayed in Table 6 then formed the basis of the discussion in sub-sections 4.3.1 and 4.3.2.

The data presented in this section was obtained from in-depth semi-structured interviews, conducted using an interview guide (Annexure B), with EIA follow-up parties across four (4) selected construction project case studies. A total of 24 participants were approached for the study and 21 consented and were successfully

interviewed. The following table is a demographic profile of the study's participants. Information on 'Years of experience' was derived from the results stemming from question 1.1 of the Interview Guide (Annexure B) 'What is your experience and how long have you been involved in construction projects in Eswatini.?'. Additionally, the information on participants' gender and age was not obtained through the interview questions in Annexure B. Prior to the interviews, both the interviewer and interviewees were required to present identification documents for verification purposes, to confirm their identities. Age and gender were noted during this verification process.

Table 7: Participants' demographic profile

Gender		
Gender	Number	% of Total
<i>Male</i>	9	43
<i>Female</i>	12	57
Age		
Age	Number	% of Total
<i>20-30 years</i>	3	14.29
<i>31- 40 years</i>	10	47.62
<i>41-50 years</i>	6	28.57
<i>51-60 years</i>	2	9.52
Years of experience		
Years of experience	Number	% of Total
<i>1-5 years</i>	5	23.81
<i>5-10 years</i>	7	33.33
<i>Over 10 years</i>	9	42.86

It is also important to understand the perception of the general state of environmental compliance of construction projects in Eswatini. Shown in the Figure 12 below is a chart illustrating perceptions of the study's participants on the current state of environmental compliance of construction projects in Eswatini. This data was derived from the results stemming from question 2.1 of the Interview Guide (Annexure B) 'How would you describe the current state of environmental compliance management in construction projects?'

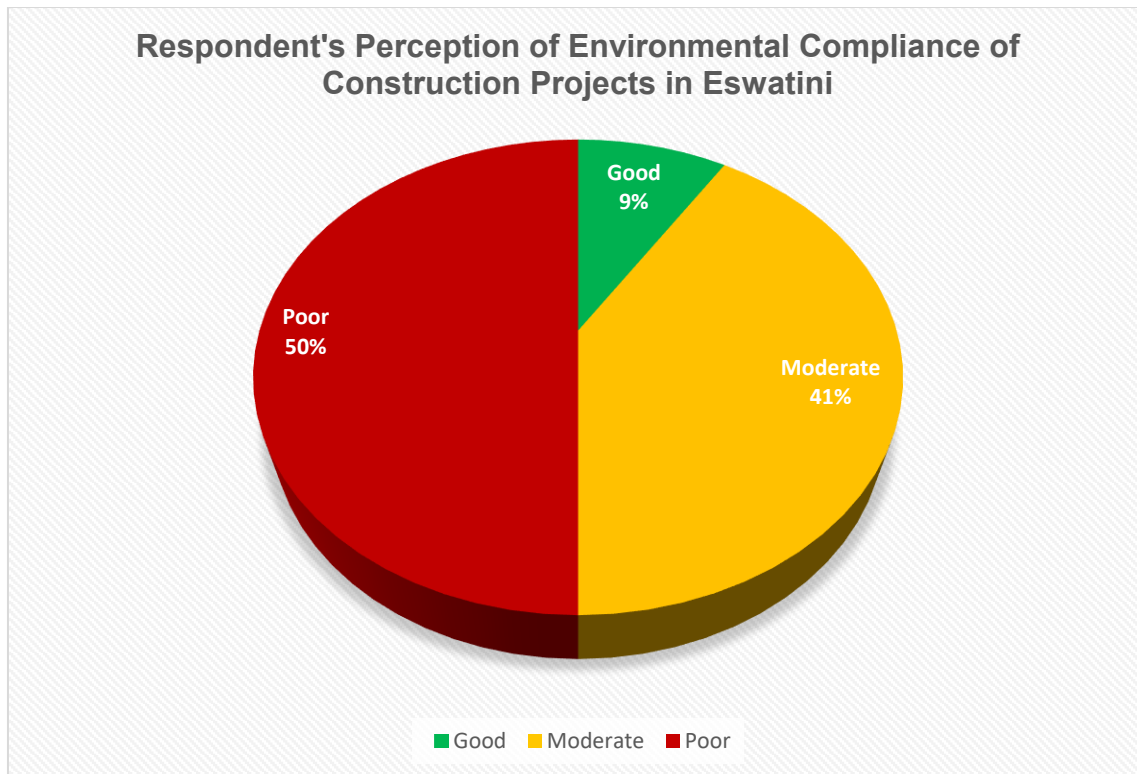


Figure 12: Perceptions on the current state of environmental compliance in Eswatini

The figure above illustrates that of the 21 participants interviewed for the study, only 9% (2) participants stated that environmental compliance at construction projects is good. Moreover, 41% (9) of the participants expressed that environmental compliance at construction projects is moderate and is showing signs of improvement. Alarming, 50% (10) of the participants raised concerns that environmental compliance at construction projects in Eswatini is poor. This indicates that there are various challenges experienced by EIA follow-up parties of construction projects. The following is a discussion of the issues at construction projects derived from the analysis of data collected for the study.

4.3 Discussion

Sub-section 4.3.1 below is a detailed discussion of the results related sub-question 3, followed by sub-section 4.3.2 that provides a detailed discussion of results related to sub-question 4.

4.3.1 Environmental compliance management, enforcement and monitoring issues experienced by EIA follow-up parties

4.3.1.1 Issues faced by first EIA follow-up parties

EIA follow-up first parties in the construction industry are primarily the ones responsible for the implementation of measures to ensure environmental compliance at their respective project sites. These first parties in the context of this study are contractors, project proponents, and developers. According to Morrison-Saunders et al., (2007), EIA follow-up first parties play a vital role in environmental management through voluntary self-regulation of environmental requirements imposed by EIA regulators during the implementation of their projects. Figure 13 below is an ATLAS.ti network used to illustrate a set of codes derived from analysed data gathered from interviews conducted for the study with participants pertaining issues faced by EIA follow-up first parties at construction projects.

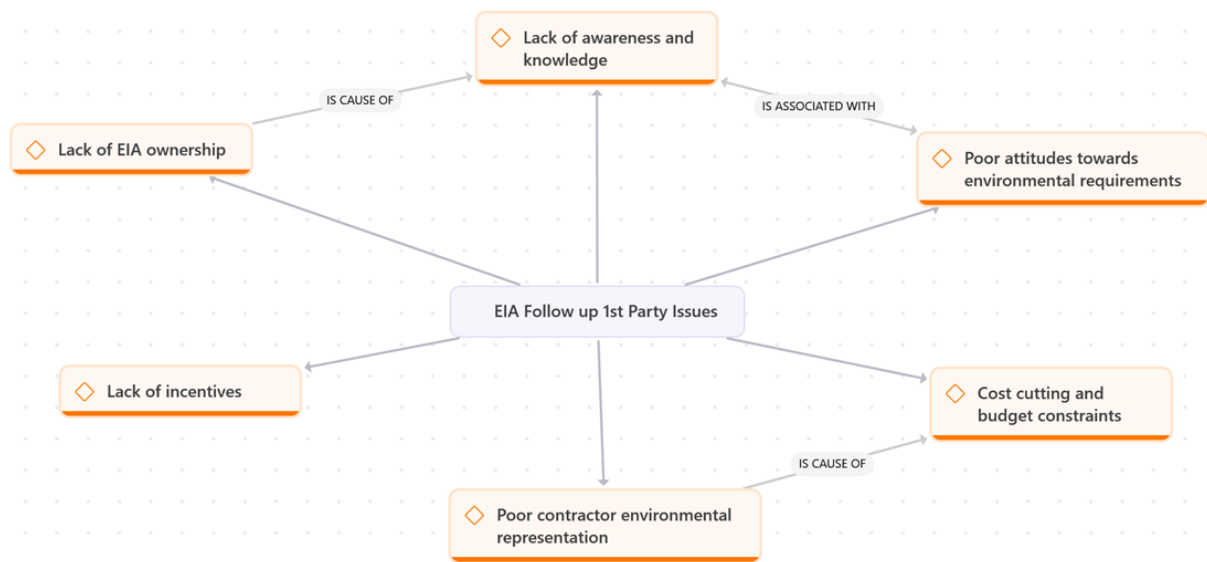


Figure 13: ATLAS.ti network of coded issues associated with EIA follow-up 1st party experiences

The network in Figure 13 is a visual representation that shows the range of issues experienced by EIA follow-up first parties of construction projects in Eswatini (Hhohho Region). The interconnection of codes further highlights recurring themes and illustrates the link between issues experienced. These challenges mainly relate to the implementation stage of the regulatory cycle, where EIA requirements are supposed to be put into practice. The findings show that this stage in Eswatini is weak, as there

is a gap between what is required on paper and what happens on site. The codes shown in Figure 13 above were used as the foundation in the development of discussions in the following subsections.

4.3.1.1.1 Lack of awareness and knowledge

Consistent with the above perspectives, the ATLAS.ti export spreadsheet presented in Table 6, the code “Lack of awareness and knowledge” recorded the highest frequency, with a groundedness of 67 occurrences across the dataset. The high groundedness of this code indicates that the issue was consistently raised by various participants across the interviews, rather than being limited to a few individuals, highlighting its widespread nature and importance. This frequency exceeds that of all other codes, indicating that inadequate awareness and knowledge constitute a significant and influential factor affecting environmental compliance in construction projects in Eswatini.

A study by Si et al. (2022) examined the relationship between environmental awareness and its direct impact on environmental outcomes. The findings indicate that pro-environmental behaviour contributes positively to environmental protection, whereas a lack of environmental awareness is associated with increased environmental degradation (Si et al., 2022). This relationship highlights the importance of knowledge and awareness as a driver of effective environmental compliance. Shown in Box 1 below is an ATLAS.ti document report showing selected participants’ perceptions on the lack of awareness and knowledge EIA follow-up first parties of construction projects in Eswatini have on environmental matters. This data was derived from the results stemming from question 2.1, 2.3 and 3.1 of the Interview Guide (Annexure B).

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/22/2026

Quotation Report

Selected quotations (2)



5:23 ¶ 16 in Participant 5

Lastly, there is also a lack of knowledge and capacity people in management with regard to the importance of environmental compliance.



5:27 ¶ 19 in Participant 5

Our culture still needs to improve otherwise, yeah, it's going to continue to be less effective and just also the lack of awareness, people are not aware of environmental regulations to be honest. People are not educated on environmental matters.

The above statements by participant 5 shown in Box 1 demonstrates the awareness gaps EIA follow-up first parties have in relation to environmental compliance in Eswatini. Perceptions of participant 5 are further affirmed by a study by Njere and Moyo (2025) discussed in section 2.4 of the literature review. Njere and Moyo (2025) suggest that the lack of awareness of environmental requirements is a barrier to achieving effective environmental protection. Tayeh et al., (2019) found that factors such as knowledge and workforce skills of contractors are major contributors that affect contractors' performance towards sustainability. The study illustrated that positive sustainability performance in construction correlates with a workforce that has high levels of skills and knowledge (Tayeh et al., 2019). In Eswatini, contractors prioritise production and they lack an appreciation for why environmental compliance is necessary, thus, illustrating a gap in the awareness of the importance of preserving the environment. Such gaps increase the likelihood of non-compliance with EIA conditions, including inadequate implementation of mitigation measures and insufficient environmental monitoring at construction sites.

Furthermore, as discussed in sub-section 3.6.2.4.3 (Pilot Study Analysis), the pilot study findings revealed that EIA follow-up first parties demonstrated limited understanding of environmental issues and regulatory requirements related to construction projects in Eswatini. This was consistent with the main interview findings, where several participants responded with statements such as “I don’t know” or “I am not well versed on that” when answering Questions 2.2 and 2.3 of the interview guide (Annexure B). These responses highlight a significant gap in knowledge, which undermines effective environmental compliance of construction projects in Eswatini.

Overall, the combined evidence from the interviews, pilot study, and existing literature shows that limited awareness and knowledge among EIA follow-up first parties represent a key weakness in the environmental compliance framework for construction projects in Eswatini.

4.3.1.1.2 Poor attitudes towards environmental requirements

Poor attitudes towards environmental requirements occurred 63 times as illustrated in Table 6. While limited awareness and knowledge weaken environmental compliance, they also influence how environmental requirements are understood and treated in practice. When environmental obligations are not well understood, compliance is more likely to be seen as a burden rather than as an essential part of responsible project development. As indicated in Figure 13, there is association between the issue of ‘Lack of awareness and knowledge’ and ‘Poor attitude toward environmental requirements’. To most project proponents, contractors and developers, environmental requirements are seen as a major inconvenience as opposed to a crucial step and process in achieving sustainable development. The environmental process in Eswatini is seen as a hurdle to overcome. This viewpoint is affirmed by Sendawula et al., (2024) in a study that investigates the relationship between environmental knowledge and environmental sustainability practices of manufacturing small and medium enterprises (SMEs) in Uganda. The study demonstrates that without understanding environmental issues and compliance obligations, environmental sustainability practices are weak, implying that poor attitudes and lack of compliance mechanisms can contribute to environmental harm over time (Sendawula et al., 2024).

‘Poor attitude to environmental requirements’, which was listed 63 times by first party participants as seen in Table 6, may be due to the ‘Lack of awareness and knowledge’

issue discussed above. For example, participants highlighted that the authorisation letter that is issued by the Eswatini Environment Authority for the commencement of a project is merely taken as a piece of paper to acquire after the EIA has been completed. Developers do not go the extra mile to ensure that the mitigation measures provided for environmental impacts in the EIA are implemented on site.

Shown in Box 2 is an ATLAS.TI document report showing selected participants' perceptions on poor attitudes that EIA follow-up first parties of construction projects in Eswatini have regarding environmental matters. This data was derived from the results stemming from question 2.1 of the Interview Guide (Annexure B).

Box 2: Relevant participants perceptions on EIA follow-up 1st parties' poor attitudes towards environmental requirements from ATLAS.ti report

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/5/2026

Quotation Report

Selected quotations (1)

18:26 ¶ 9 in Participant 17

It varies. Mostly I think in one part, If the funder is cautious of environmental management, for instance, if it's an international funder like African Development Bank, World Bank, those kind of projects are particular about environmental compliance and therefore they go the extra mile and then you have projects that are implemented by government without the oversight of an international funder, there the government does a lot of corner cutting.

The views expressed by participant 17 in Box 2 above demonstrate that although environmental legislations and frameworks exist in Eswatini, they are severely hampered by poor attitudes towards environmental requirements for construction projects. This view is consistent with arguments made by Ruppel (2022) presented in section 2.4 of the literature review that environmental concerns and environmental protection is not a major priority for many project proponents and contractors, particularly where economic pressures and project timelines take precedence over compliance obligations.

Moreover, all construction projects are subject to environmental screening and approval in Eswatini before they commence. This process is explained in 2.4.1.3 of the literature review. It has been reiterated that EIA follow-up first parties do not fully appreciate the importance of this process and view EIA approval as a steppingstone as demonstrated by participant 17 in Box 2. EIA approvals are seen a “piece of paper” to be acquired for project commencement as opposed to being a legally binding document.

Overall, the findings show that negative attitudes towards environmental requirements continue to hinder effective environmental compliance in construction projects in Eswatini. These attitudes are largely linked to limited awareness and understanding, which leads to environmental approvals being viewed as paperwork to be completed, rather than as binding obligations that must be followed during project implementation.

4.3.1.1.3 Cost cutting and budget constraints

A key finding from this study is that resource constraints are not limited to a single group of stakeholders but instead affect all EIA follow-up parties in different yet interconnected ways. This is clearly reflected in the frequency of responses captured in Table 6, where cost cutting and budget constraints were recorded 23 times for first EIA follow-up parties, lack of resources was recorded 30 times for second parties, and lack of resources and funding was recorded 17 times for third parties. While these issues are presented separately in Table 6, their consistent recurrence across all stakeholder groups indicates a common underlying challenge; accordingly, they are examined collectively in this section. A more in-depth analysis therefore shows that financial, human, and operational limitations cut across the entire environmental compliance system. This suggests that environmental compliance challenges in Eswatini’s construction sector are not simply the result of individual stakeholder shortcomings but are rooted in broader structural and systemic weaknesses.

Shown in Box 3 below is ATLAS.ti quotation report presenting selected participants’ perceptions on resource-related constraints affecting environmental compliance in construction projects in Eswatini. This data was derived from the results stemming from question 2.1 of the Interview Guide (Annexure B).

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/5/2026

Quotation Report

Selected quotations (4)

5:19 ¶ 15 in Participant 5

However, during tender stage, the environmental side of things is not priced and that is where the challenge starts because now you have to compromise on the ground on compliance things because now, now because of certain things, they'll tell you they don't have money to implement that, because it wasn't priced in the beginning, so that's that's where the challenge is and that's where the gap is.

13:20 ¶ 20 in Participant 13

EEA carry out their responsibilities very well. They are doing what they need to do. Of course, one of their limitations is the staff complement. We only have one office for the whole country which is very limited

18:38 ¶ 33 in Participant 17

As EEA, its man hours. I think, one other key challenge is the location, being located in Mbabane (Capital city) and the office in Mbabane is supposed to cover the whole country. So, when a person takes a vehicle from here and travels all the way to Lavumisa (outskirts) to conduct an inspection, so then there are projects that will be considered too small and too costly to actually go and inspect, which then means the officers will need to wait until they have a number of projects within that area to try and maximize.

20:22 ¶ 24 in Participant 19

Sometimes you find that monitoring agents are limited in terms of resources because there is lack of appreciation of what monitoring agents add to the project. So, you find that it gets difficult. Payments don't come in and then then makes it difficult monitoring agents to continue doing this smoothly and then sometimes we do get people who don't want to implement compliance measures.

For first EIA follow-up parties, resource constraints mainly appear in the form of cost-cutting and poor budgeting for environmental requirements. Many participants explained that environmental compliance is often treated as an additional expense rather than an essential part of project delivery. This is particularly evident during the

tendering stage, where contractors do not always include environmental costs in their bids as explained by participant 5 in Box 3. As a result, when compliance requirements become clear during project implementation, contractors are forced to operate within limited budgets and often end up cutting corners. This finding supports the work of Aliu et al. (2025) who highlights that the high cost of sustainable construction discourages its adoption, especially in developing countries.

Poor procurement planning further worsens this situation. Participant 5 suggested that project owners do not clearly include environmental requirements in tender documents, meaning these costs are not accounted for from the beginning. This leads to environmental considerations being overlooked throughout the project lifecycle. This finding is consistent with Muhwezi et al. (2020) who show that proper planning is closely linked to better project performance. In addition, Asnor et al. (2022) explain that without early integration of environmental plans, it becomes difficult to allocate resources effectively later on. As a result, smaller contractors who already face financial limitations are the most affected, while larger companies or internationally funded projects tend to perform better due to stronger financial backing and stricter compliance requirements.

For second EIA follow-up parties, resource constraints are mainly related to limited institutional capacity within regulatory authorities, particularly the Eswatini Environment Authority (EEA). Participant 13 in Box 3 pointed to shortages of staff, funding, transport, and monitoring equipment, all of which make it difficult to effectively monitor and enforce environmental compliance. This reflects the findings of Zulu et al. (2022) who note that many environmental agencies struggle with both capacity and resources.

In practice, these limitations mean that regulators are not always able to maintain a consistent presence on construction sites. With only one main office and limited operational resources, EEA officers often must travel long distances or combine several inspections into one trip as pointed out by participant 17 in Box 3. While this approach helps manage limited resources, it reduces the frequency and depth of monitoring. Similar challenges have been highlighted by Kavishe et al. (2022) who found that lack of finance and personnel is a major constraint in developing countries.

As a result, weak regulatory presence can create opportunities for developers and contractors to bypass or ignore environmental requirements.

For third EIA follow-up parties, resource constraints are closely linked to their dependence on funding from project proponents. Environmental consultants rely on developers and contractors to finance their monitoring and reporting activities. However, because environmental compliance is often not prioritised, consultants frequently operate under tight budgets. Participant 19 in Box 3 noted that this limits their ability to conduct regular site visits, gather environmental data, and produce detailed compliance reports.

Financial limitations also affect staffing within consulting firms. Many struggle to attract and retain skilled professionals due to an inability to offer competitive salaries, which leads to high staff turnover and reduced capacity. These findings are consistent with Ekemena et al. (2025) who found that contractors often exclude environmental and safety costs from budgets to remain competitive during tendering. This places consultants in a difficult position where their effectiveness is shaped by the financial decisions of project proponents.

What becomes clear from these findings is that these challenges are not separate but closely linked. Financial constraints at the project level reduce the resources available to consultants, while limited regulatory capacity reduces oversight and enforcement. This creates a cycle where weak enforcement allows cost-cutting practices to continue, and under-resourced monitoring further weakens compliance outcomes.

In the context of Eswatini, improving environmental compliance will therefore require more than addressing the behaviour of individual stakeholders. It calls for more coordinated, system-level solutions, including better budgeting for environmental requirements during project planning, increased support and capacity for regulatory authorities, and stronger mechanisms to ensure that environmental compliance is properly funded throughout the project lifecycle.

4.3.1.1.4 Poor contractor environmental representation

As seen in Table 6, the mention of “poor contractor environmental representation” occurred 12 times. As highlighted in the sub-sections above, the lack of awareness

and poor attitudes towards environmental matters, coupled with budget constraints in construction projects, also leads to the lack of environmental personnel on site. It was noted by the researcher that of the four (4) case study construction projects used for the study, none of them had environmental personnel or an environmental control officer (ECO) permanently present on site. In Eswatini, contractors often see the environmental, health, and safety component of a construction project as an area where they can save and cut costs. Moreover, most contractors hire only safety officers to tackle all the work, including environmental matters. The safety officers in most cases only focus on health and safety matters and neglect environmental matters as they lack the capacity and knowledge in dealing with environmental matters, further leading to environmental non-compliance. In addition, due to the lack of environmental personnel at construction projects, contractors tend to be reactive when non-compliance is flagged as opposed to being proactive in addressing environmental concerns.

In addition, contractors in Eswatini appoint unqualified or inexperienced individuals as safety officers just to tick a box. Participant 3 of the study was quoted stating their perspectives on the absence of environmental capacity within contractors in Eswatini in Box 4 below. The results shown here are based on information provided in response to question 2.3 of the Interview Guide (Annexure B).

Box 4: Relevant view of participant 3 on the absence of environmental capacity within contractors from ATLAS.ti report

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/5/2026

Quotation Report

Selected quotations (1)

3:19 ¶ 15 in Participant 3

Yeah, there are gaps. From my experience, I've come to realize that the environmental department within contractors is nonexistent because all the issues are addressed by a safety officer. So definitely that person is more focused on the safety aspect of the project and lacks the capacity of knowledge with regards to environmental issues. Contractors should have their own environmentalist as part of project.

The statement above by participant 3 further affirms the gap with regards to the lack of environmental personnel in construction projects in Eswatini. This finding is supported by literature which highlights similar challenges in construction projects. Nyamazana and Ozumba (2017) investigated the challenges in the implementation of environmental management Plans (EMPs) in construction projects in South Africa. The study highlighted that challenges in the implementation of Environmental Management Plans (EMPs) are largely attributable to inadequate monitoring and enforcement mechanisms. In particular, the absence of sufficiently capacitated personnel to implement EMP measures contributes to non-compliance and subsequent environmental degradation (Nyamazana & Ozumba, 2017).

Furthermore, safety officers are often the only party of the contractor's team who are interested in complying. All the work is left with the safety officer with little to no interest from the engineers and site agents. There is a need for all team members of the contractor's team to be involved in ensuring environmental compliance of projects. Lastly, environmental compliance enforcement agencies such the EEA do little to enforce the need for environmental officers at construction projects, thus, allowing many contractors to proceed without adequately trained personnel to oversee environmental compliance.

4.3.1.1.5 Lack of EIA ownership

As indicated in Table 6, "lack of EIA ownership" was noted on 7 occasions. Participants of the study identified a lack of ownership and accountability over EIAs as a significant factor contributing to poor environmental compliance within construction projects in Eswatini. Rather than seeing the EIA as a living and legally binding document, it is taken for granted as just a steppingstone to ultimately acquire the EIA approval for project commencement. This argument links back to previous discussions in 4.2.1.1.1 "Lack of awareness and knowledge" as is also shown in Figure 13. Box 5 below expresses their views on the lack of EIA ownership by project implementors. The data shown in Box 5 was derived from responses to question 2.3 of the interview guide (Annexure B) 'Are there any challenges or gaps in the implementation of environmental compliance measures? If yes, what are they?'.

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/24/2026

Quotation Report

Selected quotations (1)

7:24 ¶ 35 in Participant 7

I think it goes back to ownership of the environmental assessment outcomes and the measures they're in to mitigate those impacts. I think it is incumbent upon all of us as environmentalists and as environmental practitioners to entrench it to clients. I usually say to the client that once finish the study, allow me the period where we discuss it and present it before I submit to EEA. Let me give a presentation for the report. You know, in most of the reports that we do in other things, you have a point where you present to the client but in environmental assessments it is strange, you go to an assessment, but you don't present the results to the client, all they expect is a letter from EEA authorizing them to continue.

In Box 5, participant 7 emphasized that project proponents often lack ownership of EIA outcomes, as environmental assessments are rarely presented or discussed with them before submission to the EEA. In Eswatini, EIAs are mostly complied by external entities (environmental consultants) and project proponents have limited knowledge or interest in what is stated in the EIAs. Due to this lack of ownership of EIAs by the project proponents and contractors, costs of environmental compliance often come as a surprise, further leading to non-compliance through cutting corners and leaving out that which is required for the site to be environmentally compliant.

4.3.1.1.6 Lack of incentives

According to Table 6, "Lack of incentives" appeared 3 times. As stated in previous sections, EIA follow-up first parties often view environmental requirements as a hurdle, and this can be attributed to lack of incentives for compliance. EIA follow-up first parties expressed that environmental compliance would be improved if incentive-based regulatory schemes were introduced for compliance. At present, contractors feel there is no need to prioritise compliance as discussed by participant 6 in Box 6 below. These findings were drawn from participants' answers to question 2.3 of the interview guide.

Box 6: Relevant view of participant 6 on the lack of incentives for environmental compliance in Eswatini's construction industry from ATLAS.ti report

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/24/2026

Quotation Report

Selected quotations (1)

7:24 ¶ 35 in Participant 6

From our side as the project owner, the reality is that once the EIA approval is in place, the main pressure is to keep construction moving and control costs. The environmental conditions are there, but there isn't always a clear incentive for us to prioritise them during construction unless they directly affect programme or risk penalties.

Participant 6's sentiments in Box 6 demonstrate the perspectives that some project owners/contractors have towards environmental compliance. In fact, some contractors are unwilling to comply as penalties for non-compliance are cheaper than complying. Participants of the study suggested that perhaps environmental compliance would be enhanced by the provision of incentives such as grants and tax reductions whereby contractors will be more invested and inclined to sustainable practices in construction projects. This suggestion may be a measure to enhance compliance as findings of a study by Mapanje (2024) suggest that the implementation of incentive-based regulatory schemes has incentivised compliance, leading to a notable decline in environmental violations. The main issue highlighted by participants is that the current environmental regulations in Eswatini are more punitive, and the focus is to impose penalties for non-compliance as opposed to providing incentives for sustainable development. This has led to contractors in Eswatini viewing environmental compliance as an added expense to their already tight budget for the completion of construction works. It was suggested that the provision of incentives can shift the mindset of developers/contractors/project proponents to a place where environmental responsibility is an imperative part of any construction project.

4.3.1.2 Issues faced by second EIA follow-up parties

EIA follow-up second parties in the construction industry are known as the enforcers, and they are responsible for regulating and enforcing environmental requirements of projects. EIA follow-up second parties, in the context of this study, are the regulatory agencies such as the Eswatini Environment Authority (EEA), the Construction Industry Council (CIC), municipalities, and various government agencies. These are the agencies that are responsible for ensuring EIA first parties practise sustainable development during the implementation of their projects. Drawing from analysed interview data, Figure 14 below outlines codes that emerged from enforcement issues encountered by second EIA follow-up parties (regulators).

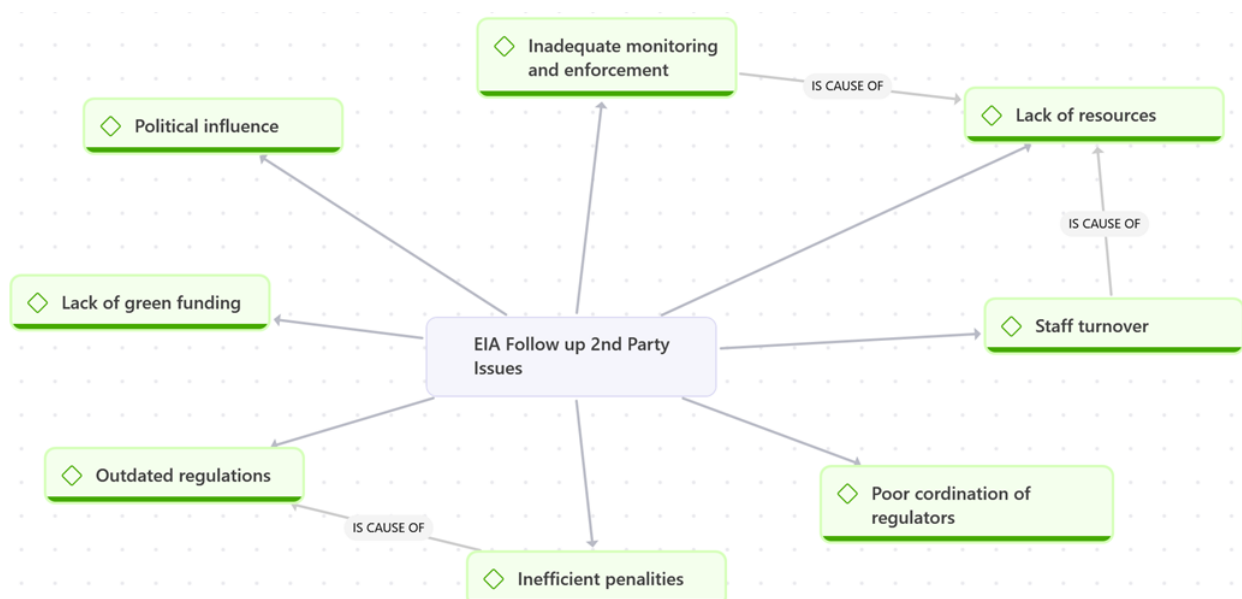


Figure 14: ATLAS.ti network of coded issues associated with EIA follow-up 2nd party experiences

From a regulatory cycle perspective, these findings highlighted above show significant weaknesses in both the monitoring and enforcement stages in Eswatini. While regulators are mandated to oversee compliance through inspections and reporting, the study shows that limited resources and coordination challenges constrain effective monitoring, which in turn weakens the ability to enforce environmental regulations. The codes presented in Figure 14 above guided the discussion in the following subsections.

4.3.1.2.1 Inadequate monitoring and enforcement

Findings from this study suggest that challenges related to monitoring and enforcement are predominantly experienced by second and third EIA follow-up parties, but their effects extend across the entire environmental compliance system. This is evident in Table 6, where “inadequate monitoring and enforcement” was recorded 43 times for second parties, while “inefficient monitoring” was recorded 12 times for third parties. Although these issues are presented separately in Table 6, their recurrence highlights a broader systemic concern relating to weak oversight, coordination gaps, and limited institutional capacity. As such, they are discussed together in this section to demonstrate how monitoring and enforcement challenges are interconnected and mutually reinforcing within Eswatini’s construction sector.

Shown in Box 7 below is an ATLAS.ti quotation report presenting selected participants’ perceptions on monitoring and enforcement constraints affecting environmental compliance in construction projects in Eswatini. This data was derived from responses to questions 3.1, 3.3 and 4.3 of the Interview Guide (Annexure B).

Box 7: Selected participant quotations on monitoring and enforcement constraints affecting environmental compliance in construction projects in Eswatini from ATLAS.ti report

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/6/2026

Quotation Report

Selected quotations (4)

13:22 ¶ 25 in Participant 13

EEA requires Project compliance reports to trigger a site inspection, but by the time it reaches the authority, it's two months down the line from when the data was taken and compiled or it's a month, so the time lag between getting the PCR and actually going for site inspection to see what is on the ground, a lot has also already changed and you find that it makes the monitoring quite difficult

14:39 ¶ 22 in Participant 14

The Ministry of Labour is responsible for occupational health and safety, but it's just a small subsection. I believe it should be a dedicated department or wing to ensure more capacity. Currently, they only act when invited, when an incident occurs, or when someone reports non-compliance

19:30 ¶ 22 in Participant 18

Enforcement has been weak, primarily because regulators lacked the capacity. They often respond only when invited or when issues are reported, so it's reactive, not proactive. But with the new EEA regulations and better resourcing, there are signs of improvement.

5:29 ¶ 34 in Participant 5

There is also a lack budget for monitoring most of the time, because it's something that was not captured from the beginning of the project, it wasn't budgeted making it difficult to carry out monitoring process because you need resources, you need money

For second EIA follow-up parties, monitoring and enforcement challenges are primarily linked to limited institutional capacity and inconsistent regulatory practices. Participants highlighted that enforcement agencies such as the Eswatini Environment

Authority (EEA), the Construction Industry Council, and the Ministry of Labour and Social Security face significant shortages in staff, funding, transport, and equipment. These constraints result in selective and uneven enforcement, where regulators tend to prioritise large-scale projects such as mining and energy developments, while smaller construction projects receive minimal or no oversight. This leads to a pattern of reactive enforcement, where authorities intervene only after environmental violations have occurred rather than preventing them. This finding aligns with Asnor et al. (2022), who argue that limited resources often force regulators into reactive rather than proactive enforcement approaches.

In practice, these capacity limitations significantly affect the consistency and effectiveness of monitoring. The EEA largely depends on Project Compliance Reports (PCRs) submitted quarterly by developers to trigger site inspections. However, participant 13 in Box 7 indicated that many developers fail to submit these reports, resulting in projects proceeding without any regulatory oversight. Even when PCRs are submitted, delays in conducting site inspections often due to resource shortages mean that conditions on the ground may have already changed, making accurate enforcement difficult. Additionally, weak communication between regulators and developers further undermines enforcement efforts, reinforcing a reactive compliance environment. Similar observations were made by Twum-Darko and Mazibuko (2015), who found that poor communication between stakeholders contributes to ineffective enforcement systems.

The findings also reveal disparities in enforcement across institutions. While the EEA is perceived as making efforts despite its constraints, other regulatory bodies, particularly the Ministry of Labour and Social Security, are viewed as largely absent from construction site inspections (the constraints of the Ministry of Labour and Social Security are discussed in sub-section 2.5.1.5.1 of the literature review). Participant 14 noted instances where the Ministry failed to respond even in critical situations, such as workplace fatalities, citing lack of personnel and transport. This further illustrates how human and financial resource limitations contribute to weak and inconsistent enforcement across the regulatory landscape.

Another important factor affecting enforcement is the quality of Environmental Impact Assessments (EIAs), which form the foundation for compliance monitoring. Evidence

suggests that the overall quality of EIAs in Eswatini has historically been poor due to the absence of mechanisms to regulate and monitor environmental consultants. Cele (2022) found that many EIAs submitted between 1996 and 2020 were of low quality, partly because there were no clear requirements for consultant qualifications. Although the introduction of the Environmental Assessment Regulations (2022) and the requirement for consultants to register with AESAP and the EEA have improved oversight, gaps remain. For instance, unqualified individuals may still prepare EIAs and rely on registered professionals to submit them, while the limited number of certified practitioners in the country further constrains effective enforcement. Additionally, as of the 31st of October 2023, the Eswatini Environment Authority website indicates only five (5) registered and certified environmental practitioners in the whole of Eswatini, highlighting a major gap in enforcement and a major concern (Eswatini Environment Authority, 2025).

For third EIA follow-up parties, monitoring challenges are mainly reflected in inefficient monitoring practices and coordination difficulties. Environmental consultants play a central role in overseeing compliance and reporting to the EEA, yet their effectiveness is constrained by limited guidance, inadequate monitoring frameworks, and weak coordination with both regulators and contractors. Participant 5 indicated that monitoring is hampered by the lack of financial resources to make it effective.

Coordination challenges further complicate monitoring efforts. Participants emphasised the need for improved communication between environmental consultants and the EEA, as well as better alignment with contractors. Similar challenges have been observed in other African contexts, such as Zimbabwe, where Machaka et al. (2013) found that poor coordination between stakeholders undermines the effectiveness of environmental management processes. In Eswatini, these coordination gaps reduce the overall efficiency of monitoring and weaken compliance outcomes.

Operational constraints also arise at the project level. Environmental consultants typically conduct bi-weekly inspections; however, contractors often resist this frequency, arguing that it does not allow sufficient time to address previously identified issues. This tension between monitoring requirements and project implementation

further limits the effectiveness of compliance efforts. As a result, environmental issues may persist or escalate due to delays in corrective action.

These findings demonstrate that monitoring and enforcement challenges in Eswatini are deeply interconnected. Limited regulatory capacity leads to inconsistent enforcement, while weak monitoring by consultants reduces the flow of reliable compliance information to authorities. At the same time, poor coordination among stakeholders further undermines both processes. This creates a cycle in which inadequate monitoring weakens enforcement, and weak enforcement, in turn, allows poor monitoring practices to persist. This reinforces the breakdown within the monitoring stage of the regulatory cycle, where insufficient data collection and oversight limit the detection of non-compliance and delay corrective action.

4.3.1.2.2 Poor coordination of regulatory bodies

As reflected in Table 6, the issue of “poor coordination of regulatory bodies” was raised 31 times. There are various regulatory agencies involved in environmental matters in Eswatini, including the Eswatini Environment Authority, the Construction Industry Council and the Ministry of Labour and Social Security, who are crucial in ensuring that environmental degradation does not occur at construction projects. The more effective the coordination is between these agencies, the higher the likelihood of environmental compliance in construction projects and vice versa.

Participants of the study highlighted that Eswatini struggles with poor coordination between regulatory agencies in relation to environmental matters, which often leads to poor enforcement of environmental requirements for construction projects as expressed by selected study participants in Box 8 below. Insights presented here were sourced from participants’ responses to the interview questions detailed in questions 2.3, and 4.3 of Annexure B.

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/6/2026

Quotation Report

Selected quotations (3)

8:24 ¶ 31 in Participant 8

I think that also a problem on its own and the issue of coordinating, I think it's another challenge in in the monitoring process, proper coordination processes from the regulators to the implementers themselves

11:26 ¶ 13 in Participant 11

I would say the biggest one is the coordination of stakeholders. These regulatory bodies don't come together when they are making changes. For example, right now, we have construction personnel being regulated by almost every department in the ministry, which makes compliance difficult in the sense that there is a lot of money involved in order to comply

11:33 ¶ 14 in Participant 11

When they are doing their sensitization education, for example, they are making a health and safety policy for the country. So, what usually happens is when you are inviting people to attend, they don't contact the right people. It's almost not effective to send representatives of less stature. It doesn't carry the same weight it would if it were someone in management who will be educated and will have the power to implement what was taught

Participant 11 expresses concerns and frustration in Box 8 above that various regulatory bodies operate as individuals which often results in overlapping and conflicting environmental requirements. Building on these findings, the literature also points to similar challenges in regulatory coordination, environmental degradation tends to occur due to the poor planning and coordination of these agencies as shown in a study by Nyaga et al., (2024), wherein it was argued that regulatory agencies contribute to environmental and infrastructural degradation by causing delays in the planning and permitting stages of construction projects. Similarly, an observation made by Orchard and Stringer (2016) in Eswatini, who, although do not explicitly

accuse regulatory agencies of intentionally causing environmental degradation, clearly show how institutional weaknesses, governance failures, and the top-down behaviour of agencies and donors contributed to unintended environmental harm and the failure of a land rehabilitation project.

Furthermore, in Eswatini, contractors are expected to be registered with multiple regulatory bodies that offer similar functions. Each of these registrations requires money, which increases the financial burden on contractors. The financial implication often then makes it unlikely to have a fully registered environmental officer as part of the contractor's team. Participants also expressed that a centralised regulatory system would be helpful in minimising costs and in encouraging environmental compliance (discussed in sub-section 2.2.2). Some participants, particularly from regulatory and institutional backgrounds, viewed centralisation as beneficial, as it promotes uniformity in decision-making, consistency in the application of environmental regulations. However, other participants of the study expressed concerns that centralisation contributes to delays, limited responsiveness, and inefficiencies in monitoring and enforcement due to EEA only have one central office located in Mbabane. Participants suggested that decentralising certain EEA functions, such as monitoring and compliance inspections, to regional or local offices could improve efficiency and allow for quicker decision-making.

These differing perspectives highlight an important governance challenge within Eswatini's environmental compliance system. The findings suggest that while the system is structurally centralised, in practice it may not be adequately resourced to operate effectively at a national scale. This helps explain why issues such as weak enforcement, poor coordination, and limited monitoring capacity persist. From an analytical perspective, the results indicate that the current model reflects a predominantly centralised system with elements of a federated approach, particularly where local authorities or sector institutions play supporting roles. However, the lack of fully developed decentralised structures limits the system's ability to respond effectively to compliance challenges at project level.

Moreover, because of poor coordination of regulatory agencies, training programs and educational outreach tend to be ineffective. In most cases, the authorities direct such efforts to individuals with limited decision-making power and limited ability to

implement what was provided at these trainings, as highlighted by participant 11 in Box 8. It highlights the disconnect whereby the information shared in training programs does not reach those with the ability to implement what was learnt. This issue further reinforces participants' concerns about the individualistic approach of regulatory agencies in dealing with environmental matters. Zulu et al., (2022) suggest that collaboration among environmental regulatory agencies could be beneficial in developing and implementing improved environmental protection legislation.

4.3.1.2.3 Inefficient penalties

Table 6 indicates that “inefficient penalties” was raised on 16 occasions. The lack of an effective penalty system is seen as one of the contributors to environmental non-compliance of construction projects in Eswatini. In many cases, some contractors and project proponents willingly risk fines as they are often lower than the cost of full compliance. Some project owners are also not afraid to risk fines as they have strong relations with high key political figures (discussed in sub-section 4.3.1.2.7) who influence the outcomes of the penalty system. In line with this, Box 9 below demonstrates participant 17 views on the environmental enforcement gaps within Eswatini's legal and judicial system. This data was derived from the results stemming from question 3.4 of the interview guide (Annexure B) ‘Are penalties imposed for non-compliance? If yes, what types of penalties are typically imposed?’

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/6/2026

Quotation Report

Selected quotations (1)

18:44 ¶ 24 in Participant 17

Unfortunately, the law states that a person should only be penalized once they have been convicted. This means a proper court process must take place, leading to a conviction before any penalties are applied. However, our court system has not been coming to the party in that respect. So, you would find that an admission of guilt type approach is adopted to say, admit that you have committed an offense, this is the penalty that says you are admitting and then take the necessary measures that particular project is guided to take the necessary corrective measures.

In support of sentiments in Box 9, a report by the Centre for Environmental Rights highlights that in South Africa, criminal prosecution of violators of environmental regulations is a difficult process and has not been very successful as many offences go unpunished (Centre for Environmental Rights, 2023). Evidence from this report indicates that without the ability to effectively impose substantial penalties, regulators will continue to struggle in encouraging environmental compliance from corporations (Centre for Environmental Rights, 2023). Struggles faced by South Africa are no different to the ones faced by Eswatini whereby the system for prosecution of environmental violations lacks effectiveness. Regulators who participated in the study expressed that the justice system in Eswatini is a barrier for effective penalties for non-compliance. Participants noted that greater support from the justice system is needed to ensure that environmental offences are addressed promptly. They further suggested that updating environmental regulations could help reduce delays in imposing fines and limit the influence of bias and political interference. These challenges weaken enforcement efforts and reduce compliance with environmental requirements. This reflects a weakness in the enforcement stage of the regulatory cycle, as penalties are not strong or consistent enough to deter non-compliant behaviour.

4.3.1.2.4 Lack of green funding

Based on codes displayed in Table 6, the lack of green funding emerged as an issue faced by EIA follow-up second parties and occurred 13 times. The lack of green funding presents a barrier in achieving effective environmental compliance in construction projects in Eswatini. Whilst EIA approvals stipulate conditions to be followed, findings of this study indicate that the lack of financial resources discussed in sub-section 4.3.1.1.3, constrain environmental mitigation and monitoring efforts by regulators to ensure environmental compliance. This gap ultimately weakens the effectiveness of EIA follow-up.

Participants of the study who are regulators indicated that the lack of green funding limits their ability to effectively enforce and monitor environmental compliance. This view was presented by participant 4 in Box 10. The data displayed was derived from participants' answer to questions 2.1 of the interview guide.

Box 10: Relevant view of participant 4 on the lack of green funding from ATLAS.ti report

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/25/2026

Quotation Report

Selected quotations (1)

4:26 ¶ 11 in Participant 4

Environmental compliance management is not fully implemented due to some problems with the government financial system. So, at the moment, the authority can't be able to hire environmental inspectors, that would be able to assist on the compliance management in construction projects.

Participant 4 in Box 10 sheds light on how the lack of green funding from government affects Eswatini Environment Authority's (EEA) ability to acquire human resources to assist in effectively managing environmental compliance at construction projects in Eswatini. Linking back to sub-section 4.3.1.1.3, the lack of both financial and human resources restricts EEA's frequency and scope of compliance inspections and audits.

A study on the role of green financing in mitigating environmental degradation implies that without sufficient green funding, environmental degradation is likely to be larger (Numan et al., 2023). The study argues for greater investment in green finance for environmental protection and supports participants' views by demonstrating that inadequate green funding constrains institutional capacity for environmental compliance, thereby exacerbating environmental degradation (Numan et al., 2023).

Additionally, the lack of green funding also affects regulators' ability to adopt and acquire the latest technological advancements for environmental compliance enhancement. Most regulators in Eswatini rely on in person inspections for compliance monitoring which can be time consuming and ineffective in monitoring construction projects in the whole of Eswatini. Regulators simply cannot afford to acquire devices such as drones and remote sensing to assist monitoring efforts which weakens the feedback mechanisms necessary for adaptive environmental governance. From the perspective of the regulatory cycle presented in sub-section 2.2.1 of the literature, the lack of green funding affects the process of monitoring and evaluation which is crucial for learning and improvement. Without green funding, environmental governance models in Eswatini remain reactive in dealing with environmental problems.

4.3.1.2.5 Outdated regulations

Table 6 highlights that "outdated regulations" was cited 7 times. Outdated environmental regulations were identified as a major challenge affecting the ability of regulatory authorities to effectively enforce environmental compliance. Participants of the study indicated that environmental regulatory frameworks in Eswatini are due for update as they do not align with current environmental challenges. The Environmental Management Act of Eswatini has been in effect since 2002 (presented in sub-section 2.5.1.2), and participants argue that it is due for an update. These views are illustrated in Box 11, and these findings were drawn from participants' answers to questions 2.3, and 6.1 of the interview guide.

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/25/2026

Quotation Report

Selected quotations (2)

4:44 ¶ 41 in Participant 4

we've got old laws that are not really in standard or moving according to the to what is happening now. So sometimes maybe we need to improve the laws to be able to enforce them on the ground.

6:19 ¶ 12 in Participant 6

Another gap would be, I think most of our legislations are outdated and they don't speak to the issues that we are facing. They don't address some of the critical issues such as climate change sustainability. Also, we don't have a wetland legislation that talks to wetlands.

Participants highlighted that Eswatini's environmental regulations do not cater for the latest environmental challenges such as wetland disruption and climate change sustainability. These gaps highlighted how outdated regulations possibly lead to environmental degradation in Eswatini. These perceptions are justified by Madebwe (2020) in a study that concluded that Botswana's environmental protection framework has failed to decrease environmental deterioration because it lacks essential quality standards, effective enforcement, and modern regulatory mechanisms. Moreover, Cele (2022) also highlighted that the previously enacted Environmental Audit, Assessment and Review Regulations (EAARR), 2000 lacked guidelines for EIA processes. The study by Cele (2022) informed the promulgation of the Environmental Assessment Regulations of 2022 (presented in sub-section 2.5.1.3), which were introduced to address gaps in the preceding regulatory framework.

4.3.1.2.6 Staff turnover

Table 6 indicates that “staff turnover” was raised on 7 occasions. With the challenge of limited human capital, EEA also experiences high staff turnover whereby skilled inspectors or environmental officers leave the agency for ‘better’ opportunities reducing institutional knowledge. Figure 14 illustrates a clear link between the lack of resources and high staff turnover within the EEA (the lack of resources is discussed in sub-section 4.3.1.1.3). The authority’s high staff turnover rate further exacerbates the issue of the lack of human resources forcing them to hire personnel with limited-to-low knowledge and skills as highlighted by participant 4 in Box 12. The results shown here based on answers provided in response to question 4.3 of the interview guide (Annexure B).

Box 12: Relevant views of participant 4 on staff turnover and increasing project demands within Eswatini Environmental Authority from ATLAS.ti report

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/26/2026

Quotation Report

Selected quotations (1)

4:36 ¶ 35 in Participant 4

I made a point when we started that we do have a high turnover of staff and also the increase of the projects which creates a problem on the authority to be able to cope up with the number of projects the level.

Without sufficient expertise, even the presence of monitoring staff does not guarantee effective monitoring. This discrepancy hinders the authority's ability to enforce and monitor environmental regulations and impacts the thoroughness and precision of inspections. Research shows that the lack of human capacity and the lack of financial resources of the principal environmental agent affects the enforcement and implementation of environmental regulations (Zulu et al., 2022). Furthermore, EIA follow-up is also affected by the shortage of staff at EEA. Due to the low likelihood of inspections or penalties by EEA, developers and contractors neglect or avoid the

implementation measures for environmental compliance knowing very well there are slim chances of being sanctioned.

4.3.1.2.7 Political influences

Table 6 records 6 references to “political influences.” Politics play a major role in the running of various sectors and industries all over the world, including the construction industry. Zulu et al., (2022) highlight that at times, politicians interfere with the processes of project evaluation wherein project developers use their relationships with politicians to gain favour and avoid complying with environmental regulations. The political sphere of Eswatini has been under major scrutiny in recent years following the political unrest of 2021. Eswatini continues to face political unrest wherein the government and major political figures face criticism over the use of harsh laws to suppress dissenting voices and the infringement of human rights of the country’s citizens (ACCORD, 2024). Due to public dissatisfaction, politicians often use development projects to gain favour with the public. Even though Eswatini has various environmental regulations like the Environment Management Act of 2002 and the Environment Assessment Regulations of 2022, the enforcement of these regulations is sometimes subject to the influence of political figures.

Firstly, the influence of politicians in Eswatini affects the process of project approvals and permits as project proponents and developers with affiliations to high key politicians use their relationships to gain favourable treatment and sometimes outrightly bypass the need for an Environmental Impact Assessment (EIA) for their projects. This was demonstrated in a case in Eswatini whereby a company named Michael Lee Enterprise was granted a 25-year mining license in 2023, by the Mining and Minerals Board of Eswatini, to mine Green Chert (Mbuyisa & Armstrong, 2024). There was major outcry and criticism from the public as the project is located at Malolotja which is a protected nature reserve and because work commenced without prior authorisation from the Eswatini Environment Authority (Mbuyisa & Armstrong, 2024). The Executive Director of the Eswatini Environment Authority stated that Malolotja is a protected and environmentally sensitive area where mining is not permitted and no clear justification was given for why this specific mining activity should be treated as an exception to that rule (Mbuyisa & Armstrong, 2024). This case, where a project proponent was granted a mining license without authorisation from the

authority, demonstrates how political influence in projects undermines the enforcement of environmental regulations by the EEA. The EEA is often left with the responsibility of dealing with the grievances of those affected by the implementation of projects, making enforcement difficult. Also, pressure is added to regulatory bodies to expedite approvals and overlook environmental concerns which leads to environmental degradation.

Moreover, the influence of politics in environmental matters also contributes to the uneven enforcement of environmental laws in Eswatini. The punitive system for breaking environmental laws is already a system filled with flaws as previously discussed in sub-section 4.3.1.2.3. Political involvement in environmental matters only exacerbates the problem. Developers, project proponents, and contractors who have ties to high-key political stakeholders of projects tend to have immunity from penalties for environmental non-compliance. Consistent with this, Box 13 below displays participants views on how politics in Eswatini affects environmental compliance. The evidence discussed in this section reflects responses to interview questions 2.1, 2.3 and 4.3 of the interview guide (Annexure B).

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/6/2026

Quotation Report

Selected quotations (3)

7:17 ¶ 17 in Participant 7

You have companies getting away with murder essentially. The political economy in the country also makes it difficult due to influence from high powers so I wouldn't say it is very effective.

18:32 ¶ 18 in Participant 17

It's tricky in that the way our country is set up, the authority is overly reactive as opposed to being proactive or reactivity is linked to our political system. It is easy for a politician to say "I need this project implemented and done within such and such a time". By virtue of the politician having said that, we're almost running around prepared to do whatever the politician says, overlooking that at the end of the day, the politician was late. If it's a project that is being pushed by a politician, the politician was late in bringing that project to the attention of the authority and by virtue of that lateness, then it compromises everything that runs thereafter, and so that by essence, it compromises even the effectiveness.

18:45 ¶ 24 in Participant 17

You then need to take into account the political climate where some will then cite certain individuals or principals to say "as much as I have infringed the law. If you say I should stop, I have so and so, who is part of the project and therefore if you are stopping me, you are by virtue stopping that political figure and by virtue of stopping that political figure, war unto you."

The statements by participants displayed in Box 13 above affirm the challenge faced by regulators regarding enforcing environmental laws and requirements at construction projects that have political backing. The notion that construction firms use their political relationships to avoid penalties for environmental violations is further justified by a study in the United States of America by Heitz et al., (2023) who sought to examine whether corporate political connections result in favourable enforcement

by regulatory bodies. The study established that firms with political connections, particularly those contributing to election campaigns, faced less stringent regulatory enforcement, and incurred lower penalties compared to firms without political connections (Heitz et al., 2023). This challenge creates a situation whereby construction companies with no political affiliations feel that regulatory bodies in Eswatini are selective on who they decide to punish for environmental violations, and this discourages efforts to comply with environmental requirements amongst environmental stakeholders. Furthermore, participant 17 explains in Box 13 that in some cases where the regulator tries to impose penalties, they have experienced threats from project implementors using their relationship with politicians to get their way. These sentiments illustrate how environmental enforcement agencies in Eswatini often have their “hands tied” when enforcing environmental compliance.

Zulu et al., (2022) stipulate that politicians often use construction projects to gain favour with the public to be re-elected when elections come about. Their primary concern is not environmental protection. This is no different in the context of Eswatini. As previously stated, Eswatini has experienced political unrest and turmoil in recent years which has tarnished the image of various government officials including members of parliament and ministers. In a bid to restore their image with the public, government officials use construction projects as their basis for demonstrating development progress and responsiveness to public needs, often by prioritising visible infrastructure delivery as a means of rebuilding public trust and political legitimacy. The public is promised better infrastructure such as roads, low-level crossings, access to clean water and footbridges particularly in remote rural areas. As much as these developments are good for the overall development of the country, they are often rushed, as emphasised by participant 17 in Box 13. As a result, processes are not followed, which leads to environmental degradation. Political influences majorly affect environmental compliance enforcement of construction projects, and this discussion illustrates how political interference undermines the enforcement of environmental regulations.

4.3.1.3 Issues faced by third EIA follow-up parties

EIA follow-up third parties in the construction sector can include formally established committees or agencies responsible for monitoring and sometimes carrying out follow-

up activities, as well as informal initiatives led by local community members who are concerned about environmental impacts in their surrounding areas (Morrison-Saunders, Marshall, & Arts, 2007). In the context of this study, the EIA follow-up parties that were focused on were environmental consultants/practitioners. These parties act as intermediaries between various regulators and contractors with the aim of ensuring the environmental compliance of construction projects. The codes presented in ATLAS.ti network below (Figure 15) illustrates the issues faced by third EIA follow-up parties

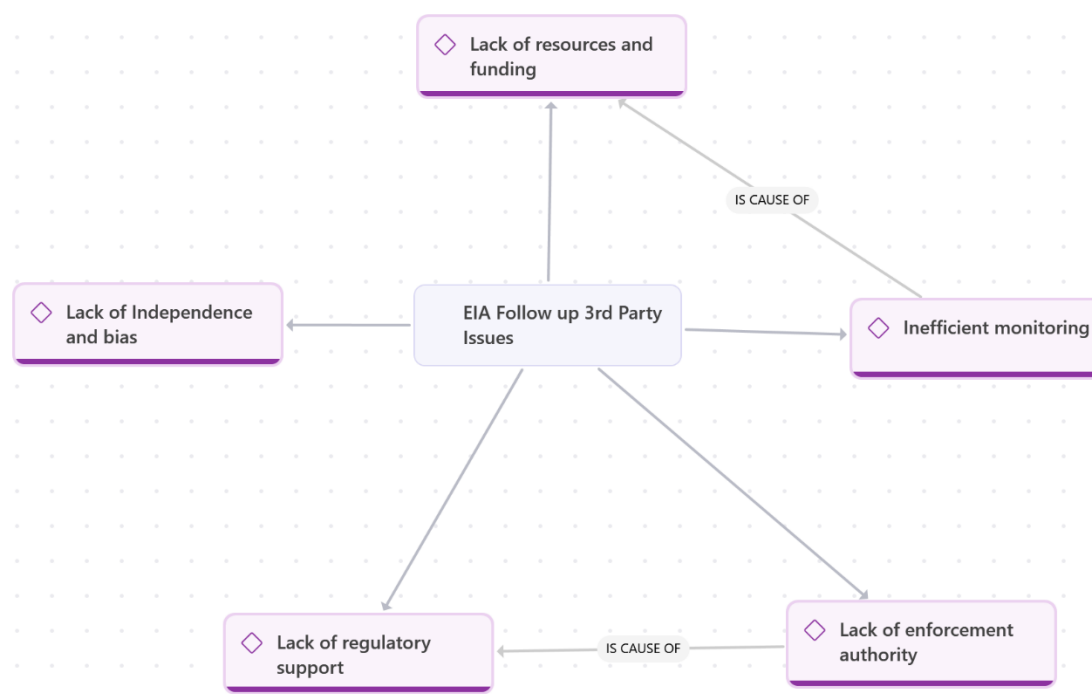


Figure 15: ATLAS.ti network of coded issues associated with EIA follow-up 3rd party experiences

The codes in Figure 15 further point to limitations in the enforcement stage of the regulatory cycle, particularly in relation to accountability and oversight, as third parties lack the authority and institutional support required to influence compliance outcomes effectively. These codes presented above informed the issues discussed in the sub-sections below.

4.3.1.3.1 Lack of enforcement authority

“Lack of enforcement authority” was mentioned 10 times as recorded in Table 6. Participants of the study who are environmental consultants/practitioners expressed their frustration with the limited or lack of authority that they possess to enforce

environmental compliance of construction projects. Unlike government regulators, environmental consultants cannot impose penalties and halt production at sites that are non-compliant. The role of most environmental consultants is more advisory, meaning that, due to the contractors' poor attitudes towards environmental matters, recommendations for improvement are ignored. In most cases in Eswatini, contractors often disregard environmental consultants' recommendations for compliance improvement unless they are backed by regulators like the Eswatini Environment Authority. Box 14 presents selected participant quotes highlighting the limited authority of environmental personnel in enforcing environmental compliance requirements at construction projects in Eswatini.

Box 14: Relevant participants views on limited powers to enforce compliance from ATLAS.ti report

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/6/2026

Quotation Report

Selected quotations (3)

9:21 ¶ 15 in Participant 9

It's the limited power, maybe that the environmental monitoring officer has in terms of ensuring that the contractor or the project manager really follows the CMP because we do not have the powers of actually stopping the project from continuing if we can see that it is not complying.

9:24 ¶ 31 in Participant 9

I'd say is a challenge I mentioned before would be the fact that we're unable to stop a construction project to continue because of limited powers

17:29 ¶ 13 in Participant 16

Lastly, there is a lack of appreciation of why compliance is necessary. Environmental staff are often sidelined, and even if they need equipment, it's not factored into the work breakdown structure

The statements expressed by participants 9 and 16 in Box 14 show concerns about the lack of legal authority that environmental practitioners of construction projects have when interacting with contractors. Their contribution towards the success of a construction project is undermined due to the limited authority. Given their inability to enforce compliance, consultants are seen as playing a ceremonial role rather than a practical role in the project oversight process. In project meetings where compliance concerns are raised, concerns are brushed under the carpet and not addressed. This further weakens their position and reduces their influence. Similar observations have been reported in the literature. A study in Australia similarly found that environmental consultants often face limitations in their authority to enforce compliance wherein poor communication between regulatory authorities and consultants, along with ambiguous policy guidelines, hamper effective environmental management of construction projects (Maund et al., 2018). This study highlighted that this challenge is not unique to developing countries but also exists in more developed regulatory environments.

Participants of the study suggested that the principal enforcement agency (EEA) needs to develop a system that enables environmental consultants to share their findings at projects for their review. This will assist and empower consultations by ensuring their observations and recommendations are backed by regulatory action. It will also assist in linking the various enforcement chains together, resulting in the improved monitoring of construction projects.

4.3.1.3.2 Lack of independence and bias

As Table 6 illustrates, “lack of independence and bias” was raised on 5 occasions. EIA consultants in Eswatini play a vital role in ensuring and assisting with the environmental compliance of construction projects. In most cases, they are often the most knowledgeable about environmental matters in the country. Due to a lack of funds, the government and the principal environmental agent do not have the capacity to hire EIA consultants to conduct EIAs and monitor compliance of construction projects. As a result, EIA consultants are hired by project proponents to conduct EIAs and monitor environmental compliance at construction projects which, presents a conflict of interest. The client-consultant relationship presents a challenge of subjectivity in relation to ensuring environmental compliance. Box 15 presents selected quotations from participants 7, 13, 15, and 21 highlighting challenges to the

independence and impartiality of environmental practitioners. These quotations were derived from interview responses collected using questions 2.3, 3.4 and 4.3 of the Interview Guide (Annexure B) and coded in ATLAS.ti.

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/6/2026

Quotation Report

Selected quotations (5)

7:20 ¶ 21 in Participant 7

As practitioners, there needs to be independence because if you are hired to monitor a site by the client, you are almost automatically going to be bias towards the client and look after their needs.

7:23 ¶ 28 in Participant 7

Then the other challenge now when as a consultant, being paid by the very client, you will tend to because you're not as independent, then you will be inclined to sort of cushion the client.

13:17 ¶ 15 in Participant 13

Of course there are challenges, one of which is funds. The government has a lack of funds which then needs the proponent to pay a consultant for conducting an Environmental Impact Assessment and that presents itself as a weakness because it makes the environmental practitioners more biased towards ensuring that the proponents is able to carry on with their project because they are the ones who are paying them

15:6 ¶ 3 in Participant 15

Challenges include limited manpower, time constraints, and reliance on contractors to self-report issues.

22:3 ¶ 47 in Participant 21

Also, environmentalists are not impartial in the decision making, as they are working for the same contravening company.

Participants' quotes shown in Box 15 above highlighted that EIA consultants in Eswatini lack independence from project proponents and contractors. The participants

also expressed concerns that the hiring of consultants by project proponents is an inherent conflict of interest. It was highlighted that it weakens not only the credibility of environmental consultants but also that of the Environmental Impact Assessments produced by these consultants. Senécal et al., (1999) emphasise that the best practices in environmental assessment advise consultants to act impartially and to keep a clear distance from the project proponents' interests. EIA consultants in Eswatini have challenges in maintaining the previously stated best practices. According to the study participants, consultants often feel under pressure to conceal or minimise findings of infractions or environmentally damaging practices during project implementation to protect their contracts or professional relationships. This ultimately contributes to environmental degradation on building sites nationwide resulting in serious environmental violations to go unreported or unaddressed.

Similarly, in a study, Zulu et al., (2022) further highlight that this challenge is not only an issue in Eswatini but also in Zambia. The participants of that study highlighted that the developers' act of hiring consultants to carry out EIAs that are to be submitted to the principal environmental agent is a major flaw in the environmental process and means that the developer is essentially auditing themselves (Zulu et al., 2022). Wessels (2013) highlights that when verifiers (EIA consultants) are paid by project proponents, their objectivity is at risk due to the threat of financial dependency. This mirrors the concerns raised by the study's participants who noted that the hiring of consultants by project proponents introduces a conflict of interest, potentially undermining the credibility of EIAs. Wessels (2013) argues that the appearance of independence is as important as actual independence. In Eswatini, the perception that consultants are biased due to their financial ties to proponents erodes public trust in the integrity of EIAs, echoing similar findings from the South African context.

The findings by Wessels (2013) strongly support the concerns raised by Eswatini stakeholders regarding consultancy independence. It confirms that when environmental consultants are hired and paid by project proponents due to limited government capacity, it leads to perceived and real conflicts of interest that compromise the objectivity of EIAs. These challenges are seen throughout the African context and are not only specific to Eswatini. To combat these challenges, independent bodies can be used to supervise the process of hiring and evaluating EIA consultants, as also recommended by Wessels (2013), to implement systemic safeguards like joint

appointments and third-party oversight to reduce the influence of project proponents on consultants. Such mechanisms could be explored in Eswatini to address the funding and independence gap, thus improving the reliability of environmental compliance monitoring.

4.3.1.3.3 Lack of regulatory support

The data in Table 6 showed 3 occurrences of “lack of regulatory support.”. Environmental consultants play a major role as a third party through monitoring compliance and advising of mitigation measures and reporting back to regulatory authorities. However, participants of the study highlighted that they do not receive adequate support from regulatory authorities that can assist them in enforcing environmental compliance at construction projects. A study by Waxin et al., (2023) similarly found that environmental practitioners often face challenges in implementing compliance measures due to limited support from regulatory authorities. The study highlights that insufficient institutional backing, inadequate resources, and weak coordination with regulators hinder practitioners’ ability to enforce environmental management systems effectively in public sector projects (Waxin et al., 2023). As discussed in sub-section 4.3.1.3.1 ‘Lack of enforcement authority’, the role of environmental practitioners is taken for granted and is not seen as essential for a project. Box 16 presents a selected quotation from participant 17 highlighting the need for stronger regulatory support and institutional backing for environmental practitioners. The quotation was derived from interview responses collected using question 6.1 of the interview guide (Annexure B) and was coded in ATLAS.ti.

Box 16: Relevant participant views on the need for stronger regulatory support for environmental practitioners from ATLAS.ti report

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/27/2026

Quotation Report

Selected quotations (1)

18:41 ¶ 41 in Participant 17

A stronger relationship between the independent practitioner and the Environment Authority to empower the independent practitioner so that when the contractor or the product implementers see the practitioner, they actually see a representative of environment management and by virtue of being in a representative of environment management, they're representative of the authority (EEA).

As illustrated in Box 16 above, participant 17 highlights the importance of a stronger relationship between environmental practitioners and regulatory authorities, suggesting that such support would empower practitioners to act as effective representatives of environmental management of construction sites. Participants of the study strongly believe that more support for environmental practitioners for regulatory authorities can help bridge that gap.

4.3.2 Enhancing environmental compliance management, enforcement and monitoring of construction projects

This section answers sub-question 4. 'How can environmental compliance management, enforcement and monitoring be improved at construction projects in Eswatini?' by discussing potential improvement methods suggested by interview participants.

Figure 16 presents an ATLAS.ti network illustrating the set of codes derived from the analysis of interview data with participants on ways to enhance environmental compliance of construction projects in Eswatini.

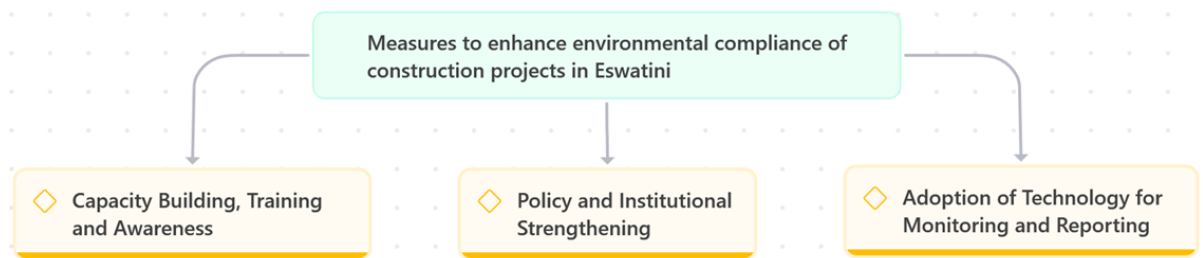


Figure 16: ATLAS.ti network of codes derived from participants' perspectives on enhancing environmental compliance in construction projects in Eswatini

From the interviews conducted for the study, key themes emerged that are important and can be utilised for effective environmental oversight. It was argued that these themes represent potential methods that may be used to improve environmental compliance at construction projects in Eswatini and are discussed further in sub-sections 4.3.2.1, 4.3.2.2 and 4.3.2.3. These proposed measures align with the feedback (evaluation and revision) stage of the regulatory cycle, where lessons from implementation and monitoring are used to improve policies, strengthen institutions, and enhance future compliance outcomes. However, the findings suggest that this feedback loop is not yet fully effective in Eswatini, as persistent challenges indicate limited integration of learning into regulatory reform.

4.3.2.1 Capacity building, training and awareness

Table 6 reveals that “capacity building, training, and awareness” was mentioned 51 times. The capacity building, training, and awareness of those involved in all environmental matters in Eswatini was highlighted as one the most important recommendations and measures of improving environmental compliance of construction projects. Participants highlighted the crucial need to raise awareness about the importance of environmental sustenance with EIA follow-up first parties (project proponents, developers, and contractors). As previously discussed in sub-section 4.3.1.1.1, the findings of this study brought attention to the lack of awareness and poor attitudes of EIA follow-up first parties towards environmental matters in Eswatini, and how it leads to poor environmental compliance and environmental degradation at construction projects. As the primary actors responsible for EIA follow-up, project implementers must have a clear understanding of their environmental obligations. Providing targeted training and awareness initiatives is crucial to bridging this knowledge gap. These sentiments were expressed by participants of the study as

shown in Box 17 below. These responses were derived from question 6.1 of the interview guide (Annexure B) and coded using ATLAS.ti.

Box 17: Relevant participant views on capacity building for environmental compliance in construction projects from ATLAS.ti report

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/7/2026

Quotation Report

Selected quotations (2)

5:31 ¶ 41 in Participant 5

I think for me it goes back to capacity building, capacitate the people who are actually ensuring or who are actually overseeing implementation of environmental management or the compliance, make sure those people are capacitated, that's an area of improvement. Capacitate the people and also provide them with resources. Capacity building and also make sure everyone involved in the construction project is sensitized is our way of environmental compliance and make it a culture for each and everyone involved in a construction

20:23 ¶ 30 in Participant 19

One way should be on the awareness generally, of people who do development projects or construction projects. Just the awareness of the importance of environmental compliance. So, it's the training, in terms of building capacity to the project implementers and also, on the project implementer's part, adding resources in terms of environment, health and safety and people who understand environmental matters because sometimes the gap exists because the communication and the language or the reports are a bit technical.

The above statements in Box 17 are affirmed by other studies that show improved environmental practices after training and awareness of all parties involved in construction projects. Sharpe et al. (2022) highlighted in their study the widespread lack of awareness regarding environmental regulations within the textile and garment sectors of Bangladesh, Cambodia, Indonesia, and Vietnam. The study further illustrates that to bridge the awareness gap, training and awareness building was conducted and reaped positive results as most of the factories that participated in the training implemented corrective measures and improved environmental compliance, further highlighting the importance of building awareness and training (Sharpe et al.,

2022). Furthermore, another study emphasizes that insufficient awareness of environmental sustainability among EIA follow-up first parties is associated with poor environmental performance in construction projects and concludes that capacity building and targeted training of construction industry stakeholders are essential for achieving sustainable project outcomes. (Moshood et al., 2024).

The participants in the study further highlighted the need for institutional strengthening of enforcement agencies through the capacitation of staff and institutional coordination. Participant 13 expressed the need for environmental enforcement agencies in Eswatini to better coordinate and provide training programs for the construction industry stakeholders in Eswatini in Box 18 below. The data presented were obtained from questions 5.2 and 6.3 of the Interview Guide (Annexure B) and coded in ATLAS.ti software.

Box 18: Relevant participant views on practitioner accreditation and inter-institutional partnerships for environmental compliance from ATLAS.ti report

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/7/2026

Quotation Report

Selected quotations (2)

13:26 ¶ 28 in Participant 13

We're also partnering with AESAP for the accreditation of the practitioners so that they become more professional instead of being compromised due to being paid by the proponent, but now they also need to think about their own self integrity and ethics. So, by being forced to be affiliated to a body which can actually give them a professional recognition, or they can strip them of that professional recognition, that actually is meant to improve compliance monitoring within all spheres

13:31 ¶ 33 in Participant 13

We (EEA) need to partner more with the Construction Industry Council so that they also assist, and understand what environmental issues are, to be able to integrate it even into their everyday activities when they go to inspect construction sites as part of their mandate is to provide, like courses, provide education and trainings to their affiliates and environmental issues should be included as part of their trainings so that investments can be protected and be done in a sustainable way.

Ge and Chen (2025) affirm this approach in a study that shows how enforcing policies in a coordinated manner by environmental agencies can boost sustainable development.

There is, however, some cause for optimism. Eswatini has taken measures to improve environmental compliance through training and awareness in initiatives such as the annual SHERQ (Safety, Health, Environment, Risk, and Quality) Summit hosted by the International Centre for Sustainability and Excellence (ICSE) in Eswatini. This initiative brings together industry stakeholders for training and knowledge-sharing on compliance and sustainability practices in the construction sector. While such initiatives do exist, participants of the study highlighted that it is not enough, and that more trainings are needed to ensure wider awareness and understanding of environmental requirements in Eswatini. Moreover, through the promulgated Environmental Assessment Regulations of 2022, environmental practitioners/consultants now need to be accredited through Architects, Engineers, Surveyors and Allied Professionals (AESAP) before conducting Environmental Impact Assessments (EIAs) which improves the quality of EIAs and ensures adherence to environmental requirements.

Participant 13 in Box 18 emphasises that the environmental practitioners/consultants should be forced to be affiliated to a body as this could give them professional recognition, or else they could be stripped of that professional recognition which would, in turn, improve compliance monitoring and environmental compliance within all spheres.

Capacity building and awareness training as highlighted by participants of the study is important for improving environmental compliance of construction projects in Eswatini, especially amongst EIA follow-up first parties who are project implementors and lack environmental awareness that often leads to environmental degradation. Although initiatives like the annual SHERQ summit do exist in the country, the industry stakeholders emphasise more training and capacity building is needed to create and improve the culture of environmental responsibility.

4.3.2.2 Policy and institutional strengthening

Table 6 reflects 37 mentions of “policy and institutional strengthening”. Policy and Institutional strengthening were recommendations for improvement highlighted by

many participants of the study. Firstly, as reflected by Participant 6 in Box 11 (Subsection 4.3.1.2.5, “Outdated Regulations”), environmental policies and regulatory frameworks were perceived to be outdated and not aligned with current conditions and contemporary environmental management demands. Participant 6 highlighted that current regulations do not correlate with what is happening on the ground at construction projects. This assumption is affirmed by a study by Hlatshwayo et al., (2025) that assesses the efficiency of the legislative framework (including environmental) in developing countries, using Eswatini as a case study. Hlatshwayo et al. (2025) found that Eswatini’s legislative framework exhibits shortcomings and inefficiencies that hinder the effective regulation of the country’s construction industry. The study also highlights that the Construction Industry Council lacks the capacity and enforcement power to effectively manage the construction industry (Hlatshwayo et al., 2025).

Moreover, this point is further affirmed in a broader context by a study by Matome and Fischer (2024), also highlighting weak EIA/EMP frameworks in Botswana, and demonstrating that issues of weak and outdated policies and regulations are not just an issue in Eswatini but are also a prevailing issue in developing countries. The study finds that EIA/EMP legislative frameworks lead to oversimplified EIAs and fail to incorporate crucial issues such as climate change and undermine public involvement (Matome & Fischer, 2024). These studies highlight the importance of policy strengthening to improve environmental compliance of construction projects as highlighted by participants of the study.

Eswatini has made some strides in improving environmental regulations through the Environmental Assessment Regulations of 2022. For two decades, the Environmental Audit Assessment and Review Regulations of 2000 were in place but often failed to keep pace with Eswatini’s development landscape and undermined effective environmental compliance. Findings by Cele (2022) notably highlighted inadequacies of the Environmental Audit Assessment and Review Regulations of 2000, exposing flaws that included gaps in environmental safeguards and weak enforcement mechanisms. This led to the promulgation of the Environmental Assessment Regulations of 2022 to replace the Environmental Audit Assessment and Review Regulations of 2000 to close gaps that previously existed. This supports the

participants' arguments and recommendations to strengthen policy to improve environmental compliance.

In addition, participants of the study stated that the principal environmental agency (EEA) needs to strengthen its institution through the improvement of capacity. Participants suggested that the EEA needs to open new offices around the country to cope with development demands. It was also suggested that the EEA needs to acquire new vehicles to visit different sites and that they also need to hire capacitated staff. Participants of the study expressed frustration, citing that the Environmental Assessment Regulations of 2022 have equipped the EEA with more money coming from significantly increased assessment review fees to improve their capacity. However, despite this, nothing has changed.

Participants of the study reiterated that funds generated from review processes must be transparently allocated towards compliance and enforcement activities. As noted by Hlatshwayo et al. (2025), the Construction Industry Council lacks both the capacity and enforcement authority to effectively regulate the construction industry. Participants of the study also expressed that other enforcement agencies such as the Construction Industry Council, the Ministry of Labour and Social Security, and many others, also need to “pull their weight” and assist the Eswatini Environment Authority in improving environmental compliance. Insights from participants and from relevant literature all affirm the view that outdated policies and legislative frameworks are challenges that affect environmental compliance. Whilst Eswatini has made great strides to update some environmental regulations, they need to be implemented alongside robust institutional mechanisms and adequate financial resources. Lastly, in addition to being able to handle the demand and pressures of development in Eswatini, the strengthening of policy and institutions is crucial for long-term sustainability and resilience for future environmental challenges.

4.3.2.3 Adoption of technology for monitoring and reporting

Table 6 reveals that “adoption of technology for monitoring and reporting” was mentioned 8 times. Participants of the study highly favoured the use of gadgets like drones and imagery systems for effective environmental monitoring and believed Eswatini can benefit from the adaptation of such systems. There are cases where the use of these systems has reaped positive results. The rapid improvement of

technology and economic development has seen the use of various technologies in improving environmental monitoring. The use of Artificial Intelligence (AI), Global Information Systems (GIS), remote sensing and gadgets such as drones are being used around the world for monitoring (Gibellini et al., 2025). A case in point is a case in the United States of America where remote sensing and computer vision systems were used to assess the effects of structural expansions on intensive livestock farms (Chugg et al., 2021). The systems were able to detect early warning signs of non-compliance and thereby enhanced environmental enforcement (Chugg et al., 2021). Furthermore, a case in Spain further reinforces this in a study that illustrates that remote sensing and GIS have seen growing application in water, air, soil, and agriculture monitoring (Parra, 2022). Although the study by Parra (2022) indicates that the use of remote sensing and GIS is not without its own challenges such as data storage and processing, it highlights the major benefits of using these systems for improved environmental monitoring.

While remote sensing and GIS have demonstrated significant potential for enhancing environmental monitoring and enforcement, it is important to note that the studies referenced above were conducted in developed countries, specifically the United States and Spain. Implementing such systems in developing countries may have various challenges such as financial constraints as the acquisition of these technologies is expensive. These challenges are shown in a study by Mangewa et al., (2019) that investigated the integration of Unmanned Aerial Technology for ecological monitoring in Tanzania. The study cited the following as challenges of the systems: financial, ethical, and legal requirements as well as weather conditions (Mangewa et al., 2019). As discussed in previous sections, Eswatini as a developing country and struggles with finances for environmental matters. The adoption of GIS and remote sensing in Eswatini may prove to be difficult despite the proven benefits as discussed. The acquisition of such technologies may be too expensive, coupled with the expenses of maintenance. Moreover, institutions would need to hire staff with technical expertise and capacity to manage these systems. Box 19 below shows participant perspectives on the use of technology and innovative tools, such as AI, drones, GIS, and remote sensing, to support environmental monitoring. These responses were derived from questions 5.1 and 6.1 of the Interview Guide (Annexure B) and coded using ATLAS.ti.

Box 19: Relevant participants views on the use of technological advancement to enhance environmental compliance from ATLAS.ti report

Project: Eswatini's Enviro Compliance of Construction Projects (Interview data)

Report created by Mason Manyatsi on 1/6/2026

Quotation Report

Selected quotations (5)

1:26 ¶ 30 in Participant 1

There are discussions around adopting new technologies, such as artificial intelligence (AI), to assist in analyzing data and reviewing environmental reports. AI could help address skill gaps in report analysis.

1:27 ¶ 31 in Participant 1

Additionally, using drones and GIS for site inspections could help detect environmental risks, like undisclosed wetlands, before damage occurs.

4:32 ¶ 13 in Participant 4

There's so much that is happening. At the moment, people are implementing AI, artificial intelligence, they need to go hand in hand with innovations that are really happening on the ground.

13:23 ¶ 28 in Participant 13

We're now using Google Maps and Google Earth. We are also trying to use Google images to assess compliance. However, as you say, you find that calls for a bigger budget.

13:24 ¶ 28 in Participant 13

We're looking into using drones and all such technology, so that probably we don't need to go to the sites probably, we can see what is going on remotely in real time.

The responses from participants in Box 19 shows that Eswatini is trying to enhance environmental compliance of construction projects through technological advancements, but the country is still a long way off in implementing these systems. Without the necessary training and infrastructure, these systems may remain underutilised or improperly applied. However, participant 4 in Box 20 mentions that due to rapid economic development, it is imperative that Eswatini keeps up with the current times by conducting monitoring.

Although there has been some success using Google Maps and Google Earth for monitoring as mentioned by participant 13 in Box 19, the main challenge remains that maps are outdated and are not a true reflection of what is happening on the ground. Participant 13 mentioned that the process of acquiring real time images needs finances that they do not have. Even with these challenges, participants still firmly believe that the integration of these technologies and systems is the right direction to head towards, highlighting that although it may be expensive and difficult to implement in the beginning, the long-term benefits will outweigh the initial costs. They emphasised that real-time monitoring technologies such as drones, remote sensing, and GIS can significantly improve the effectiveness and efficiency of environmental monitoring and enforcement. Over time, these systems can reduce the need for costly manual inspections, enable early detection of non-compliance, and ultimately lead to better environmental outcomes and cost savings.

Participants concluded that investing in such technologies, despite financial hurdles, is a strategic move towards sustainable environmental governance. These views are justified by Almohsen (2024) in a study looking into challenges in the use of remote sensing in construction sectors. Almohsen (2024) emphasised that even though challenges do exist in implementing systems of GIS and remote sensing, the benefits far outweigh the challenges. The study indicates that construction companies have experienced notable cost savings and improved productivity by using remote sensing technologies and that these tools enhance communication and collaboration, ensure precise measurements, boost safety, and enable quicker access to valuable data insights (Almohsen, 2024).

This indicates that Eswatini can benefit from the integration of remote sensing, GIS, and gadgets such as drones for effective environment monitoring and enforcement. However, their integration needs to be gradual due to the expenses of acquiring these systems.

4.4 Conclusion to the results and discussion

In conclusion, the results and discussion chapter aimed to answer two sub-questions of the study:

3. *What are the issues experienced by first, second, and third EIA follow-up parties involved in environmental compliance management, enforcement and*

monitoring at four (4) selected case studies within the Hhohho Region of Eswatini?

4. How can environmental compliance management, enforcement and monitoring be improved at construction projects in Eswatini?

In response to Sub-question 3, the findings from the data collected and analysed shows the interconnected issues and challenges experienced by first, second, and third EIA follow-up parties at construction projects in Eswatini. These issues included lack of awareness and poor attitudes towards environmental requirements by first EIA follow-up parties. Lack of resources of which was a challenge raised across the different EIA follow-up parties, indicating that lack of resources is a shared problem within the EIA follow-up process. Moreover, second EIA follow-up parties experience various issues included lack of green funding and political influences. Additionally, lack of enforcement authority and lack of independence are some of the issues experienced by EIA follow-up third parties. All these issues contribute to challenges that hinder effective environmental compliance at construction projects. The findings demonstrate that while all stages of the regulatory cycle, implementation, monitoring, enforcement, and feedback are formally present within Eswatini's environmental governance framework, their practical application is uneven. The study therefore both supports and challenges the conceptual framework, showing that the effectiveness of the regulatory cycle is constrained not by its design, but by institutional, resource, and coordination limitations in practice.

Regarding Sub-question 4, findings highlighted that improving environmental compliance management, enforcement, and monitoring in Eswatini construction industry requires capacity building and training. Moreover, participants also highlighted policy and institutional strengthening as a measure of enhancing environmental compliance in construction projects. Furthermore, the adoption of technological advance tools such as GIS, remote sensing and use of drones can improve monitoring of projects.

The following chapter presents the conclusions of the study and outlines recommendations for improving environmental compliance management, enforcement, and monitoring in Eswatini's construction sector.

5 CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the conclusion and recommendations of the study on environmental compliance management, enforcement, and monitoring issues of construction projects within the Hhohho Region of Eswatini. It outlines the key findings derived from the study and links them to the research question and sub-questions. The chapter further highlights the main issues experienced by EIA follow-up parties at construction projects in Eswatini as explored in Chapter 4. This chapter also provides practical recommendations aimed at improving environmental compliance practices within Eswatini's construction sector. Lastly, recommendations for further research are presented to address existing gaps and support the advancement of environmental governance in Eswatini.

5.2 Conclusion

This study explored Eswatini's environmental compliance management, monitoring and enforcement issues in Eswatini's construction industry, focusing on case study construction projects in the Hhohho Region. A qualitative research approach was used, utilizing both secondary and primary data.

Secondary data was collected through the review of literature gathered from relevant databases like the UNISA library, google scholar and the Swazi Legal Information Institute website for Eswatini Government Publications. The literature review assisted in answering sub-question 1 and 2, provided useful conceptual links, which were used in constructing the methodologies of this study, and assisted in the discussion of primary results.

Primary data for the study was collected from 21 first, second, and third EIA follow-up parties involved in environmental compliance management in Eswatini, through in-depth interviews. The primary data collected was analysed using ATLAS.ti software to support the thematic analysis approach that aided in answering sub-questions 3 and 4.

5.2.1 Concluding remarks on sub-question 1: What are the global elements of the regulatory cycle for effective environmental compliance management, enforcement, and monitoring?

The literature review process of answering sub-question 1 showed that functions of the regulatory cycle work in conjunction as opposed to in isolation. Global systems for effective environmental compliance include three crucial components: environmental management, environmental enforcement and environmental monitoring. Although these components perform different roles, they all work hand in hand in achieving environmental sustainability.

Management is the planning and policy setting element of the regulatory cycle (Zhang et al., 2022). This component encompasses the setting of environmental laws, standards and regulations for nations to achieve sustainable development (Zhang et al., 2022). Management is important as it provides baseline to measure the rate of environmental compliance. Management's strength is its capacity to incorporate environmental priorities into more comprehensive development agendas, establishing sustainability as a common objective among the social and economic spheres.

Enforcement on the other hand is the component of ensuring that environmental laws, standards, and regulations established in the management component are not just on paper but are implemented and enforced (INECE, 2009). Globalisation has ensured that environmental enforcement is transparent, ensuring accountability and deterrence for environmental non-compliance (INECE, 2009). With global technological advancements, the use of high-tech devices such as drones, satellite imagery, and remote sensing making it easier to detect non-compliance, ensuring improved and effective environmental enforcement. Environmental enforcement also relies heavily on public participation through whistleblowing and reporting of environmental infringements, thus, holding violators accountable for non-compliance (INECE, 2009).

Monitoring completes the cycle as it allows policy makers and regulators the opportunity to evaluate whether environmental laws and regulations are meeting their intended purpose (INECE, 2009). Environmental monitoring systems around the world now incorporate scientific evaluations that guide ongoing improvement, cooperative data exchange, and international reporting procedures in addition to the more

conventional inspections (INECE, 2009). Monitoring is a learning process that continuously shapes environmental governance.

Therefore, the regulatory cycle in environmental compliance is a continuous loop that is a living system for environmental governance. It evolves through learning outcomes and is a basis for effective environmental compliance across all levels of governance.

5.2.2 Concluding remarks on sub-question 2: Which applicable compliance obligations and related governance structures exist in Eswatini to manage, enforce, and monitor environmental compliance at construction sites?

Answering Sub-question 2 made it clear that Eswatini's environmental governance is made up of local legal frameworks, institutional structures, and international standards that affect environmental compliance in the country's construction industry. The country has a mix of national legislation along with international sustainability standards to promote environmental protection.

Eswatini's Environmental Management Act of 2002 (EMA) is the country's foundation for environmental protection. The EMA along with the Environmental Assessment Regulations of 2022 are at the centre of environmental governance for all development projects. These core compliance obligations require all construction projects to undergo environmental screening and to conduct an environmental assessment to ascertain project approval before projects can commence. These legal requirements assist in ensuring that potential project environmental risks are detected early and that mitigation measures are established to prevent environmental degradation. The EMA mandates the Eswatini Environment Authority as the central enforcement agency and the regulator of all environmental matters in the country.

Related to construction projects, Eswatini Environment Authority (EEA) reviews environmental assessments, issues project approvals, and oversees monitoring of environmental compliance of construction projects through their life cycle. The EEA is also in charge of administering punitive action should environmental non-compliance occur at construction sites. This is exercised through financial penalties or the revoking/suspension of approvals. Eswatini also has sector-specific agencies that assist the EEA with environmental governance. The Department of Water Affairs (DWA) oversees water use and pollution associated with construction activities, while the Ministry of Labour and Social Security ensures workplace health and safety

throughout project implementation. Moreover, the Construction Industry Council (CIC) works to ensure that all construction projects have environmental considerations as part of their management systems.

Eswatini has several projects that are donor funded, increasing the influence of international environmental standards for environmental compliance. Common environmental standards found in Eswatini are that of the World Bank and the African Development Bank. In most cases, projects that are funded by these donors are faced with rigorous environmental and social requirements boosting the level of compliance of projects. Overall, Eswatini's environmental governance system, including national legislation, international standards, and regulatory institutions, provide a solid foundation for environmental protection in the country. Although these structures are in place, it is important to remember that their effectiveness depends on effective coordination among regulatory agencies, enforcement capacity, and continuous monitoring to ensure that all construction projects comply with environmental requirements.

5.2.3 Concluding remarks on sub-question 3: What are the issues experienced by first, second, and third EIA follow-up parties involved in environmental compliance management, enforcement and monitoring at four (4) selected case studies within the Hhohho Region of Eswatini?

Answering Sub question 3 led to the discovery of various structural weaknesses within Eswatini's environmental governance framework. Interviews were conducted with first, second, and third EIA follow-up parties involved in environmental compliance management, enforcement, and monitoring at four (4) selected construction projects to explore issues they experience.

EIA follow-up first parties consisting of project proponents, developers and contractors presented little-to-no knowledge on their environmental requirements showing a lack of awareness and knowledge of environmental matters. Also, findings of the study illustrated poor attitudes towards environmental requirements with a culture of viewing environmental protection as a hindrance as opposed to a crucial component of development projects which leads to cost cutting and budget constraints during project implementation. Participants also highlighted that there is a lack of environmental personnel as part of contractor's team and a lack of EIA ownership by project

proponents. First EIA follow-up parties highlighted the lack of incentives to comply as an obstacle of effective environmental compliance.

Findings of the study discovered that inadequate monitoring and enforcement is a challenge faced by second EIA follow-up parties and attributes some non-compliance's of construction projects to the poor coordination of regulatory authorities. Moreover, further findings of the study highlighted that Eswatini Environment Authority is severely understaffed and does not have the resources (financial and human) to meet the demands of the whole country, limiting project oversight. Other issues experienced by second EIA follow-up parties included inefficient penalties, lack of green funding and outdated regulations which all hamper effective environmental compliance of construction projects. Furthermore, efforts for effective environmental enforcement are often undermined high staff turnover and by political interference in projects.

Lastly, environmental practitioners/consultants (EIA follow-up third parties), highlighted a major gap in Eswatini's compliance chain. The study highlighted that environmental consultants lack the resources and funding to carry out their work which in results in inefficient monitoring. Further findings of the study uncovered that environmental consultants and practitioners are often undermined and lack the legal authority to enforce the recommendations for improvement they provide. Moreover, participants highlighted major concerns on the lack of independent environmental consultants and practitioners. In most cases, they are hired and paid by project proponents, relatively deeming them impartiality compromised as they are likely to be biased towards those who pay them. This conflict of interest needs to be addressed through financial backing from regulators. Without institutional support or an independent funding mechanism, the contribution of environmental consultants and practitioners remains undervalued and constrained.

5.2.4 Concluding remarks on sub-question 4: How can environmental compliance management, enforcement and monitoring be improved at construction projects?

In answering sub-question 4, light was shed through interviews about prospective measures that can be implemented to improve environmental compliance of construction projects. The three key measures recommended were capacity building,

training and awareness, policy and institutional strengthening and the adoption of technology for monitoring and reporting.

The first recommendation involved capacity building, training, and awareness. Answering Sub-question 3 highlighted a major gap among project proponents, developers, and contractors and their knowledge of environmental requirements. Environmental protection is seen as a hindrance, and this has led to poor environmental compliance at construction projects. Participants of the study highlighted and emphasised that training and awareness is needed to improve the culture and general outlook of environmental requirements. Participants also highlighted that although there are initiatives that are being implemented in the country to improve compliance, programs need to be more frequent, accessible, and integrated into everyday industry practice.

The second recommendation for improvement was policy and institutional strengthening. Interview data, along with supporting literature, illustrated that although Eswatini's environmental regulations are well established, most of them are outdated and do not meet the criteria of current times as they don't address issues of climate change and wetland protection. The promulgation of the Environmental Assessment Regulations of 2022 has been a step in the right direction. However, its effectiveness is highly dependent on how it is implemented. It was also highlighted that the Eswatini Environment Authority needs to acquire adequate financial and human resources to meet the demands of the country. Along with supporting agencies, more efforts need to be put into improving coordination and monitoring to improve environmental compliance.

The third recommendation relates to the use of technological advancements for monitoring. Participants of the study highly favoured the use of technologies such as drones, satellite imagery, and GIS systems to monitor and detect early warning signs of non-compliance. Although reliable, the challenge for Eswatini lies in its limited financial capacity to acquire such technology. Coupled with having to procure the equipment, technical expertise needs to be improved through training, which is an added expense. Participants remained optimistic, noting that while the approach may be costly initially, it is expected to yield long-term benefits for the country.

5.3 Recommendations

Finally, some recommendations for practice and further research are made.

5.3.1 Recommendations for practice

The findings of this study show that environmental compliance in Eswatini's construction industry is constrained by various issues, including the lack of institutional capacity, fragmented governance, and poor stakeholder participation. Although legal frameworks are in place, their implementation remains inconsistent. This section of the study provides the researcher's recommendations that will contribute to the existing body of knowledge on environmental matters in Eswatini.

Firstly, policy reform has to be focused on for improvement. The study highlighted that current policies and regulations are outdated and are no longer viable to meet current environmental needs. Unfortunately, in Eswatini, the Eswatini Environment Authority can only enforce legal requirements but cannot amend legislation. This is a major gap that needs addressing. Moreover, limited collaboration between employers, training institutions, and policy makers has led to fragmented governance, resulting in the slow improvement and evolving of policies. Policy revision is then critical to eliminate current fragmentation amongst the Eswatini Environment Authority, municipalities, and various government ministries. Revised frameworks can clearly define roles of the different institutions to avoid the overlapping of mandates and the duplication of responsibilities.

Finance is another gap that exists within policy in Eswatini. Environmental compliance activities such as enforcement and monitoring through inspections are underfunded. It would be beneficial to the industry to establish a compliance fund that is funded by levies imposed on major construction projects. This fund could facilitate regular and effective project monitoring. Furthermore, sanctions for non-compliance need to be strengthened in policy reform. Sanctioning should be fair and transparent as it can build trust between communities and regulators.

Furthermore, for the successful implementation of policy reform, institutional strengthening is critical. Firstly, it was highlighted by participants of the study that the primary regulator is understaffed and has limited resources. Therefore, the EEA requires additional staff and logistical resources such as vehicles. It would also be beneficial for the Authority (EEA) to consider the establishment of other offices in the

other three (3) Regions of the country to assist with the distribution of resources. Moreover, capacity building within these institutions is crucial. Trainings such as environmental auditing and compliance monitoring can vastly improve and enhance effective enforcement. Additionally, environmental compliance needs to be adopted as an integral component of a construction project. Project proponents, developers, and contractors need to be educated on the importance of environmental protection as there needs to be shift away from viewing environmental compliance as a hinderance and stepping stone to viewing it as an essential component of sustainable development. The introduction of awareness campaigns and training workshops for decision makers can boost the understanding of environmental obligations, and incentives can be put in place to encourage proactive adherence to legislation.

Furthermore, one of the weaknesses of environmental compliance in construction projects that emerged as part of this study is poor public participation. Stakeholder engagement is relatively active during the EIA compilation stage of projects and once completed, no engagements are done in post-approval phases. Regulators need to ensure that public participation continues into post-approval phases and that communities are included in compliance structures. Communities provide additional project oversight in their communities and areas where regulators are under-resourced. Moreover, public disclosure of projects can enable communities to hold developers accountable for non-compliance. Lastly, research and knowledge development can be beneficial in strengthening environmental compliance measures. Studies into Eswatini's political economy can provide insight into how political influence affects environmental compliance of projects and can assist in devising measures to limit political influence.

Additionally, research into how technological innovations that can improve environmental compliance can be beneficial. Developed countries are using devices such as drones and satellite monitoring which can be adopted in Eswatini to improve environmental compliance. Although expensive, the use of such technologically advanced devices instead of in-person inspections may be cost effective over time. In addition, there is strong potential to use more affordable and accessible digital tools such as mobile-based monitoring apps, GIS platforms, and cloud-based reporting systems to support real-time data collection, improve transparency, and strengthen coordination between stakeholders. These tools can also streamline reporting

processes, reduce delays, and improve accountability in environmental compliance management. Furthermore, academic institutions can play an important role in training and upskilling graduates and practitioners to effectively use these technologies, while also supporting research and innovation in digital environmental monitoring, ensuring that the sector has the necessary capacity to implement and sustain these solutions for improved environmental compliance.

These recommendations emphasise the need for legal provisions to improve environmental compliance management, enforcement and monitoring of construction projects in Eswatini. Stronger policies and capacitated institutions can transform environmental compliance to safeguard sustainable development.

5.3.2 Recommendations for further research

Through highlighting the environmental compliance management, enforcement and monitoring issues of construction projects in Eswatini within the Hhohho Region, and by making recommendations for practice improvement and further research, it is hoped that this study contributes to the existing body of knowledge and discourse on EIA follow-up, environmental compliance management, enforcement and monitoring globally and specifically developing countries.

Future studies could build on this research by including construction projects from other regions of Eswatini, not only the Hhohho Region. This would allow for comparison across regions and provide a clearer national picture of how environmental compliance management, enforcement and monitoring are implemented. Further research could also look at how these practices change over time and whether existing laws, institutions and enforcement approaches are effective in practice. Such studies would help identify practical gaps and support improvements in EIA follow-up within the construction sector.

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ANNEXURES

Annexure A: Research Permission Letter



Ethics clearance reference number: 2023/CAES_HREC/2404

Research title: Exploring Eswatini's Environmental Compliance Management, Monitoring, and Enforcement issues of construction projects

My name is Mason Isaac Manyatsi, and I am currently a master's candidate in MSc Environmental Management at the University of South Africa under the supervision of Professor Jan-Albert Wessels.

Eswatini's efforts to facilitate and expand economic growth has presented major challenges in complying with existing environmental regulations and policies in various industries like the construction industry. This study will assist in highlighting environmental compliance management, enforcement and monitoring issues of construction projects in Eswatini. Moreover, through the review of literature, information on Eswatini's compliance with environmental policies proved difficult to acquire highlighting a gap in literature with regards to environmental compliance management, enforcement and monitoring of construction projects in Eswatini. Perspectives from EIA follow-up parties at four selected case studies projects in the Hhohho Region in Eswatini will assist in answering sub-questions 3 and 4 of the study.

Questions of the proposed study:

What is the Environmental Compliance Management, Enforcement and Monitoring issues of construction projects in Eswatini within the **Hhohho Region**?

Sub-questions

To aid the answering of the research question, the following research sub-questions are asked:

1. What are the issues experienced by first, second and third EIA follow-up parties involved in environmental compliance management, enforcement and

monitoring at four (4) selected case studies within the **Hhohho Region** of Eswatini?

2. How can environmental compliance management, enforcement and monitoring be improved at construction projects?

To achieve the above, I hereby request permission to conduct:

1. In-depth interviews of a 30-45-minute duration per participant, with a total of 24 participants, from four (4) selected construction projects in the Hhohho Region of Eswatini

Your input is much appreciated, and I trust you will assist me in the pursuit of this research by granting me permission. Thank you for your time and I look forward to your timely feedback.

Yours sincerely,



Mason Isaac Manyatsi

masonmanyatsi@gmail.com

Master's candidate (Environmental Management)

University of South Africa



ESWATINI ENVIRONMENT AUTHORITY

RHUS Office Park
Flat 195, Raul Grant Street
Mbabane

P.O.Box 2602
Mbabane, Kingdom of Eswatini
Tel: 2404 6900/7893 Fax: 2404 1719
Email: reception@eea.org.sz or eeasec@eea.org.sz
www.eea.org.sz

14th December 2023

To Whom It May Concern

Dear Sir/ Madam

RE: APPROVAL FOR PERMISSION TO CONDUCT RESEARCH STUDY

This is to confirm that Mr Mason Manyalsi a registered Master's Degree student in the University of South Africa (UNISA) has been granted permission by the Eswatini Environment Authority to undertake research titled "Exploring Eswatini's Environmental Compliance Management, Monitoring and Enforcement Issues of Construction Projects".

Kindly afford him all the support he needs in undertaking his research.

Yours Faithfully

ISAAC G. DLADLA
EXECUTIVE DIRECTOR

Ensuring the integration of environmental concerns in the development of the Kingdom of Eswatini

P.O.Box 5020, Mbabane
Ligwalagwala House plot 427
J. S. M Matsebula Street
Mbabane, Kingdom of Eswatini



Established by
An Act of Parliament, No.14 of 2013

Tel: (+268) 2404 9848/1497/8481
Fax: (+268) 2404 8527
E-mail: info@cic.co.sz
Website: www.cic.co.sz

15th February 2024

Mr Mason Manyatsi

P.O Box 3695

Manzini

Dear Sir,

RE: APPROVAL OF PERMISSION TO CONDUCT RESEARCH STUDY

This letter serves to confirm receipt of your letter of request to conduct a research study titled "Exploring Eswatini's Environmental Compliance Management, Monitoring and Enforcement Issues of Construction Projects" and collect data at various construction projects. The Construction Industry Council (CIC) hereby approves your request and grants you permission to undertake the necessary steps to complete your research study.

Your usual cooperation will be highly appreciated.

Sincerely,

A handwritten signature in black ink, appearing to read "Maqame Mnisi", is written over a horizontal line.

**MAQAME MNISI
CHIEF EXECUTIVE OFFICER**

Vision

The Most competitive construction industry in the region driven by appropriate skills, technology innovation and equal opportunities for all players

Du - Van Developers (Pty) Ltd.

BUILDING, CIVIL, ENGINEERING CONTRACTORS, PROPERTY AND PROJECT MANAGERS

8 February 2024

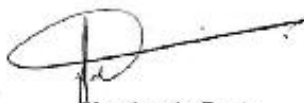
Mr Mason Manyatsi
P.O Box 3695
Manzini

Dear Sir

APPROVAL OF PERMISSION TO CONDUCT RESEARCH STUDY

We, Du-Van Developers acknowledge and confirm receipt of your letter of request to conduct a research study titled **"Exploring Eswatini's Environmental Compliance Management, Monitoring and Enforcement Issues of Construction Projects"** and collect data at the construction project where the Du-Van Office Complex is being constructed. As the Developer of the project, we hereby grant you permission to collect the data you need to complete your study.

Yours sincerely,



Maurice du-Pont
Du-Van Developers (pty) ltd
+268 76028590

P.O. BOX 1414
Matsapha
Eswatini



Tel: 2518 4766/2518 4699
Fax: 2518 5129
E-mail: info@duvan.co.sz
TIN No. 100102118



Sustainable Technologies (Pty) Ltd

Plot 735, Southern Distributor Road,
Extension 7, Manzini,
P. O. Box 4019, Manzini
Swaziland

Contacts: (+268) 2505 8875 (tel),
(+268) 7603 4256 (mobile), (+268) 7511 9749 (fax),
email: sustainable@mtkenvest.com

16 February 2024

Mr Mason Manyatsi
P.O Box 3695
Manzini

Dear Sir

RE: APPROVAL OF PERMISSION TO CONDUCT RESEARCH STUDY

This letter serves to confirm receipt of your letter of request to conduct a research study titled “Exploring Eswatini's Environmental Compliance Management, Monitoring and Enforcement Issues of Construction Projects” and use the construction project where the extension of Mbabane Heights apartments were established

MTK Sustainable Technologies (Pty) Ltd as the environmental supervising agent of the project grant you permission to collect the data you need to complete your study

Yours sincerely,

Thobile Khumalo
Director

Plot 206 Matsapha Block A
Matsapha Industrial Estate
Office No. 124

POSTAL ADDRESS
P.O.Box 1639
Mbabane



PAT-PAT-INVESTMENTS

Suppliers of : * Construction *Plumbing *Electrical wiring * Car Ports *Painting
*Roof Leaks * Fencing *Rural water Installation

20 February 2024

Mr Mason Manyatsi
P.O Box 3695
Manzini

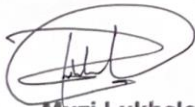
Dear Sir

RE: APPROVAL OF PERMISSION TO CONDUCT RESEARCH STUDY

This letter serves to confirm receipt of your letter of request to conduct a research study titled **"Exploring Eswatini's Environmental Compliance Management, Monitoring and Enforcement Issues of Construction Projects"** and use the construction project where the Eswatini Electricity Company staff houses were established.

Pat-Pat Investments (Pty) Ltd as the contractor of the grant you permission to collect the data you need to complete your study

Yours sincerely,



Muzi Lukhele

Projects Manager





P.O. Box 9255, Mbabane,
H100, Eswatini
+268 2417 1389
Office number 14,
Valley View Centre, Ezulwini
info@pmc.co.sz
www.pmc.co.sz



29th January 2024

Mr Mason Manyatsi
P.O Box 3695
Manzini

Dear Sir

APPROVAL OF PERMISSION TO CONDUCT RESEARCH STUDY

We acknowledge and confirm receipt of your letter of request to conduct a research study titled "Exploring Eswatini's Environmental Compliance Management, Monitoring and Enforcement Issues of Construction Projects" and collect data at the construction project where the Eswatini Communications Commission Office block is being established.

Project Managers of Choice hereby grant you permission to collect the data you need for your study.

Yours sincerely,

Mcebo Maziya
For PMC (Pty) Ltd

Directors:

Z.M. Nhleko – Pr.DS, Soc GS, B.Com, DABS, MAQS, MSAAPS
M. Vaziya – FR PRINCE2 Practitioner, PM, Adv. Dip PM, Dip B.D, MAPISA, EA/CE
S. Nhlengethwa – Bcom (Hons) BA (SD)



Cottage 1 – Farm 443, Malagwane Hill
P O Box A 1022, Swazi Plaza
Tel: +268 2410 2485, Cell: +268 7690 4949
Email: sabatha@sabvilla.com

05th February 2024

Mr Mason Manyatsi

P.O Box 3695

Manzini

Dear Sir/Madam

RE: APPROVAL OF PERMISSION TO CONDUCT RESEARCH STUDY

We acknowledge and confirm receipt of your letter of request to conduct a research study titled **“Exploring Eswatini’s Environmental Compliance Management, Monitoring and Enforcement Issues of Construction Projects”** and collect data at the construction project where the Vuvulane Civic Offices are being constructed. Sabvilla Architects as the Project Managers of the project hereby grant you permission to collect data at the construction project where the Vuvulane Civic Offices are being constructed.

Yours sincerely,

Sabata Vilakati
Sabvilla Architects

sabvilla
ARCHITECTS



Annexure B: Interview Guide

Research Conducted by:

Mason Manyatsi

Email: 19219016@mylife.unisa.ac.za

INTERVIEW GUIDE

Thank you for your willingness to participate. My name is Mason Isaac Manyatsi. I am a Master's student at the University of South Africa, pursuing a Master's Degree in Environmental Management and my study is meant to "Explore Eswatini's Environmental Compliance Management, Monitoring, and Enforcement issues of construction projects".

May I record this interview for transcription later. The information you share as responses will be anonymous and confidential and should be unwilling to continue with the interview, you are free to withdraw your participation. If you are willing to proceed, kindly read and sign this consent form.

(Recorder turned on and interview given identification and date)

Interview

Thank you for agreeing to share your views on the performance of impact management during project implementation.

Questions

1 Background Information

1.1 What is your experience and how long have you been involvement in construction projects in Eswatini.

2 Environmental Compliance Management

2.1 How would you describe the current state of environmental compliance management in construction projects?

2.2 How are environmental impact assessments conducted and integrated into construction projects?

2.3 Are there any challenges or gaps in the implementation of environmental compliance measures? If yes, what are they?

3 Enforcement of Environmental Regulations

3.1 How effective is the enforcement of environmental regulations in construction projects?

3.2 What measures are in place to ensure compliance with environmental regulations during construction?

3.3 Are there any regulatory bodies responsible for overseeing environmental enforcement in construction projects? If yes, how do they carry out their responsibilities?

3.4 Are penalties imposed for non-compliance? If yes, what types of penalties are typically imposed?

4 Monitoring of Environmental Impact

4.1 How is the monitoring of environmental impact carried out during construction projects?

4.2 What mechanisms or tools are employed to monitor and report environmental compliance during construction?

4.3 Are there any challenges or limitations in the monitoring process? If yes, what are they?

5 Best Practices and Innovations

5.1 Are there any notable best practices or innovative approaches being implemented to enhance environmental compliance in construction projects?

5.2 Have there been any successful cases of mitigating environmental impact or improving compliance in recent projects?

6 Recommendations for Improvement

6.1 In your opinion, what improvements should be made to strengthen environmental compliance management, enforcement, and monitoring in construction projects?

6.2 Are there any specific training or capacity-building needs for industry stakeholders in this context?

6.3 What are the potential benefits of enhancing environmental compliance in Eswatini's construction industry?

Thank you for taking your time to respond to these interview questions.

Annexure C: Consent Forms

Research Conducted by:

Mason Manyatsi

Email: 19219016@mylife.unisa.ac.za

CONSENT LETTER TO A DATA COLLECTION INTERVIEW

You are invited to participate in an academic study conducted by Mason Manyatsi under the supervision of Prof. J.A. Wessels in the Department of Environmental Science towards a MSc Degree in Environmental Management at the University of South Africa. The study is titled "Exploring Eswatini's Environmental Compliance Management, Monitoring, and Enforcement issues of construction projects" and an interview has been adopted as one of the data collection instruments.

Kindly note the following:

- Those younger than 18 years of age are not eligible. By participating in this interview, you agree that the information you provide may be used for research purposes, including dissemination through peer-reviewed publications and conference proceedings. You will not be harmed, and you will not be paid.
- You are under no obligation to complete the interview and you can withdraw at any time. However, your participation is imported.
- The interview is developed to be anonymous. Any identifying information will remain confidential.
- This interview will not be more than one hour.
- Your participation will help improve Environmental Compliance Management, Monitoring, and Enforcement issues of construction projects in Eswatini.
- The researcher(s) undertake to keep any information provided herein confidential, and your identification will be revealed.
- The researcher will request consent before audio recording the interviews for transcription purposes
- The records will be kept for five years for audit purposes where after it will be permanently destroyed, hard copies will be shredded, and electronic versions will be permanently deleted from the hard drive of the computer.

Kindly indicate your agreement to participate by signing at the bottom of the page.

Signature 

Date 27 May 2024

Research Conducted by:

Mason Manyatsi

Email: 19219016@mylife.unisa.ac.za

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Kindly indicate your agreement to participate by signing at the bottom of the page.

Signature M. Manyatsi

Date 20 JUNE 2024

Research Conducted by: Mason Manyatsi

Email: 19219016@mylife.unisa.ac.za

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Kindly indicate your agreement to participate by signing at the bottom of the page.

Signature T. S. Solo

Date 07/07/24

Research Conducted by:

Mason Manyatsi

Email: 19219016@mylife.unisa.ac.za

CONSENT LETTER TO A DATA COLLECTION INTERVIEW

You are invited to participate in an academic study conducted by Mason Manyatsi under the supervision of Prof. J.A. Wessels in the Department of Environmental Science towards a MSc Degree in Environmental Management at the University of South Africa. The study is titled "Exploring Eswatini's Environmental Compliance Management, Monitoring, and Enforcement issues of construction projects" and an interview has been adopted as one of the data collection instruments.

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Kindly indicate your agreement to participate by signing at the bottom of the page.

Signature



Date

11 July 2024

Research Conducted by:

Mason Manyatsi

Email: 19219016@mylife.unisa.ac.za

CONSENT LETTER TO A DATA COLLECTION INTERVIEW

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Kindly indicate your agreement to participate by signing at the bottom of the page.

Signature 

Date 31/07/2024

Research Conducted by:

Mason Manyatsi

Email: 19219016@mylife.unisa.ac.za

CONSENT LETTER TO A DATA COLLECTION INTERVIEW

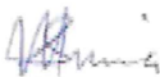
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- The records will be kept for five years for audit purposes where after it will be permanently destroyed, hard copies will be shredded, and electronic versions will be permanently deleted from the hard drive of the computer.

Kindly indicate your agreement to participate by signing at the bottom of the page.

Signature _____



Date 14 September 2024

Annexure D: Example of a Transcribed Interview

TRANSCRIPT

Date of interview: 24/05/2024

Time of interview: 6:00 pm

Duration of interview: 1 hour

1. Background Information

1.1 What is your experience and how long have you been involvement in construction projects in Eswatini?

“So, I would say based on my experience, my training was on BSc in chemistry and physical geography from the University of Lesotho and then I was hired by EEA in January 2009 as a projects officer and then I went on to be an Ozone Officer, at that particular moment then I was able to be involved in some of the duties of EEA. By the time in 2015, I was hired as an environmental inspector, and that is when I got involved in the construction projects in Eswatini, not only the construction projects, but also on the existing projects, because EEA we treat project as ongoing and also existing and the ongoing projects are the construction projects whether it be the road construction or whether constructing of buildings whatsoever houses even going as small as small houses. So, my experience was beginning the year 2015, so that is when I was able to participate in the inspection be involved in construction projects.”

2. Environmental Compliance Management

2.1 How would you describe the current state of environmental compliance management in construction projects?

“In my perspective, Compliance is not compliant. What I'm trying to say is, the Environmental compliance management is not fully implemented due to some problems with the government financial system. So, now, the authority can't be able to hire environmental inspectors, that would be able to assist on the compliance management in construction projects. So, at the moment there are construction

projects that we normally do the categorisation and then all of a sudden, after categorisation, it then becomes very difficult for the authority to visit each and every project that has been categorized due to the fact that we have limited number of staff, we have a high turnover of staff going on and looking for greener pastures. So that's a fact that's really impacting the environment authority whereby it all comes down to whether, is the authority able to hire and to maintain staff because the authority is supposed to hire and then to maintain, and then we'll be able to have an impact or a footprint on the environmental compliance and management field, especially in the construction projects. So, the state is not good because the authority is not visible as it is supposed to be. So, there's lots of health and safety issues going on the ground. Some other people are not serious when it comes to implementing the health and safety regulations. So, I would say that the situation or the current state is not really on a good state and unless the government is able to assist the environment authority, hire many inspectors that will be able to take care of the situation now."

2.3 How are environmental impact assessments conducted and integrated into construction projects?

"I believe that the model that is happening at the moment is quite a good model according to the environmental impact assessment regulations. The proponent is supposed to 1st apply to the authority that they need to implement some sort of project and then the authority, to according to the regulations, the authority responds by visiting the area and being able to categorize and give a certain category to the project and I believe the categories are fair and they are enough for the country. Category one for small projects and then category 2 for medium size projects and then category 3 for the big projects. For category one, I believe that they are conducted in a fairly good manner, except for the fact that we just lacking on the inspection of those kinds of category projects. But on the Category 2 project and category 3 projects, I believe that there is enough work that is done by the authority in terms of the reviewing of the environmental impact assessment. The review is quite good, we've got very experienced officers that are able to provide those reviews, and they are thorough in their work in terms of reviewing. Also, the inspections of the category two and category three, whenever we go on site to the inspections, I believe that those inspections are quite thorough, they are almost at par with the World Bank inspections, except for the fact that the construction industry puts much emphasis on external organisations that

are able to provide the assessment. If the construction industry would put much more emphasis on our internal structures, like the environment authority, then I believe that more work and more thorough job could be done and if the construction industry as well would be able to implement all the guidelines, all the recommendations provided by the Environment Authority and I believe that you know, we would very much improve and like I said, innovation is quite at a higher pace, so we also need to be able to innovate as well and also move at the pace at which other countries are going but I believe that the environmental impact assessment is conducted and integrated into the construction projects in a very good manner.”

2.4 Are there any challenges or gaps in the implementation of environmental compliance measures? If yes, what are they?

“Yes, I believe there's always gaps. There are gaps everywhere. We cannot say there are not gaps, like for example, in terms of the implementation by the industry. I believe that gap is in the fact that the industry only hires the environmental consultants when it comes to the production of the environmental impact assessment documents and they only have health and safety officers on site that are permanent on their side, yet you know, we do have environmental issues and due to the fact that we liaise more with the environmental consultants as the environmental authority, there's that of lack of communication between the authority and the proponent or the industry in terms of understanding environmental issues and environmental matters. So, one gap would be to say that we need someone who will be permanent on side to assist the health and safety officers. That's one challenge, and the fact there's a gap in the capacity of health and safety officers in executing their roles. So, if we would have that capacity, then the skills would be much more improved in terms of having someone who really understands the issues with which comes to the environmental matters, but at the moment, there are people who are just to cover up the sector and after the environmental inspector is gone, people won't really put into effect whatever measures mentioned and you find that at the next inspection, the job that we prescribed to be done has not been done, and that's another factor that I believe needs to be improved, take this issue seriously. The only contractors that is able to implement any recommendations by the Environment Authority are ones taking on the big projects, the category 3 projects like the roads, those that are involved with the external reviewers or regulators such as the World Bank, you know the road construction that

have been funded by the World Bank. I believe those actually hire environmental officers and they are always on the ground doing the job and I believe that as well, if everybody would be able to take the environmental issues seriously and be able to hire the highly skilled people that are needed for the job, I believe we will be able to close many of the of the challenges and the gaps.”

3 Enforcement of Environmental Regulations

3.1 How effective is the enforcement of environmental regulations in construction projects?

“The enforcement is very much effective. Of course. One, we do have inspectors that actually do a follow-up. We do have environmental consultants that produce environmental compliance reports, and then we do actually undertake follow-ups to ensure that the work that is really on the documents, is implemented in the fact that the main document that was submitted at the beginning, applying for a project, like the category tools and the category three is the main. The main documents, are they still? I mean, are there environmental compliance reports? Are they still in line with those kinds of documents or those recommendations that were actually put or the? OK, by this environmental impact assessment and the compliance reports against. CMP yeah, the compliance mitigation plan. Yeah, I want to talk about the compliance mitigation plans that. Those enforcement or the those or those complaints reports, are they still in line with the mitigation plans that were actually submitted at the beginning? So yes, the enforcement is very effective. We do undertake, especially on the sensitive projects, it's very much effective on the sensitive projects like for example on the mining projects, we do make a follow-up. On the sensitive projects in terms of Sensitive to the public or sensitive to the environment, or maybe those projects that are very close to the public domain or where people are housed, or where there's lots of people, then yes, they are very much effective and as well as the environment authority is working hand in hand with the environmental consultants. Then I believe that they are very effective and as well where the proponents are making a follow-up, are getting involved because you also need the proponents as well to be able to make follow-ups, to get involved and to be pushing the environmental authority in terms of visiting the area, because I believe that the environment authority are not just police, but we work together to ensure that the environment is well kept. Proponents or the consultants

shouldn't be running away from the Environment authority, but they should be working together so that we improve whatever is on the ground. Whatever penalties that are in the law, they are not as a stick, but they are there for improvement and those are the last resort measures to ensure that compliance is enforced and is implemented. Whenever the proponent and Environment authority are working hand in hand, I don't see any reason where we would have those punitive measures such as fines."

3.2 What measures are in place to ensure compliance with environmental regulations during construction?

"To ensure compliance with environmental regulations during construction, we do have the environmental officers and the environmental consultants as measures that are in place to ensure compliance with environmental regulations and also we do have the punitive measures or the fines that are there to ensure compliance with environmental regulations and also, except for the fine, there are measures on the environmental impact assessment regulations that are there to stop any kind of construction or maybe to revoke their compliance certificate to say that if you are not able to perform up to the standards then we are invoking the license to carry out works. So those are some of the measures that are in place to ensure compliance. The construction industry as well, has the Minister to write to whenever they feel that the Environment authority is not doing the right job."

3.3 Are there any regulatory bodies responsible for overseeing environmental enforcement in construction projects? If yes, how do they carry out their responsibilities?

"Yes, we do have regulatory bodies responsible for overseeing environmental enforcement in construction projects. We have the Minister of Labor. EEA is supposed to be undertaking inspections together with the Minister of Labour, as well as with the Ministry of Health and CIC. Those are some of the other body parties that are able to oversee my environmental enforcement in construction projects. What do we do is, the Environment authority is the one that you know brings together all the other bodies because they are the ones that are always in touch or in communication with the proponents depending on what sectors that the construction project touches. If it's more on waste, then the Minister of Health will be part and parcel of the of the inspection to oversee the environmental enforcement of the project, the environmental

enforcement of regulations in that kind of project. If it's more on water based, then we do have the Department of Water Affairs and also, we can be able to bring along Eswatini Water Services Corporation. If it's more on the mining, then we do undertake a joint inspection together with the Ministry of Energy & Natural resources.”

3.4 Are penalties imposed for non-compliance? If yes, what types of penalties are typically imposed?

“Yes, we do impose penalties on non-compliant bodies but that's the last resort. We first write to the to the company to say that we are not satisfied with non-implementation or non-compliance and then from there, we can either revoke the certificate or to say hire a qualified person to ensure compliance or ensure company closes or stops any construction until the kind of problem is rectified and if that doesn't work, then we then come, you know, at the end to imposing whatever penalties to say that now, because we have been able to communicate with this kind of industrial company, then we then we now going to impose certain kind of fines of fees to ensure that there's compliance. So yes, we do have the penalties. The penalties are listed under the environmental impact assessment regulations and also under the Environmental Management Act. So, most of the penalties are deduced from the act and then they're imposed on the company.”

4 Monitoring of Environmental Impact

4.1 How is the monitoring of environmental impact carried out during construction projects?

“Monitoring of environmental impacts is carried out by the authority. Through the environmental consultants, they provide the authority with quarterly submission of the project compliance reports and then the authority will be able to go onsite to check compliance and is compliance still being undertaken. Then the authority will be able to write recommendations based on the compliance and mitigation plan they were submitted at the beginning. We check them for whether they're still in line with the submitted document at the beginning of the project. The company, then goes back to the drawing board to align, realign all the compliance and mitigation plans that were submitted at the beginning.”

4.2 What mechanisms or tools are employed to monitor and report environmental compliance during construction?

“We do have the environmental compliance reports, that's a tool that is being used to report environmental compliance during construction and also letters due to the relationship between the authority and also the proponents, that's also another tool to be able to report any environmental compliance during. During construction, I believe those tools are quite enough. They are there and they're quite enough to be able to take care of whatever issues that would arise or that have appeared on the ground during the construction project.”

4.3 Are there any challenges or limitations in the monitoring process? If yes, what are they?

“Yes, everywhere there's always challenges but the authority works hand in hand together with the proponent to be able to work out any challenges on the ground, like for example, I made a point when we started that we do have a high turnover of staff and also the increase of the projects which creates a problem on the authority to be able to cope up with the number of projects the level. There's more and more infrastructure development in the country; therefore, the authority needs to hire more inspectors to be able to be on the ground to ensure that all projects are monitored and there's no project that goes unmonitored.”

5 Best Practices and Innovations

5.1 Are there any notable best practices or innovative approaches being implemented to enhance environmental compliance in construction projects?

“Yes, there's always a notable best practices and innovative approaches being implemented to enhance environmental compliance in construction projects, especially on the externally funded projects, there's always more of the innovation and also more of the best practices in terms of, you know, ensuring environmental compliance, especially on the protection of the biodiversity. It is noted in the country, for example, there are some species that are transplanted from sensitive areas and moved to nurseries. According to the law, we do have some species that are endangered. So, to ensure that their protection then we have to be in line with those

laws. And you know there's also always those best practices or innovative approaches to ensure those compliances.”

6 Recommendations for Improvement

6.1 In your opinion, what improvements should be made to strengthen environmental compliance management, enforcement, and monitoring in construction projects?

“Let’s start by strengthening environmental compliance management. I believe that the authority has to work hand in hand together with the implementers of the project or the proponents. I know some with the environmental consultants and everybody involved in producing quality reports and the timely reports because sometimes people can do desk study work and try to submit to the Environment authority and say we’ve been on the ground, yet they have not been on the ground. Everything should capture what is there on the ground. You know, we should have specialist studies. and in those specialist studies provide quality kind people that will be able to provide information. and in so doing, then you’ll be able to strengthen environmental compliance management and ensure that we don’t stray away from the original document that was submitted and approved for a project. I believe that the Environment authority has still got work to do in terms of making sure that there’s more people on the ground. and they are timely in terms of conducting inspections and also improvement of the laws to capture the standards or the current times because sometimes you might find, maybe we’ve got old laws that are not really in standard or moving according to the to what is happening now. So sometimes maybe we need to improve the laws to be able to enforce them on the ground. Some of the cases have to be taken to court and the media as well needs to be involved on this kind of environmental projects. I know that you know in the environment sector, people do not like involving the media but obviously the media plays a role in terms of highlighting the issues because yes, indeed there are people who do not like to comply, so by bringing the media into the picture, then people will be able to comply and their companies will be deemed as non-compliant to the environmental laws and if you are non-compliant then you can be banned from doing business, the media’s got to be there.

The monitoring, I mentioned the fact the monitoring has got to improve, the authority has got to be more visible on the ground and provide more inspectors to be able to

monitor the projects and also the proponent himself needs hire more skilled labour, or people that are environmentally focused on that monitoring basis so that they are able to inform the environment authority on environmental issues and on timely. There should also be at a budget for the environment to say whenever there are some issues on the ground and then we do have a budget to take care of that because most of the times most of these projects do not factor in a budget.”

6.2 Are there any specific training or capacity building needs for the industry stakeholders in this context?

“Yes, the industry needs more training because actually what's happening is at the University of Eswatini, there's no specific cause on environmental issues like the ISO Standards, so, so we need, constant improvements. The construction industry has got to be able to build its own capacity to be able to be in line with all environmental issues. The other players in the environment have got to come up and be able to work hand in hand with the environment authority and the environment authority has got to hold more trainings or capacity building needs for the industry to be able to be at par and to be able to ensure that environmental management is strengthened.”

6.3 What are the potential benefits of enhancing environmental compliance in Eswatini's construction industry?

“There, there are so many benefits in terms of enhancing environmental compliance, benefits like I would mention that financially, we would save lots and lots of millions in terms of benefits because there are some of some of the mitigations that we implement that are not environmentally based and that are very expensive on the construction industry that are implemented by maybe the proponents. So, if we would be able to enhance those in environmental compliances then we'd be able to save lots and lots of money, and we'll be able to note issues quite early because we are, you know. monitoring and ensuring that we comply with the environment regulations. Also, potential benefits in terms of protection against any climate induced issues (natural disasters). There are potential benefits in terms of health and safety. If we comply then we wouldn't be losing people, losing lives. Our environment wouldn't be scared, we wouldn't be losing any endangered species because we comply, because if we don't comply.”

Annexure E: Ethical Clearance Certificate



College of Agriculture and Environmental Sciences_Health REC

Date: 04/03/2024

Dear: Mr Mason Manyatsi

NHREC Registration # : REC-170616-051
Ref #: 2023/CAES_HREC/2404
Name: Mr Mason Manyatsi
Student #: 19219016

**Decision: Ethics Approval from
01/03/2024 to 28/02/2027**

Researcher: Mr Mason Manyatsi
19219016@mylife.unisa.ac.za +268 76356786

Supervisor: Professor Jan-Albert Wessels wessej@unisa.ac.za

**Exploring Eswatini's Environmental Compliance Management, Monitoring, and Enforcement
issues of construction projects**

Qualification: MSc Environmental Management

Thank you for the application for research ethics clearance by the College of Agriculture and Environmental Sciences_Health REC for the above mentioned research study. Ethics approval is granted for three years, **subject to submission of yearly progress reports. Failure to submit the progress report will lead to withdrawal of the ethics clearance until the report is submitted.**

Due date for progress report: 28 February 2025

The **low risk application** was reviewed by College of Agriculture and Environmental Sciences_Health REC on 30 November 2023 and the required clarifications approved on 01 March 2024 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College of Agriculture and Environmental Sciences_Health REC.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.

5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
7. No field work activities may continue after the expiry date (28 February 2025). Submission of a completed research ethics progress report will constitute an application for renewal, for Ethics Research Committee approval.

Additional Conditions

1. Disclosure of data to third parties is prohibited without explicit consent from Unisa.
2. De-identified data must be safely stored on password protected PCs.
3. Care should be taken by the researcher when publishing the results to protect the confidentiality and privacy of the university.
4. Adherence to the National Statement on Ethical Research and Publication practices, principle 7 referring to Social awareness, must be ensured: "Researchers and institutions must be sensitive to the potential impact of their research on society, marginal groups or individuals, and must consider these when weighing the benefits of the research against any harmful effects, with a view to minimising or avoiding the latter where possible." Unisa will not be liable for any failure to comply with this principle.

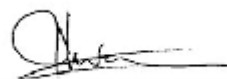
Note

The reference number 2023/CAES_HREC/2404 should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.

Kind regards,



Prof MA Antwi
Chair of College of Agriculture and Environmental Sciences_Health REC
E-mail: antwima@unisa.ac.za



Executive Dean / By delegation from the Executive Dean of College of Agriculture and Environmental Sciences_Health REC
E-mail: ntwasmm@unisa.ac.za

Annexure F: Grammatical editor's certificate



Declaration of Copy-editing

I, Nolwazi Gumbi, hereby declare that I edited the study titled

**EXPLORING ESWATINI'S ENVIRONMENTAL COMPLIANCE MANAGEMENT,
MONITORING, AND ENFORCEMENT ISSUES OF CONSTRUCTION PROJECTS**

for **Mason Manyatsi** for the purpose of submission as a research study for examination. Observations and suggestions were indicated through the use of track changes and the application of the aforementioned was left to the author.

Regards,

Certified copy-editor (UCT)

Certified Copy-editor (UCT)



+266 7622 2742/ 7942 1243



nolwazi@editng.org



Manzini, Eswatini

