

A Sustainable Solution to Protect Agriculture and Promote Tourism in Sri Lanka

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ABSTRACT

Although farmers have been explaining to the government for a long time about the animals that harm their crops, the government has failed to provide a proper remedy so far. This problem is becoming increasingly serious, and farmers strongly request the current government to save their crops from the monkey menace. While the government appears to be considering the farmers' demands, they are evaluating which alternative measures would provide the most sustainable and scientific solution. Given this situation, this concept paper addresses the monkey problem in Sri Lanka, focusing on the Gampaha district. Many alternative proposals have been presented in this regard, and this concept paper aligns accordingly. The aim of this paper is to propose a win-win solution that contributes to the development of the country through the tourism industry while providing an immediate solution to the farmers' problem. The paper proposes establishing a monkey park to manage the monkey population, protect agriculture, and generate revenue through tourism and allied activities. This initiative integrates wildlife management, community engagement, and sustainable economic strategies to deliver a comprehensive solution.

Key Words: Community Engagement, Eco-Tourism, Human-Monkey Conflict, Sustainability, Wildlife Management.

INTRODUCTION

Contextual Background: The Monkey Problem in Sri Lanka

The human-monkey conflict in Sri Lanka has long-standing historical roots, as reflected in legends such as the role of monkeys in the mythical Rama-Ravana war (Wisdom Lib, n.d.). Over centuries, the nature of this interaction has evolved, yet challenges persist in contemporary times. Today, Sri Lanka is home to an estimated monkey population of 3 million (Balachandran), a number that underscores the urgency of addressing the multifaceted impact of these primates on agriculture, tourism, and community life.

Monkey Species and Their Distribution

Sri Lanka's monkey population is predominantly composed of toque macaques (*Macaca sinica*) and gray langurs (*Semnopithecus priam*), whose distribution is shaped by habitat availability and human activities. Toque macaques are prevalent in urban and suburban regions, particularly in districts such as Colombo, Gampaha, Kandy, and Matara. These adaptable primates thrive in human-dominated landscapes, frequenting parks, gardens, and temples (De Silva, 2020; Bambini & Kaur, 2017).

In contrast, gray langurs are more commonly found in rural and forested areas, with notable populations in districts like Anuradhapura and Polonnaruwa and near national parks such as Yala and Udawalawe (Seneviratne, 2012). While precise district-level population data is limited due to the absence of continuous censuses, localized ecological surveys provide critical insights into their habitat preferences and density (Wildlife Conservation Department of Sri Lanka, 2021).

Impact on Different Sectors

1. Agriculture

Monkeys, especially toque macaques, pose significant challenges to agriculture by raiding crops such as fruits and vegetables. These incursions lead to considerable financial losses for farmers, directly threatening their livelihoods. Efforts to deter monkeys often result in measures that negatively affect their populations, exacerbating human-wildlife conflict (Kumara & Turk, 2009; Fernando et al., 2015). Addressing this issue requires sustainable strategies that ensure agricultural productivity while minimizing harm to monkey populations.

2. Tourism

Monkeys play a dual role in Sri Lanka's tourism industry. On the one hand, they attract tourists to national parks like Yala and Udawalawe, bolstering ecotourism and generating income for local communities (IUCN, 2019). On the other hand, their disruptive behaviors, such as stealing food and interrupting tourist activities, can diminish the quality of visitor experiences (Gunathilaka et al., 2021). Balancing their appeal as a natural attraction with effective management of their interactions with tourists is a critical challenge for the sector.

3. Community Life

In urban areas, monkeys frequently interact with humans, creating a mix of fascination and frustration. While their presence can be entertaining, issues such as property damage and aggressive encounters, particularly when they are habituated to human food sources, often lead to conflict (Bambini & Kaur, 2017). Developing community-level awareness and proactive management strategies is essential to fostering harmonious coexistence.

Significance of Gampaha District

The Gampaha district stands out as a vital region for addressing the monkey problem due to its unique socio-economic and environmental characteristics.

1. Socio-Economic Importance

As a significant agricultural hub, Gampaha experiences substantial crop losses due to monkey raids, directly affecting farmers' livelihoods (Kumara & Turk, 2009). A pilot project in this district could identify effective strategies to mitigate these losses, while also exploring alternative income opportunities, such as wildlife tourism (Fernando et al., 2015).

2. Community Engagement

Gampaha offers an ideal platform for fostering collaboration among farmers, local governments, and conservationists. Education campaigns and awareness initiatives can equip communities with knowledge about monkey behavior and effective conflict mitigation strategies (Gunathilaka et al., 2021).

3. Environmental Sustainability

The district faces urbanization pressures that threaten both agricultural lands and wildlife habitats. A pilot project could promote a balanced approach to habitat conservation and agricultural development, ensuring the preservation of biodiversity while addressing human needs (IUCN, 2019).

4. Region-Specific Research

Gampaha provides a context for adaptive research, enabling stakeholders to assess and refine management practices, such as deterrents, habitat enrichment, and alternative livelihoods. These findings could form a replicable model for addressing similar conflicts in other districts (Bambini & Kaur, 2017).

Scope and Objectives

This study focuses on the human-monkey conflict in the Gampaha district, aiming to develop actionable strategies for mitigating the challenges posed by monkeys while promoting sustainable coexistence.

Specific Objectives:

1. **Reducing Crop Damage:** Implement measures to protect crops and secure farmers' livelihoods.
2. **Promoting Sustainable Tourism:** Leverage monkeys as a tourist attraction while mitigating disruptions to tourist activities.
3. **Fostering Community Engagement:** Enhance awareness and encourage participatory approaches to coexistence.

By addressing these objectives, the study seeks to balance human and wildlife needs, creating a framework for sustainable conflict resolution in Sri Lanka.

METHODOLOGY

This research employs a structured and multi-faceted methodology to establish a sustainable monkey park in the Gampaha district. The approach integrates ecological, social, and economic considerations, ensuring the park benefits both the local community and the environment.

1. Site Selection Criteria

The selection of the site for the monkey park was guided by specific criteria to maintain ecological integrity, foster community acceptance, and ensure operational feasibility:

- **Ecological Balance:** Sites were evaluated for their ability to support monkey populations without disrupting existing ecosystems. Areas with natural habitats conducive to both primates and native flora and fauna were prioritized.
- **Community Feedback:** Local residents' perspectives were gathered through surveys and community meetings to understand their concerns, expectations, and willingness to support the project. Addressing these insights helps build trust and ensure community buy-in.
- **Logistical Feasibility:** Practical factors such as accessibility, proximity to agricultural areas, and available infrastructure (e.g., roads, utilities, and sanitation facilities) were considered to ensure the park's success and relevance to the community.

2. Stakeholder Analysis

A detailed stakeholder analysis was conducted to identify key players and their roles in the project's success. These stakeholders include:

- **Local Farmers:** Their firsthand experiences with crop damage and monkey interactions are crucial for designing effective management strategies.
- **Community Leaders:** Acting as liaisons, they facilitate communication and collaboration between residents and project developers.
- **Wildlife Conservation Organizations:** Their expertise in primate behavior and conservation practices is essential for creating sustainable solutions.
- **Government Agencies:** They provide necessary permits, funding, and alignment with conservation policies while supporting infrastructure development.

- **Tourism Operators:** Their involvement in eco-tourism initiatives will help promote the park while ensuring wildlife welfare and visitor satisfaction.

3. Implementation Steps

The park's establishment will follow a phased approach to ensure comprehensive planning and execution:

Planning Phase:

- Conduct detailed project designs.
- Engage in community consultations to refine objectives.
- Secure approvals from relevant authorities.

Infrastructure Development:

- Build visitor facilities, nature trails, and signage with minimal environmental impact.

Stakeholder Engagement:

- Facilitate regular meetings and workshops with stakeholders to address concerns and align goals.

Revenue Model Development:

- Establish a sustainable financial framework, including entrance fees, guided tours, and educational initiatives, ensuring the park's economic viability and community benefits.

4. Data Collection and Analysis

A robust data collection and analysis plan will guide the project's evaluation and refinement:

Behavioral Observations:

- Use field observations and camera traps to study monkey behaviors, movement patterns, and interactions with crops and visitors.

Community Surveys:

- Conduct surveys before and after park establishment to measure changes in community attitudes, perceptions, and socio-economic impacts.

Economic Assessments:

- Analyze data on agricultural yields, tourism revenue, and community participation. Statistical tools will identify correlations between park activities and improvements in local livelihoods.

Summary

This methodology ensures a holistic approach to establishing the monkey park, balancing ecological preservation, community engagement, and economic sustainability. By integrating rigorous planning, stakeholder collaboration, and adaptive research, this project aims to serve as a replicable model for addressing human-wildlife conflicts in Sri Lanka.

ANALYSIS

The analysis of the monkey park project focuses on its economic viability, environmental impact, and comparative relevance to similar initiatives globally. This comprehensive evaluation underscores the project's

potential to achieve sustainability while benefiting local communities and ecosystems.

1. Economic Viability

The economic success of the monkey park is pivotal for its sustainability. Preliminary estimates indicate robust revenue-generation potential from eco-tourism and supplementary farming activities such as quail and chicken farming:

Table No 01: Estimates of revenue generation:

Sector	Daily Revenue	Monthly Revenue	Annual Revenue
Ecotourism	10000	300000	3600000
Quail Farming	180000	5400000	64800000
Poultry Farming	30000	900000	10800000
Total	220000	6600000	79200000

Source: Created by researcher considering market prices.

The expected number of tourists per day is 100 and the proposed ticket fare is 100 rupees. Also, the daily expected number of quail eggs is 10000 and it is proposed to sell one for 18 rupees. In addition to this, the daily expected number of village chicken eggs is 1000 and it is proposed to sell one for Rs.30.

Table No 02: Cost sharing:

Sector	Initial set-up costs	Daily expenses	Monthly cost	Annual cost
Infrastructure	5000000			
Quail Farming	4800000	96000	2880000	34560000
Poultry Farming	250000	9600	288000	3456000
Total		105600	3168000	38016000

Source: Created by researcher considering market prices.

A number of 12000 quail birds are going to be reared with an expectation of 10000 eggs daily. The total daily cost for each bird is estimated at 8 rupees and is 96000 rupees. Also, the number of animals raised daily is 1200 with the expectation of 1000 farm chicken eggs. As it is proposed to use the free-range system, the cost per chicken is Rs.8 and the total daily cost is Rs.9600. Thus, the total annual cost is 38,016,000 rupees.

Table No 03: Profit Margin:

Sector	Annual Revenue	Annual cost	Annual Profit
Ecotourism	3600000		3600000
Quail Farming	64800000	34560000	30240000
Poultry Farming	10800000	3456000	7344000
Total	79200000	38016000	41184000

Source: Created by researcher considering market prices.

It is clear that when the cost is deducted from the total income, a surplus of 41184000 rupees can be earned annually. It reflects a strong economic base for the park.

2. Environmental Impact

The project offers significant ecological benefits by addressing human-monkey conflict and enhancing biodiversity:

- **Containment of Monkey Populations:** By providing a dedicated habitat, the park reduces agricultural damage caused by monkey incursions, enabling local farmers to adopt more sustainable farming practices.
- **Promotion of Biodiversity:** The protected natural environment will support not only the monkeys but also other native species, contributing to a more balanced and diverse ecosystem.
- **Ecosystem Services Enhancement:** Monkeys play a vital role in seed dispersion and the natural regeneration of flora. A well-managed monkey population will contribute to the restoration of degraded ecosystems, aligning with global conservation goals (IUCN, 2019).
- **Reduction of Human-Monkey Conflict:** By mitigating crop losses, the park alleviates economic pressures on local farmers while fostering coexistence between humans and wildlife.

3. Comparison with Similar Projects

The Gampaha monkey park shares similarities with several successful wildlife management initiatives worldwide. These comparisons provide valuable insights for refining the project:

- **Community-Based Conservation in Namibia:** Namibia's conservation programs integrate community involvement with eco-tourism, resulting in increased wildlife populations and reduced poaching (Bennett, 2015). The economic model and community engagement strategies align closely with the goals of the Gampaha project.
- **Samaru Wildlife Management Project in Nigeria:** This initiative establishes wildlife reserves to protect agricultural lands, combining community education with biodiversity conservation (Ojomo et al., 2017). The Gampaha project mirrors this approach, focusing on reducing crop losses while promoting ecosystem health.
- **Singapore's Coastal Marine Conservation:** While centered on marine ecosystems, Singapore's community-driven conservation efforts emphasize eco-tourism and public engagement. The success of these strategies highlights the importance of involving local stakeholders in achieving sustainable outcomes, a principle integral to the Gampaha project.

Summary

This analysis demonstrates the monkey park's potential to be both economically viable and environmentally sustainable. By learning from similar projects and engaging local communities, the initiative promises to address human-wildlife conflicts while fostering biodiversity and offering economic benefits through eco-tourism and sustainable farming practices.

DISCUSSION

The proposed monkey park project in the Gampaha district offers a transformative approach to human-wildlife coexistence. By addressing critical challenges and leveraging its strengths, the initiative promises substantial benefits for the community, government, and environment while setting a precedent for sustainable wildlife management.

1. Benefits

The monkey park project provides both immediate and long-term advantages, fostering positive changes at multiple levels:

Immediate Benefits:

- **Economic Stability for Farmers:** The reduction in crop damage caused by monkey raids will bring immediate financial relief to farmers, enhancing their livelihoods and contributing to community stability.
- **Creation of Employment Opportunities:** Jobs generated through park operations and related farming initiatives, such as quail and chicken farming, will stimulate local economic development.
- **Boost to Eco-Tourism:** As a tourist destination, the park will attract visitors, driving revenue through entry fees and bolstering local businesses, including accommodations and dining establishments.

Long-Term Benefits:

- **Ecological Restoration:** Establishing a balanced monkey population within a protected environment will support biodiversity, promote habitat regeneration, and benefit other species.
- **Enhanced Community Resilience:** By engaging local residents in conservation efforts, the project will foster a sense of ownership and responsibility, encouraging sustainable practices and strengthening the local economy.
- **Policy Development:** The success of the initiative can inspire integrated wildlife management policies, influencing conservation strategies across Sri Lanka.

2. Challenges

Despite its potential, the project faces several challenges that require proactive solutions:

Resistance from Locals: Initial skepticism or reluctance among community members may stem from concerns about changes to traditional practices.

- **Mitigation Strategy:** Conducting awareness campaigns, fostering dialogue, and involving locals in decision-making will help build trust and acceptance.

Initial Costs: The financial demands of infrastructure development and farming setup may pose challenges.

- **Mitigation Strategy:** Securing government grants, partnering with NGOs, and pursuing public-private partnerships can offset costs and mobilize resources effectively.

Ecological Risks: Issues such as disease transmission and unforeseen ecological impacts may arise.

- **Mitigation Strategy:** Collaborating with wildlife experts and implementing robust monitoring protocols will ensure the project's ecological sustainability.

3. Policy Implications

The project has the potential to reshape wildlife management policies by demonstrating innovative and community-driven approaches:

- **Integrated Wildlife Management Policies:** The initiative can serve as a model for balancing conservation with agricultural needs, highlighting the importance of community involvement.
- **Funding and Resource Allocation:** Its success could encourage increased government support for

conservation, inspiring similar projects nationwide.

4. Sustainability and Replicability

To ensure the project's long-term success and adaptability, several key strategies must be emphasized:

- **Sustainable Practices:** Incorporating eco-friendly practices in farming and park management will protect ecosystems and support community livelihoods.
- **Knowledge Transfer:** Training programs and workshops will empower stakeholders, enabling the replication of the model in other regions.
- **Monitoring and Evaluation Framework:** Continuous assessment of ecological and socio-economic outcomes will allow the project to adapt to challenges and optimize its effectiveness over time.
- **Collaboration with Other Regions:** Building partnerships with other districts and international organizations will promote resource sharing and collective learning, broadening the project's impact.

CONCLUSION

While the monkey park project faces obstacles, its numerous benefits for the community, government, and environment far outweigh the challenges. By addressing these hurdles and leveraging strategic insights, the initiative has the potential to establish a sustainable and scalable model for wildlife management. This project not only offers a solution to human-monkey conflict but also lays the groundwork for long-term ecological and socio-economic development, making it a valuable blueprint for similar efforts worldwide.

Conclusion and Recommendations

1. In-Depth Conclusion

The proposed monkey park in the Gampaha district represents a transformative opportunity to tackle the persistent issue of human-monkey conflict while advancing community well-being, environmental conservation, and economic development. The project is poised to deliver immediate benefits, such as mitigating agricultural damage and generating employment, while fostering long-term ecological restoration and resilience within the community. By involving local communities in wildlife management and sustainable practices, the initiative not only protects livelihoods and biodiversity but also serves as a catalyst for eco-tourism development.

The broader implications of this project, including its potential to influence wildlife management policies in Sri Lanka, further underscore its importance. As a model for balancing conservation and community interests, the project holds promise for replication nationally and internationally, showcasing a practical and sustainable approach to human-wildlife coexistence.

2. Actionable Recommendations

To ensure the successful realization of the monkey park project, a structured and comprehensive roadmap is essential:

Implementation Timeline:

Phase 1 (0-6 months):

- Organize community engagement sessions to gather insights and build local support.
- Conduct site assessments, ecological studies, and initial planning.

Phase 2 (6-12 months):

- Finalize project designs and acquire necessary permits.
- Begin developing infrastructure, such as visitor facilities and farming setups.

Phase 3 (12-24 months):

- Officially launch the park, initiate farming activities, and commence eco-tourism operations.
- Roll out community training programs to ensure active involvement and skill building.

Phase 4 (24+ months):

- Continuously monitor and evaluate the project's ecological and socio-economic impacts.
- Adapt strategies based on community feedback and ecological assessments to ensure long-term success.

Funding Strategies:

- **Government Grants:** Secure financial support from wildlife conservation and agricultural development programs.
- **NGO Partnerships:** Collaborate with non-governmental organizations for additional funding and technical expertise.
- **Eco-Tourism Revenue:** Develop sustainable revenue streams through entrance fees, guided tours, and educational programs to support ongoing costs.

Potential Partnerships:

- **Local Agricultural Cooperatives:** Work with farmers to integrate sustainable agricultural practices and optimize resource sharing.
- **Wildlife Conservation Organizations:** Partner with experts to design effective management and engagement strategies.
- **Academic Institutions:** Involve universities in research, monitoring, and implementation to ensure scientific rigor.

3. Future Research

The success of the monkey park project can serve as a foundation for further research in the following areas:

- **Long-Term Impact on Monkey Populations:** Study the behavioral and ecological changes in monkey populations following the park's establishment, including their interaction with agricultural lands.
- **Community Dynamics:** Analyze shifts in community attitudes towards wildlife, economic practices, and social structures resulting from the project.
- **Tourism Development:** Evaluate the growth of eco-tourism in the region, focusing on its economic impact, visitor experiences, and potential for expansion.

Final Remarks

The monkey park project in the Gampaha district offers an innovative and practical solution to human-wildlife

conflict, with profound benefits for the environment, economy, and local communities. By implementing the outlined recommendations and supporting the initiative with continued research, stakeholders can ensure its success as a sustainable model for wildlife management. Through collaborative efforts and adaptive strategies, this project has the potential to inspire broader conservation and development goals while strengthening the bond between people and nature.

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