



NATIONAL DEFENCE UNIVERSITY-KENYA

**ENVIRONMENTAL DIPLOMACY AND THE CONSERVATION OF
ENDANGERED WILDLIFE SPECIES IN KENYA: A CASESTUDY OF
PANGOLIN**

LUCY WAMUYU MUITA

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DECLARATION

I hereby declare that this thesis is my original work and has not been presented for a degree in any other university;

Signed Date

LUCY MUTA
ND601/0074/2023

This thesis has been submitted for examination with our approval as University supervisor;
1st Supervisor

Signed Date

DR SOLOMON OWUOCHE, PhD
University of Nairobi

2nd Supervisor

Signed Date

Dr. Gladys Rotich, PhD
Jomo Kenyatta University of Agriculture and Technology

DEDICATION

This thesis is dedicated to my family (my husband Peter Wambugu and daughters Grace Njambi and Eliana Gathoni) for their unwavering moral support and unconditional love throughout my studies at the National Defence University-Kenya.

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ACRONYMS AND ABBREVIATIONS

AEAP	-	African Elephant Action Plan
AfESG	-	African Elephant Specialist Group
AICGS	-	American Institute for Contemporary German Studies
ANAW	-	Africa Network for Animal Welfare
AWF	-	African Wildlife Foundation
CBD	-	Convention on Biological Diversity
CID	-	Criminal Investigations Department
CITES	-	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	-	Convention on Migratory Species
DCI	-	Directorate of Criminal Investigations
EACC	-	Ethics and Anti-Corruption Commission
FAO	-	Food and Agriculture Organization
FDG's	-	Focus Group Discussion
IFAW	-	International Fund for Animal Welfare
IGAD	-	Intergovernmental Authority on Development
INTERPOL	-	International Criminal Police Organization
IUCN	-	International Union for Conservation of Nature
KFS	-	Kenya Forest Service
KWCS	-	Kenya Wildlife Conservation Society
KWS	-	Kenya Wildlife Service
MEAs	-	Multilateral Environmental Agreements

MOUs	-	Memoranda of Understanding
NACOSTI	-	National Commission for Science, Technology and Innovation
NDU-K	-	National Defence University-Kenya
NGO	-	Non-Governmental Organization
NMK	-	National Museums of Kenya
QDA	-	Qualitative Data Analysis
SES	-	Social-Ecological Systems
SPSS	-	Statistical Package for the Social Sciences
Stata	-	Statistical Software
UNEP	-	United Nations Environment Programme
UNFCCC	-	United Nations Framework Convention on Climate Change
WCMA	-	Wildlife Conservation and Management Act

OPERATIONAL DEFINITION OF TERMS

Environmental Diplomacy- refers to the diplomatic efforts and negotiations aimed at addressing environmental challenges and promoting sustainable solutions at the national, regional, and international levels. It involves engaging in diplomatic dialogues, negotiations, and cooperation with other countries, international organizations, and stakeholders to address environmental issues, including wildlife conservation. In the context of the conservation of endangered species in Kenya, such as the pangolin, environmental diplomacy plays a crucial role in advocating for policies, agreements, and collaborative actions that contribute to pangolin conservation and biodiversity protection (Gabriela, 2024).

Endangered Species- are species that face a high risk of extinction in the wild in the near future if the factors contributing to their decline are not addressed. Conservation efforts, both within Kenya and through international collaboration, are crucial for protecting these species and preserving the country's rich biodiversity for future generations (Joshua and Frank, 2023).

Pangolin - Pangolins are a family of unique scaly mammals with large, protective keratin scales, similar in material to fingernails and toenails, covering their skin; they are the only known mammals with this feature (Wikipedia). They live in burrows and eat ants and termites, walking on two or four legs. Pangolins live remarkable social lives but are rarely seen due to their nocturnal behavior (Pangolin project 2024).

Biodiversity: The variety of life forms within a given ecosystem, including plants, animals, fungi, and microorganisms. Biodiversity is essential for ecosystem health and resilience, providing resources and services necessary for human survival and well-being (UNEP, 2022).

Sustainable Development- Refers to development that satisfies current demands without jeopardising the capacity of future generations to satiate their own wants. Social fairness, environmental preservation, and economic prosperity must all be balanced. (United Nations, 2020).

Diplomatic Channels- Defined as methods or routes through which countries and international organizations communicate and negotiate (Brown, 2016). These channels include formal negotiations, summits, and cooperative programs aimed at addressing shared environmental concerns.

ABSTRACT

The main aim of this study was to establish environmental diplomacy and the conservation of endangered wildlife species in Kenya: Pangolin. The specific objectives that guided the study include; analyzing the nature and forms of advocacy efforts towards the conservation of endangered pangolin species in Kenya determining the legislative and institutional framework governing the conservation of pangolins in Kenya and evaluating the challenges affecting conservation of Pangolins in Kenya. The study utilized collaborative conservation theory and protected area theory, to contextualize the role of environmental diplomacy in conservation of endangered species in Kenya in this case the Pangolin. The study utilized a case study method in establishing the relationship between environmental diplomacy and conservation of endangered species in Kenya using a case of Pangolin. Primary data was collected using in-depth personal interviews and structured questionnaires, while formal periodic reports from security agencies, government ministries and departments, and non-governmental organisations provided secondary data. The acquired qualitative data was analysed using qualitative analysis. To aid deeper analysis, interpretation, and identification of the numerous thematic issues in the study, the researcher used content and theme analysis to organise the data into several categories. To analyse the quantitative data, descriptive statistics such as frequency, means, and percentages were employed. The findings revealed that advocacy efforts for pangolin conservation involve raising awareness, mobilizing support, and influencing policies. Efforts include educating the public, engaging local communities, influencing government policies, and fostering stakeholder cooperation. The legislative framework, including the Wildlife Conservation and Management Act 2013, provides legal protection for pangolins. However, challenges such as habitat loss, illegal wildlife trade, and poaching hinder effective conservation. The study recommends prioritizing public awareness campaigns, strengthening and monitoring wildlife protection legislation, and enhancing law enforcement to combat pangolin trafficking.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This study assesses how international and national diplomatic efforts influenced the protection of pangolins, which are critically endangered due to illegal trafficking and habitat destruction. It examines Kenya's engagement in global environmental treaties such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) as well as how diplomatic frameworks and collaborations have shaped conservation policies and practices. The research study also highlighted the complexities of aligning international agreements with local conservation needs, and the challenges faced in implementing effective strategies to curb the illegal trade of pangolins. The study also investigated the effectiveness of Kenya's legislative and institutional frameworks in addressing pangolin conservation. It reviewed past efforts, including national policies and partnerships with international organizations, to determine their impact on pangolin populations and the broader conservation landscape.

The research sought to fill gaps in understanding by evaluating how environmental diplomacy has been employed to protect pangolins in Kenya, providing insights into both successful initiatives and areas needing improvement. By focusing on these aspects, the study aimed to contribute to a more comprehensive understanding of the intersection between diplomacy and conservation, with the goal of enhancing future efforts to safeguard endangered species. Environmental diplomacy refers to the use of diplomatic channels and negotiations to address and resolve international environmental issues. It involves collaboration among nations, international bodies, NGOs, and various stakeholders is essential for addressing global environmental issues and seeking solutions

(AICGS, 1999). Promoting sustainable development, protecting natural resources, and lessening the effects of environmental degradation globally are the objectives of environmental diplomacy. Environmental agreements and frameworks resulting from diplomatic negotiations can be broadly classified into two categories: conventions governing the utilization of natural resources, including wildlife, and conventions governing pollution control. There are several wildlife related conventions or Multilateral Environmental Agreements. Within Environmental diplomacy, Multilateral Environmental Agreements (MEAs) are international treaties or agreements that involve multiple countries and address specific environmental issues. These agreements are negotiated and adopted through diplomatic processes involving governments, international organizations, and often non-governmental organizations. MEAs are a cornerstone of international environmental governance, facilitating collaboration and coordination among nations to tackle worldwide environmental issues. According to KWS (2021), Kenya has acceded to several wildlife/biodiversity related MEA's which include; CITES- Convention on International Trade in Endangered Wild fauna and Flora, Convention on Migratory Species (CMS) and its family of Agreements, Ramsar Convention, World Heritage Convention, Nairobi Convention, CBD and its protocols Nagoya and Cartagena protocols and UNFCCC.

The CITES was established in 1973 and became operational in 1975. CITES operates by imposing specific controls on the international trade of designated species. Any import, export, re-exports, or introduction from the sea of species covered by the Convention must receive authorization through a licensing system (CITIES, 2022). The species listed under CITES are categorized into three appendices: Appendices I, II, and III, based on their conservation status. Appendix I comprise species facing the threat of extinction, allowing trade in specimens only under exceptional circumstances. Appendix II includes species not currently threatened with extinction, but requiring

trade regulation to ensure their survival. Appendix III encompasses species protected by at least one country, seeking assistance from other CITES Parties in controlling trade. Amendments to Appendix III follow a separate procedure from those of Appendices I and II, allowing each Party to make unilateral changes (CITIES Appendices, 2023). In Kenya, critically endangered species are listed in 6th Schedule of the WCMA Act (2013) and these include several mammals and others species. However, the Pangolin is not listed in the 6th schedule of the Act.

1.1 Background of the Study

Pangolins are unique and highly specialized mammals belonging to the family Manidae. They are known for their distinctive appearance, covered in protective scales, and are often referred to as *scaly anteaters*. Pangolins are located across regions of Africa and Asia and are known for their role in ecosystems as insectivores, feeding primarily on ants and termites. Concerning their physical characteristics, Pangolins have a unique appearance, with their bodies covered in overlapping keratin scales that resemble armor plating. These creatures possess scales crafted from the same material as human fingernails and hair. Pangolins boast lengthy tongues and robust claws, which they employ to penetrate termite mounds and ant nests. As per a 2017 IUCN report authored by Dan Challender and Carly Waterman for the CITES Secretariat, there exist eight surviving species of pangolins. Among these, four are found in Asia: “the Chinese pangolin (*M. pentadactyla*), Sunda pangolin (*M. javanica*), Indian pangolin (*M. crassicaudata*), and Philippine pangolin (*M. culionensis*)”. Additionally, four species are native to Africa: “the black-bellied pangolin (*M. tetradactyla*), white-bellied pangolin (*M. tricuspis*), giant pangolin (*M. gigantea*), and Temminck’s ground pangolin (*M. temminckii*)”. Together, they inhabit a variety of environments including tropical and sub-tropical forests, riverine and swamp forests, as well as woodland

savannahs and grasslands. Pangolins are specialized insectivores, primarily subsisting on ants and termites. Their lengthy, adhesive tongues are perfectly adapted for extracting insects from nests and mounds. They have powerful claws that help them break into these insect colonies (Ibid). Pangolins are generally solitary and nocturnal creatures, spending much of their time foraging for ants and termites.

The available research by Flora and Fauna International (2023) indicates that, pangolins are believed to have originated around eighty million years ago, with evidence suggesting a potential European origin for modern pangolins, followed by migration into sub-Saharan Africa and then Asia. The IUCN report (2017) indicates that, Pangolins have a widespread distribution. The range of the Asian Pangolin spans from Northern and Eastern Pakistan, extending southward across the Indian subcontinent, encompassing Sri Lanka. It further extends eastward from the foothills of the Himalayas, covering regions such as Bhutan, Nepal, and Bangladesh, as well as Southern China, including Taiwan, Province of China, and Hong Kong SAR. Additionally, it extends southward across mainland and island Southeast Asia, reaching the Palawan faunal region in the Philippines.

Pangolins are also found throughout Sub-Saharan Africa. In this region, three species (*M. tetradactyla*, *M. tricuspis*, and *M. gigantea*) inhabit areas of West and Central Africa, while *M. temminckii* ranges across East and Southern Africa, as well as parts of Central Africa. However, several scholars; for instance; Challender *et al.*, (2014), Waterman *et al.*, (2014) have postulated that; Pangolins are still understudied and there exists limited quantitative research relating to the status, taxonomy and distribution of Pangolins ranging from national to global levels.

1.1.1 Global Conservation Status of the Pangolin

As per the International Union for Conservation of Nature (IUCN) Red List of Threatened Species, all eight (8) pangolin species are classified as threatened. The IUCN Red List assesses species' risk of extinction, with categories ranging from Least Concern to Extinct. Currently, all pangolin species face the threat of extinction due to illegal wildlife trafficking. These creatures are heavily targeted for their scales, prized in traditional medicine, as well as their meat, which holds cultural significance as a delicacy in certain cultures (Kingdon, et al., (2013). The table below shows the general global classification of the status of the Pangolin.

Table 1.1

Global Classification of the Status of the Pangolin

Pangolin Species	Scientific Identity	Status
Chinese Pangolin	Manis pentadactyla	Critically Endangered
Sunda Pangolin	Manis Javanica	Critically Endangered
Indian Pangolin	Manis Crassicaudata	Endangered
Philippine Pangolin	Manis Culionensis	Endangered
Giant Pangolin	Smutsia Gigantea	Endangered
Black-bellied Pangolin	Phataginus Tetradactyla	Vulnerable
White-bellied Pangolin	Phataginus Tricuspis	Vulnerable

Source; IUCN, the Status, Trade and Conservation of Pangolins (Manis Spp)

There are four species of pangolins which are native to Africa. They include; “the Black-Bellied Pangolin (Phataginus tetradactyla): Found in West and Central Africa. The White-Bellied Pangolin (Phataginus tricuspis): Found in West and Central Africa. Giant Ground Pangolin (Smutsia gigantea): Found in various parts of sub-Saharan Africa. Temminck's Ground Pangolin (Smutsia temminckii) and Found in Southern and East Africa”. In Africa, Pangolins are highly sought after

for their scales, which are used in traditional Asian medicine, and for their meat, which is considered a delicacy in some regions (Swart, 2013). This has led to rampant poaching and illegal trade, putting pangolins at risk. They are often captured from the wild and sold on the black market, both domestically and internationally.

Data on the status of African pangolins is limited, despite the longstanding hunting and poaching of the four species for bush meat and traditional African medicine. Recent research indicates a growing trend of exploitation for local consumption in Africa (Challender and Hywood, 2012). Recent studies indicate an alarming rise in illegal intercontinental trade involving African pangolins and their derivatives, particularly their scales, to meet demand in East and Southeast Asia. This emerging trend is of great concern. In Africa, pangolins are distributed from regions such as Guinea, Sierra Leone, and much of West Africa, extending to Central Africa, reaching as far east as southwestern Kenya and northwestern Tanzania (west of Lake Tanganyika), and as far south as northwestern Zambia and northern Angola. Challender and Hywood, 2012) posits that; African Pangolin species have become the most traded and trafficked wild mammal species in the world today, for their meat and scales, which are used in witchcraft rituals in Africa, and in traditional Chinese medicines in Asia, but also in America and Europe.

According to Musila, et al. (2023) three (3) pangolin species are found in Kenya. They include; the White-bellied Pangolin (*Phataginus tricuspis*), which is a semi-arboreal species which depends on hollowed trees for roosting. The Giant Pangolin (*Smutsia gigantea*) which is a highland forest species and is also a ground-dwelling and digs burrows and the Temminck's Pangolin (*Smutsia temminckii*) which occurs in savanna, woodlands and bushlands and is also a ground-dwelling species. Musila, et al (2023) argues that very little is known about Kenyan pangolins even though

they have undergone a silent population decline and the available information shows that *S. gigantea* last recorded in Kenya in 1974, is confirmed to occur in Nyakweri Forest (in Transmara) and southwestern Mau Forests (Olenguruone); *P. tricuspis* in Kakamega Forest fragments, North and South Nandi Forest Reserves, and in Mt. Elgon NP; and *S. temminckii* is widely distributed in much of the west of Rift Valley.

In Kenya, the primary threats to pangolin species are poaching and the illicit trade in pangolin products where there has been an increasing trend in the number of people arrested with pangolin products in Kenya from 2015-2022 (IFAW,2023). The other threat is associated with habitat loss (Musila, *et al.* 2023). According to the recent research Nyakweri Forest, which constitutes the main stronghold of *S. gigantea* in Kenya, has been subdivided and title deeds given to private individual owners. Habitat loss emanates from Charcoal burning and livestock overgrazing which continue to destroy the remaining natural habitat for these animals. Old and hollowed trees, which are key for the survival of *P. tricuspis* have been logged and the habitat quality for this species is poor and declining in range areas. The habitat of *S. temminckii* is threatened by livestock overgrazing, charcoal burning, bushlands burning, agricultural and human settlement expansion, planned and unexpected fires destroying vast land areas, as well as land subdivision and fencing. The three Pangolin species in Kenya are also threatened by traditional rituals, and believes among the communities which reside in the Pangolin range lands. Pangolin species in Kenya are also threatened by high mortality rates, experienced as a result of electrocution by electric fences and also from deaths occurring after their release from traffickers.

1.2 Statement of the Problem

Pangolins classified under Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), are subject to rigorous international regulations aimed at curbing their trade and trafficking (CITES, 2022). Despite these stringent measures, the illegal trade of pangolins and their body parts persists, demonstrating a significant gap between policy and practice. This situation is particularly concerning in Kenya, where pangolins are critically endangered (Musila et al., 2023). Recent global reports highlight alarming seizures of pangolin scales, including over three tonnes intercepted in Hong Kong from shipments that transited through Kenya, underscoring the inadequacy of current enforcement strategies and the urgent need for more effective environmental diplomacy (IUCN, 2022).

The persistence of pangolin trafficking, as evidenced by large-scale seizures and reports from the IUCN SSC Pangolin Specialist Group, indicates a pressing conservation concern across several African countries, including Kenya (IUCN SSC Pangolin Specialist Group, 2023). This highlights a critical disconnect between the established legal protections and their practical implementation on the ground. Despite Kenya's involvement in international agreements and its own national policies designed to protect endangered species, the ongoing trafficking of pangolins reveals significant shortcomings in the effectiveness of these measures (Kenya National Recovery and Action Plan for Pangolins, 2023). The current conservation efforts are insufficient to address the complexities of illegal wildlife trade, suggesting that enhanced environmental diplomacy could play a crucial role in bridging this gap.

This research seeks to address these gaps by exploring the role of environmental diplomacy in improving the conservation of endangered pangolins in Kenya. The study will investigate how

international cooperation, advocacy, and policy frameworks can be better leveraged to combat the trafficking of pangolins and strengthen conservation efforts (Pitman, 2020). By identifying and analyzing these gaps, the research aims to propose actionable strategies for enhancing environmental diplomacy to ensure more effective protection of pangolins and other endangered species, thereby bridging the divide between policy intent and practical outcomes in wildlife conservation (Musila et al., 2023).

1.3 Research Objectives

This section provides the general and specific objectives as outlined below;

1.3.1 General Objective

The general objective of this research study was to establish the role of environmental diplomacy and the conservation of endangered wildlife species in Kenya: Pangolin

1.3.2 Specific Objectives

The following specific objectives apply to this research;

- i. To analyze the nature and forms of advocacy efforts towards the conservation of endangered pangolin species in Kenya
- ii. To determine the legislative and institutional framework governing the conservation of pangolins in Kenya
- iii. To evaluate the challenges affecting conservation of Pangolins in Kenya

1.4 Research Questions

The following research questions apply to this research;

- i. What is the nature and forms of advocacy efforts towards the conservation of endangered pangolin species in Kenya?
- ii. What is the legislative and institutional framework governing the conservation of pangolins in Kenya?
- iii. What are the challenges affecting conservation of Pangolins in Kenya?

1.5 Justification of the Study

This section presents policy, academic and general public justification of the study.

1.5.1 Policy Justification

Pangolins are highly endangered species and are often victims of illegal wildlife trade, habitat loss, and other threats. Due the transnational nature of the threat involved in Pangolin conservation; environmental diplomacy is important for international collaboration for wildlife conservation. Environmental diplomacy serves as a powerful tool for pangolin conservation in Kenya, by fostering international cooperation, aligning policies, mobilizing resources, and raising awareness. Collaboration among countries and stakeholders is essential for effectively addressing the complex challenges that pangolins face. This research is of great importance to policy makers, for it will enable for international collaborations, which can lead to the development of agreements, treaties, and conventions that facilitate the creation and enforcement of stricter regulations against pangolin trafficking and habitat destruction.

Furthermore, this research will provide valuable insights to law enforcement agencies, enhancing their capabilities to effectively detect and combat wildlife trafficking. Environmental Diplomacy will support capacity-building initiatives, aiding countries in strengthening their law enforcement agencies, judiciary, and wildlife management authorities. This research study facilitates for the improvement of the effectiveness of pangolin conservation efforts by enhancing the ability to track, apprehend, and prosecute wildlife traffickers. Therefore, this research contributes to international campaigns aimed at raising awareness about the critical importance of pangolin conservation, collaboration among various stakeholders, including local communities, indigenous groups, NGOs, and international organizations. The policy recommendations in this study shall educate the public, including consumers in different countries, about the ecological role of pangolins and the impacts of their trade on ecosystems.

1.5.2. Academic Justification

Previous studies have demonstrated the inadequacies of national and international legal and institutional frameworks for the conservation of wildlife, which have enabled for the decline of endangered species through international trafficking. This research facilitates sharing of scientific research and data related to pangolins across borders. This can contribute to a better understanding of pangolin populations, their distribution, and their ecological requirements. Scholars and researchers interested in wildlife conservation can refer to this study to enable them share information, intelligence, and best practices to combat illegal wildlife trade.

1.5.3. To the General Public

This research study is important to the general population for a number of reasons. First; the general public needs to realize that, Pangolins don't recognize international borders, and their conservation requires a transboundary approach. Environmental diplomacy should be entrenched in their policies to aid in the establishment of protected areas, and conservation corridors that span multiple countries, ensuring that pangolins have suitable habitats to thrive. This research therefore, raises public awareness campaigns both within Kenya and in consumer countries to reduce demand for pangolin products. Such campaigns aim at educating people about the ecological importance of pangolins, the illegality of their trade, and the potential impacts of their extinction. Further, this research is integral in influencing policy changes in Kenya and other countries, to strengthen legal frameworks for pangolin conservation. This might involve advocating for stricter penalties for wildlife trafficking, improved habitat protection, and stronger enforcement of regulations.

1.6 Importance of the study

This study on the role of environmental diplomacy in the conservation of endangered pangolin species in Kenya is crucial for advancing both national and international efforts to protect these unique mammals. By examining how environmental diplomacy fosters collaboration, facilitates international agreements, and raises awareness, the research highlights how diplomatic channels can address the multifaceted issues leading to pangolin decline. This study underscores the importance of a holistic, cross-border approach to conservation that integrates diplomatic efforts with empirical evidence, promoting policies that are both effective and sustainable. The findings are intended to enhance diplomatic practices, encouraging African countries and their international partners to adopt comprehensive strategies that transcend national borders and address the root

causes of pangolin endangerment. Ultimately, this research aims to contribute to the development of inclusive, evidence-based policies that will support the long-term conservation of pangolins and other endangered species globally.

1.7 Assumptions of the Study

This study assumes that; the respondents who shall participate in this research study are well versed with wildlife conservation, and particularly that of critically endangered animal species. Secondly, this study assumes that; the respondents to this study can make a physical distinction between Pangolins and Porcupines (*Erethizon Dorsaum*) which are almost similar in physical appearance. The researcher also assumes that; Countries such as Kenya can engage in bilateral negotiations with other countries where demand for pangolin products is high, or where trafficking routes pass through, and formulate an agreement which regulates the trafficking of the Pangolins and their derivatives. Again, the researcher assumes that, Kenya as a State Party to CITES Convention has adopted Resolution. Conf. 17.10 on Conservation of and trade in pangolins and Decisions 17.239 and 17.240 on pangolins (*Manis spp*).

1.8 Scope and Limitations

The scope and limitations of a study define the boundaries and extent of the research project. They help to provide clarity about what the study intends to cover, and what it will not cover, as well as the potential constraints that might affect the research (Marilyn and Jim, 2013). The research focuses on the three pangolin species found in Kenya, which include; “White-bellied Pangolin (*Phataginus tricuspis*), Giant Pangolin (*Smutsia gigantea*) and Temminck’s Pangolin (*Smutsia temminckii*)”. The geographical scope of this study is confined in Kenya focusing on the key habitat areas for Pangolin. Thus, the scope of this research entails collating all available

information from literature and key informants about pangolin species in Kenya, in order to establish the relationship between environmental diplomacy and conservation of pangolin species in Kenya.

The limitations encountered during this research, such as the unavailability of key individuals for interviews and difficulties in scheduling physical Focus Group Discussions (FGDs), posed significant challenges. To overcome these obstacles, the study adopted several strategies to ensure successful data collection. Firstly, the researcher extended outreach efforts by persistently following up with potential interviewees through multiple channels, including phone calls outside regular working hours, to accommodate their schedules. This persistence helped secure crucial interviews despite initial unavailability. Additionally, for the FGDs, the researcher adapted by rescheduling sessions and utilizing virtual platforms where in-person meetings were not feasible, thereby addressing quorum issues and scheduling conflicts. By being flexible and proactive in communication and data collection methods, the researcher was able to gather the necessary information and maintain the integrity of the research.

1.9 Chapter Summary

In this chapter, the study's foundation is laid out, beginning with the background that contextualizes the research within its broader scholarly and real-world setting. The statement of the problem clearly identifies the specific issues or gaps in knowledge that the research aims to address. This is followed by a detailed articulation of the research objectives and questions, which serve as the guiding framework for the investigation. Additionally, the chapter delves into the significance and justification of the study, explaining why the research is important and the potential contributions it can make to both academic literature and practical applications. The

assumptions underlying the study are also outlined, providing transparency about the presuppositions that guide the research approach. Finally, the scope and limitations of the study are discussed, delineating the boundaries of the research and acknowledging any potential constraints that could affect the findings. This comprehensive overview ensures a clear understanding of the study's direction and its relevance.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This Chapter reviews literature related to the conservation of endangered species utilizing a case of Pangolin species in Kenya. The review of literature is guided by the study objectives outlined in the previous chapter. The chapter also presents the theoretical reviews; theoretical framework and literature gaps.

Concerning environmental diplomacy, the chapter assesses formal cooperation mechanisms through Multilateral Environmental Agreements (MEAs) such as CITES and CMS as well as their limitations imposed by unchecked geopolitical and economic forces that sustain illegal wildlife trade threatening pangolins. A synthesis of institutional analytical strengths with critical institutionalist approaches situating bureaucratic functionality within broader socio-political shaping forces, is utilized to analyze legislative and institutional dimensions. Moreover, social-ecological systems and political ecology theories are leveraged for examining complex interconnect drivers undermining pangolin conservation in Kenya.

The role of environmental diplomacy reviewed literature interrogating regulation attempts through MEAs like uplisting all pangolin species, under CITES Appendix I to ban international commercial trade, amid growing threats from trafficking networks supplying Asian consumer markets. However, scholarly evidence reveals sustained illegal trade and unabated consumer demand despite trade bans, indicating the ineffectiveness of agreements due to unwillingness to expedite actions by influential consumer states and governance challenges disrupting sophisticated trafficking supply chains spanning Africa and Asia. Persisting neocolonial power imbalances, also

constrain lasting partnerships between pangolin range states in the global South with Northern countries and entities, on financing and resourcing conservation capabilities.

Analysis of legislative and institutional dimensions exposes robust rules and stringent penalties in some pangolin range states like Kenya. However, there are gaps in the national legislation where the pangolin species is not included in schedule 6 of the WCMA Act (2013) as per the requirement of section 47(1) which provides for declaration compiling a list of critically endangered, vulnerable, nearly threatened, and protected species within a given area or context the Sixth Schedule of the Act. In addition, Section 48 of the act states that no person is allowed to undertake any activity involving the species listed in the Sixth Schedule without a permit.

Furthermore, enforcement gaps arising from capability shortfalls, information management limitations, and corruption continue driving trafficking despite strong legislation on paper. Weak inter-agency collaborations between conservation, security, and customs agencies also undermine policy implementation coordination regionally and domestically. Critical institutional perspectives further situate conservation functionality deficiencies within wider underdevelopment and socio-political marginalization, shaping global institutional cultures misaligned with ecological protection and species justice.

Furthermore, a multi-dimensional framing exposes complex, interlinked challenges spanning ecological knowledge gaps, institutional governance barriers around enforcement and prosecution, persisting economic incentives, and sociocultural consumption drivers sponsoring illegal harvest and trade, despite growing risks of pangolin extinctions. Hence, integrated diagnoses of interacting institutional, market, and community-based threats are essential for transforming conditions threatening species locally and globally. The chapter summarizes persisting gaps around assessing

geopolitical commitments, equitable resourcing, and integrated strategies balancing conservation, livelihoods, and socio-economic welfare concerns that require urgent reconciliation for reversing pangolin declines.

2.1 The Nature and Forms of Advocacy Efforts towards the Conservation of Endangered Pangolin Species in Kenya

Pangolins are cryptic scaled mammals distinguished by their protective keratin plates covering their skin. Of the 8 extant pangolin species globally. In Kenya, the giant ground pangolin (*Smutsia gigantea*) and black-bellied tree pangolin (*Phataginus tricuspis*) are both classified as endangered by the IUCN. As solitary and nocturnal creatures, the secretive lifecycles of these species pose significant challenges for population survey and monitoring. However, seizures of pangolin scales and meat in illegal wildlife trade coupled with anecdotal reports of sightings indicate drastic declines of Kenyan pangolin numbers within their savannah and forest ecosystems due to hunting pressures (Shibaike, 2022). In fact, over 5 tons of pangolin scales originating from Kenya were seized in Asia between 2017-2019 alone, underscoring the profitability of the illicit global trade threatening these mammals. Often used as food or traditional medicine ingredients, pangolin parts are hence sourced to meet persisting consumer demand in the region and abroad. With both species now regionally extinct in certain former ranges, the existence of Kenya's three pangolin species is growing ever precarious without strong conservation intervention. Particularly within rural communities near wildlife areas, poverty and lack of livelihood alternatives fans hunting for the lucrative pangolin trade due to the high prices brought by scales and meat on local black markets (Horton, 2020). Saving Kenya's embattled pangolins thus necessitates a multi-pronged strategy to curb escalating commercial poaching and trafficking networks through environmental education

programs, and anti-poaching and enforcement measures while also engendering community support for species preservation.

2.2 Awareness Campaigns Targeted at Reducing Consumer Demand

Public awareness-building represents a vital first line strategy to engender protective attitudes towards pangolins and disincentivize consumption. Often general environmental education lacks specifics on the ecological roles of lesser-known species like pangolins. Over 85% of rural Kenyans still consume bushmeat with 1 in 5 having directly eaten pangolin meat, especially men between 19-35 years involved in hunting. Targeting such key demographics through contextual messaging could make citizen campaigns more impactful. Conservation groups have harnessed traditional and social media for demand reduction messaging - the most prominent being the Africa Network for Animal Welfare (ANAW). ANAW leverages artwork competitions in schools and video PSAs broadcast on public buses viewed by up to 50,000 citizens (Martens & Berstermann, 2023).

Their award-winning 'Tunza Pangolin' artwork calendar sensitized thousands of children by reaching 550 schools in a year. However, retaining engagement levels and measuring attitudinal change requires sustained multimedia efforts and on-ground activities beyond one-off initiatives. For instance, classified wildlife crime units under the KWS and NGO allies regularly conduct raids on poaching hotspots and illegal bushmeat markets to reinforce zero tolerance messaging through apprehended contraband. The fundamental idea underpinning awareness drives is to make pangolin consumption socially taboo and deter would-be poachers and traders since they primarily respond to lucrative market incentives rather than conservation motives or legislation currently. Sustained national campaigns localized to community languages and customs can achieve this over

time with pangolin protection resonating as a deep-seated social norm rather than just legal ordinance.

2.2.1 Community-Based Conservation Programs

As pangolins inhabit areas near rural settlements, conservation solutions require community participation to succeed. Traditionally communities would hunt pangolins at sustainable levels for subsistence use. However, the rising commercial trade has led to unchecked poaching without allowing populations to recover. Building local stewardship for protecting pangolins as part of the ecological heritage of traditional Kenyan hunting tribes is thus vital. Several models of incentive-based involvement of communities as stakeholders focused on pangolins show early promise. The head start model drives income generation activities conditional on assisting wildlife ranger patrols to maintain zero poaching zones (Fowler, 2020). One pilot by conservation alliance Mawingo in Taita Taveta has trained 22 village scouts now monitoring a 500km² range protecting the Taita Hills tree pangolin stronghold through camera traps with geo-tagged data. The project brought together customary leaders, youth groups and women for conservation enterprises like apiculture and indigenous tree nurseries where the community has begun sustaining anti-poaching operations itself after initial external support. Such participatory planning integrating traditional ecological knowledge on patterns of pangolin sightings, birthing seasons and their ideal habitats also builds a sense of inclusive ownership and pride to conserve flagship species which can inspire large-scale governmental efforts.

A key challenge will be providing sustained alternative income for erstwhile hunters as conversions take time. Additionally, monitoring impacts on pangolin population numbers after interventions through field surveys remains difficult and costly due to the solitary burrowing

natures of pangolins. More cross-sectional data gathering on consumption levels over time through random sampling household surveys combined with ranger patrol poaching observations can refine insights on attitudinal transformations on the ground towards pangolins (Stracquadiano, 2023). With greater policy mainstreaming, devolved community conservation can synergize with national level demand reduction messaging and enforcement drives.

2.2.2 Strengthening Enforcement against Trafficking

Robust law enforcement action forms the backbone for a comprehensive strategy against swelling commercial pangolin poaching rackets in Kenya. At the policy level, conservationists have helped enlist pangolins under the protected animal categorization in the Wildlife Act of Kenya entailing stiff penalties for offenders. However lax implementation, procedural loopholes and corruption have hampered convictions to date. Wildlife trafficking is now a specialized desk under the national Criminal Investigations Department (CID), but field capacities remain weak (Liddick Jr, 2020). Frontline officer's lack tactical training in gathering field intelligence, conducting informant debriefs, setting up covert sting operations and asset seizure procedures to apprehend kingpins and organized crime groups like Al Shabaab and Somalia's pirate networks known to control the illicit pangolin supply chains. Basic evidence collection using DNA sampling and identification techniques for seized pangolin derivative contraband also needs scaling up for higher prosecution success.

The judiciary also requires extensive sensitization on the disastrous ecological impacts of pangolin poaching to hand down maximum sentences to the powerful cartels running regional trafficking rackets. Recent research on poaching hotspots suggests moving court hearings to local environments where the most damage occurs so judges realize conservation consequences first-

hand to issue harsher verdicts. The extreme profits from the pangolin scales and meat trade, allows cartels to quickly regroup after arrests so enforcement requires persistent disruption tactics. Kenya has had some cooperation success through global partnerships like INTERPOL operations leading to crackdowns on smuggling routes into Vietnam (Orsini, 2022). But bilateral pacts with transit nations like South Africa and Mozambique also offer potential channels for intelligence sharing and joint investigations to trace transnational kingpins commanding the lucrative trade preying on Kenya's threatened pangolins through local networks across international boundaries.

The precarious existence of Kenya's endangered pangolins underscores the need for intensified conservation efforts to curb the rampant poaching and trafficking threatening the survival of these unique species. As reviewed, a multi-pronged strategy is essential given the complex drivers of the escalating commercial pangolin trade in the country. First, shifting public attitudes and tamping down demand requires persistent multimedia messaging and sensitization campaigns localizing the plight of pangolins to engender protective social norms that make consumption unacceptable. Second, community-based programs creating economic incentives and alternative livelihoods for participation of rural tribes in wildlife stewardship builds sustainability through inclusive participation while utilizing traditional ecological knowledge. Third, strengthening enforcement encompasses boosting capacities for intelligence-driven investigations, water-tight prosecutions, and transnational partnerships to dismantle the entrenched trafficking networks profiting off Kenya's pangolins. Ultimately the solution lies in transitioning pangolins from being viewed as common bushmeat or tradable commodities to treasured signatures of Kenya's natural heritage warranting national pride and grassroots protection. For this, conservation approaches require innovation, adaptation, and persistence in implementation. More empirical research into pangolin population dynamics, hunter profiles, consumption economics and trafficking typologies can help

fine-tune evidence-based policies. Saving Kenya's pangolins necessitates all of society working in unison - from rural communities bearing coexistence costs to law enforcers dismantling underground commercial networks to policymakers championing conservation against vested interests exploiting pangolin resources - with the collective aim of allowing these unique species to thrive again in the wild. The time for action is now before populations vanish completely from key ranges. With concerted efforts across multiple fronts prioritizing pangolin welfare based on ecological science and ethics, the tide can still turn to preserve Kenya's natural heritage.

The discussion on advocacy efforts towards the conservation of endangered pangolins in Kenya highlights several literature gaps that warrant further exploration. While existing research addresses awareness campaigns, community-based programs, and enforcement strategies, there is a need for more detailed studies on the effectiveness and long-term impact of these interventions. Specifically, there is a lack of comprehensive analysis on how awareness campaigns translate into sustained behavioral change and reduction in pangolin consumption at the grassroots level. Additionally, more empirical research is needed on the socio-economic outcomes of community-based conservation programs, including the effectiveness of alternative livelihoods and the integration of traditional ecological knowledge. Enforcement strategies also require more in-depth investigation into the specific challenges faced by field officers and the judiciary in prosecuting wildlife trafficking cases. Furthermore, there is limited research on the dynamics of international trafficking networks and their interactions with local poaching activities. Addressing these gaps through targeted studies could enhance the design and implementation of more effective conservation strategies for pangolins in Kenya.

2.3 Legislative and Institutional Framework for Pangolin Conservation

Globally, legislative frameworks governing pangolin conservation remain uneven and poorly enforced in many countries. Challender and Waterman (2017) undertook a comprehensive policy review across pangolin range states, finding only 25% have domestic laws affording strict legal protections. Many Asian and African countries lacked specialized regulations directly covering pangolin exploitation, trade, and habitat conservation. This indicates key legislative gaps, highlighted from an institutional analytics perspective as a fundamental basis undermining conservation action. Moreover, the study found major deficiencies in implementing existing pangolin protections even where robust legislation exists on paper. Monitoring failures, limited enforcement capabilities, and widespread corruption obstruct giving effect to environmental rules. Institutional theory posits that efficacy requires not just robust formal regulations, but crucially the informal norms, resources, and coordination capacities to actualize policy intentions (Dimitrakopoulos & Richardson, 2001). Challender and Waterman (2017) conclude such institutional functionality conditions remain lacking in the majority of pangolin range states, causing a substantial gulf between formal rules and on-ground conservation outcomes.

Wu et al. (2021) undertook a detailed examination of China's domestic legislative framework governing pangolin exploitation as the largest consumer driving global poaching and trafficking threats. They found China's 1989 Wildlife Protection Law expressly prohibits hunting, killing, smuggling or commercial trade in pangolins nationally. However, the law retains exceptions allowing trade for scientific research, captive breeding, exhibition and other special purposes. These legal loopholes sustain avenues for laundering and leakage into commercial markets, undermining protections (Zhang et al., 2008). Moreover, pangolins remain covered under

traditional medicine regulations rather than the stricter conservation laws preventing sustainable utilization. Such institutional gaps encourage persistent demand and consumption despite formal CITES trade bans.

More recently, China's new 2021 Wildlife Protection Law sought to strengthen pangolin protections by removing captive utilization exceptions and clarifying prohibitions on eating pangolins. But critics argue enforcement and implementation systems continue lagging behind stricter regulations (Chen & Garcia, 2022). Moreover, sanctions remain focused on poachers rather than wealthy traders or medicinal corporations controlling exploitative supply chains. Hence from an institutional lens, critical gaps around execution, coordination, and targeting remain even as China has progressively strengthened legislative protections for endangered pangolins in response to global concerns. At the international level, Hanson et al. (2021) examined treaties like CITES governing the exploitative online wildlife trade increasing exponentially. They found major regulatory gaps with e-commerce platforms and social media sites becoming leading channels for illegal wildlife transactions operating freely without fear of legal repercussions. This highlights cross-border legislative holes with countries slow to expand protections into virtual spaces despite its growing role enabling trafficking of endangered species.

Ingram et al. (2018) analyzed regional policy efforts on pangolins in Africa under CMS and CITES. Africa has the highest levels of legal protections for pangolins continentally. However, they note weaknesses in enforcement and low conviction rates once traffickers are apprehended. This aligns with institutional analysis expectations on robust monitoring and enforcement systems required to give effect to solid legislation. Mwale et al. (2021) assessed the institutional effectiveness of wildlife crime data flows between African states to curb trafficking. Their study

exposed discrepancies between seizure data and prosecution outcomes, indicating statistical gaps undermining regional coordination efforts. Hence, institutional constraints regarding poor monitoring are reinforced, undermining conservation actions.

Pietersen et al. (2014) reviewed seized trafficking records in African pangolin range states to assess enforcement capabilities continentally. Their analysis shockingly revealed that only 6% of illicit trade confiscations involving thousands of pangolins over a decade culminated in any arrests or prosecution. This indicates systemic institutional failures in the form of capability gaps within judicial systems undermining seizures through impediments in the legal prosecutorial chain, enabling trafficker impunity.

Challender & Waterman (2017) also analyzed convictions secured for the 6% pangolin seizures culminating in arrests across 12 African states over a decade. They revealed shockingly low conviction rates below 20% once cases entered the court system. Very few points resulted in sentencing commensurate with the ecological damage stipulated in institutional penalties like CITES. These further exposes judicial institutional failures in executing punishments that effectively deter illegal pangolin trade in Africa despite solid legislation. Hence, analysis reveals significant institutional limitations regarding enforcement and prosecution capabilities enabling unlawful trading of violation of protected legal frameworks continentally. Without addressing capacity issues undermining the rule of law over environmental matters, paper-based policies cannot safeguard endangered species threatened by sophisticated transnational trafficking networks operating with relative impunity across porous African borders.

In Kenya, pangolins are safeguarded by the stringent regulations outlined in the Wildlife Conservation and Management Act 2013. This robust legislation criminalizes poaching,

trafficking, or commercial exploitation of endangered species like pangolins with stringent penalties including life imprisonment. However, analyses show critical gaps in enforcement and prosecution obstruct translating strong rules into deterrent outcomes.

Wasser et al. (2018) reviewed detected trafficking cases from 2014-2016. They found less than 20% resulted in convictions, with majority of arrests not culminating in any prosecutions. Low sentencing rates and lean penalties including fines also persist for those successfully convicted. This glaring enforcement gap indicates systemic weaknesses in the prosecutorial chain undermining even significant enforcement efforts through impediments converting arrests into court convictions as required.

Di Minin et al. (2021) examined impediments around cross-border cooperation on combating pangolin trade. They found poor coordination between national wildlife agencies mandated with prevention poaching with customs authorities required for intercepting sophisticated trafficking syndicates transiting huge consignments through Kenyan ports. Differing institutional procedures, priorities and capacities hinder multi-agency information sharing and joint operations. This jurisdictional failure to collaborate reflects governance gaps institutionally undermining policy implementation.

Furthermore, bureaucratic corruption remains an enduring barrier sabotaging the legal process against arrested wildlife traffickers in Kenya who routinely evade accountability through bribery and political interference (Weru, 2016). Rather than isolated individual behavior, this indicates deep state capture by entrenched criminal networks that have infiltrated security, customs and judicial institutions. According to Ihwagi (2018), systemic corruption enables the relative impunity for illegal pangolin trade in Kenya by subverting the rule of law critical for enforcement.

Weak information management and data discrepancies also persist around detected trafficking cases (Muthamia et al., 2021). Incomplete court documentation obstructs analysis on prosecutions, sentencing and convictions necessary for reform. Moreover, policy initiatives promoting alternative livelihoods to mitigate poaching threats lack inputs from local communities who retain traditional resource access rights unrecognized in exclusionary state wildlife governance frameworks. This top-down coercion approach risks aggravating historical marginalization and conflict amid shrinking habitats, undermining conservation efficacy (Mbaria & Ogada, 2016).

At a deeper governance level, coordination and accountability failures become visible between national conservation policies and county development plans controlling local land use changes and investments. This regulatory fragmentation enables habitat destruction through incompatible activities like agricultural encroachment, logging and infrastructure permitted by counties even in designated pangolin dispersal areas and corridors (Atela et al., 2021). Without reconciling these institutional disconnects between national and decentralized governance systems, legislative protections remain obstructed.

Essentially, critical institutional perspectives situate the difficulties actualizing Kenya's strong environmental legislation within wider systemic contexts of underdevelopment and socio-political marginalization that shapes a culture misaligned with conservation across global South states (Dressler et al., 2010). Lasting functionality requires looking beyond isolated capacity-building efforts targeted as technical fixes for enforcement weaknesses. Fundamentally transforming ineffective institutions and outcomes demands addressing enduring inequities entrenched by historical forces that remain unreconciled, enabling the relative impunity and corruption

devastating wildlife and biodiversity. Technical training and equipment cannot resolve the deep societal power imbalances shaping institutional dysfunction over environmental issues in Kenya.

Therefore, in summary, while Kenya possesses robust legislative frameworks on paper, actualizing pangolin protections faces severe challenges of enforcement, prosecution, jurisdiction coordination and data management gaps – which reflect wider institutional dysfunctionality rooted in unresolved inequities and vested interests. Holistic governance reforms addressing marginalization while elevating indigenous participation and capabilities are essential to transform conditions enabling illegal wildlife trade on the ground. Fortifying monitoring and enforcement capacities alone through specialized units cannot effectively uphold conservation rules without wider institutional transformation.

Despite the comprehensive advocacy strategies for conserving Kenya's endangered pangolins, several literature gaps remain. Firstly, there is limited empirical data on the population dynamics and exact distribution of the giant ground pangolin and black-bellied tree pangolin within Kenya, owing to their elusive nature. This hampers accurate assessments of conservation status and the effectiveness of interventions. Secondly, while awareness campaigns are emphasized, there is a lack of longitudinal studies measuring the long-term impact of these campaigns on public attitudes and behaviors towards pangolins. Thirdly, the effectiveness of community-based conservation programs needs more rigorous evaluation, particularly concerning the sustainability of alternative livelihoods and the long-term commitment of local stakeholders. Additionally, enforcement challenges such as corruption, procedural loopholes, and inadequate training of wildlife crime units are discussed, but detailed case studies on successful enforcement practices and judicial outcomes are sparse. Lastly, there is a need for deeper exploration of the transnational dimensions

of pangolin trafficking, including the role of international cooperation and intelligence-sharing mechanisms in disrupting illegal trade networks. Addressing these gaps through targeted research could significantly enhance the efficacy of conservation efforts for Kenya's pangolins.

2.4 Challenges affecting conservation of Pangolins Conservation in Kenya

The illegal wildlife trade crisis has complex challenges from a Social Economic Study perspective driven by demand-supply dynamics spanning multiple scales. High consumer demand and profits go poacher and trafficker risks decimating endangered species through vast, sophisticated global trafficking networks. Persisting traditional medicine demands and unfounded beliefs regarding the health properties of animal parts exacerbate unsustainable offtake (Wu et al., 2021). Growing online traders also exploit cyberspace governance gaps, violating protective laws (Hanson et al., 2021).

However, a political ecology lens exposes the uneven power relations upheld by states and institutions, enabling ecological declines through policy actions and inactions (Duffy et al., 2019). Corruption and regulatory lapses facilitate the indifference and impunity protecting illegal wildlife traders from prosecution while conservation agencies remain under-resourced. Rural farmers turned poachers also need more viable alternatives amid declining agriculture returns and persistent poverty traps, although calls for balancing green economy shifts with livelihood protections. Thus, macro-forces shape micro-decisions driving species loss. The supply-demand dynamics create lucrative black markets given increasing rarity and associated value (Lenzen et al., 2012). Yet simplistic neoliberal 'green grab' assumptions ignore the restricted economic options, social inequities, and resource Alienation underpinning environmentally damaging individual choices. What may appear as poaching 'greed' can be subsidized livelihood desperation

in the absence of pathways for meaningful participation in the so-called legal economy for those subaltern groups erased from policy spaces propagating solutions neglectful of human welfare externalities from conservation.

Global leadership inertia also persistently rewards status quo institutional interests preventing conservation reforms. Massive legislative gaps remain to close the contributor footprint fueling the global wildlife trafficking chain from multinational companies and corporations evading full accountability for accelerating unsustainable production and consumption patterns driving biodiversity decline (Duffy & Moore, 2021). Consumer states signing MOUs with pangolin range countries as self-declared conservation 'partners' also refrain from expedited actions regulating their domestic markets. Traditional medicine demands sponsoring the pangolin slaughter seen in African ecosystems today (Challender et al., 2021). The hypocrisy of targeting militarized anti-poaching crackdowns on poor locals with limited options while disregarding powerful external actors sponsoring damage for profits reflects the conservation imperialism and social oppression threatening environmental and social justice forwarded by political ecology theory (Duffy, 2021).

More structural lenses thus reveal cooperative and trade agreements like CITES can end up sustaining the inequalities of colonial economic relationships by granting goods in ways that reaffirm the dependency of the global South upon the industrialized North (Westad, 2021). The limited progress undermining black market trades reflects underlying exploitative core-periphery dynamics persisting whereby developing countries facing the most significant losses from ecological damage lack the power to shape outcomes for their interests (Roy & Dowd-Uribe, 2013). Only policy reforms that help equalize agency over conservation-development trade-offs

can shift unsustainable dualisms. This demands economic reforms, social justice partnerships, and emancipatory paradigms decolonizing environmental governance.

Regionally in Africa, growing foreign demand and commercialization incentivize present high risks and returns from illegal pangolin trade for local community members (Mwakisali, 2020). However, political ecology perspectives situate these decisions within declining rural livelihood options and hardening socio-economic inequities, driving ecological damages for survival (Duffy et al., 2019). Poaching and wildlife trafficking then become coping outlets for groups marginalized from formal economic activities but retain extensive environmental dependencies now threatened by the over-exploitation. Uneven policy priorities advancing elite industrialization interests through land alienation rather than smallholder support further escalate human-wildlife conflicts and risks driving species declines.

The rising corporatization of nature manifested in the proliferation of ecotourism, trophy hunting, and conservation land leases. Partnerships with private firms optimize financial returns over environmental sustainability and local communities' access, control, and participation (Lunstrum & Givá, 2022). This sustains exploitative tendencies echoing colonial era enclosures dispossessing natives justified as necessary interventions by Northern experts and governments driving irreversible ecosystem alterations and biodiversity loss (Neimark et al., 2020). The renewed 'green' land and resource grabs by states and foreign entities in the name of conservation today revives the power imbalances of centuries past, dispossessing and marginalizing rural citizens from the lush ecosystems sustaining their cultures without addressing reducing dependencies and inequalities undermining conservation outcomes.

Political economy analyses indeed indict worsening income disparities, social deprivations, and ethnic marginalization as actively incentivizing poaching and illegal wildlife trading (Duffy et al., 2019). When national policies undervalue and undermine rural communities' special relationship as custodians of biodiverse habitats while prioritizing agendas of industry, private capital, and foreign partners, then wildlife declines as groups turn heavily dependent ecosystems into desperate survival strategies no matter the ecological repercussions (Mbaria & Ogada, 2016). The rise of rebel and extremist militia groups in East Africa, like Al-Shabaab (Duffy, 2016), exploiting porous borders and trafficking networks to finance violent insurgencies through booming illicit global trades like endangered species further signals policy failures. Depoliticized militarized responses demonize locals while ignoring more extensive interests and marginal political economy contexts sustaining threats risk aggravating historical oppression.

SES and political ecology lenses thus challenge simplified technical solutions like CITES trade bans, which can displace threats through tightening black markets, underlining the root perverse incentives requiring transformation. Lasting conservation demands go beyond isolated protected areas to secure wildlife migrations and corridors through decentralized management supporting mobility across human landscapes and territorial borders (Lindsay et al., 2022). This compels openly addressing complex linkages between ecological viability, rural community access and equity in sustainable utilization, and regional cooperation balancing conservation and developmental priorities. Reforms tackling land rights, benefit sharing, livelihood supports, and democratic environmental governance become necessary, given the colonial legacies and economic inequities driving species loss. Political change, leadership commitment, and unprecedented partnerships - not just designated parks - remain integral for decolonizing enduring environment-society power structures undermining local and global sustainability.

In Kenya, persistent policy gaps sustaining incompatible land use changes, deforestation, and fragmentation of protected wildlife habitats signal an unwillingness to enact reforms curbing emissions and environmental damage from large-scale infrastructure, extractives, logging, and agricultural industry interests present a big challenge to the conservation of endangered species. (Owuor et al., 2022). This allows development agendas to undermine ecological sustainability persistently. State wildlife agencies like KWS also remain severely under-capacitated and under-resourced to enforce protections and curb threats across porous, vast lands sustaining rich biodiversity (Ngene et al., 2022).

The pursuit of ambitious economic blueprints like Vision 2030 has also displaced indigenous communities and fomented human-wildlife conflicts through land use changes, forest excisions, and infrastructure encroaching wildlife dispersal areas and corridors without sufficient impact assessments or community engagement (Atela et al., 2022). This has placed rural smallholders at increasing risk of retaliation from desperate wildlife populations amid shrinking habitats while undermining traditional sustainable utilization practices, custodianship ethics, and communal tenure arrangements sustaining co-existence (Sanghi et al., 2022). Dispossession hence destroys intergenerational knowledge systems supporting biodiversity, too.

Moreover, the growing foreign presence, including conservation INGOs, donors, researchers, and media replete with their ideologies, interests, and assumptions, now significantly influences Kenya's biodiversity policy (Mbaria, 2021). This squeezes space for indigenous voices in framing solutions attuned to lived local realities amid glaring power differentials. Persisting institutional racism also means critical decisions over wildlife utilization restrictions and benefit sharing exclude participation from marginalized ethnic groups most affected by human-wildlife conflicts

and bear the costs of increasing endangered species protection nationally (Kahumbu et al., 2021). Hence, lasting buy-in still needs to be improved.

Gender dynamics further shape uneven policy impacts and spaces for influence. Strict resource access limits like logging and grazing bans in protected forests undermine subsistence activities but impose outsized burdens on rural women facing gendered responsibilities for household provisioning (Gicobi et al., 2021). Yet patriarchal structures concentrate decision-making power and leadership over environmental issues within older men (Ashire et al., 2019). Without technical policy approaches, this hinders the realization of equitable solutions tackling differentiated needs and priorities across ages and genders.

Political ecology perspectives thus expose profound socio-economic deprivations, power imbalances, and systemic injustices that need foregrounding within sustainability issues like endangered species declines in Kenya (Bersaglio & Cleaver, 2018). Lasting conservation demands unflinching diagnoses of root causes of ecological unsustainability rooted not just in regulatory gaps as institutionalists argue, but fundamentally unequal power relations and trade-offs sustained through prevailing institutions and policies themselves benefitting powerful political and economic interests over the wellbeing of human and non-human life (Fletcher, 2017).

The literature on pangolin conservation in Kenya reveals several gaps that warrant further investigation. While existing studies highlight the influence of illegal wildlife trade, socio-economic drivers, and policy shortcomings, they often lack a nuanced understanding of how local socio-economic conditions interact with broader conservation policies. Specifically, there is a need for more detailed research on how political ecology frameworks can better address the intersection of poverty, land use changes, and conservation efforts. Additionally, there is insufficient

exploration of gender dynamics and indigenous perspectives in shaping conservation strategies. Studies also need to better integrate the impacts of global market forces with local conservation challenges and examine the effectiveness of current policy interventions in a more granular context. Addressing these gaps could lead to more comprehensive and actionable solutions for pangolin conservation and broader wildlife protection efforts.

2.5 Literature Gaps

The review highlights significant barriers like persisting illegal trade, institutional governance weaknesses, and social-cultural beliefs driving continued overexploitation of endangered pangolins despite existing protective legal frameworks. However, more research remains to adopt a multi-factorial lens examining linkages between the various sub-system challenges undermining conservation efforts for a comprehensive response. Studies also remain narrowly focused on specific sub-systems rather than a systematic social-ecological systems approach to diagnosing scale interactions escalating extinction risks for pangolins in Kenya.

Given their complex interdependencies, SES theory posits the need for interlinked mitigation strategies tackling sub-system threats simultaneously. However, application for endangered species conservation remains limited, with most studies examining isolated system aspects. This could reflect difficulties in coordinating policy solutions across sectors. However, persistent siloed approaches analyzing singular dimensions are criticized as inadequate and disconnected from on-ground realities demanding integrated strategies. Hill et al. (2020) highlight limitations in applying SES diagnostics to issues of endangered species in developing countries like Kenya. Conservation SES analyses have predominantly focused on North American and European contexts. However, developing countries battle starker socio-economic and institutional resource limitations

warranting targeted mitigation mixes recognizing those barriers. Hence, literature adopting SES framings for pangolin conservation rooted in the global South still needed to be developed.

Similarly, only Pietersen et al. (2020) examine the successes and limitations of integrated conservation strategies for pangolins globally. However, studies assessing multi-pronged policy mixes tackling ecological, trade, cultural, and developmental challenges simultaneously from an SES standpoint in Kenya still needed to be included. Most conservation SES analyses also utilize secondary data rather than primary stakeholder perceptions. This constrains nuanced diagnosis of roots and mitigation measures grounded in field realities from actors encountering threats like trafficking, poaching, and unsustainable utilization driving pangolin declines first-hand. Hence, critical gaps include investigating multi-level integrated strategies tackling institutional, economic, knowledge, and cultural drivers recognized in literature threatening pangolins within their SES context in Kenya using grounded stakeholder evidence. This can support response prioritizations through participatory threat diagnoses and action planning processes essential for conservation policy reforms targeting sustainable pangolin protection.

This chapter has examined the literature concerning the nature and forms of advocacy efforts towards the conservation of pangolins in Kenya, legislative and institutional frameworks governing conservation of pangolins in Kenya, and challenges affecting conservation of pangolins in Kenya. Theoretical frameworks like liberal institutionalism, constructivism, institutional analytics, and SES theory were utilized for grounding analyses. Key highlights from the role of diplomacy review included successes and significant limitations of global agreements like CITES and CMS in curbing the persisting illegal wildlife trade threatening pangolins.

Legislative analyses also exposed robust rules and stringent penalties in some pangolin range states. However, enforcement gaps continue driving trafficking with lenient prosecution. Weak inter-agency collaborations further undermine conservation policy implementation. This aligns with institutional analysis expectations on adequate monitoring and coordination capabilities necessary for giving effect to environmental regulations on paper. Moreover, a multi-factorial framing exposed complex, interlinked sub-system challenges spanning ecological knowledge gaps, institutional governance weaknesses, persisting economic demand drivers, and socio-cultural use beliefs and practices collectively threatening pangolins. Thus, an SES perspective revealed conservation barriers stemming from interdependencies between institutional, economic, developmental, and cultural drivers of exploitation requiring coordinated mitigation.

However, critical literature gaps persist around the partnerships between pangolin range states, consumer countries, and international organizations directly focused on targeted trafficking interventions to give effect to trade bans like CITES. Grounded analyses situating conservation challenges within local socio-economic realities, as highlighted by SES theory, also remain scant. Moreover, integrated policy response diagnoses tackling the complex, multi-level drivers identified from an SES systems perspective are needed but urgently needed. These gaps frame the next chapter detailing the research methodology for the participatory investigation of interlinked ecological, trade, livelihoods, knowledge, and governance issues escalating pangolin declines using key informant interviews. Analytical approaches combining thematic analyses for qualitative evidence and rank ordering of threat levels for triangulation are also outlined.

2.6 Critiques of the Literature

Firstly, while the literature highlights various advocacy efforts aimed at pangolin conservation in Kenya, there is limited research on thorough assessment of their effectiveness. Many studies focus on describing the nature and forms of advocacy activities, such as public awareness campaigns, community engagement, and policy advocacy, but fail to assess their impact on pangolin populations or habitat protection. Without robust evaluation measures, it is challenging to determine which advocacy strategies are most successful and where resources should be allocated for maximum conservation impact.

Secondly, the literature on the legislative and institutional framework governing pangolin conservation in Kenya often emphasizes the existence of laws, policies, and institutions aimed at protecting pangolins and their habitats. However, there is limited analysis of the enforcement mechanisms, implementation challenges, and gaps in the legal framework. For example, while Kenya has wildlife protection laws in place, the effectiveness of law enforcement agencies in combating pangolin poaching and illegal wildlife trade remains a critical issue. Without addressing these enforcement challenges, the legal framework alone may not be sufficient to ensure effective pangolin conservation.

Thirdly, the literature identifies several challenges affecting conservation of pangolins in Kenya. While these challenges are well-documented, there is a lack of in-depth exploration of their root causes and underlying socio-economic drivers. For example, the literature often mentions habitat loss as a major threat to pangolins, but fails to examine the factors driving deforestation, land-use change, and urbanization that contribute to habitat degradation. Understanding these underlying

drivers is essential for developing targeted conservation interventions that address the root causes of pangolin decline.

2.7 Theoretical Review

According to Grant, C. and Osanloo, A (2014) theoretical review serves as the fundamental underpinning for academic investigation, offering a thorough and evaluative analysis of established theories, models, and conceptual frameworks in a particular area of study. Wildlife conservation is a complex field that involves the protection and preservation of biodiversity. Various theories and frameworks have been suggested to elucidate the principles and strategies behind wildlife conservation. Among the theories reviewed in this chapter include; Sustainable Development Theory and Theory of Environmental Diplomacy.

2.7.1 Theory of Environmental Diplomacy

The Theory of Environmental Diplomacy explores how international diplomacy and negotiation processes address global environmental issues through cooperation and consensus-building. This theory emphasizes the role of diplomacy in shaping and implementing environmental policies, particularly those involving transboundary and global environmental challenges. It operates on the premise that environmental problems are inherently global and require collective action beyond national borders. Environmental diplomacy involves various stakeholders, including nation-states, international organizations, non-governmental organizations (NGOs), and other actors, working together to address environmental concerns through treaties, agreements, and cooperative frameworks.

In the context of pangolin conservation in Kenya, the Theory of Environmental Diplomacy provides a valuable lens to understand the international and regional efforts aimed at protecting this endangered species. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which categorizes pangolins under Appendix I, is a key example of environmental diplomacy at work. According to Chaytor (2017), CITES represents a global commitment to regulating and restricting the international trade of endangered species, reflecting the principles of environmental diplomacy by fostering cooperation among member states to address wildlife trafficking and conservation challenges.

The theory also highlights the role of diplomatic efforts in shaping national policies and enforcement mechanisms. For instance, despite Kenya's adherence to CITES regulations, the ongoing trade and trafficking of pangolins underscore a gap between international agreements and local implementation. According to Ramesh (2019), effective environmental diplomacy involves not only the formulation of international agreements but also ensuring that these agreements are robustly implemented at the national level. The challenges faced by Kenya in curbing pangolin trafficking reveal the complexities of translating global environmental diplomacy into practical conservation outcomes.

Furthermore, the Theory of Environmental Diplomacy emphasizes the importance of multi-stakeholder collaboration in achieving conservation goals. As noted by Brown and Jacobs (2021), successful environmental diplomacy often requires engaging diverse actors, including governments, NGOs, and local communities, to build consensus and coordinate actions. In Kenya, the involvement of various stakeholders, such as the Kenya Wildlife Service (KWS) and conservation NGOs, in addressing pangolin conservation illustrates the application of this theory.

However, the study investigates how effectively these collaborations are translating into concrete conservation measures and whether there are gaps in the diplomatic and policy frameworks that need to be addressed. In essence, the Theory of Environmental Diplomacy offers a framework for understanding how international agreements and diplomatic efforts influence national conservation strategies. It sheds light on the dynamics between global commitments and local implementation, and highlights the importance of collaborative approaches in addressing environmental challenges such as pangolin conservation in Kenya.

2.7.2 Sustainable Development Theory

In order to secure the welfare of present and future generations, the Sustainable Development Theory highlights the necessity of striking a balance between social fairness, economic progress, and environmental protection. This philosophy, which has its roots in the 1987 report "Our Common Future" by the Brundtland Commission, promotes development strategies that do not jeopardise the capacity of future generations to meet their own needs (World Commission on Environment and Development, 1987). The goal of sustainable development is to achieve a balanced approach to resource use and conservation by integrating the environmental, economic, and social elements.

In the context of pangolin conservation in Kenya, the Sustainable Development Theory underscores the importance of integrating conservation efforts into broader development strategies. Pangolins, categorized under Appendix I of CITES, face severe threats from illegal trafficking and habitat loss, which undermine their chances of survival. According to Challenger and Hywood (2012), addressing pangolin conservation requires not only stringent legal frameworks but also sustainable development practices that consider the socio-economic contexts

of the regions where pangolins are found. For instance, local communities often rely on natural resources for their livelihoods, and effective conservation strategies must incorporate community needs and development aspirations to be successful.

The theory also highlights the need for inclusive policies that address both environmental and socio-economic goals. For example, sustainable development initiatives can support conservation by promoting alternative livelihoods for communities engaged in activities that threaten pangolins, such as poaching or illegal trade (UNEP, 2021). Through providing economic incentives and alternative income sources, these initiatives can reduce the pressure on wildlife and support conservation efforts. In line with the objectives of sustainable development theory, incorporating pangolin conservation into more comprehensive plans for sustainable development in Kenya may improve socioeconomic development as well as environmental protection.

In addition, the Sustainable Development Theory advocates for a systemic approach to addressing environmental issues, recognizing that conservation challenges are interconnected with broader development issues. According to Schellnhuber et al. (2018), sustainable development requires coordinated efforts across sectors and levels of governance. For pangolin conservation, this means integrating environmental protection with policies on economic development, law enforcement, and community engagement. The theory suggests that sustainable solutions for pangolin conservation in Kenya should involve multi-sectoral collaboration, combining efforts from government agencies, NGOs, local communities, and international bodies. Overall, the Sustainable Development Theory provides a framework for addressing pangolin conservation through a holistic approach that balances environmental protection with socio-economic development. It

emphasizes the importance of integrating conservation efforts into broader development strategies to achieve long-term sustainability and enhance the effectiveness of conservation measures.

2.8 Chapter Summary

The review has established that, in Kenya, advocacy efforts for the conservation of endangered pangolin species have been multifaceted and diverse, encompassing various stakeholders such as NGOs, government agencies, local communities, and international partners. These efforts often focus on raising awareness about the plight of pangolins, their ecological importance, and the threats they face from illegal trafficking and habitat destruction. NGOs like the Kenya Wildlife Conservation Society (KWCS) and the African Wildlife Foundation (AWF) have been instrumental in leading public campaigns, organizing educational programs, and engaging in community outreach initiatives to promote pangolin conservation.

The legislative and institutional framework governing the conservation of pangolins in Kenya primarily revolves around existing wildlife protection laws and international conventions. The cornerstone piece of legislation, the Wildlife Conservation and Management Act of 2013, establishes the legal framework necessary for the management, conservation, and protection of all wildlife species, including pangolins. Additionally, Kenya is a signatory to international agreements such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which regulates the international trade of pangolins and their derivatives. Government agencies such as the Kenya Wildlife Service (KWS) play a crucial role in enforcing these laws, conducting anti-poaching operations, and collaborating with other stakeholders to combat illegal wildlife trade.

However, despite these advocacy efforts and regulatory frameworks, several challenges persist in the conservation of pangolins in Kenya. One major challenge is the rampant poaching driven by the high demand for pangolin scales and meat in illegal wildlife markets, particularly in Asia. This illegal trade is fueled by deeply entrenched cultural beliefs and traditional medicine practices that attribute medicinal properties to pangolin parts. Moreover, the secretive nature of pangolins and their elusive behavior make them difficult to monitor and protect effectively. Inadequate resources, funding constraints, and limited capacity within enforcement agencies further exacerbate these challenges, hindering efforts to curb poaching and trafficking activities. Additionally, habitat loss and fragmentation due to agricultural expansion, urbanization, and infrastructure development pose significant threats to pangolin populations, further exacerbating their vulnerability. While advocacy efforts and legislative frameworks provide a foundation for pangolin conservation in Kenya, addressing the challenges requires a concerted and holistic approach. This entails strengthening law enforcement measures, enhancing public awareness and education, promoting sustainable livelihoods for local communities, and collaborating with international partners to tackle the transnational nature of wildlife trafficking. By addressing these challenges collectively, Kenya can strive towards ensuring the long-term survival and protection of endangered pangolin species.

2.9 Conceptual Framework

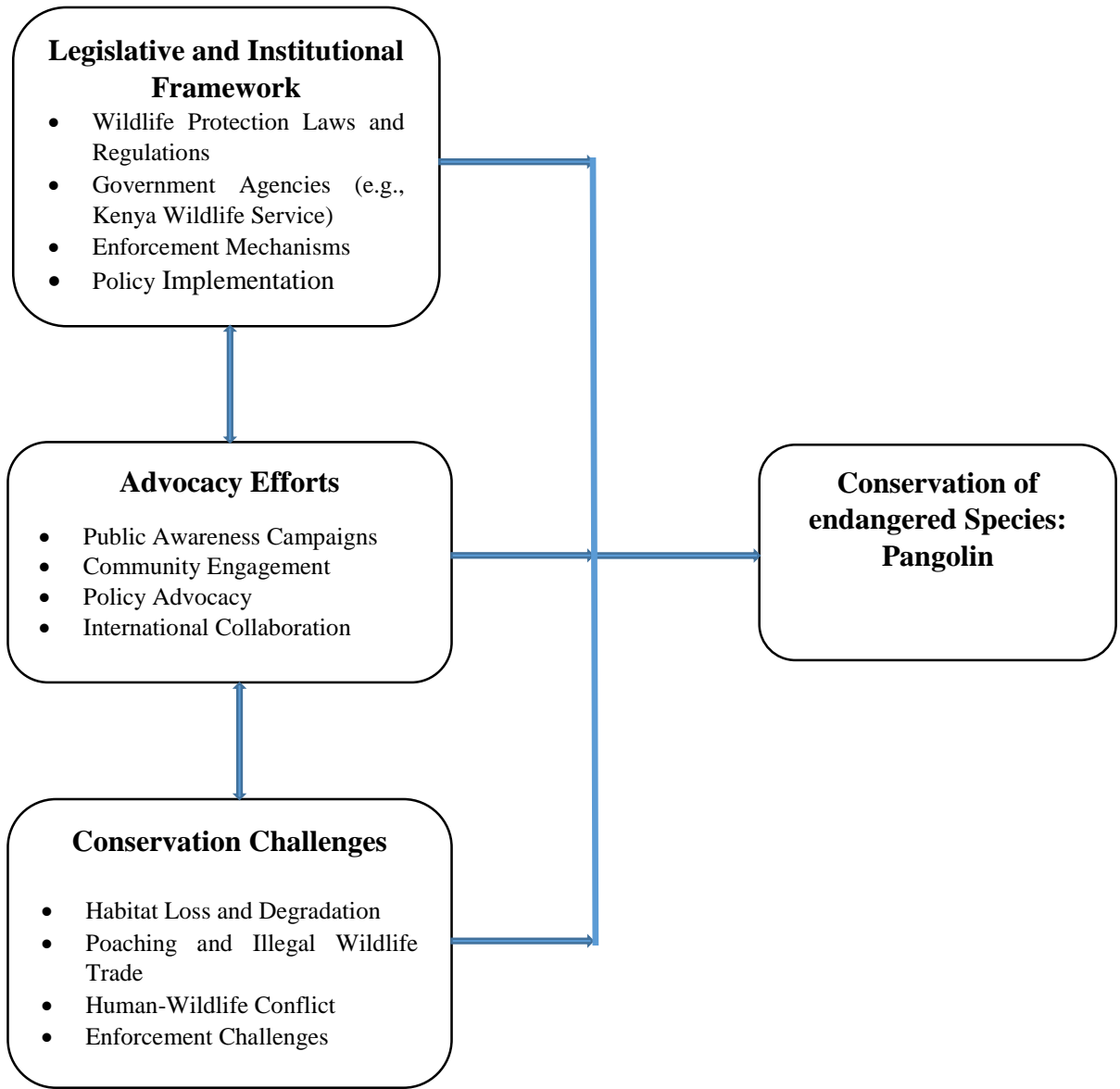
A conceptual framework serves as a theoretical structure or model delineating the essential concepts, variables, relationships, and assumptions guiding a research study or academic inquiry. It provides a framework for comprehending the phenomenon under investigation and guides the formulation of research questions, hypotheses, and data collection methods (Bass and George,

2022). Independent Variable (Advocacy Efforts represented by various forms of advocacy activities aimed at pangolin conservation, such as public awareness campaigns, community engagement, policy advocacy, and international collaboration. Advocacy efforts are considered independent variables as they are believed to influence the conservation of pangolins. The Dependent Variable (Conservation of Pangolins) represents the outcome of interest, which is the conservation status of pangolins in Kenya. It reflects the effectiveness of advocacy efforts and the legislative and institutional framework in ensuring the survival and well-being of pangolin populations. While Conservation Challenges are external factors or conditions that may hinder effective pangolin conservation efforts. They are considered as external influences that may affect the relationship between advocacy efforts, the legislative and institutional framework, and the conservation of pangolins. This conceptual framework provides a structured representation of the relationships between key variables involved in pangolin conservation in Kenya, highlighting the potential influence of advocacy efforts and the legislative and institutional framework on the conservation outcomes, as well as the role of conservation challenges as intervening factors.

Figure 2.1 Conceptual framework

Independent Variable

Dependent Variable



CHAPTER THREE

METHODOLOGY

3.0 Introduction

The research methodology utilised for the study is described in this section, which also includes sub-sections on research design, data collection methods, sampling strategies, measures of validity and reliability used, and ethical considerations.

3.1 Research Design

This study used a mixed-methods approach, combining qualitative and quantitative research methods, in establishing the nexus between environmental diplomacy and conservation of endangered species in Kenya, with specific reference to pangolins (Rosenbaum, 2002). The use of mixed methods allowed for a comprehensive exploration of this complex subject matter. Qualitative methods included use of interviews, focus groups, or observations to gather in-depth insights into stakeholders' perspectives, policy dynamics, and diplomatic interactions related to pangolin conservation. On the other hand, quantitative methods involved statistical analysis of data related to policy outcomes, conservation efforts, or economic impacts. By combining these approaches, the study aimed to provide a nuanced understanding of how environmental diplomacy influences pangolin conservation in Kenya, shedding light on potential strategies to enhance conservation efforts through diplomatic channels. Because it aim to avail answers to the questions on the influence of environmental diplomacy in the conservation of endangered pangolin species in Kenya, analyzing the nature and forms of advocacy efforts towards the conservation of pangolin species in Kenya , determining the legislative and institutional framework governing the conservation of pangolins in Kenya and evaluating the challenges affecting conservation of

pangolins in Kenya, descriptive research design, which seeks to ascertain and report things as they are, is favored for use in establishing the relationship between environmental diplomacy and conservation of endangered species in Kenya due to its many benefits in the social sciences (Sharma, 2019).

The study also included a descriptive research approach to overcome the shortcomings of the case study design and provide the researcher a chance to evaluate how well environmental diplomacy is working to save pangolins in Kenya. Researchers can analyse the relationships between variables in a social phenomenon by using a descriptive research design. Descriptive research design is especially well-suited to time and money constraints since it allows for the less time-consuming collection and analysis of qualitative data. In order to complete their research, researchers must obtain non-numeric data within a restricted budget and time frame (Sharma, 2019). Furthermore, the study's conclusions can serve as a guide for future research because to the descriptive research design's adaptability.

3.2 Study Area

This research focuses on environmental diplomacy and conservation of endangered species in Kenya, with specific reference to pangolins. Pangolins are found in various parts of Kenya, primarily in forested and savanna habitats, national parks, wildlife reserves, and protected areas known to harbor pangolin populations, such as “Tsavo National Park, Amboseli National Park, Mount Kenya National Park, the three species of pangolins found in Kenya are the White-bellied pangolin (*Phataginus tricuspis*), Giant ground pangolin (*Smutsia gigantea*), and Temminck's ground pangolin (*Smutsia temminckii*)”. However, due to their elusive nature and nocturnal habits, pangolins can be challenging to spot in the wild, and their populations may be under threat due to

habitat loss, poaching, and illegal trade. Therefore, conservation efforts are crucial to protect pangolin populations and their habitats in Kenya.

3.3 Target Population

This study focused on engaging diverse agencies in Kenya tasked with responsibilities such as wildlife conservation, enforcement, research, and environmental diplomacy. Accordingly, the study will focus on key government agencies, academia, and non-governmental organizations. These include the following with the relevant departments shown: The Kenya Wildlife Service (KWS) – Conservation, Wildlife Security and Diplomacy, National Museums of Kenya (NMK) – Research and Biology, Kenya Forest Service (KFS) – Ecosystem conservation, The Pangolin Project (NGO) – Research, Flora and Fauna International – Conservation and Academia – Research. From these groups, 80 respondents were selected purposively based on their expertise.

3.4 Sampling Technique

This study utilized non-probability sampling methods since it aimed to gather insights from respondents presumed to possess the specific information required. Non-probability sampling is well-suited for qualitative research as it prioritizes obtaining detailed information rather than making inferences or generalizations (Mugenda & Mugenda, 2004). Purposive sampling was used to select key informants who helped in availing the need information on the study area. The targeted respondents were handpicked based on the information and expertise in conservation, environmental diplomacy, research, and enforcement with a focus to Pangolin species in Kenya.

Quota sampling was employed to establish the number of respondents from different locations and agencies or ministries. Additionally, convenient sampling was utilized in cases where respondents

chose to withdraw from the study or was unable to continue with the interview due to various reasons.

3.5 Sample Size Determination

The researcher sought informants possessing comparable expertise to substitute for the previously mentioned respondents. Based on these approaches, the study sampled a total of 80 respondents which was calculated from the formula below as suggested by Saunders et al (2019).

$$n = \frac{N}{1 + N(a)^2}$$

Where n= the sample size

α =margin error (0.05%)

N=sample frame

A sample size of 80 was arrived as follows

$$n = \frac{100}{1 + 100(0.05)^2} = 80$$

Therefore, the sample size for this research is 80 Respondents

Table 3.1
Target Population and Sample Size

Category	Target Population	Calculation	Sample Size	Sample Procedure
Kenya Wildlife Service (KWS) and National Museums of Kenya Officials	20	$80/100*20$	16	Purposive Sampling
Academicians or the Scholars	20	$80/100*20$	16	Purposive Sampling
Officials from The Pangolin Project (NGO)	20	$80/100*20$	16	Purposive Sampling
Kenya Forest Service (KFS) Officials	20	$80/100*20$	16	Purposive Sampling
Flora and Fauna International	20	$80/100*20$	16	Purposive Sampling
Total	100		80	

Source: Research Study, 2024

3.6 Data Collection Instruments

The study collected primary and secondary data using a variety of techniques. Formal surveys and in-depth interviews with the subjects were the main methods of gathering data. Selected important informants from academia, government agencies, and NGOs were subjected to in-depth personal interviews. Semi-structured interviews were selected to guarantee concentration on the topic of the study and to provide the researcher with comprehensive insights. To ensure that key informants were in agreement with the study's scope and to confirm scheduled appointments, interview schedules were established and reviewed beforehand. Data from frontline and operational staff members of participating agencies, organisations, and units were gathered using structured questionnaires. Taking into account any potential obstacles encountered during the study, this approach provided benefits in terms of efficiency both in terms of time and money. Focus Group

Discussion (FGD) was used on respondents from Kenya Wildlife Service representing 14 (18.9%), Kenya Forest Service (KFS) representing 15 (23.3%) as well as Museums of Kenya at 14 (18.9%). The use of Focus Group Discussion (FGDs) was deemed essential for gathering pertinent insights from these three key institutions. The Kenya Wildlife Service holds the mandate for conservation efforts and actively engages in international diplomacy to safeguard the species. The Kenya Forest Service is critical in habitat management, specifically the forests that serve as the natural habitat for pangolins and hence it will help to elucidate the interplay between pangolin conservation and the preservation of their natural environments. The FGDs provide a unique perspective, allowing for a nuanced understanding of the challenges and successes encountered in pangolin conservation efforts. Furthermore, 16 (21.6%) officials from The Pangolin Project (NGO) responded to the interviews, and at the same time, 15 academicians representing (20.3%) as well as 14 (8.9%) officials from Flora and Fauna International filled the questionnaires.

Secondary data came from academic journals, theses, dissertations, monographs, online reports, government website postings, worldwide reports on environmental diplomacy and conservation of endangered species, statistics, and official periodic reports of security agencies, government ministries, departments, and NGOs. This extensive range of sources sought to fill in the blanks and improve the primary data that was gathered. Official data from pertinent institutions or organisations was sought out and included in the analysis as needed. The primary data and responses were complemented, validated, and expanded upon by secondary data.

3.7 Validity and Reliability

To pre-test the research tools, a pilot study was carried out with a subset of individuals who were not part of the main fieldwork. It assisted in locating any ambiguous, imprecise, or confusing

research instrument questions. To further validate the research findings, the researcher used triangulation. Adopting appropriate scientific protocols improves objectivity and reduces prejudice in the research. In essence the pilot study helped to enhance the quality, rigor, and effectiveness of a larger-scale research project by identifying and addressing potential challenges, refining research instruments and procedures, and building researcher competence.

The purpose of the pilot study was to evaluate the questionnaire's capacity to yield information that would best address the goals and enquiries of the research. The Cronbach's alpha was used to test the results from the pilot study. This test, which has a score range of 0 to 1, shows how trustworthy the instrument is for gathering data for the study. Only values over the suggested cut-point of 0.7 were employed in this investigation. Any item below this cut-off was refined with the help of the supervisor to ensure that the tools can be relied upon for data collection (Malhotra, 2004).

3.8 Data Collection Procedures

The researcher adhered to the regulations governing research at the NDU-K, and in Kenya overall. Consequently, permission was obtained from the supervisor at NDC, followed by an application submitted to the NACOSTI. Subsequently, the research instruments were designed, validated, and reviewed. A list of contact persons was compiled and utilized to arrange appointments in advance for interviews and discussions. Interviews and group discussions were then conducted according to the scheduled appointments. Questionnaires were administered and collected.

3.9 Data Processing and Analysis

Qualitative Data Analysis (QDA) entails systematically organizing, examining, and interpreting non-numeric, conceptual information and user feedback. Its goal is to reveal themes and patterns,

address research inquiries, and extract actionable insights to enrich the research study. Thematic and content analysis methods were employed by the researcher to categorize the qualitative data, facilitating deeper analysis, interpretation, and identification of thematic issues. Additionally, the completeness and consistency of questionnaires were reviewed. Responses were coded and stored in appropriate computer spreadsheets. Descriptive statistics, including frequencies, means, and percentages, were utilized to analyze the quantitative data. SPSS and Stata software were employed to process the coded data.

3.10 Ethical Considerations

Adhering to ethical requirements is essential when conducting research. Research ethics serve to safeguard both the researcher and the participants, particularly in sensitive subject matters, ensuring their willingness to participate and protection throughout the research process. The primary objective of ethical considerations in research is to ensure that research is conducted in a manner that guarantees the safety and well-being of participants, the integrity of the research process, and the research itself. Consent from participants was actively sought and respected, following the principle of informed consent. Detailed information regarding the nature and purpose of the research was provided to participants, allowing them to make informed decisions about participation at any stage. All data and information obtained were treated confidentially and not shared with any other individual or entity. To maintain anonymity, respondents' names were not included on the data collection tools. The researcher carried necessary permits from NACOSTI and other identification documents to authenticate the legitimacy of the research endeavor.

3.11 Chapter Summary

This Chapter provided a detailed overview of the research methodology employed in this study. It began with an introduction to the mixed-methods approach used to explore the nexus between environmental diplomacy and pangolin conservation in Kenya. The chapter described the study area, focusing on specific regions in Kenya where pangolins are found, and identified the target population, including key government agencies, academia, and non-governmental organizations involved in wildlife conservation and environmental diplomacy. It also detailed the non-probability sampling techniques used to select 80 respondents based on their expertise and outlined the data collection instruments, including interviews, structured questionnaires, and focus group discussions. The chapter also discussed measures of validity and reliability, emphasizing the importance of a pilot study and the use of Cronbach's alpha to ensure the reliability of research instruments. Data collection procedures were described, including obtaining necessary permissions and scheduling interviews. Finally, the chapter explained data processing and analysis methods, highlighting the use of thematic and content analysis for qualitative data and statistical software for quantitative data, and underscored the ethical considerations adhered to throughout the research process to ensure participant safety and data confidentiality.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

This chapter presents the results and findings in accordance with the study objectives. Both qualitative and quantitative data analysis methods were utilized. Qualitative data primarily underwent interpretation based on responses obtained from key informants, questionnaires, and Focus Group Discussions. Focus Group Discussions were conducted with respondents from the Kenya Wildlife Service, Kenya Forest Service (KFS), and the Pangolin Project (NGO). The information derived from the analyzed data was thematically presented, guided by the specific research objectives.

4.1 Presentation and Discussion of Research Findings

This section presents the findings on the nexus between environmental diplomacy and the conservation of endangered pangolin species in Kenya. It details the results obtained from interviews, questionnaires, and document reviews, highlighting key patterns, challenges, and insights related to the effectiveness of environmental diplomacy efforts and conservation strategies.

4.1.1 Response Rate

Seventy four (92.5%) respondents of the targeted sample of 80 respondents participated in the study. From these respondents, 14 (18.9 %) were from the Kenya Wildlife Service (KWS) and National Museums of Kenya 14 (18.9 %). At the same time, 15 academicians (20.3 %) responded to the questionnaires. All the 16 (21.6%) officials from The Pangolin Project (NGO) responded to the interviews, and 15 (23.3%) of Kenya Forest Service (KFS) Officials responded to the Focus

Group Discussion Guides. Finally, 14 (8.9%) officials from Flora and Fauna International also filled the questionnaires. The response rate is depicted in Table 4.1 as follows

Table 4.1

Response Rate

Category	Target Size	Sample	Response	Response Rate (%)
1. Kenya Wildlife Service (KWS) Officials and National Museums of Kenya	16		14	87.5
2. Academicians or the Scholars	16		15	93.8
3. Officials from The Pangolin Project (NGO)	16		16	100.0
4. Kenya Forest Service (KFS) Officials	16		15	93.8
5. Flora and Fauna International	16		14	87.5
Total	80		74	92.5

Source; Field Data, 2024

4.1.2 Demographic Characteristic

4.1.2.1 Respondents' Gender

From the findings, respondents from each gender category were evenly distributed at 51.4% male and 48.6% female as shown in Table 4.2.

Table 2.2

Respondents' Gender

Sex	Frequency	Percent
Male	38	51.4
Female	36	48.6
Total	74	100.0

Source; Field Data, 2024

4.1.2.2 Level of Education

The respondents were asked to indicate their levels of education. The findings are shown in Table 4.3.

Table 4.3

Levels of Education

Highest education level	Frequency	% Frequency
Undergraduate	39	52.7
College	19	25.7
Secondary	12	16.2
Postgraduate	4	5.4
Total	74	100.0

Source; Field Data, 2024

4.1.3 General Information on Environmental Diplomacy and Endangered Species

Legislation

The study sought to find out whether the respondents' organizations had been involved in environmental diplomacy. Forty two percent (42%) of the NGO's staff, 67% of government officials and 50% of academicians stated that they had been involved in environmental diplomacy and endangered species legislation. About 8% of government officials and 50% of academicians had not engaged in environmental diplomacy and endangered species legislation. However, 58% of NGO's and 25% of government officials were not sure if they had engaged in environmental diplomacy and endangered species legislation as shown in Table 4.4.

Table 4.4*General information on environmental diplomacy and endangered species legislation*

	NGO's	Government Officials from (KWS, NKM AND KFS)	Scholars or Academicians
Yes	5	16	5
% Yes	42	67	50
No	0	2	5
% NO	0	8	50
Not sure	7	6	0
% Not Sure	58	25	0

Source; Field Data, 2024

The findings in Table 4.4 show that most of the environmental diplomacy and endangered species legislation in Kenya is mostly led by government and supported by NGO's as well as academicians.

One of the NGO officials pointed out that:

Five species are critically endangered. According to the International Union for the Conservation of Nature (IUCN), this designation corresponds to the highest degree of risk, indicating that the animals have a 50 per cent likelihood of going extinct within ten years or three generations. Nine further species have been classified as endangered (Respondent 1)

The respondent went on to list the at least three endangered mammal species in Kenya including the Elephant, White Rhino and pangolin. The respondent highlighted the significance of pangolins due to being the world's most trafficked mammal, despite an international ban on the trade of all pangolin species since 2017. As per the information provided by the Kenya Wildlife Service (KWS) official, a global operation in 2023 resulted in the seizure of 25 tons of African pangolin scales, equating to approximately 50,000 deceased pangolins, valued at an estimated market worth

of USD \$7 million. Pangolin scales are sought after in traditional Chinese medicine, while its meat is considered a delicacy in certain regions of Asia.

Respondents noted that in 2016, all eight pangolin species were elevated to Appendix I of CITES, affording them the highest level of protection against international trade. In Kenya, the IUCN identifies 463 endangered species of flora and fauna. Section 44(1-4) mandates that all wildlife conservation areas must establish officially designated management plans. Nevertheless, one of the NGO officials posited that:

But, while most range countries have laws on the books protecting pangolins, lack of enforcement and light penalties have allowed for unabated poaching and smuggling (Respondent 2).

In Kenya, WCMA (2013) govern wildlife conservation and management, this law is enforced primarily by the Kenya Wildlife Service with support from other law enforcement agencies. The findings show that most of the government and NGO officials have personally participated in meetings/conventions where legislations for conservation of endangered mammal species were being developed. One of the respondents stated:

I participated in the African elephant Project (AEAP) which was proposed during the 14th CITES COP meeting. Developed through a highly consultative and participatory process and guided by African Elephant Specialist Group (AfESG) and the CITES Secretariat, the plan was completed and adopted during the 15th meeting of the COP to the CITES. In the same vein, a fund to assist with the plans implementation was also established (Respondent 3).

Gobush 2021 highlights the African Elephant Action Plan (AEAP)'s acknowledgment of the imperative for enhanced coordination among African elephant range states. This recognition stems from the understanding that poaching persists in populations spanning borders. The primary goals of the action plan are to diminish instances of poaching and the illicit trade of elephant products while also preserving elephant habitats and facilitating habitat connectivity restoration.

The study went on to enquire whether the national legislation has been successful in protecting endangered species in Kenya. To this one of the respondent said:

The WCMA, 2013, in Section 5: 2(a) gives KWS the mandate to put measures in place for the protection of wildlife species and their habitats and ecosystems. KWS has put measures in place to prevent and combat wildlife crimes (Respondent 4).

Another respondent collaborated on this stating that:

Inter - Agency Collaboration and Partnerships work very closely with other law enforcement agencies in all matters of wildlife security at local, regional and international arena. Structured engagement with law enforcement agencies, Government institutions, local communities and other conservation stakeholders have been intensified. Specific engagement with the County Administration, National Police Service, National Intelligence Service, Directorate of Criminal Investigation, Kenya Forest Service, Kenya Revenue Authority, Kenya Ports Authority and Kenya Airports Authority amongst others is enhanced in terms of surveillance on poachers and prosecution of wildlife cases. This has also been extended in profiling of known poachers and dealers in the country. Regionally, cross-border collaborations between Tanzania and Uganda have also been put in place to address crimes of trans-boundary nature and have yielded results in tackling crime along the shared borders. In particular, we are collaborating with Tanzania in the cross-border wildlife security collaboration in the following key areas (Respondent 5).

However, the efforts have not been successful due to various challenges. To this end, one of the respondents said:

Wildlife crime still poses threat to the survival of wildlife species. Although poaching has declined in the recent years, it remains as one of the main challenge to wildlife conservation as it has become more organized, sophisticated and international in nature and is occurring across all ranges including in those areas that were hitherto considered safe havens. Challenges facing the protection of natural resources in the country are becoming more diverse and complex as the demand and use patterns change with time (Respondent 6).

At international level, forums for conservation of endangered mammal species have been successful in developing legislation to protect these species. To this end, one of the NGO officials said:

CITES, the Convention on International Trade in Endangered Species of Wild Flora and Fauna, regulates and moderates international trade in plants and animals to ensure that such trade does not threaten their survival. The Convention seeks to achieve this by placing various restrictions and requirements on legal trade in certain flora and fauna. Its system of permits and certificates, which relate to three lists of protected species in the Convention's Appendices, enable States Parties to 'reciprocally protect one another's species according to a common set of rules (Respondent 7).

Pitman (2020) underscores that CITES establishes a framework to address trade that exceeds these boundaries. As the sole international instrument requiring penalties for illegal trade in protected species, CITES plays a crucial role (Pitman, 2020). Nevertheless, the effectiveness of CITES in combating wildlife trafficking and safeguarding endangered species is constrained. States Parties retain the freedom to regulate domestic trade concerning CITES-listed species according to their discretion.

4.1.4 General Information on Environmental Diplomacy and Pangolin Species

Conservation Legislation in Kenya and Internationally

The study endeavored to seek information from the participants on their knowledge on pangolin.

The results are depicted in Table 4.5.

Table 4.5
Knowledge of the Pangolin Species by the Respondents

	NGO's	Government Officials	Scholars or Academicians	Total
Yes	8	14	2	24
% Yes	67	58	20	52

No	4	10	8	22
% NO	33.3	42	80	48

Source; Field Data, 2024

About 52% of the respondents overall have encountered pangolin species in the country. According to Table 4.5, the presence of pangolin species in their respective areas has been observed by 58% of government official and over 66.7% of the NGO’s representatives staff. , The respondents also described the pangolin. To this end, a KWS official said:

Pangolins are the only mammals wholly-covered in scales and they use those scales to protect themselves from predators in the wild. If under threat, a pangolin will immediately curl into a tight ball and will use their sharp-scaled tails to defend themselves (Respondent 8).

Another respondent, an official from the Pangolin Project (NGO) asserted that;

Pangolins eat ants, termites and larvae and are often known as the scaly anteater. Because they have no teeth, pangolins pick up food with their sticky tongues, which can sometimes reach lengths greater than the animal’s body (Respondent 9).

According the findings in Table 4.6, pangolins are mainly found in Masai Mara National Park, Tsavo National Park and Nyakweri Forest in Trans Mara.

Table 4.6

Location of pangolins in Kenya

	NGO’s	Government Officials from (KWS, NMK AND KFS)	Scholars or Academicians
Where Sighted	Nyakweri forest- Trans Mara Tsavo national park Masai mara national park	Nyakweri forest- Trans Mara Tsavo national park Masai mara national park	Tsavo national park

Source; Field Data, 2024

According to an IUCN report authored by Challender and Waterman (2017) for the CITES Secretariat, there are eight existing species of pangolins. Among these, four are found in Asia: “the Chinese pangolin (M. pentadactyla), Sunda pangolin (M. javanica), Indian pangolin (M.

crassicaudata), and Philippine pangolin (*M. culionensis*). The remaining four species are native to Africa: the black-bellied pangolin (*M. tetradactyla*), white-bellied pangolin (*M. tricuspis*), giant pangolin (*M. gigantea*), and Temminck's ground pangolin (*M. temminckii*)". These pangolins collectively inhabit various ecosystems including tropical and sub-tropical forests, riverine and swamp forests, as well as woodland savannahs and grasslands. Pangolins are specialized insectivores, primarily consuming ants and termites (Kingdon, Hoffmann & Hoyt, 2013).

According to Musila, et al. (2023) three (3) pangolin species are found in Kenya. They include; the White-bellied Pangolin (*Phataginus tricuspis*), which is a semi-arboreal species which depends on hollowed trees for roosting. The Giant Pangolin (*Smutsia gigantea*) which is a highland forest species and is also a ground-dwelling and digs burrows and the Temminck's Pangolin (*Smutsia temminckii*) which occurs in savanna, woodlands and bushlands and is also a ground-dwelling species. The *S. gigantea* last recorded in Kenya in 1974, is confirmed to occur in Nyakweri Forest (in Transmara) and southwestern Mau Forests (Olenguruone); *P. tricuspis* in Kakamega Forest fragments, North and South Nandi Forest Reserves, and in Mt. Elgon NP; and *S. temminckii* is widely distributed in much of the west of Rift Valley.

Poaching is one of the key threats to the Pangolin species in Kenya and trade in pangolin products, where there has been an increasing trend in the number of people arrested with pangolin products in Kenya from 2015-2022. The other threat is associated with habitat loss, one of the respondents from The Pangolin Project (NGO) asserted that;

Habitat loss poses a significant threat to pangolins in Kenya, as it disrupts their natural ecosystems and reduces available resources essential for their survival. Factors such as deforestation, agricultural expansion, urbanization, and infrastructure development contribute to habitat loss in Kenya (Respondent 10).

This corroborates the findings of Musila, *et al.* (2023) who posit that, habitat loss emanates from Charcoal burning and livestock overgrazing which continue to destroy the remaining natural habitat for these animals. Old and hollowed trees, which are key for the survival of *P. tricuspis* have been logged and the habitat quality for this species is poor and declining in range areas. The habitat of *S. temminckii* is threatened by livestock overgrazing, charcoal burning, bushlands burning, agricultural and human settlement expansion, planned and unexpected fires destroying vast land areas, as well as land subdivision and fencing. The three Pangolin species in Kenya are also threatened by traditional rituals, and believes among the communities which reside in the Pangolin range lands. Pangolin species in Kenya is also threatened by high mortality rates, experienced as a result of electrocution by electric fences and also from deaths occurring after their release from traffickers.

The study findings indicate that the Wildlife Conservation and Management Act 2013 safeguard the three pangolin species in Kenya. Additionally, pangolins are listed under Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), signifying stringent regulations on international trade in pangolins and their parts. However, despite these protective measures, the trade and trafficking of these endangered species persist, with limited success in curtailing such activities.

The focus group responses show that most of the respondents were aware of Pangolin.

One of the respondents in the FDG noted that;

There were a few organizations carrying out awareness campaigns to inform the public about pangolins, their unique characteristics, and the threats they face. Leveraging social media platforms and online channels is a common strategy to reach a broader audience. Organizations create and share engaging content, including videos, infographics, and articles, to disseminate information about pangolins, their conservation status, and the importance of protecting them Respondent 11).

Another participant noted that there were strong collaborations and partnerships between NGO’s with governmental agencies, and international bodies to amplify their outreach efforts. Joint campaigns and partnerships allow for a more extensive reach and bring together diverse expertise and resources. To this end, one of the participants said:

Involving local communities in conservation efforts is crucial. Organizations may work closely with communities living in areas where pangolins are found to build awareness, provide training, and encourage sustainable practices that contribute to pangolin protection Respondent 12).

4.1.5 Objectives-based Analysis

4.1.5.1 The Nature and Forms of Advocacy Efforts towards the Conservation of Endangered Pangolin Species in Kenya

The first objective of the study was to assess the nature and forms of advocacy efforts towards the conservation of endangered pangolin species in Kenya. Using a Likert Scale ranging from 1-5 where; “1 = strongly disagree (SD), 2 = disagree (D), 3 = neutral (N), 4 = agree (A), 5 = strongly agree (SA)” the respondents indicated their level of agreement regarding statement relating to the nature and forms of advocacy efforts. The results are shown in Table 4.7.

Table 4.7

The Nature and Forms of Advocacy Efforts

Statement	1	2	3	4	5	Total	Weighted Mean
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From your opinion Advocacy organizations and NGOs play a crucial role in raising awareness about pangolin conservation in Kenya	0	5	15	30	24	74	3.42
Community-based conservation initiatives involving local communities are essential for pangolin conservation	0	0	10	20	44	74	4.00
Policy advocacy efforts influence government policies and regulations to better protect pangolins and their habitats	0	2	2	20	50	74	3.59
International collaboration and cooperation are crucial for addressing the transboundary nature of pangolin conservation	0	10	20	10	34	74	2.92
Diplomatic channels can be further utilized to enhance public awareness and support for pangolin conservation.	0	0	10	20	44	74	4.00
Public awareness campaigns effectively educate the public about the importance of pangolin conservation	0	2	2	20	50	74	3.59
Policy advocacy efforts influence government policies and regulations to better protect pangolins and their habitats	0	0	10	20	44	74	4.00

Source; Field Data, 2024

According to Table 4.7 there is generally a positive perception among respondents regarding the role being played by advocacy organizations and NGOs in raising awareness about pangolin conservation in Kenya. Specifically, respondents strongly agreed that advocacy organizations and NGOs have significantly contributed in raising awareness about pangolin conservation in Kenya, with a weighted mean of 3.42. Moreover, the participants expressed agreed that community-based conservation initiatives involving local communities are essential for pangolin conservation evidenced by a weighted mean of 4.00.

While the respondents had a moderately positive perception regarding international collaboration and cooperation as crucial for addressing the transboundary nature of pangolin conservation (weighted mean of 2.92), they also showed optimism that diplomatic channels can be further utilized to enhance public awareness and support for pangolin conservation, with a weighted mean

of 4.00. Additionally, respondents believed that Public awareness campaigns effectively educate the public about the importance of pangolin conservation, albeit with a moderately positive perception (weighted mean of 3.59).

The participants strongly agreed that policy advocacy efforts influence government policies and regulations to better protect pangolins and their habitats, all with weighted means of 4.00. Moreover, respondents expressed a belief that, policy advocacy efforts influence government policies and regulations to better protect pangolins and their habitats with a moderately positive perception (weighted mean of 4.00).

Overall, the responses emphasize the perceived importance advocacy efforts play in mobilizing support, raising awareness, and influencing decision-makers to take action to protect pangolins and ensure their survival for future generations. This is in line with the findings by Wild in Africa (2023) advocacy campaigns play an instrumental role in creating awareness about the ecological importance of pangolins, their role in maintaining ecosystem balance, and the threats they face from poaching, habitat loss, and illegal wildlife trade. By educating the public about the value of pangolins and the need for conservation measures, advocates can foster a greater appreciation for these unique creatures and garner support for conservation initiatives.

The researcher interviewed participants on their experience on the nature and forms of advocacy efforts in protecting pangolin species in Kenya. The participants stated that advocacy efforts play a crucial role in creating awareness about pangolin conservation in Kenya. To this end, one of the respondents said:

Awareness campaigns in raising awareness about pangolin conservation utilize various communication channels such as media, social media, community events, and educational programs to disseminate information about pangolins, their ecological significance, and the threats they face to the public (Respondent 13).

Another responded opined:

Community-based conservation initiatives that involve local communities in pangolin conservation efforts empower communities to actively participate in pangolin monitoring, habitat restoration, and anti-poaching patrols, fostering a sense of ownership and stewardship over pangolin habitats (Respondent 14).

Participants in the focus group acknowledged that advocacy efforts have contributed significantly to creating awareness about pangolin protection at the local level in Kenya. To this one of the participants said:

The international collaboration and cooperation facilitated by diplomatic efforts have led to regional and international forums to advocate for stronger regulations, enforcement mechanisms, and cross-border cooperation to combat pangolin trafficking” (Respondent 15).

Furthermore, Focus group participants highlighted Policy Advocacy efforts have contributed to awareness and advocacy for pangolin conservation. To this end, one of the participants said:

There is need for policy advocacy efforts to influence government policies, laws, and regulations to better protect pangolins and their habitats. Advocates work to strengthen wildlife protection laws, increase penalties for pangolin poaching and trafficking, and improve enforcement mechanisms to combat illegal wildlife trade (Respondent 16).

The findings show that advocacy efforts have also helped in conveying the shared responsibility of protecting wildlife particularly the pangolin, fostering a sense of pride and ownership among the local population.

4.1.5.2 Assessing Legislative and Institutional Framework for Pangolin Conservation

The second objective of the study was to assess the legislative and institutional framework for pangolin conservation. Using a Likert Scale ranging from 1-5 where; “1 = strongly disagree (SD), 2 = disagree (D), 3 = neutral (N), 4 = agree (A), 5 = strongly agree (SA)” the participants indicated

their level of agreement regarding statement relating to Legislative and Institutional Framework for Pangolin Conservation. Table 4.8 presents the results.

Table 3*Legislative and Institutional Framework for Pangolin Conservation*

Statement	1	2	3	4	5	Total	Weighted Mean
(i) The responsibility for the conservation of endangered wildlife species in Kenya, specifically Pangolins, is well-defined.	0	10	10	20	34	74	4.05
(ii) There are specific laws or regulations in Kenya that entail the protection of Pangolins.	50	10	5	5	4	74	1.69
(iii) Arrests or prosecutions related to pangolins and/or pangolin parts/products have been recorded or heard of in the last Twelve Months.	30	20	10	4	10	74	1.57
(iv) When someone is arrested with live Pangolins/body parts in Kenya, appropriate legal actions are taken.	0	10	10	20	34	74	4.05
(v) Pangolins or their body parts are trafficked from Kenya to other countries.	0	10	10	20	34	74	4.05
(vi) Laws and regulations in place in Kenya adequately protect pangolins and their habitats.	50	10	5	5	4	74	1.69
(vii) The institutional framework for enforcing pangolin conservation laws in Kenya is well-defined.	30	20	10	4	10	74	1.57
(viii) Gaps or weaknesses exist in the legislative and institutional setup for pangolin conservation	30	20	10	4	10	74	1.57
(ix) The legal framework effectively addresses issues such as trafficking, habitat destruction, and human-wildlife conflict related to pangolins.	30	20	10	4	10	74	1.57
(x) Measures are in place to ensure the coordination and cooperation of different government agencies and non-governmental organizations involved in pangolin conservation.	30	20	10	4	10	74	1.57

Source; Field Data, 2024

Table 4.8 provides insights into the perceived status of pangolin conservation efforts in Kenya, specifically focusing on legal and regulatory aspects. Each statement received ratings on a scale

from 1 to 5, with a total of 74 respondents. There is a prevalent sentiment that the responsibility for safeguarding endangered wildlife, particularly pangolins, is not distinctly defined, and specific laws or regulations addressing their protection are perceived to be lacking, as indicated by weighted means of 1.82 and 1.69, respectively. Awareness regarding arrests or prosecutions related to pangolins in the past twelve months is relatively low, with a weighted mean of 1.57. This indicates that, on average, the level of awareness regarding arrests or prosecutions related to pangolins in the past twelve months is relatively low. The weighted mean takes into account the importance or significance of each response when calculating the average. Therefore, based on the data collected, the overall perception or knowledge about pangolin-related arrests or prosecutions is not very high among the respondents. However, respondents moderately agree (weighted mean of 2.30) that appropriate legal actions are taken when individuals are arrested with live pangolins or their body parts in Kenya.

A notable consensus emerges in the belief that pangolins or their body parts are trafficked from Kenya to other countries, with a weighted mean of 4.05. Meanwhile, concerns persist about the adequacy of existing legal frameworks, the definition of institutional responsibilities, and the presence of gaps in the legislative and institutional setup for pangolin conservation, all with weighted means of 1.57. Overall, while there is strong acknowledgment of pangolin trafficking, the survey underscores perceived challenges and deficiencies in legal, institutional, and enforcement aspects of pangolin conservation in Kenya. These findings are in agreement with the findings by Challender and Waterman (2017) who found that only 25% have domestic laws affording strict legal protections. Many Asian and African countries lacked specialized regulations directly covering pangolin exploitation, trade, and habitat conservation. This indicates key legislative gaps, highlighted from an institutional analytics perspective as a fundamental basis

undermining conservation action. Moreover, the study found major deficiencies in implementing existing pangolin protections even where robust legislation exists on paper. Monitoring failures, limited enforcement capabilities, and widespread corruption obstruct giving effect to environmental rules. Institutional theory posits that efficacy requires not just robust formal regulations, but crucially the informal norms, resources, and coordination capacities to actualize policy intentions (Dimitrakopoulos & Richardson, 2001). Challender and Waterman (2017) conclude such institutional functionality conditions remain lacking in the majority of pangolin range states, causing a substantial gulf between formal rules and on-ground conservation outcomes.

The interview responses show international agreements and treaties indeed play a crucial role in influencing Kenya's approach to pangolin conservation. These agreements provide a framework for collaboration, setting standards, and promoting a unified global effort to address the challenges faced by pangolins. To this end, one of the participants said:

By being part of these international agreements, Kenya gains access to shared knowledge, resources, and technologies that contribute to more effective conservation strategies. Additionally, the agreements often entail commitments to combat illegal wildlife trade, which aligns with Kenya's efforts to protect pangolins and their habitats (Respondent 17).

In addition, focus group participants agreed that international agreements and treaties significantly influence Kenya's approach to pangolin conservation. To this end, one of the participants said:

Being part of these agreements provides Kenya with access to funding, technology, and expertise that are crucial in developing and implementing effective conservation strategies. The agreements create a platform for sharing best practices and learning from successful conservation models implemented in other parts of the world (Respondent 18).

The focus group also identified several factors shaping the formulation of legislative and international agreements related to wildlife conservation and management. These include

ecological interconnectedness, recognizing that the survival of species like pangolins depends on collaborative efforts beyond national borders. Economic considerations, including the impact on tourism, were also noted, as well as ethical considerations and a shared responsibility to protect global biodiversity. The participants emphasized the role of scientific research, advocacy, and public awareness in influencing policymakers to engage in international collaborations for wildlife conservation.

4.1.5.3 Challenges in Pangolin Conservation

The third aim of the study was to assess the obstacles encountered in pangolin conservation efforts in Kenya. Respondents employed a Likert Scale spanning from 1 to 5, with 1 representing “strongly disagree” (SD), 2 denoting “disagree” (D), 3 indicating “neutral” (N), 4 representing “agree” (A), and 5 signifying “strongly agree” (SA)”. The participants expressed their degree of agreement with statements pertaining to the challenges in pangolin conservation in Kenya, and the outcomes are detailed in Table 4.9.

Table 4.9
Challenges in Pangolin Conservation

Statement	1	2	3	4	5	Total	Weighted Mean
(i) The primary challenges faced by conservationists and policymakers in effectively protecting pangolins in Kenya are well-understood.	0	10	10	20	34	74	4.05

Statement	1	2	3	4	5	Total	Weighted Mean
(ii) Socio-economic factors significantly contribute to challenges in pangolin conservation, and effective strategies can address them.	0	10	10	10	44	74	4.19
(iii) There are specific obstacles related to public awareness and education regarding pangolins that need urgent attention.	0	5	5	10	54	74	4.53
(iv) The illegal trade in pangolins has a severe impact on conservation efforts, and effective measures are in place to combat this issue.	0	10	10	20	34	74	4.05
(v) Innovative approaches or solutions could be implemented to overcome the challenges hindering pangolin conservation in Kenya.	0	5	5	20	44	74	4.39.

Source; Field Data, 2024

According to Table 4.10, participants expressed a robust consensus that conservationists and policymakers possess a deep understanding of the primary challenges in effectively protecting pangolins, reflected by a weighted mean of 4.05. Additionally, there is a shared belief that socio-economic factors significantly contribute to conservation challenges, but effective strategies can address these issues, as shown by a high weighted mean of 4.19. Respondents also emphasized the urgency in addressing specific obstacles related to public awareness and education about pangolins, reflected in a weighted mean of 4.53. Furthermore, there is a resounding agreement that the illegal trade in pangolins poses a severe threat to conservation efforts, and effective measures are in place to combat this issue, with a weighted mean of 4.05. Finally, participants strongly endorsed the notion that innovative approaches or solutions could be implemented to overcome the challenges hindering pangolin conservation in Kenya, yielding a high weighted mean of 4.39.

Generally, the survey underscores a positive perception and a collective confidence in the effectiveness of conservation efforts and strategies for pangolins in Kenya. The findings

collaborate those by Owuor et al. (2022) who pointed out that challenges range from incompatible land use changes, deforestation, and fragmentation of protected wildlife habitats signal an unwillingness to enact reforms curbing emissions and environmental damage from large-scale infrastructure, extractives, logging, and agricultural industry interests. This allows development agendas to undermine ecological sustainability persistently. State wildlife agencies like KWS also remain severely under-capacitated and under-resourced to enforce protections and curb threats across porous, vast lands sustaining rich biodiversity (Ngene et al., 2022).

Moreover, the growing foreign presence, including conservation INGOs, donors, researchers, and media replete with their ideologies, interests, and assumptions, now significantly influence Kenya's biodiversity policy. This squeezes space for indigenous voices in framing solutions attuned to lived local realities amid glaring power differentials. Persisting institutional racism also means critical decisions over wildlife utilization restrictions and benefit sharing exclude participation from marginalized ethnic groups most affected by human-wildlife conflicts and bear the costs of increasing endangered species protection nationally (Greiner, 2012).

The interview responses show that coordinating international efforts for pangolin conservation does face challenges. To this end, one of the participants said:

One primary challenge is the diversity of stakeholders, each with varying interests, capacities, and approaches. This diversity can lead to differences in priorities and strategies, hindering a unified front against pangolin trafficking and habitat destruction (Respondent 19).

Additionally, another participant said:

Communication barriers, including language differences and varying levels of technological infrastructure among participating countries, can impede effective collaboration. Furthermore, differences in legal frameworks and enforcement capacities across nations contribute to challenges in harmonizing efforts against illegal wildlife trade (Respondent 20).

Focus group participants collectively acknowledged challenges in coordinating international efforts for pangolin conservation. To this end, one of the participants said:

The main challenges include differences in stakeholder interests, communication barriers, and varying legal frameworks across countries (Respondent 21).

The focus group also highlighted the impact of economic disparities among participating nations, which can affect the allocation of resources and priorities for conservation efforts. They also envisioned several strategies to enhance coordination in international pangolin conservation efforts. These included the establishment of a centralized information-sharing platform, regular forums for dialogue and collaboration, and the development of a standardized legal framework for wildlife protection. Capacity-building initiatives, particularly focusing on supporting countries with limited resources, were emphasized as a crucial component to ensure equitable participation and effective contribution to pangolin conservation.

4.1.6 Statistical modeling

4.1.6.1 Nature and Forms of Advocacy Efforts

Multiple linear regressions was performed to assess the impact of different forms of advocacy efforts on the perceived effectiveness of pangolin conservation advocacy.

Table 4.10

Nature and Forms of Advocacy Efforts Model 1

	Coefficient	Standard Error	t-value	p-value
Intercept	2.30	0.50	4.60	<0.001
Community-based	0.85	0.25	3.40	0.002
Policy advocacy	0.62	0.30	2.07	0.042
Public awareness	0.75	0.28	2.68	0.014

The regression analysis aimed to evaluate the impact of various forms of advocacy efforts on the perceived effectiveness of pangolin conservation advocacy, measured by the level of agreement on the role of advocacy organizations and NGOs. The results revealed that the community-based initiatives, policy advocacy, and public awareness campaigns all have significant positive effects on the perceived effectiveness of pangolin conservation advocacy in Kenya. This suggests that investing in these forms of advocacy can lead to increased support and awareness for pangolin conservation efforts.

4.1.6.2 Legislative and Institutional Framework

The regression table for Model 2, which is a logistic regression analysis examines the factors influencing the presence of specific laws or regulations for pangolin protection.

Table 4.11*Legislative and Institutional Framework Model 2*

Variable	Coefficient (β)	Standard Error	Odds Ratio (Exp(β))	p-value
Intercept	-2.862	0.672	0.056	<0.001
Responsibility for conservation	0.584	0.236	1.794	0.014
Adequacy of existing laws	0.307	0.251	1.36	0.22
Institutional framework	0.441	0.234	1.554	0.061

The logistic regression analysis suggests that the perceived responsibility for conservation is significantly associated with the presence of specific laws or regulations for pangolin protection in Kenya, while the adequacy of existing laws and the institutional framework show weaker associations.

4.1.6.3 Relationships between different challenges in pangolin conservation

The structural equation modeling (SEM) table for Model 3, explores the relationships between different challenges in pangolin conservation.

Table 4.12*Structural equation modeling (SEM) table for Model 3*

Path	Standardized	
	Coefficient (β)	p-value
Socio-economic factors → Public awareness obstacles	-0.45	<0.001
Illegal trade impact → Socio-economic factors	0.32	0.003
Illegal trade impact → Public awareness obstacles	-0.38	<0.001
Socio-economic factors → Illegal trade impact	0.25	0.012
Public awareness obstacles → Pangolin conservation challenges	0.55	<0.001
Socio-economic factors → Pangolin conservation challenges	0.4	<0.001
Illegal trade impact → Pangolin conservation challenges	0.35	<0.001

The SEM analysis reveals significant relationships between socio-economic factors, illegal trade impact, public awareness obstacles, and challenges in pangolin conservation efforts. These findings suggest that addressing socio-economic factors and public awareness obstacles may be key to mitigating challenges and improving pangolin conservation outcomes.

Table 4.13*The factor analysis table for Model 4*

Factor/Component	Eigenvalue	Variance Explained (%)	Cumulative Variance Explained (%)
Factor 1	3.25	32.5	32.5
Factor 2	1.92	19.2	51.7
Factor 3	1.45	14.5	66.2
Factor 4	1.1	11	77.2
Factor 5	0.85	8.5	85.7
Factor 6	0.63	6.3	92
Factor 7	0.4	4	96
Factor 8	0.25	2.5	98.5
Factor 9	0.15	1.5	100

The factor analysis conducted on responses across all objectives reveals several underlying factors influencing respondents' perceptions and attitudes towards pangolin conservation in Kenya. The analysis identified six main factors, each representing distinct dimensions of respondents' viewpoints. These factors encompassed overall support for advocacy efforts and conservation initiatives, perceptions regarding the legislative and institutional framework for pangolin conservation, challenges and obstacles faced in conservation efforts, attitudes towards the effectiveness of measures against illegal wildlife trade, support for innovative solutions, and additional dimensions of perception not fully delineated by the initial objectives. Understanding these factors provides valuable insights into the multifaceted nature of public opinion on pangolin conservation, guiding policymakers and conservationists in developing targeted strategies to address key concerns, promote effective advocacy, and enhance conservation outcomes.

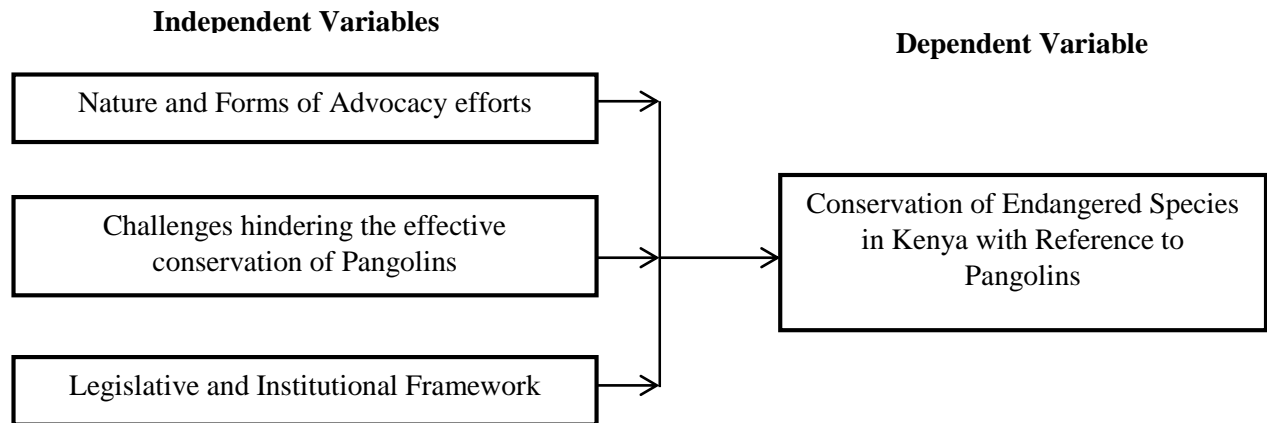
4.2 Summary of the Results

The findings show that various stakeholders, including government officials, NGO staff, and academicians, have been involved in environmental diplomacy and endangered species legislation to varying extents. Government officials show a relatively higher involvement compared to NGO staff and academicians. The results also show that Pangolins face significant threats in Kenya, primarily from poaching, habitat loss, and traditional beliefs. Legislative measures such as the wildlife (Conservation and management) Act, 2013 and international protections under CITES aim to safeguard pangolin species. Conservation efforts involve raising awareness among the public, leveraging social media platforms, and engaging local communities in conservation initiatives. Focus on Awareness and Community Engagement: Awareness campaigns, partnerships, and collaborations between NGO's, governmental agencies, and international bodies are vital in promoting pangolin conservation.

4.3 Optimal model

The study established that the most important variable was advocacy efforts towards the conservation of endangered pangolin species in Kenya. This means that there was need to enhance these variables. This should be followed by instituting methods of dealing with challenges hindering the effective conservation of Pangolins. Lastly, it was pertinent to enhance legislative and institutional framework governing the conservation of pangolins in Kenya. The model was presented in Figure 4.1 below.

Figure 4.1 Optimal model



CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter provides a comprehensive overview of the research findings, conclusions, and recommendations in tandem with study objectives. The primary aim of the study was to establish the nexus between environmental diplomacy and conservation of endangered species in Kenya in this case the Pangolin. The study objectives that guided the study include; “the nature and forms of advocacy efforts towards the conservation of endangered pangolin species in Kenya, to determine the legislative and institutional framework governing the conservation of pangolins in Kenya and to evaluate the challenges affecting conservation of Pangolins in Kenya”. Lastly the study proffers recommendations suitable for enhancing protection of endangered pangolin species in Kenya.

5.1 Summary of the Research Findings

This section presents the summary of the findings based on each objective of the study.

5.1.1 The nature and forms of advocacy efforts towards the conservation of endangered pangolin species in Kenya

In tandem with the first objective, the findings show that, advocacy efforts towards the conservation of endangered pangolin species in Kenya encompass a diverse range of approaches, including public awareness campaigns, advocacy organizations, community-based conservation initiatives, policy advocacy, and international collaboration. These efforts play a crucial role in mobilizing support, raising awareness, and influencing decision-makers to take action to protect

pangolins and ensure their survival for future generations. Public awareness campaigns serve as crucial tools in educating the public about the significance of pangolin conservation and the threats confronting these distinctive creatures.

These campaigns leverage diverse channels including television, radio, social media, and community events to disseminate information regarding pangolins, their ecological importance, and the detrimental impacts of illegal wildlife trade. Through raising awareness and cultivating empathy and stewardship among the public, these campaigns strive to garner support for pangolin conservation initiatives and diminish the demand for pangolin products. Advocacy organizations and non-governmental organizations (NGOs) are crucial in advocating for pangolin conservation through research, advocacy, and outreach activities. These organizations work to raise awareness about pangolin conservation issues, lobby policymakers to enact stronger laws and regulations to protect pangolins, and collaborate with local communities and government agencies to implement conservation programs on the ground.

They also engage in fundraising efforts to support pangolin conservation projects, provide training and capacity-building initiatives for local stakeholders, and monitor and report on pangolin populations and threats. Community-based conservation initiatives involve local communities in pangolin conservation efforts, recognizing their role as stewards of natural resources and key stakeholders in conservation decision-making processes. These initiatives empower local communities to actively participate in pangolin monitoring, habitat restoration, and anti-poaching patrols, providing incentives for conservation through ecotourism, alternative livelihoods, and revenue-sharing schemes.

By involving communities in pangolin conservation efforts, these initiatives build social capital, foster ownership, and ensure the sustainability of conservation interventions. Policy advocacy focuses on influencing government policies, laws, and regulations to better protect pangolins and their habitats. Advocates work to strengthen wildlife protection laws, increase penalties for pangolin poaching and trafficking, and improve enforcement mechanisms to combat illegal wildlife trade. They also call for creation as well as management of conserved areas, wildlife corridors, and conservation reserves to safeguard pangolin habitats from habitat loss, deforestation, and land-use conversion. By advocating for policy reforms, advocates seek to create an enabling environment for pangolin conservation and ensure that conservation priorities are integrated into national development plans and environmental policies. International collaboration and cooperation are essential for addressing the transboundary nature of pangolin conservation and trafficking. Advocacy efforts involve engaging in regional and international forums such as CITES to advocate for stronger regulations, enforcement mechanisms, and cross-border cooperation to combat pangolin trafficking. Advocates also work to build partnerships with neighboring countries, transit routes, and destination markets implicated in the illegal trade to coordinate joint initiatives and share best practices for pangolin conservation and law enforcement.

5.1.2 The Legislative and Institutional Framework Governing the Conservation of Pangolins in Kenya

The second objective sought to determine the legislative and institutional framework governing the conservation of pangolins in Kenya, the study findings established that, globally, legislative frameworks governing pangolin conservation remain uneven and poorly enforced in many countries. Many Asian and African countries lack specialized regulations directly covering

pangolin exploitation, trade, and habitat conservation. This indicates key legislative gaps, highlighted from an institutional analytics perspective, as a fundamental basis undermining conservation action. There are major deficiencies in implementing existing pangolin protections even where robust legislation exists on paper. These deficiencies include; monitoring failures, limited enforcement capabilities, and widespread corruption obstruct giving effect to environmental rules.

In China, the China's 1989 Wildlife Protection Law expressly prohibits hunting, killing, smuggling or commercial trade in pangolins nationally. These legal loopholes sustain avenues for laundering and leakage into commercial markets, undermining protections. Moreover, pangolins remain covered under traditional medicine regulations rather than the stricter conservation laws preventing sustainable utilization. By continents, Africa has the highest levels of legal protections for pangolins. However, there are weaknesses in enforcement and low conviction rates once traffickers are apprehended. Very few points result in sentencing commensurate with the ecological damage stipulated in institutional penalties like CITES. This further exposes judicial institutional failures in executing punishments that effectively deter illegal pangolin trade in Africa despite solid legislation.

Pangolins in Kenya are safeguarded by the rigorous regulations outlined in the WCMA 2013. This robust legislation criminalizes poaching, trafficking, or commercial exploitation of endangered species like pangolins with stringent penalties including life imprisonment. However, analyses show critical gaps in the implementation of this Act with regard to Pangolin protection. For instance, within the Act, Section 47(1) stipulates the declaration and listing of critically endangered, vulnerable, nearly threatened, and protected species in the Sixth Schedule of the Act.

In addition, no person is allowed to undertake any activity involving the species listed in the Sixth Schedule without a permit (Section 48). However, the Kenyan pangolin species are not specifically listed among the critically endangered, vulnerable, nearly threatened, or protected species in the Sixth Schedule of the Act.

Pangolins are protected by the WCMA 2013 Act by virtue of being listed in CITES Appendix 1. The consequences are that this presents a legal conundrum to any judicial officer who intends to sentence a person caught with any pangolin trophies as the sentence would amount to the ordinary punishment for any person caught with any wildlife trophy. The outcome is weak prosecution and poor deterrent outcomes. This in addition to other barriers such as poor coordination between national wildlife agencies mandated with prevention of poaching and customs authorities required to intercept sophisticated trafficking syndicates, transiting huge consignments through Kenyan ports. Differing institutional procedures, priorities and capacities hinder multi-agency information sharing and joint operations, bureaucratic corruption remains an enduring barrier sabotaging the legal process, weak information management and data discrepancies also persist around detected trafficking cases, coordination and accountability failures, all which reflect wider institutional dysfunctionality rooted in unresolved inequities and vested interests. However, holistic governance reforms addressing marginalization, while elevating indigenous participation and capabilities are essential to transform conditions enabling illegal wildlife trade on the ground.

5.1.3 The Challenges affecting Conservation of Pangolins in Kenya

In line with the third objective the study findings show that, the illegal wildlife trade crisis has complex challenges from an SES perspective driven by demand-supply dynamics spanning multiple scales. High consumer demand and profits go poacher and trafficker risks decimating endangered species through vast, sophisticated global trafficking networks. Persisting traditional medicine demands and unfounded beliefs regarding the health properties of animal parts exacerbate unsustainable offtake. Uneven power relations upheld by states and institutions, enables ecological declines through policy actions and inactions. Corruption and regulatory lapses facilitate the indifference and impunity protecting illegal wildlife traders from prosecution while conservation agencies remain under-resourced. Massive legislative gaps remain to close the contributor footprint fueling the global wildlife trafficking chain from multinational companies and corporations evading full accountability for accelerating unsustainable production and consumption patterns driving biodiversity decline.

In Africa, growing foreign demand and commercialization incentivize present high risks and returns from illegal pangolin trade for local community members. Poaching and wildlife trafficking have become coping outlets for groups marginalized from formal economic activities but retain extensive environmental dependencies now threatened by the over-exploitation. Uneven policy priorities advancing elite industrialization interests through land alienation rather than smallholder support further escalate human-wildlife conflicts and risks driving pangolin species declines. The worsening income disparities, social deprivations, and ethnic marginalization have become an incentive for poaching and illegal wildlife trading. When national policies undervalue and undermine rural communities' special relationship as custodians of biodiverse habitats, while prioritizing agendas of industry, private capital, and foreign partners, then wildlife declines as

groups, turn heavily dependent ecosystems into desperate survival strategies, no matter the ecological repercussions.

In Kenya, persistent policy gaps sustaining incompatible land use changes, deforestation, and fragmentation of protected wildlife habitats signal an unwillingness to enact reforms curbing emissions and environmental damage from large-scale infrastructure, extractives, logging, and agricultural industry interests present a big challenge to the conservation of endangered species. State wildlife agencies like KWS also remain severely under-capacitated and under-resourced to enforce protections and curb threats across porous, vast lands sustaining rich biodiversity. The pursuit of ambitious economic blueprints like Vision 2030 has also displaced indigenous communities and fomented human-wildlife conflicts through land use changes, forest excisions, and infrastructure encroaching wildlife dispersal areas and corridors without sufficient impact assessments or community engagement.

5.2 Conclusions

In conclusion, and in tandem with the study objectives, the nexus between environmental diplomacy and the conservation of endangered species, such as the pangolin in Kenya, is integral to addressing the complex challenges facing wildlife protection and habitat preservation. Environmental diplomacy serves as a crucial mechanism for facilitating international cooperation, fostering dialogue, and promoting collective action to conserve biodiversity and combat illegal wildlife trade. By engaging in environmental diplomacy, Kenya can leverage diplomatic channels to advocate for pangolin conservation on the global stage, forge partnerships with other countries and international organizations, and mobilize resources for conservation initiatives. This diplomatic engagement can help raise awareness about the plight of pangolins, strengthen

enforcement measures to combat poaching and trafficking, and promote sustainable management of pangolin habitats. Advocacy efforts towards the conservation of endangered pangolin species in Kenya encompass a diverse range of approaches, including public awareness campaigns, advocacy organizations, community-based conservation initiatives, policy advocacy, and international collaboration. These efforts play a crucial role in mobilizing support, raising awareness, and influencing decision-makers to take action to protect pangolins and ensure their survival for future generations.

The legislative and institutional framework governing pangolin conservation in Kenya provides a foundation for conservation efforts, but requires continuous improvement and enforcement to be effective. Strengthening laws and regulations related to wildlife protection, enhancing penalties for poaching and trafficking, and ensuring adequate resources and capacity within relevant institutions are essential steps to safeguarding pangolins and their habitats.

However, despite these efforts, numerous challenges hinder the effective conservation of pangolin in Kenya. These challenges include inadequate law enforcement and prosecution of wildlife crimes, lack of public awareness and community engagement, habitat loss and fragmentation, and insufficient resources for conservation activities. Addressing these challenges requires a coordinated approach involving government agencies, civil society organizations, local communities, and international partners to enhance enforcement efforts, raise awareness, mitigate habitat threats, and mobilize resources for pangolin conservation. The conservation of pangolin in Kenya is a complex endeavor that requires concerted efforts across multiple fronts. Thus, by leveraging environmental diplomacy, strengthening legislative and institutional frameworks, and

addressing key challenges, Kenya can work towards the sustainable conservation of pangolin and contribute to the global effort to protect this highly threatened species.

5.3 Recommendations

Based on the discussion on relationship between environmental diplomacy and the conservation of endangered species, particularly focusing on pangolins in Kenya, the study recommends the following recommendations;

5.3.1 The Nature and Forms of Advocacy Efforts towards the Conservation of Endangered Pangolin Species in Kenya

Raising public awareness and education; the government should also prioritize public awareness campaigns and community engagement initiatives to mobilize public support for pangolin conservation. Environmental diplomacy can play a crucial role in disseminating information, fostering public dialogue, and mobilizing resources for conservation activities, thereby empowering local communities to participate in pangolin protection efforts.

Engaging Local Communities in Pangolin Conservation Efforts; this can involve providing training, resources, and incentives for community members to actively participate in pangolin monitoring, habitat restoration, and anti-poaching patrols. Collaborating with local leaders, traditional authorities, and community-based organizations can help build trust, foster ownership, and ensure the sustainability of conservation efforts.

Advocating for policy and legal reforms is essential to strengthen pangolin conservation efforts; this include lobbying for the development and implementation of robust wildlife protection laws, regulations, and enforcement mechanisms that specifically target pangolin

trafficking and trade. Advocacy efforts should also focus on addressing gaps in existing legislation, increasing penalties for wildlife crimes, and enhancing collaboration between law enforcement agencies, judiciary systems, and conservation organizations to effectively combat pangolin poaching and trafficking networks.

5.3.2 The Legislative and Institutional Framework Governing the Conservation of Pangolins in Kenya

Strengthen and Monitoring Implementation of the Existing Legislation; There is need to review, strengthen and monitoring execution of the existing legislation related to wildlife protection and conservation in Kenya, such as the WCMA, to specifically address the conservation needs of pangolins. This may involve enacting stricter penalties for pangolin poaching, trafficking, and trade, as well as establishing protected areas and conservation reserves to safeguard pangolin habitats from encroachment and habitat loss.

Engage in Environmental Diplomacy; the government of Kenya should continue to actively engage in environmental diplomacy by participating in international forums, conferences, and negotiations related to wildlife conservation and biodiversity protection. Strengthening diplomatic ties with other countries and regional organizations can facilitate information sharing, collaboration on conservation initiatives, and resource mobilization for pangolin conservation efforts. It should also advocate for increased multilateral cooperation and coordination among countries affected by pangolin trafficking and habitat loss. This can involve leveraging existing platforms such as CITES and regional agreements to develop joint strategies, share intelligence, and implement coordinated enforcement actions to combat illegal wildlife trade and protect pangolin populations.

Enhancing Law Enforcement Capacity and Coordination; this entails providing training, resources, and equipment for law enforcement agencies, wildlife rangers, and customs officials to improve their capacity to detect, investigate, and prosecute wildlife crimes involving pangolins. Strengthening inter-agency collaboration and information-sharing mechanisms can also help coordinate enforcement efforts across different sectors and jurisdictions to disrupt pangolin trafficking networks and hold perpetrators accountable.

5.3.3 The challenges affecting conservation of Pangolins in Kenya

Addressing Habitat Loss and Degradation; this entails promoting habitat protection measures, such as establishing and expanding protected areas, wildlife corridors, and conservation reserves to safeguard pangolin habitats from deforestation, urbanization, and agricultural expansion. Implementing long term land-use practices, for instance as agroforestry, reforestation, and land-use planning, can assist mitigate habitat loss and fragmentation while promoting ecosystem resilience and biodiversity conservation.

Combating illegal wildlife trade and trafficking networks; this includes strengthening law enforcement efforts, such as increasing patrols, surveillance, and intelligence gathering to detect and disrupt pangolin trafficking operations. Enhancing inter-agency coordination and collaboration between law enforcement agencies, customs authorities, and wildlife conservation organizations can improve the effectiveness of anti-poaching measures and prosecution of wildlife traffickers.

Enhancing Scientific Research and Monitoring; this is essential for informing evidence-based conservation strategies and monitoring the status of pangolin populations. Further, conducting population surveys, habitat assessments, and ecological studies to gather baseline data on pangolin

distribution, abundance, and habitat requirements, investing in research capacity-building efforts, such as training programs for local researchers and field biologists, can also strengthen scientific expertise and empower local communities to actively participate in pangolin monitoring and research efforts.

By implementing these recommendations, Kenya can enhance its capacity to conserve endangered pangolin species effectively, address conservation challenges, and contribute to global efforts to protect biodiversity and wildlife.

5.4 Suggestions for Further Studies

This study established the relationship between environmental diplomacy and the conservation of endangered species, particularly focusing on pangolins in Kenya. This research study recommends further research on Exploring diplomatic strategies and best practices employed by Kenya and other countries in pangolin conservation. This would involve analyzing successful case studies and identifying key diplomatic approaches, negotiation tactics, and partnership models that can be replicated or adapted to enhance pangolin conservation efforts in Kenya and around the world. Further research is suggested to look at the role and effectiveness of international treaties and agreements, such as the CITES, in pangolin conservation in Kenya. This would examine how these agreements influence diplomatic efforts, shape policy decisions, and contribute to on-the-ground conservation actions. Lastly, scholars and researchers should conduct studies on the diplomatic strategies and best practices employed by Kenya and other countries in pangolin conservation by analyzing successful case studies and identifying key diplomatic approaches, negotiation tactics, and partnership models that can be replicated or adapted to enhance pangolin conservation efforts in Kenya.

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APPENDIX I: NACOSTI PERMIT

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APPENDIX II: QUESTIONNAIRE

Dear Respondent;

I kindly request you to provide information on my master's study titled; **Environmental diplomacy in conservation of endangered wildlife species in Kenya: a case study of pangolin.**

This study is meant to improve diplomatic practice and efforts, which propel Countries to work towards a comprehensive and sustainable approach to pangolin conservation that extends beyond its national borders. This study appreciates the pivotal role which the environmental diplomacy plays in pangolin conservation in international relations, by fostering collaboration, facilitating international agreements, raising awareness, and addressing the root causes of pangolin decline.

Your Contribution will be highly appreciated.

A: DEMOGRAPHIC DATA

1. Occupation/Title

2. Organization..... (Allow people to enter their organizations/no need to list)

Kenya Wildlife Service (KWS) []

Kenya Forest Service (KFS) []

The Pangolin Project []

Flora and Fauna International []

National Museums of Kenya []

3. Department

Age: Less than 25 [] 26-35 [] 36-45 [] 46-55 [] 56 and above []

Sex: 1.Male [] 2. Female []

5. Level of Education: Secondary School [] Certificate/ Diploma [] Bachelor's Degree []
Master's Degree [] Doctorate/Ph.D. [] Other (please specify):

6. Years of Experience in your work.....

General information on environmental diplomacy and endangered species legislation

1). Has your organization been involved in environmental diplomacy? 1.Yes [] 2. No []

If YES above give more details.....

.....

.....

2). Can you give an example of at least three endangered mammal species in Kenya? 1.Yes [] 2.

No []

If YES list them below.....

.....

.....

3). Do you know any national legislation that exist in relation to conservation of a Kenyan endangered mammal species? 1.Yes [] 2. No []

If YES above give name of at least one national legislation below.....

.....

.....4). Do

you know any international legislation that exist in relation to conservation of a Kenyan mammal endangered species? 1.Yes [] 2. No []

If YES above give name of at least one internal national legislation below.....

.....
.....
5). Have you personally ever participated in a meetings/conventions where legislations for conservation of endangered mammal species were being developed 1.Yes [] 2. No []

If YES above give more details about the meeting and the legislation.....

.....
.....
6). Has the organiation you work for ever been involved/invited to participate in a meetings/conventions where legislations for conservation of endangered mammal species were developed 1.Yes [] 2. No []

If YES above give more details about the meeting and the legislation.....

.....
.....
7). Do you think legislation developed at NATIONAL forums in Kenya to develop legislations for conservation of endangered mammal species have been successful in conservation of these species 1.Yes [] 2. No []

If NO above give more details.....

.....
.....
8). Do you think legislaton developed at INTERNATIONAL forums for conservation of endangered mammal species have been successful in conservation of these species 1.Yes [] 2. No []

No []

If NO above give more details.....

.....
.....
General information on environmental diplomacy and pangolin species conservation legislation in Kenya and internationally

1). Have you ever seen a pangolin? 1.Yes [] 2. No []

If YES above give more details where you saw it.....

.....
.....

. Is pangolin a mammal [] or reptile []

. How many pangolin species do we have in Kenya.....

. Are pangolin species listed as endangered in Kenya; 1.Yes [] 2. No []

If YES above give more details about their IUCN Listed conservation status/threat categories..

.....
.....

. Do you know which national (Kenyan) law protect pangolin species 1.Yes [] 2. No []

If YES above give more details about the law.....

.....
.....

. Do you know which International convention/agreement protect pangolin species 1.Yes [] 2.

No []

If YES above give more details about the international convention.....

.....
.....
7). Do you know how the International convention/agreement that protects pangolin species was developed? 1. Yes [] 2. No []

If YES above give more details about the process of development.....

.....
.....

8). Is the organization you work for involved in the conservation of pangolin species 1.Yes [] 2. No []

If YES above give more details about what the organization is doing.....

.....
.....

9). Do you think Kenyas pangolin species are well protected; 1.Yes [] 2. No []

If YES above give more details.....

.....
.....

10). Are there any major weaknesses in the legislations developed in conservation of Kenyan pangolins; 1.Yes [] 2. No []

If YES above give more details about these challenges and how to address them.....

.....
.....

B: THE NATURE AND FORMS OF ADVOCACY EFFORTS TOWARDS THE CONSERVATION OF ENDANGERED PANGOLIN SPECIES IN KENYA

7. The following Likert-scale statements seek to gather insights into the experiences, perceptions, and opinions on the nature and forms of advocacy efforts towards the conservation of endangered pangolin species in Kenya. Please use the Likert scale provided to express your level of agreement or disagreement with each statement, where **1-Strongly Agree [SA]**, **2-Agree [A]**, **3-Neither Agree nor Disagree [NA/D]**, **4-Disagree [D]**, **5-Strongly Disagree [SD]**. For each set of statement choose only one option as choice of your reply.

	1= Strongly Agree	2=Agree	3= Neither Agree nor Disagree	4= Disagree	5=Strongly Disagree
Statements					
From your opinion Advocacy organizations and NGOs play a crucial role in raising awareness about pangolin conservation in Kenya					
Public awareness campaigns effectively educate the public about the importance of pangolin conservation					
Community-based conservation initiatives involving local communities are essential for pangolin conservation					
Policy advocacy efforts influence government policies and regulations to better protect pangolins and their habitats					
International collaboration and cooperation are crucial for addressing the transboundary nature of pangolin conservation					
Diplomatic channels can be further utilized to enhance					

public awareness and support for pangolin conservation.					
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8. Please share your thoughts and insights on additional measures, challenges, or considerations regarding advocacy efforts towards pangolin conservation in Kenya

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PART C: ASSESSING LEGISLATIVE AND INSTITUTIONAL FRAMEWORK FOR PANGOLIN CONSERVATION

9. This section evaluates the legislative and institutional framework for pangolin conservation in Kenya. Please provide your perspectives on the following statements using the Likert scale [**1-Strongly Agree [SA], 2-Agree [A], 3-Neither Agree nor Disagree [NA/D], 4-Disagree [D], 5-Strongly Disagree [SD]**], to express your level of agreement or disagreement. For each set of statement choose only one option as choice of your reply.

Statements	1= Strongly Agree	2=Agree	3= Neither Agree nor Disagree	4= Disagree	5=Strongly Disagree
The responsibility for the conservation of endangered wildlife species in Kenya, specifically Pangolins, is well-defined.					
There are specific laws or regulations in Kenya that entail the protection of Pangolins.					
Arrests or prosecutions related to pangolins and/or pangolin parts/products have been recorded or heard of in the last Twelve Months.					

When someone is arrested with live Pangolins/body parts in Kenya, appropriate legal actions are taken.					
Pangolins or their body parts are trafficked from Kenya to other countries.					
The trafficking of Pangolins from Kenya is best described as:					
Laws and regulations in place in Kenya adequately protect pangolins and their habitats.					
The institutional framework for enforcing pangolin conservation laws in Kenya is well-defined.					
Gaps or weaknesses exist in the legislative and institutional setup for pangolin conservation.					
The legal framework effectively addresses issues such as trafficking, habitat destruction, and human-wildlife conflict related to pangolins.					
Measures are in place to ensure the coordination and cooperation of different government agencies and non-governmental organizations involved in pangolin conservation.					

10. Please share any additional insights, challenges, or suggestions regarding legislative and institutional aspects of pangolin conservation in Kenya.....
.....

PART D: EVALUATING CHALLENGES IN PANGOLIN CONSERVATION

11. This section evaluates the challenges in pangolin conservation in Kenya. Your insights are invaluable in comprehending the obstacles faced by conservationists and policymakers. Please provide your perspectives on the following likert scale statements on the scale provided [1-Strongly Agree [SA], 2-Agree [A], 3-Neither Agree nor Disagree [NA/D], 4-Disagree [D], 5-Strongly Disagree [SD]]. For each set of statement choose only one option as choice of your reply.

Statements	1= Strongly Agree	2=Agree	3= Neither Agree nor Disagree	4= Disagree	5=Strongly Disagree
The primary challenges faced by conservationists and policymakers in effectively protecting pangolins in Kenya are well-understood.					
Socio-economic factors significantly contribute to challenges in pangolin conservation, and effective strategies can address them.					
There are specific obstacles related to public awareness and education regarding pangolins that need urgent attention.					
The illegal trade in pangolins has a severe impact on conservation efforts, and effective measures are in place to combat this issue.					
Innovative approaches or solutions could be implemented to overcome the challenges hindering pangolin conservation in Kenya.					

11. Please share any additional insights, challenges, or innovative solutions that you believe could enhance pangolin conservation efforts in Kenya.....

THANK YOU

APPENDIX III: FOCUS DISCUSSION GUIDE

Understanding and Awareness:

Have you heard of Pangolin?

Could you outline the efforts your organization has made to raise awareness about pangolins and their conservation?

Environmental Diplomacy Contributions:

From your experience, how has environmental diplomacy significantly contributed to raising awareness and advocating for pangolin conservation in Kenya?

In your understanding, what is the role of environmental diplomacy in the broader context of wildlife conservation?

Identification of Diplomatic Initiatives:

Can you identify specific diplomatic initiatives or collaborations aimed at pangolin conservation in the region?

How do you assess the effectiveness of these diplomatic initiatives in addressing pangolin conservation challenges?

International Agreements and Treaties:

In your opinion, do international agreements and treaties play a crucial role in influencing Kenya's approach to pangolin conservation?

What factors do you believe influence the formulation of international agreements related to wildlife conservation?

Coordination Challenges:

In your experience, do coordinating international efforts for pangolin conservation face challenges that can be addressed?

How do you envision overcoming challenges to enhance coordination in international pangolin conservation efforts?

Conservation of Endangered Species:

What is conservation of endangered species all about? What does it entail?

Can you share insights into the key components of environmental diplomacy that are relevant to species conservation?

Organization's Involvement in Pangolin Conservation:

Has your organization been involved in environmental diplomacy? In what form/ways?

How has your organization addressed challenges in pangolin conservation, and what strategies have you found to be effective?

Intervention Techniques:

What are some of the intervention techniques that your organization has adopted in Pangolin conservation?

Challenges and Solutions:

What are some of the challenges that you have faced as an organization in pangolin conservation?

How have you addressed these challenges?

Thank you for sharing your valuable insights. Your contributions are instrumental in advancing our understanding of the role of environmental diplomacy in pangolin conservation.

APPENDIX IV: SIMILARITY INDEX

ENVIRONMENTAL DIPLOMACY AND THE CONSERVATION OF ENDANGERED WILDLIFE SPECIES IN KENYA: A CASESTUDY OF PANGOLIN BY LUCY WAMUYU MUTA

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