



**CONSERVATION OF TAPIRIDAES:
A HOLISTIC STRATEGY IN THE
COLOMBIAN AMAZON BASIN**

By: Bosque Colombiano Foundation

CONSERVATION OF TAPIRIDAES: A HOLISTIC STRATEGY IN THE COLOMBIAN AMAZON BASIN

By: BOSQUE COLOMBIANO FOUNDATION

RESUME

The Tapir Conservation Plan in the Colombian Amazon is developed in response to the urgent need to address the critical threats faced by the Mountain Tapir (*Tapirus pinchaque*) and the Lowland Tapir (*Tapirus terrestris*) in 144 km² of forests in the Amazon basin Colombia, especially in the Kamsá indigenous territory. The population of these ungulates is severely affected by poaching, climate change, and habitat destruction, with projections pointing to their extinction by 2032 if decisive action is not taken.

This plan is articulated in four strategic components:

Educational: Training and awareness raising of approximately 5,000 Kamsá indigenous families, focusing on the conservation of hoofed mammals and sustainable practices. This component seeks to change long-term perceptions and behaviors towards local fauna, aiming at the significant reduction of poaching and illegal trafficking that currently results in the capture of up to 8 tapirs per month.

Creation of a protected natural area: This 144 km² space will serve as a safe habitat for tapir species, complemented by environmental restoration initiatives such as reforestation and channeling runoff to rehabilitate and expand critical ecosystems. It is expected that this protected natural area will serve as a conservation model, replicable in other affected regions.

Sustainability: Establishment of an indigenous secretariat, operated by trained members of the indigenous community, dedicated to the conservation of biodiversity with a particular focus on the protection of tapirs. This organization will work in coordination with the Colombian Forest Foundation and the University of Amazonas, ensuring that conservation strategies are led and maintained by the local community, promoting autonomy and sustainable management of the territory.

Communication: Development and dissemination of digital media materials, scientific articles, and conferences aimed at informing and mobilizing a broader audience, estimated at 50,000 people, about the importance of tapir conservation and the challenges they face. This component seeks to generate awareness and support both locally and internationally, drawing attention to the critical situation of these mammals and the urgent need for conservation actions.

The plan integrates direct collaboration with indigenous communities, academic institutions and environmental organizations to form a strong coalition that ensures the effective implementation of conservation strategies. With a holistic and participatory approach, the Tapir Conservation Plan not only seeks to prevent the extinction of these key species, but also to promote a model of sustainable coexistence that can be a reference for the conservation of biodiversity in the Amazon and beyond.

INTRODUCTION

Colombia's Amazon region is home to rich biodiversity, including iconic species such as the mountain tapir (*Tapirus pinchaque*) and the lowland tapir (*Tapirus terrestris*), which now face a critical risk of extinction. Recent estimates indicate that tapir populations have declined by more than 30% in the last three decades due to factors such as poaching, which results in the loss of approximately 96 tapirs per year in the Colombian Amazon basin alone, climate change, which alters their natural habitats causing forced displacement and the estimated annual loss of 51 individuals due to starvation, and habitat destruction, with more than 384 hectares of Amazon forest lost each year due to unsustainable agricultural practices.

Faced with this scenario, the plan "Tapirida Conservation: A Holistic Strategy in the Colombian Amazon Basin" seeks to implement an integrated conservation model, aimed at reversing the negative trends that affect these key species. With a focus on environmental education, it is proposed to train 5,000 Kamsá indigenous families, indirectly impacting a community of approximately 20,000 individuals, on sustainable practices and the importance of ungulate conservation.

The creation of a 144Km² protected area aims to provide a safe haven for tapirs, integrating ecological restoration actions that include the reforestation of 200 hectares and the rehabilitation of runoff systems, thus improving the quality and connectivity of the habitat. This approach will be complemented by the establishment of an indigenous conservation secretariat, ensuring long-term sustainable management and protection of the area, with a staff completely formed by trained members of the indigenous community.



Finally, the plan includes a robust communications strategy aimed at raising awareness among a broader audience, with the goal of reaching at least 50,000 people through digital media, scientific articles and conferences. This component seeks not only to inform and educate about the importance of tapir conservation, but also to mobilize support both nationally and internationally.

The integration of these components underscores the need for a holistic and collaborative approach to biodiversity conservation in the Colombian Amazon, emphasizing the importance of community participation, scientific research and public awareness as fundamental pillars for the long-term success of the conservation of tapirs and their habitat.

DIAGNOSIS OF CONSERVATION STATUS OF THE POPULATIONS OF Mountain Tapir (*Tapirus pinchaque*) and Lowland Tapir (*Tapirus terrestris*) IN THE COLOMBIAN AMAZON BASIN

The Colombian Amazon basin, a critical biodiversity ecosystem, faces unprecedented challenges in the conservation of key species such as the mountain tapir (*Tapirus pinchaque*) and the lowland tapir (*Tapirus terrestris*). These species, critical to the ecological health of the Amazon forest, are being decimated by a combination of poaching, climate change and habitat destruction, endangering their long-term survival.

Poaching, driven by both the illegal wildlife market and local traditions, results in the annual loss of approximately 96 tapirs, with 8 individuals hunted monthly by the indigenous Kamsá community. This practice not only reduces tapir populations, but also alters the population dynamics and genetic structure of the species, compromising their future viability.

Climate change further aggravates this situation, altering the region's traditional weather patterns. The consequences include prolonged droughts of up to 9 months and severe flooding during the remaining 3 months of the year, forcing tapirs to migrate to mountainous areas where food is scarce. This situation results in the starvation death of at least 51 tapirs each year, highlighting an existential threat directly attributable to climate change.

Habitat destruction represents another critical threat, with the Kamsá community converting 384 hectares of Amazon forest annually into land for agriculture and livestock. This cycle of destruction not only decreases habitat availability for tapirs, but also degrades ecosystem quality, affecting biodiversity and ecosystem services.

Population models project a bleak outlook for tapirs in the Colombian Amazon basin, suggesting potential extinction by 2032 if immediate and effective measures are not taken. The urgency of implementing a holistic conservation approach is evident, requiring actions that directly address identified threats, promote habitat restoration, and foster community awareness and participation in conservation. This diagnosis underscores the critical need for targeted, science-based interventions to ensure the survival of these iconic species in one of the richest and most threatened ecosystems on the planet.

DIFFERENTIAL GENDER DIAGNOSIS ON THE EFFECTS OF THE ELIMINATION OF THE POPULATIONS OF MOUNTAIN TAPIR (*TAPIRUS PINCHAQUE*) AND LOWLAND TAPIR (*TAPIRUS TERRESTRIS*), IN WOMEN, GIRLS, MEN AND BOYS, OF THE KAMSÁ INDIGENOUS COMMUNITY



In Kamsá communities, as in many other indigenous cultures, gender roles and responsibilities are deeply rooted and reflected in the distribution of work, decision-making, and cultural and spiritual practices. Hunting and territory management, activities that directly impact tapir populations, are usually dominated by men, who traditionally assume the role of providers and protectors. On the other hand, women tend to be more involved in agriculture, gathering and household maintenance, activities equally affected by the health of the ecosystem and the presence of key species such as the tapir.



The elimination of tapir populations may have gender-differentiated impacts due to these roles. For men, the reduction of wildlife can mean reduced hunting opportunities, affecting their traditional role as providers and having implications for their status and authority within the community. Additionally, illegal tapir trafficking, in which men may be more involved, can increase the risk of conflict with the law and other communities, as well as vulnerability to organized crime networks.

For women and girls, the disappearance of tapirs and the degradation of their habitat can have a significant impact on food and nutritional security, as the loss of biodiversity affects the availability of other natural resources essential for their subsistence. Additionally, environmental degradation may increase women's workload, as they may need to travel longer distances to collect water, food and other resources, reducing the time available for education, rest or income-generating activities.

Habitat fragmentation and ecosystem alteration can also exacerbate the vulnerabilities of women and girls to gender violence, as their movements through more isolated or degraded areas increase their exposure to risks. Simultaneously, economic and environmental pressures can intensify the dynamics of gender inequality, limiting women's participation in community decision-making and the management of natural resources.

This diagnosis highlights the need to incorporate a gender perspective in conservation strategies, recognizing that gender equity is fundamental for environmental sustainability. It is crucial to design and implement conservation actions that not only protect species and ecosystems, but also promote gender equity, empower women and girls, and ensure that the benefits of conservation are shared equitably by all community members.

MATERIALS AND METHODS

To implement the Tapir Conservation Plan in the Colombian Amazon, an integrated methodology will be used that encompasses data collection, field interventions, community training and dissemination. This multidisciplinary approach ensures effective and sustainable management of the project, incorporating both scientific knowledge and traditional knowledge.

1. **Biodiversity Assessment and Ecological Monitoring:** We will use biological sampling techniques, including camera traps strategically distributed across 144 km² to monitor tapir populations and other biodiversity indicators. Data collection will be complemented by direct observations and the use of technologies such as drones for habitat mapping.
2. **Training and Awareness:** Educational workshops will be developed for 5,000 Kamsá families, using educational materials designed to promote the conservation of ungulates. These workshops will include theoretical and practical components, ensuring that participants can apply what they learn in their daily practices.
3. **Habitat Restoration:** Reforestation will be carried out by planting native species, selected to promote ecological connectivity and restoration of tapir habitat. Runoff channeling will be designed to minimize soil erosion and improve water quality, using ecological engineering techniques.

4. Community Infrastructure Development: The creation of an indigenous secretariat will involve the training of local personnel in environmental management, governance and leadership, ensuring that the community has the tools to continue conservation practices autonomously.



5. Communication and Dissemination: A communication strategy will be implemented that will include the development of digital content, the publication of scientific articles and the holding of conferences. The reach of these activities will be estimated at at least 50,000 people, using indicators such as the number of publications, web traffic and participation in events.

The methodology used in the Tapir Conservation Plan is based on an integrative and participatory approach, which seeks not only the protection of the species and their habitat, but also the empowerment of the Kamsá indigenous community and the promotion of long-term sustainable practices. . The implementation of this plan requires close collaboration between researchers, community members, environmental organizations and government entities, ensuring a positive and lasting impact on the conservation of biodiversity in the Colombian Amazon.

EDUCATIONAL STRATEGY

To design an effective educational strategy focused on the conservation of tapirs within the Kamsá indigenous community, a multifaceted approach will be adopted that integrates traditional and scientific knowledge, promoting a deep understanding of the ecological and cultural importance of these species. The strategy will be structured into several phases and key activities, aimed at raising awareness and training approximately 5,000 Kamsá families on sustainable practices and the importance of conserving tapirs and their habitat.

<p>Phase 1: Diagnosis and Mapping of Prior Knowledge Initially, a diagnosis will be carried out to identify the level of current knowledge, attitudes and practices related to tapirs and environmental conservation in the Kamsá community. Surveys and interviews will be used aimed at 200 representative families, in order to collect data that will allow the content of the training to be personalized.</p>	<p>Phase 2: Development of Educational Materials Based on the diagnostic results, educational materials will be designed that will include guides, brochures and videos in local languages and Spanish, focused on the ecology of tapirs, their role in the ecosystem, the threats they face and specific actions that communities can take. for your protection. 5,000 sets of materials will be produced, ensuring their accessibility and understanding by the community.</p>
<p>Phase 3: Workshops and Training 250 participatory workshops will be organized, with the objective of directly reaching the 5,000 Kamsá families. These workshops will focus on the transmission of knowledge about conservation, sustainable natural resource management techniques and the importance of tapirs in the Kamsá culture. Each workshop will last 2 days and will be facilitated by conservation experts and trained community leaders.</p>	<p>Phase 4: Experiential Education Programs We will implement 50 educational excursions for youth and community leaders to areas where tapirs can be observed in their natural habitat, complemented with reforestation and wildlife monitoring activities. These hands-on experiences are designed to strengthen the emotional and cultural connection to the environment and foster commitment to conservation.</p>
<p>Phase 5: Evaluation and Feedback</p>	<p>Phase 6: Sustainability and Scaling</p>

To measure the impact of the educational strategy, evaluations will be carried out before and after the training, using both questionnaires and direct observations of changes in practices and behaviors. A 30% increase in knowledge and understanding of tapir conservation and sustainable practices is expected among participants.

To ensure the long-term sustainability of the educational strategy, groups of community leaders will be formed who will continue with awareness-raising and training activities within the community. Additionally, an online platform will be developed to share resources, experiences and continue environmental education to a broader audience.

This educational strategy focuses on building local capacities, promoting biodiversity conservation and valuing traditional knowledge, essential elements to achieve a lasting impact on the protection of tapirs and their ecosystems in the Colombian Amazon.

CONSERVATION STRATEGY

To design an effective conservation strategy, specific actions will be integrated into the conservation of *Tapirus pinchaque* and *Tapirus terrestris* in the Colombian Amazon, with a focus on reducing direct threats and strengthening community resilience. The strategy focuses on four fundamental pillars: habitat protection, research and monitoring, community participation, and strategic alliances.

Habitat Protection (144 km²): We will establish a protected area that will encompass critical tapir habitat, implementing management measures that include reforestation with 50,000 native trees to restore degraded areas, installation of water channeling systems to mitigate erosion, and the creation of ecological corridors that facilitate the mobility of fauna. A 40% reduction in the annual deforestation rate is expected in the intervention area.

Research and Monitoring: We will launch a monitoring program using 100 camera traps and conducting 200 field days per year by trained experts and community members. This will allow real-time monitoring of tapir populations and evaluation of the effectiveness of the conservation measures implemented. 10,000 EUR will be allocated for research scholarships to support undergraduate and postgraduate theses on the ecology of tapirs.

Community Participation: We will develop training workshops for 5,000 Kamsá families, seeking to improve their agricultural practices towards sustainable models that reduce pressure on the tapir habitat. We will invest €20,000 in environmental education and sustainability programs, focused on sustainable hunting practices and natural resource management.

Strategic Alliances: We will form alliances with the University of Amazonas and other entities to strengthen the scientific base of the project and promote favorable public policies. In addition, the collaboration of international organizations will be sought to ensure the long-term financial sustainability of the project.

These combined actions are expected to significantly reduce major threats to tapirs, including poaching, illegal trafficking, climate change, and habitat destruction. Through active community participation and strengthening local capacities, this strategy seeks not only to conserve these key species, but also to improve the quality of life of indigenous communities and preserve their cultural heritage. This comprehensive and participatory approach is essential to achieve effective and sustainable conservation of tapirs in the Colombian Amazon.

SUSTAINABILITY STRATEGY

To design a robust and effective sustainability strategy, it is essential to address both the financial and operational aspects of the conservation project. This strategy must guarantee the continuity of conservation actions in the long term, beyond the period financed by the initial grant. The sustainability of the project will be based on three pillars: financial sustainability, community sustainability and environmental sustainability.



Financial Sustainability:

- Establish a conservation fund: Create a fund for tapir conservation with an initial endowment of €100,000, seeking contributions from various sources, including private donations, government support and carbon offset financing.
- Sustainable income generation: Develop ecotourism initiatives that involve the local community, projecting income of 30,000 EUR annually, intended to finance conservation and community development activities.

Community Sustainability:

- Community training and empowerment: Train 200 community leaders and technicians in environmental management and conservation practices, ensuring the transmission of knowledge and skills within the community.
- Creation of green jobs: Generate at least 50 direct jobs in activities related to conservation and ecotourism, promoting local economic development aligned with environmental sustainability.

Environmental sustainability:

- Monitoring and adaptive management: Implement a system for monitoring biodiversity and the impacts of human activities in the conservation area, with an initial investment of €20,000 in equipment and training.
- Continued ecological restoration: Plan annual reforestation of 10 km² with native species, increasing forest cover and improving habitat connectivity for tapirs and other species.

The integration of these pillars will ensure not only the effective conservation of tapirs and their habitat, but also the strengthening of the local community and the development of capacities for the sustainable management of natural resources. This sustainability strategy seeks to create a replicable and scalable conservation model that can be adapted and applied in other regions with similar challenges.

COMMUNICATION STRATEGY

To design an effective communication strategy, you will focus on three main objectives: raising awareness about the importance of tapir conservation, mobilizing community and international support, and promoting the exchange of knowledge and good practices. This strategy will be articulated through various communication channels and tools, aimed at reaching and engaging a wide audience.

Digital Channels:

- Development of a dedicated website and social media platforms, aiming to reach at least 100,000 visitors and followers in the first year, providing up-to-date information on the project, progress, and success stories.
- Launch of an awareness campaign on social networks with specific hashtags to generate global trends, aiming to achieve an interaction of 500,000 impressions in the first six months.

Printed and Multimedia Material:



- Production and distribution of 10,000 brochures and 500 posters in schools, community centers, and high-traffic areas, illustrating the importance of tapirs and how the community can contribute to their conservation.
- Creation of a series of short documentaries, with at least 5 episodes, highlighting conservation efforts and the personal stories of community members involved in the project, distributed through online video platforms.

Events and Community Participation:

- Organization of outreach events and educational workshops that directly involve 2,000 participants annually, encouraging dialogue and active commitment to tapir conservation.
- Participation in international conservation conferences and forums, presenting the project to experts and potential donors, with the aim of establishing at least 10 new strategic alliances in the first year.

Scientific and Technical Publications:

Writing and publishing at least 5 articles in recognized scientific and technical journals, sharing findings and good practices derived from the project, aimed at the scientific community and policy makers.

Monitoring and Impact Evaluation:

- Implementation of digital analytics tools to monitor the reach and impact of online campaigns, adjusting strategies as necessary to maximize effectiveness.
- Periodic evaluations of the impact of printed materials and events through surveys and direct feedback from participants, always seeking to improve and adapt messages to increase participation and support.

This comprehensive communications strategy seeks not only to inform and educate, but also to inspire action and long-term commitment to the conservation of tapirs and their habitat, supporting the overall objectives of the conservation project and ensuring sustainable impact.

PLAN RESULTS

To formulate the expected results of the conservation plan, it is planned to achieve significant impacts in the



conservation of tapirs and the improvement of the socio-environmental conditions of the Kamsá indigenous community. These results are articulated around the objectives of conservation, education, sustainability and communication:

- **Tapir Conservation:** Stabilization of the populations of *Tapirus pinchaque* and *Tapirus terrestris* in the project area, with a goal of 50% reduction in mortality due to poaching and habitat loss in the first 5 years.

- **Habitat Restoration:** Reforestation and ecological restoration of 144 km² of critical habitat, including the planting of 50,000 native trees and improvement of biological corridors, increasing habitat connectivity by 30%.
- **Community Training:** Reach 5,000 Kamsá indigenous families with education and training programs in sustainable conservation and natural resource management practices, increasing knowledge and community commitment by 80%.
- **Financial and Community Sustainability:** Establishment of a conservation fund with 100,000 EUR for the continuity of the project and generation of 50 green jobs for the community, contributing to the local economy and reducing dependence on unsustainable practices.
- **Visibility and Global Awareness:** Through a comprehensive communication strategy, it is expected to increase global awareness of tapir conservation, reaching more than 100,000 people on digital platforms and generating 500,000 impressions on social networks in the first year.

These results seek not only to protect and conserve tapir species and their habitat, but also to foster a more sustainable and respectful relationship between the Kamsá indigenous community and their natural environment, ensuring long-term benefits for both biodiversity and human well-being.



ANALYSIS OF RESULTS

This analysis focuses on tapir conservation impacts, community participation, financial and environmental sustainability, and communication effectiveness.

- The conservation strategy aims to stabilize the populations of *Tapirus pinchaque* and *Tapirus terrestris*, with an expected 50% reduction in mortality from poaching and habitat loss. This significant result suggests a positive change towards the recovery of endangered species, which would be a clear indication of the success of the habitat protection and management measures implemented, including the reforestation of 50,000 trees and the improvement of biological corridors.
- Community participation is vital, with 5,000 Kamsá families reached through education and training programs. This broad scope indicates a significant effort to integrate the community into conservation, promoting sustainable practices and improving knowledge and commitment to tapir protection. The effectiveness of this strategy would be measured in behavioral change towards more sustainable practices and a reduction in poaching.
- From the point of view of financial sustainability, the creation of a conservation fund with 100,000 EUR and the development of income-generating ecotourism initiatives reflect strategic planning to secure long-term resources. The generation of 50 green jobs strengthens the local economy and links the economic well-being of the community with conservation.
- The communication strategy, with the aim of reaching more than 100,000 people on digital platforms and generating 500,000 impressions on social networks, plays a crucial role in increasing the visibility of the project and mobilizing both local and international support. The effectiveness of these efforts would be reflected in the level of online participation and the interest and support generated towards the project.

The integration of these elements—effective conservation, active community participation, financial sustainability, and effective communication—indicates a holistic approach toward tapir conservation. However, the long-term success of the plan will depend on the ability to adapt to unforeseen challenges, continuity in funding and the sustained commitment of all stakeholders. Continuous evaluation and adjustment of strategies will be essential to achieve and exceed projected results.

CONCLUSIONS

The conclusions of this conservation plan for the populations of mountain tapir (*Tapirus pinchaque*) and lowland tapir (*Tapirus terrestris*) in the Kamsá indigenous community are of vital importance in the fight for the preservation of these emblematic species and their habitat in the Colombian Amazon basin. Through a holistic approach that addresses multiple threats, including poaching, climate change and habitat destruction, this plan seeks to not only protect tapirs, but also promote environmental sustainability and the well-being of the Kamsá community.



One of the key aspects of the plan is its inclusive approach that recognizes and addresses gender differences within the community. Women, men, girls and boys experience the impacts of the elimination of tapir populations and the degradation of their habitat differently. For example, women may have specific roles in collecting natural resources, such as medicinal plants, which depend on the health of the ecosystem and the presence of species such as tapirs. Men, on the other hand, may be more involved in hunting and livestock management activities, which can have a direct impact on wildlife conservation.

Furthermore, girls and boys in the Kamsá community are fundamental for the intergenerational transmission of knowledge and conservation practices. Engaging young people in educational programs and awareness-raising activities can have a significant impact on perception and attitude towards biodiversity conservation.

While this plan represents an important step towards the conservation of tapirs and their habitat, it is also recognized that there is still much work to be done. Effective implementation of the plan will require adequate resources, cross-sector collaboration and continued commitment at both the local, national and international levels. Additionally, it is crucial to regularly monitor and evaluate the progress of the plan to adapt to changes in the environment and improve its effectiveness over time.

In short, the success of this conservation plan depends on the collaboration and commitment of all members of the Kamsá community, as well as external partners and interested parties. By protecting tapirs and their habitat, we not only preserve the rich biodiversity of the Colombian Amazon basin, but also promote human well-being and ensure a sustainable future for generations to come.

BIBLIOGRAPHY

- Bernal, M. (2021). Conservation of species in the Colombian Amazon basin: Strategies and challenges. *Journal of Environmental Conservation*, 10(2), 45-58.
- González, L. R. (2019). Impact of climate change on Amazonian biodiversity: Case study in the Kamsá indigenous community. *Journal of Environmental Studies*, 7(3), 112-127.
- Martínez, J. A. (2020). Role of indigenous women in the conservation of natural resources: Perspectives from the Kamsá community. *Gender Approaches in Conservation*, 5(1), 30-42.
- Ríos, C. D. (2018). Poaching and illegal wildlife trafficking in the Colombian Amazon: Impact on the conservation of emblematic species. *Journal of Biology and Conservation*, 15(4), 75-89.
- National university of Colombia. (2022). Research report on biodiversity and ecosystems in the Colombian Amazon basin. Bogotá, Colombia: Author.