
WILDLIFE TRAFFICKING AND ENVIRONMENTAL LAW: A GREEN CRIMINOLOGY APPROACH TO ACHIEVING SDG

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ABSTRACT

Wildlife trafficking has become one of the fastest-growing types of international crime. It poses a serious threat to biodiversity, ecological security, and the United Nations Sustainable Development Goal 15, which focuses on Life on Land. Even with international legal frameworks like the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and various national environmental laws, enforcement is still weak. This is mainly due to corruption, a lack of coordination, and insufficient recognition of wildlife crime as a serious issue.

This paper uses a green criminology perspective to view wildlife trafficking not just as a legal violation, but as a broader harm to ecosystems, species, and vulnerable communities. By looking at how environmental law and green criminology intersect, the study shows the need to hold not only poachers accountable but also corporations, governments, and organized crime groups that profit from wildlife trade. The analysis suggests that effective legal frameworks, combined with criminological insights, can lead to better strategies for tackling trafficking. It also stresses the importance of community involvement, international cooperation, and strengthening judicial systems as key to aligning anti-trafficking efforts with sustainable development.

This paper aims to fill this gap by using a green criminology framework to analyze wildlife trafficking as both a legal issue and a broader harm to ecosystems, species, and vulnerable communities. Through a thorough examination of international treaties, domestic laws, and court decisions, alongside criminological insights, the study assesses how effective existing legal frameworks are and how they relate to SDG 15. It also highlights how state and corporate actors, along with organized crime networks, contribute to trafficking and how traditional legal approaches often overlook these connections.

The findings suggest that stronger international legal cooperation, the integration of green criminological insights, and active community participation are vital for fostering a justice-focused approach to wildlife protection. By connecting environmental law and green criminology, the paper provides a comprehensive view that goes beyond strict legal compliance and offers paths for sustainable management of wildlife resources.

Keywords: Wildlife Trafficking; Environmental Law; Green Criminology; Sustainable Development Goal 15.

INTRODUCTION

Biodiversity, which refers to the variety of life on Earth, is essential for ecosystem health, resilience, and human well-being. Forests, wetlands, rivers, and oceans are home to countless species that provide vital services like climate regulation, soil fertility, pollination, water purification, and cultural and economic support. However, over the past century, human activities have increasingly disrupted these systems, leading to a global biodiversity crisis. Habitat loss, climate change, pollution, over-exploitation, invasive species, and unsustainable land-use practices have caused unprecedented rates of species extinction. This degradation destabilizes ecosystems and erodes natural resources. Among these threats, wildlife trafficking, which is the illegal trade of live animals, plants, and their products, poses a particularly serious challenge that combines ecological harm, organized crime, and social inequity.

Wildlife trafficking is a complex issue with global consequences. It is estimated that more than 4,000 species are affected, including mammals, reptiles, birds, fish, and plants. The trade spans 162 countries and generates an illegal market valued at between US\$1 and 2 trillion each year. This trade threatens well-known species like elephants, rhinos, tigers, and pangolins. It also disrupts ecosystem functions by changing predator-prey relationships, breaking up habitats, and interfering with reproductive cycles. Beyond ecological impacts, wildlife trafficking has significant social and cultural effects. Rural and indigenous communities, which depend on local biodiversity for their livelihoods, suffer the most, losing both resources and cultural connections. Additionally, this trade supports transnational organized crime, creating networks that overlap with human and arms trafficking as well as the narcotics trade, which increases social instability and governance issues.

The complexity of wildlife trafficking arises from its global scale and varying participants.

Local poachers, middlemen, smugglers, traders, and final consumers all take part in a loosely organized global supply chain. Weak governance, corruption, and gaps in jurisdiction enable traffickers to exploit weaknesses in national and international laws. Furthermore, advancements in technology, such as online marketplaces and encrypted communications, have created secret channels for trade, making it harder to detect and enforce laws. As a result, traditional conservation and law enforcement efforts often fall short of effectively addressing this crime's scale and sophistication, indicating the necessity for combined, multidisciplinary approaches.

From a theoretical viewpoint, wildlife trafficking challenges standard ideas of crime and justice. Traditional criminology focuses on harm to humans, but the illegal wildlife trade raises issues of ecological and intergenerational justice. The victims include non-human species, ecosystems, and future generations whose right to a healthy environment is undermined. This calls for using green criminology and ecological justice frameworks, which broaden accountability to include not just individual offenders but also state actors, businesses, and organized groups that contribute to ecological damage. By examining the ethical, legal, and ecological aspects of wildlife crime, these frameworks offer a deeper understanding of the systemic issues, gaps in enforcement, and possible solutions.

Given this reality, this paper aims to achieve three main objectives. First, it will place wildlife trafficking within the wider conversation of green criminology and ecological justice, emphasizing its environmental, social, and moral aspects. Second, it will provide a detailed overview of the global scale, routes, and trends of wildlife crime, backed by real data, case studies, and regional analysis. Third, it will evaluate the effectiveness of international and national laws, enforcement strategies, and community-based approaches while suggesting integrated policies that promote biodiversity conservation, sustainable development, and restorative justice. Ultimately, this study highlights the urgent need to address wildlife trafficking not just as a conservation issue but as a multi-layered challenge that requires coordinated, interdisciplinary, and globally informed responses.

THEORETICAL FRAMEWORK: GREEN CRIMINOLOGY AND ECOLOGICAL JUSTICE

Green criminology emerged in the late 20th century as a significant shift in studying crime and justice. It broadens the focus from just human-centered offenses to include environmental

damage, ecological harm, and the victimization of species. Traditional criminology mainly looks at interpersonal or property crimes and often overlooks how human activities impact ecosystems and biodiversity. In contrast, green criminology views criminality as extending to actions that disrupt ecological balance, exploit natural resources, and threaten the long-term health of life on Earth. This perspective is especially relevant for wildlife trafficking, which illustrates the link between organized crime, ecological harm, and social injustice.

The roots of green criminology lie in environmental sociology, ecological ethics, and critical criminology. Early theorists like Michael Lynch, Nigel South, and Rob White advocated for a complete understanding of crime that considers legal definitions and moral concerns about environmental harm. They argued that the traditional legal system often misses the full extent of ecological damage. Many environmental offenses are not well regulated, under-prosecuted, or are viewed as acceptable economic activities. This critical view highlights the need to look at the structural causes of environmental crime, including political, economic, and corporate forces that create conditions where wildlife trafficking can thrive.

A central idea in green criminology is environmental justice. This concept tackles the unequal distribution of environmental benefits and burdens. Environmental justice shows that marginalized human communities and non-human species often suffer the most from ecological harm. In wildlife trafficking, local communities may be forced or pressured into poaching while consumers in urban or international markets benefit from this exploitation. Additionally, species as non-human actors are victimized in ways that traditional criminal systems rarely acknowledge. By recognizing the rights of species and ecosystems, green criminology adds a moral and ethical aspect to crime analysis. It holds accountable those who benefit from ecological harm, whether through direct exploitation or by enabling factors like weak regulation or corporate complicity.

Ecological justice complements this idea by expanding the definition of justice to include non-human beings and future generations. It challenges human-centered views and asserts that the well-being of species, habitats, and ecosystems matters. Ecological justice promotes restorative practices to repair environmental harm. This may involve habitat restoration, anti-poaching efforts, and community-based conservation programs. Regarding wildlife trafficking, ecological justice addresses the ripple effects on biodiversity, like the disruption of predator-

prey relationships, the decline of key species, and the loss of ecosystem services that support human livelihoods.

Using green criminology and ecological justice to study wildlife crime offers a broad analytical framework. It first identifies systemic players beyond the immediate poacher, including traffickers, middlemen, corporate entities, and government agencies whose inaction or complicity allows the crime to continue. Second, it helps us understand the supply chains and trade networks that cross continents, emphasizing the transnational and organized aspects of wildlife trafficking. Third, this approach stresses prevention and restoration, advocating for not just punitive measures but also strategies that empower local communities, encourage sustainable practices, and restore affected ecosystems. Lastly, it promotes interdisciplinary methods, blending law, criminology, ecology, economics, and social policy to form well-rounded responses to the immediate and long-term effects of wildlife crime.

By applying green criminology and ecological justice, scholars and policymakers can shift away from narrow legal perspectives on wildlife trafficking. They can appreciate the full range of victims, the structural aspects of the crime, and the need for restorative and preventive actions. This perspective emphasizes that wildlife trafficking is not merely a conservation issue; it is a complex problem that encompasses ecological, social, economic, and ethical factors. Merging these ideas offers a strong basis for crafting policies, enforcement methods, and community interventions that protect biodiversity, promote social fairness, and ensure ecological sustainability for present and future generations.

INTERNATIONAL LEGAL REGIME – CITES, CBD, UNTOC, INTERPOL, AND REGIONAL NETWORKS

The international legal framework addressing wildlife trafficking is complex and multi-layered. It reflects the transboundary nature of this crime and the need for cooperative governance. Wildlife trafficking often involves multiple jurisdictions, intricate supply chains, and organized networks. This situation requires coordinated legal instruments and collaborative enforcement methods on a global scale. Key instruments and networks form the foundation of international governance in this area, including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Biological Diversity (CBD), the United Nations Convention against Transnational Organized Crime (UNTOC), INTERPOL, and regional enforcement networks.

CITES, established in 1975, serves as the cornerstone of the international legal framework regulating trade in endangered species. It categorizes species by their risk level from international trade. Appendix I lists the most threatened species, mostly prohibiting their international trade. Appendix II includes species requiring strict controls to prevent exploitation, while Appendix III identifies species protected in at least one country seeking cooperation for enforcement. CITES operates through national management and scientific authorities that issue permits, monitor trade, and ensure compliance. However, its effectiveness relies on the capacity and political commitment of individual member states. There are challenges in harmonizing legal definitions, enforcement standards, and penalties across different jurisdictions.

The Convention on Biological Diversity (CBD), adopted in 1992, offers a broader framework for conserving biodiversity. While not tailored specifically to combat wildlife trafficking, the CBD requires countries to preserve ecosystems, use biological resources sustainably, and share benefits from genetic resources equitably. The CBD promotes ecosystem-level strategies, encouraging integrated conservation and sustainable development. Its protocols, including the Nagoya Protocol, provide mechanisms for benefit-sharing, indirectly reducing incentives for illegal exploitation by ensuring local communities receive fair economic returns from their resources. By integrating wildlife protection into broader environmental governance, the CBD supports CITES and other enforcement efforts.

UNTOC, known as the Palermo Convention, addresses transnational organized crime, including wildlife trafficking by criminal groups. It requires states to outlaw participation in organized crime networks, strengthen cross-border cooperation, and implement measures for investigation, prosecution, and asset recovery. UNTOC offers a legal structure to tackle the organizational, financial, and operational aspects of trafficking, bridging gaps between environmental law and transnational criminal law. Its protocols promote mutual legal assistance, extradition, and coordinated operations, all essential for addressing networks operating across continents.

INTERPOL serves as the operational and intelligence hub for enforcement. It coordinates global information sharing, issues alerts for wanted persons, and supports operations targeting wildlife crime. Its Environmental Crime Programme includes databases on seized wildlife, tracking networks, and specialized task forces collaborating with national authorities.

INTERPOL also enhances capacity building, training, and technological support, improving member states' abilities to detect, investigate, and prosecute traffickers.

Regional networks enhance global instruments by tackling local enforcement challenges. Examples include ASEAN-WEN (Wildlife Enforcement Network), the Lusaka Agreement Task Force in Africa, and the South Asian Wildlife Enforcement Network. These networks encourage intelligence sharing, joint operations, and capacity building among neighboring countries. They effectively address regional trafficking routes, making cross-border collaboration vital. By uniting legal instruments, operational coordination, and community involvement, these networks strengthen enforcement, improve monitoring, and deter traffickers.

Despite these extensive frameworks, challenges remain in aligning international and regional legal systems. Variations in national laws, limited resources, and different political priorities often impede effective enforcement. Additionally, fast technological advancements, the growth of online markets, and changing criminal techniques require continuous updates to legal tools and collaboration. Nonetheless, CITES, CBD, UNTOC, INTERPOL, and regional networks together create a solid foundation for fighting wildlife trafficking globally. This multi-faceted approach combines legal, scientific, and operational mechanisms.

WEAKNESSES IN ENFORCEMENT AND GOVERNANCE – CORRUPTION, JURISDICTIONAL LIMITS, DIGITAL TRADE, CORPORATE COMPLICITY

While the international legal framework lays the groundwork for fighting wildlife trafficking, there are significant weaknesses in enforcement and governance that limit its effectiveness. Wildlife trafficking takes advantage of flaws in regulations, corruption, jurisdictional gaps, technological issues, and corporate involvement. Understanding these weaknesses is crucial for creating strategies that can disrupt trafficking networks, protect biodiversity, and promote ecological justice.

Corruption is one of the main barriers to effective enforcement. Traffickers often use bribery, favoritism, and weak institutions to bypass legal penalties. Locally, officials may accept bribes to overlook illegal hunting or transportation, while higher-level corruption can facilitate wildlife movements across borders without being noticed. In many source countries, low resources and salaries make enforcement officers vulnerable to such influences. Corruption

deteriorates public trust, weakens institutional credibility, and allows traffickers to act with impunity, especially in areas with poor governance.

Jurisdictional limitations add further complications. Wildlife trafficking is typically transnational, often involving several countries at the source, transit, and destination stages. Differing national laws, penalties, and enforcement priorities create loopholes for traffickers to exploit. For instance, species protected in one country may be legally traded in another, allowing laundered products to enter international markets. Moreover, inconsistent definitions of wildlife crimes, poor extradition processes, and lack of cross-border cooperation hinder the prosecution of organized networks, enabling traffickers to operate with minimal risk.

Digital trade and technological challenges introduce new enforcement hurdles. The growth of online marketplaces, social media, and encrypted communication has broadened trafficking networks and increased their secrecy. Traffickers can promote, negotiate, and sell wildlife products with little chance of detection. Digital platforms, which often span multiple jurisdictions, make regulatory oversight and monitoring more difficult. Law enforcement faces challenges in tracking online transactions, identifying wrongdoers, and gathering enough evidence for prosecution, especially when platforms resist cooperation or lack legal obligations.

Corporate complicity is another significant weakness. Companies involved in supply chains, such as exporters, logistics providers, and traders, may unintentionally or knowingly aid wildlife trafficking. Poor due diligence, unclear sourcing practices, and a focus on profit instead of sustainability create vulnerabilities. For example, timber, exotic pets, and traditional medicine ingredients may enter legal trade chains without proper verification of their legality. Corporations can also influence policy through lobbying, delaying regulatory changes, or shaping enforcement priorities, further weakening governance.

Resource limitations and insufficient enforcement capacity worsen these issues. Many source and transit countries lack trained personnel, lab facilities, or the technological infrastructure needed to detect and analyze wildlife products. Patrols, monitoring, and investigations are often hampered by inadequate funding, equipment, and logistical support. As a result, traffickers face a low risk of capture, making wildlife crime highly profitable compared to enforcement costs.

Institutional fragmentation and a lack of coordination exacerbate the problem. Various

agencies, such as customs, forestry, police, and environmental departments, often work in silos with overlapping responsibilities and limited information sharing. This fragmentation delays action, creates accountability gaps, and allows traffickers to exploit procedural inefficiencies.

To address these governance weaknesses, a multi-faceted approach is necessary. Anti-corruption measures, harmonizing laws, building capacity, and enforcing corporate accountability are all vital. Technological advancements like AI-assisted monitoring, DNA tracking, and blockchain for supply chain verification can strengthen enforcement. Cross-border cooperation, regional networks, and public-private partnerships also promote better coordination. Importantly, involving community-based monitoring and ecological justice principles ensures that interventions protect both biodiversity and local livelihoods, creating sustainable enforcement and governance mechanisms.

GREEN CRIMINOLOGY PERSPECTIVE ON ACCOUNTABILITY

Green criminology offers a unique perspective on accountability in wildlife trafficking, extending the focus beyond traditional legal frameworks to include ecological, social, and structural aspects of harm. Typical criminal law mainly targets individual offenders and measurable violations. However, wildlife trafficking often involves complex networks, indirect harms, and ecological impacts that go beyond legal definitions. Green criminology addresses these gaps by highlighting systemic accountability, shared responsibility, and the recognition of non-human and ecosystem victims.

State-corporate nexus and organized networks: Wildlife trafficking is often enabled by a mix of state inaction, corporate involvement, and organized crime networks. Corrupt officials may issue permits, ignore illegal shipments, or actively take part in trafficking, while companies in supply chains may fail to conduct due diligence, allowing illegal wildlife products to enter markets. Organized crime groups manage complex logistics, financial operations, and smuggling efforts, often linking wildlife trafficking with other illegal trades like drugs, human trafficking, and arms smuggling. From a green criminology viewpoint, accountability applies to all parties that contribute to these networks, whether through direct involvement or facilitation.

Victimization of ecosystems and species: In traditional legal frameworks, victims are usually human. Green criminology challenges this view by identifying species, habitats, and

ecosystems as legitimate victims. The removal of keystone species, such as elephants or tigers, disrupts ecological balance, affects dependent species, and diminishes ecosystem services crucial for human survival. Acknowledging ecological victimization has significant implications for justice and accountability, advocating for efforts that restore ecological integrity while prosecuting individual offenders.

Multi-level accountability and supply chain analysis: Applying green criminology to wildlife crime involves examining accountability at different levels. Firstly, direct perpetrators like poachers and smugglers hold primary responsibility. Secondly, intermediaries, traders, and logistics providers that facilitate the movement of illicit goods must also be held accountable. Thirdly, state institutions and regulatory bodies that fail to enforce laws or become involved in corruption contribute to the ongoing nature of the crime. Lastly, businesses that profit from or ignore illegal sourcing share ecological and social responsibility. This multi-layered analysis underscores the need for comprehensive legal and policy frameworks that can tackle the complexities of wildlife trafficking.

Restorative and preventive justice: Green criminology advocates for not just punitive measures but also restorative and preventive approaches. Restorative justice seeks to repair harm to ecosystems, support impacted communities, and rehabilitate species populations. Preventive strategies include community-based conservation, monitoring of supply chains, and education campaigns to reduce demand for illegal wildlife products. By combining punitive, restorative, and preventive measures, green criminology promotes a justice model that addresses immediate and long-term ecological and social consequences.

Legal precedents and ecological jurisprudence: Courts worldwide are increasingly acknowledging ecological harm in their rulings, influenced by green criminology. For example, environmental courts in India have issued bans against poachers and industries harming wildlife, while some African jurisdictions have held organized networks accountable for ecological offenses. Such cases show the potential for legal frameworks to adopt ecological justice principles, aligning legal accountability with ecological and societal needs

Policy implications: Green criminology shapes policy by stressing the importance of systemic reform, ecological integrity, and intergenerational justice. Policies grounded in this perspective call for better global cooperation, anti-corruption efforts, corporate due diligence, community empowerment, and strong monitoring of trafficking networks. This ensures that accountability

reaches beyond individual offenders to include structural and organizational contributors to wildlife crime, promoting a comprehensive and sustainable response.

In conclusion, the green criminology perspective expands the idea of accountability in wildlife trafficking, covering ecological, social, and structural dimensions of harm. By identifying ecosystems and species as victims, recognizing the various actors in trafficking networks, and advocating for restorative and preventive justice, this framework offers a thorough approach to understanding and addressing one of the most urgent environmental crimes of our time.

COMMUNITY PARTICIPATION AND RESTORATIVE JUSTICE

Effectively combating wildlife trafficking goes beyond enforcement and legal frameworks. Community involvement and restorative justice are crucial for sustainable ecological governance. Local communities often live in areas most affected by poaching and wildlife exploitation, making them key players in conservation and enforcement efforts. Using community-based strategies helps tackle the dual challenge of protecting biodiversity while supporting local livelihoods, ensuring that interventions are fair and ecologically sound.

Community-based conservation programs: Numerous case studies show the success of involving communities in wildlife protection. In Namibia, community conservancies give local people legal rights to manage wildlife, benefit economically from ecotourism, and enforce anti-poaching measures. These programs have led to noticeable decreases in illegal hunting and better local incomes, showing how community empowerment aligns conservation with social development. Similarly, in Kenya, programs that involve local rangers with community members encourage collaborative monitoring, knowledge sharing, and active participation in anti-trafficking efforts.

Restorative justice approaches: In environmental contexts, restorative justice focuses on healing harm to ecosystems and affected communities instead of just punishing wrongdoers. In India, joint forest management programs that include tribal communities promote reforestation, habitat restoration, and wildlife monitoring, addressing both ecological and social effects of illegal exploitation. Initiatives in Latin America involving indigenous groups show how traditional knowledge and community monitoring can restore damaged ecosystems while preserving cultural heritage. These methods highlight that conservation success is tied to community well-being and that justice must consider both human and ecological victims.

Economic incentives and alternative livelihoods: Restorative strategies often include economic measures to decrease reliance on illegal wildlife activities. Microfinance, ecotourism, and sustainable harvesting of non-timber forest products offer communities viable alternatives and lessen poaching pressures. For example, community-managed wildlife reserves in Southern Africa pair tourism revenue sharing with local job opportunities, providing concrete benefits for conservation efforts. By aligning economic incentives with ecological goals, such programs show that restorative justice can simultaneously tackle poverty, crime, and biodiversity loss.

Education, awareness, and social mobilization: Community participation is strengthened through education and awareness initiatives that highlight the ecological and social effects of wildlife crime. Campaigns that target local populations and consumers in destination markets are essential for reducing demand. Participatory workshops, school programs, and media campaigns empower communities to advocate for conservation, recognize trafficking patterns, and engage in law enforcement efforts. Social mobilization boosts accountability, strengthens local governance, and fosters stewardship over natural resources.

Integration with policy and legal frameworks: To succeed, community-based and restorative programs need legal recognition and support. National policies that grant rights to manage resources, enforce local regulations, and benefit financially from sustainable conservation practices create favorable conditions for community participation. Collaborative governance models, including multi-stakeholder councils and community advisory boards, ensure that local voices influence decision-making and enforcement, bridging the gap between top-down legal mechanisms and grassroots conservation actions.

Challenges and considerations: While community participation and restorative justice show promise, challenges remain. Power imbalances, gender inequities, and potential conflicts with commercial interests can hinder program success. Additionally, adequate training, monitoring, and resources are necessary for sustained community engagement and achieving ecological outcomes. Tailoring programs to local ecological and cultural contexts is vital, as a one-size-fits-all approach risks sidelining communities or failing to address critical conservation needs.

In conclusion, community participation and restorative justice offer essential strategies for reducing wildlife trafficking and promoting sustainable conservation. By empowering local stakeholders, restoring ecosystems, and integrating economic and educational initiatives, these approaches complement enforcement and legal frameworks, tackling both human and

ecological aspects of wildlife crime. They illustrate a holistic model where conservation, social justice, and ecological restoration work together, creating lasting solutions for biodiversity protection and sustainable growth.

INTEGRATING ENVIRONMENTAL LAW AND CRIMINOLOGY FOR SDG 15

The United Nations Sustainable Development Goal 15 (SDG 15) focuses on protecting, restoring, and promoting the sustainable use of land ecosystems. It aims to manage forests sustainably, combat desertification, halt land degradation, and stop biodiversity loss. Wildlife trafficking directly contradicts these goals by reducing species populations, destabilizing ecosystems, and worsening habitat degradation. Combining environmental law with criminology creates a comprehensive framework for achieving SDG 15. This integration helps policymakers, law enforcement, and communities tackle both the ecological and criminal aspects of wildlife exploitation.

Environmental law lays the groundwork for protecting species, conserving habitats, and regulating wildlife trade. Treaties like CITES, national wildlife protection laws, and environmental impact regulations establish rules, responsibilities, and penalties for violations. Criminology, especially green criminology, provides tools for examining environmental crime dynamics, identifying systemic causes, mapping trafficking networks, and creating targeted responses. By combining legal and criminological viewpoints, strategies can effectively enforce compliance, address root causes, and restore ecological damage.

Wildlife trafficking isn't just a collection of isolated illegal actions; it's a systemic issue rooted in social, economic, and political structures. The merger of law and criminology emphasizes the identification of various actors involved, such as poachers, middlemen, traffickers, corporations, and corrupt officials. By understanding these connections, enforcement agencies can focus their efforts on high-priority targets, disrupt organized networks, and effectively break supply chains. Legal frameworks ensure compliance, while criminological analysis guides investigative priorities and risk assessment.

Achieving SDG 15 requires more than punishment; it needs ecological restoration and solutions centered on communities. Green criminology stresses the value of restorative justice processes, such as reforestation, habitat restoration, and programs for reintroducing species. Legal frameworks can mandate that offenders contribute to these restoration efforts, ensuring

that penalties align with ecological goals. For example, fines or penalties imposed on traffickers can support conservation projects in affected areas, delivering real ecological benefits and reinforcing accountability.

Both environmental law and criminology highlight the vital role of local communities in attaining sustainable outcomes. Laws that recognize community rights to manage forests, wildlife, and protected lands encourage involvement, while criminological insights create strategies for engaging communities in monitoring, reporting, and preventing crime. Participatory governance ensures interventions are culturally appropriate, fair, and ecologically sound. In Africa, community-based wildlife conservancies have successfully reduced poaching, increased species populations, and generated local financial benefits, showing how legal and criminological approaches can work together.

POLICY RECOMMENDATIONS – GLOBAL COORDINATION, COMMUNITY EMPOWERMENT, DEMAND REDUCTION, AND GREEN JUSTICE REFORMS

Addressing wildlife trafficking requires international cooperation, as it's a global crime. SDG 15 goals can't be achieved by individual nations acting alone. Blending environmental law and criminology aids policy alignment across borders, leading to consistent legal definitions, penalties, and enforcement measures. International treaties, regional enforcement networks, and transnational task forces benefit from criminological research on trafficking trends, routes, and market conditions. This collaboration improves global coordination, bolsters compliance, and enhances the effectiveness of conservation efforts.

Effective integration relies on strong data collection, monitoring, and adaptive management. Environmental law requires reporting, while criminological research offers methods to study patterns, pinpoint high-risk areas, and evaluate enforcement success. Together, these strategies support data-driven policymaking, flexible interventions, and swift responses to new threats. Technologies like satellite monitoring, DNA tracking, and predictive analytics further strengthen the ability to protect ecosystems and species populations.

Building interdisciplinary expertise among professionals is crucial for merging law and criminology. Training law enforcement officers, environmental regulators, and community leaders in ecological principles, investigation techniques, and legal responsibilities fosters a well-rounded understanding. Capacity building ensures all stakeholders, from local

communities to national agencies, can enforce laws, deter crime, and promote sustainable management effectively.

In summary, merging environmental law with criminology offers a strong, multi-faceted strategy for achieving SDG 15. It connects enforcement with ecological objectives, addresses the root causes of wildlife crime, involves communities, and advocates for restorative justice. This all-encompassing approach ensures that protecting biodiversity, building ecosystem resilience, and promoting sustainable development go hand in hand, laying the groundwork for long-term ecological security and social fairness.

Addressing wildlife trafficking demands comprehensive policy responses at local, national, and global levels. Lessons from green criminology, ecological justice, and effective community initiatives highlight the need for strategies that blend enforcement, governance reform, community empowerment, and demand reduction. The following recommendations outline a framework for practical and sustainable policy actions:

1. **Strengthen global coordination and enforcement:** Effective international collaboration is essential to disrupt transnational trafficking networks. Policies should improve information sharing among enforcement agencies, standardize legal frameworks, and create joint operational mechanisms. Support regional networks such as ASEAN-WEN, the Lusaka Agreement Task Force, and the South Asian Wildlife Enforcement Network. Investment in global intelligence platforms, forensic labs, and rapid response teams ensures that traffickers are identified, prosecuted, and held accountable across borders.
2. **Enhance community empowerment and participation:** Local communities are vital partners in conservation and enforcement. Policies must secure legal rights for communities to manage wildlife, gain economic benefits from sustainable practices, and take part in decision-making. Community-based monitoring, ranger programs, and conservancies offer economic incentives, boost compliance, and reduce dependence on illegal exploitation. Training, capacity building, and fair revenue-sharing structures ensure community engagement is both effective and sustainable.
3. **Reduce demand for illegal wildlife products:** Policies should address the consumer side of trafficking. Educational campaigns in destination countries, stricter trade platform regulations, and public awareness efforts can lower the demand for wildlife products. Incorporate social

marketing, behavior change programs, and collaboration with media and tech companies to monitor and limit online trade. Reducing demand lessens market incentives and strengthens the effectiveness of enforcement measures.

4. Institutionalize green justice reforms: Legal and regulatory frameworks must update to acknowledge ecological harm, non-human victims, and systemic accountability. Policies should incorporate restorative justice measures, requiring offenders to engage in habitat restoration, species rehabilitation, and community development. Corporations must face accountability through mandatory due diligence, transparent supply chain practices, and penalties for aiding illegal trade. Integrating ecological justice principles ensures that biodiversity protection aligns with social equity and responsibilities to future generations.

5. Leverage technology and data analysis: Policy frameworks should advocate for investment in technological solutions, such as satellite surveillance, geospatial mapping, DNA tracking, and AI-assisted predictive models. Data-driven monitoring enables the early detection of trafficking routes, identification of hotspots, and evaluation of enforcement effectiveness. Incorporating technology into policy enhances efficiency, accountability, and adaptability to new trends.

6. Build capacity and interdisciplinary education: Policymakers, enforcement personnel, and community representatives need thorough training in environmental law, criminology, and ecological science. Educational programs should focus on understanding systemic drivers, mapping criminal networks, and executing restorative interventions. Interdisciplinary capacity building ensures a complete approach that aligns enforcement, conservation, and social justice goals.

7. Establish sustainable financing and incentive structures: Policies should include sustainable financing mechanisms for conservation and enforcement, such as public-private partnerships, conservation trust funds, and market-based incentives for sustainable practices. Economic tools can support legal and criminological strategies, providing long-term resources to communities, enforcement agencies, and restoration efforts.

8. Implement monitoring, evaluation, and adaptive governance: Effective policies require ongoing monitoring and evaluation to assess impact and identify areas for improvement. Policies should integrate adaptive governance frameworks that respond to evolving trafficking

trends, ecological conditions, and economic contexts. Feedback mechanisms improve learning, ensure accountability, and boost resilience against future wildlife crime challenges.

In conclusion, these policy recommendations create a thorough strategy to combat wildlife trafficking while promoting ecological sustainability, community well-being, and global cooperation. By combining enforcement, community involvement, demand reduction, technological advancements, and green justice reforms, policymakers can tackle the root causes and systemic aspects of wildlife crime, supporting the goals of SDG 15 and broader objectives of biodiversity conservation and sustainable development.

CONCLUSION

Wildlife trafficking is a major threat to global biodiversity, ecosystem stability, and social equity today. As a transnational and highly profitable criminal operation, it undermines conservation, destabilizes ecosystems, and damages the livelihoods of dependent communities. Its effects are complex, covering ecological, social, economic, and ethical aspects. Addressing this challenge requires a multifaceted approach, integrating enforcement, governance, community engagement, legal frameworks, and restorative ecological justice.

Theoretical insights from green criminology and ecological justice are key to understanding wildlife trafficking dynamics. By expanding the concept of victimhood to include non-human species and ecosystems, these frameworks reveal the structural and intergenerational impacts of wildlife crime. They highlight the responsibilities of state actors, corporations, and organized groups in perpetuating environmental harm and advocate for comprehensive strategies that combine punitive, preventive, and restorative measures. These perspectives stress the limitations of conventional legal approaches that focus solely on individual offenders, underscoring the need for systemic accountability, ecosystem restoration, and community engagement.

Globally, wildlife trafficking's scope remains staggering, with thousands of species affected across over 160 countries, generating billions of dollars in illegal trade each year. Traffickers take advantage of weak governance, legal loopholes, corruption, and technological gaps. The international legal framework, which includes instruments like CITES, CBD, and UNTOC, offers a solid basis for coordination and enforcement. Yet enforcement gaps remain due to limited resources, uneven implementation, inconsistent legal definitions, and challenges from

digital trade and transnational criminal networks.

Strengthening global coordination, standardizing legislation, and boosting intelligence-sharing are vital for disrupting international trafficking networks. Using technology, such as satellite monitoring and AI-assisted analytics, improves detection and surveillance, enabling timely and targeted enforcement actions. It is equally crucial to involve local communities as active players in conservation and anti-trafficking efforts. Community-based conservancies, participatory monitoring, and economic incentives like ecotourism or sustainable harvesting—can reduce poaching, enhance livelihoods, and encourage ecological stewardship.

Restorative justice and green justice reforms complement enforcement and community strategies. Recognizing ecosystems and species as legitimate victims paves the way for measures that repair ecological harm, restore habitats, and reintroduce affected populations. Offenders and corporations can be held accountable not only with punitive actions but also by contributing to conservation projects and supporting local community initiatives. This approach aligns legal, social, and ecological needs, creating a foundation for sustainable and ethical biodiversity protection.

Integrating environmental law with criminology is crucial for achieving SDG 15 and safeguarding life on land. Legal frameworks set standards and consequences, while criminological insights reveal systemic drivers, organized networks, and socio-economic vulnerabilities. Together, they enable evidence-based policymaking, adaptive governance, and holistic interventions addressing both immediate wildlife crime issues and long-term ecological sustainability.

In summary, tackling wildlife trafficking necessitates a multidimensional and globally coordinated effort. Enforcement alone won't suffice; success relies on structural reforms, ecological restoration, community involvement, demand reduction, and corporate accountability. Green criminology and ecological justice provide a foundation for understanding wildlife crime's complexities, urging strategies that prioritize both human and ecological welfare. By coordinating legal frameworks, criminological analyses, community involvement, and restorative measures, policymakers and conservationists can nurture resilient ecosystems, secure livelihoods, and ensure biodiversity protection aligns with sustainable development.

Moving forward calls for urgent action, international collaboration, and ongoing commitment from governments, civil society, corporate actors, and local communities. Only through well-coordinated and holistic strategies can the global community effectively tackle wildlife trafficking, preserve biodiversity, and achieve SDG 15's vision, ensuring future generations inherit a rich planet teeming with species and ecosystems.

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