

Land & Biodiversity Conservation Through Sustainable Enterprise Advancement in Baja California Sur, Mexico

Sadie Armstrong, Julia Field, Samson Grunwald, Shivank Jhanji, & Tatianna Suriel

Faculty Advisor: Dr. Naomi Tague

Client: Unión de Conservación Agua de la Sierra (UCAS)

April 2025

Environmental Problem & Project Scope

Cattle ranching in the Sierra de la Laguna region of Baja California Sur, Mexico, faces economic, environmental, and cultural challenges that threaten its long-term viability. The region contains the only tropical ecosystem on the Baja California Peninsula, including the driest tropical deciduous forest in the country and the only pine-oak forest in the state. Environmental degradation poses a serious threat to this unique, biodiverse landscape and to the sustainability of traditional ranching. Without intervention, continued land degradation could further reduce the land's capacity to support cattle grazing and strain already limited water resources.

Balancing sustainable land use with conservation has become a critical priority, especially as cattle densities often exceed sustainable thresholds. Culturally, cattle ranching is deeply rooted in the identity of local families, many of whom have been raising cattle for generations. However, shifting economic realities and environmental pressures are prompting younger generations to explore alternative livelihoods. Finding ways to balance tradition with new economic opportunities is essential to ensure the ranching way of life can adapt and endure.

This project is focused on supporting UCAS (Unión de Conservación Agua de la Sierra), a newly formed coalition of five cattle ranches in the Northeastern Sierra de la Laguna region, in identifying and implementing sustainable alternatives to traditional cattle ranching. The goal is to assist the group in transitioning away from land-intensive cattle ranching practices toward more environmentally sustainable and economically viable alternatives. Following in-depth discussions with UCAS ranchers, local stakeholders, and regional experts, as well as analyzing climate and economic trends in the region, our team identified two primary objectives for the project.



Project Objectives

- I. Evaluate the costs and risks of current practices and alternatives to cattle ranching.
- II. Develop a marketing strategy to build a donor base that will provide financial support for UCAS's transition to sustainable land management and long-term conservation efforts.

Key Findings

Ranchers in the UCAS region are facing mounting economic and environmental pressures that call for a strategic shift in how land and livestock are managed. With herd sizes significantly over sustainable levels, current ranching practices are no longer viable. Additionally, as climate change drives costs higher, more frequent droughts and rising feed prices erode profitability. Our economic analysis found that small-scale tourism—such as guided hikes, homestays, and ranch experiences—could match or exceed current cattle income over time with lower environmental impacts. A phased transition model would allow ranchers to gradually reduce herd size while

Key Findings (Continued)

building tourism capacity aligned with local cultural practices and regional tourism trends. With local support for these hybrid models, ranchers have expressed interest in reducing cattle numbers while developing small-scale tourism, preserving traditions while adapting to new markets.

To support UCAS's shift to sustainable land use and ecotourism, initial capital investments and strategic partnerships are essential. To help attract donors and partners, we developed a marketing strategy that defines UCAS's brand identity and outreach approach. Analysis of content from local, regional, and international organizations found that posts with strong visual storytelling, audience-aligned messaging, and campaign-driven narratives consistently achieved higher engagement rates, with Instagram and LinkedIn being most effective for engaging public audiences and cultivating potential donor relationships. High-performing content leveraged compelling imagery, strategic timing, and consistent themes tied to audience interests—particularly around conservation, sustainable development, and community impact. These insights will guide UCAS's outreach as it builds a more resilient, diversified, and sustainable future for ranchers and their communities.

Recommendations

- I. Implement partial fencing to exclude cattle grazing, protecting key areas and reducing erosion.**
- II. Secure initial funding to develop basic ecotourism infrastructure, scale up proposed ecotourism ventures, and market tours to target audience.**
- III. Leverage the marketing strategy to attract donors and promote UCAS as a leader in community-based conservation in Baja California Sur.**
- IV. Focus website and media development on Search Engine Optimization, donor-based outreach, and impact storytelling to increase visibility and support.**



Click [here](#) to access the full report.

Project Impact

Our findings support a gradual, community-informed transition from cattle ranching to ecotourism as a viable strategy. By aligning conservation goals with ranchers' cultural values and economic realities, this transition can strengthen watershed health, protect endemic species, and enhance local climate resilience. Our recommendations offer a scalable model for other ranching communities in Baja California Sur and similar arid regions facing environmental and economic pressures. With targeted investment and outreach, UCAS ranchers have the potential to shift from land users to land stewards, ensuring a sustainable future for the Sierra de la Laguna and its people. To date, our project has helped UCAS raise a total of \$52,500 through grants, individual donations, and matched contributions, enabling them to hire a part-time interim Project Manager to lead early implementation efforts. Overall, we hope these strategies will continue to emphasize the critical role of sustainable practices in conserving the Sierra de la Laguna watersheds while creating economic opportunities for UCAS members, demonstrating the potential for long-term conservation and economic resilience.