

From Clandestine to Certified: Shaping a Sustainable and Equitable Future for Bacanora Production in Sonora

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Executive Summary: The international popularity of traditional agave spirits, like bacanora, is growing. However, the Sonoran Council's inaction in ensuring equity among producers and sustainable agriculture practices raises concerns about the product's future. While bacanora production has transitioned from being outlawed in Mexico to being protected under a Denomination of Origin (DO), social and environmental issues persist due to the Council's lack of proactive measures. Ensuring sustainable bacanora production is crucial for cultural and economic longevity within the industry. Herein, we recommend that the Sonoran Council implement a funded initiative to reduce small-scale producers' barriers: difficulties in qualifying for certification, overharvesting, and financial strife among small-scale producers. Additionally, policies should be in place to formally expand conservation efforts that support sustainable agricultural techniques. These recommendations seek to ensure the longevity of the bacanora industry and support the traditional knowledge that has persisted throughout history.

I. History of Bacanora & the Sonoran Council

Agave plants are critical to the Sonoran Desert ecosystem and have been central to local traditions and history in Sonora, Mexico for centuries. Agave is highly drought-resistant and common in a range of climates. Its use can be traced from the ancestral people of 2600 B.C. to modern Indigenous groups (Davis and Ortiz-Cano 2023). Agave has not only been linked to religious ceremonies, but its products also created tools and clothing used often for hunting (Davis and Ortiz-Cano 2023). Bacanora, a regional mezcal derived from agave, is exclusive to the state of Sonora in Mexico and protected by a Denomination of Origin (Dominguez-Arista 2020). This DO distinguishes a product as distinctive to a particular geographical area, highlighting both

natural and human processes that establish its unique value (Hernández Ibarra 2015).

While agave spirits have been a staple in Sonora since the 1600s (Salazar Solano 2007), bacanora production was banned from 1925 to 1992. This prohibition drove the industry underground, leading to unregulated production (Salazar Solano 2007; Dominguez-Arista 2020). Banning bacanora resulted in the current state of overharvesting, environmental degradation, and social inequity. A lack of modern policy frameworks has further exacerbated these environmental and social issues. Since 1992, the Sonoran Council has worked to implement regulations to protect bacanora production standards. These regulations maintain production, distribution, marketing, and consumption integrity

standards, preventing imitation elsewhere (Dominguez-Arista 2020). Despite these efforts, bacanora production remains primarily unregulated as an industry, leading to informal development at community and regional levels (Salazar Solano and Mungaray Lagarda 2008). Challenges from this lack of oversight have emerged, including social inequities due to resource constraints for small-scale producers, unfair competition from large producers as well as natural resource over-exploitation, driven by a sudden shift to a burgeoning commercial bacanora market (Núñez Noriega and Salazar Solano 2009; Salazar Solano et al. 2014).

Existing policies have social and environmental gaps that could jeopardize the producers and future of bacanora. These gaps include inaccessibility within the Sonoran Council for small-scale producers and exploitative agricultural practices. For example, small-scale producers seeking bacanora production certification face substantial barriers. These producers are disadvantaged because of their geographic isolation, lower socioeconomic status, and prioritization of cultural techniques outside the certification scope even though some Grassroots Movements have emerged to support these producers. However, the standards required for bacanora DO certification remain challenging for many compared to larger agave enterprises (Salinas-García 2023).

In collaboration with the Borderlands Restoration Network, the Salazar Center for North American Conservation at Colorado State University has developed a certification promoting sustainable practices among producers (Salazar Center 2020). This effort addresses threats to native pollinators, such as regional disconnect, land clearing, and monocultures (Salazar Center 2020; Janzen 2022). While it is too early to determine the effectiveness of these measures in curbing unsustainable practices and restoring the ecosystem, this approach notably seeks external stakeholder solutions rather than focusing on the core regulatory functions of the Sonoran Council.

Critiques by the bacanora community are slowly increasing as well. Several producers recognize the need to replenish agave populations and revise traditional harvesting methods (Blust 2021). In 2017, the Sonoran Council intervened, requesting

mining groups plant agave to offset environmental damage (Blust 2018). While significant progress is still needed to bridge the social gaps for resource-poor producers, the community and experts increasingly demand that social sustainability be prioritized, advocating for more substantial support for equity and the overall social well-being of producers by the Sonoran Council (Solano et al. 2007). Herein, we propose policy recommendations that aim to protect environmental sustainability and local producers while promoting economic and community development in Sonora now and in the future.

II. Social policy recommendations

Two significant gaps persist in the bacanora industry: 1) certification standards are inaccessible to resource-poor producers, and 2) there is a lack of financial and systemic support for small-scale producers to maintain their traditional cultural practices (Thelmadatter 2023). The Sonoran Council should implement a policy to reduce certification barriers and provide the necessary materials for expanding the industry beyond regional distribution. These barriers can be addressed by subsidizing essential materials for international market compliance and establishing shared production facilities.

i. Option 1: Sonoran Council support to disadvantaged producers

Large-scale producers dominate the agave industry, while small-scale producers often 'go unnoticed because they must adjust to normative, administrative, and bureaucratic standards designed for large-scale industries' (Salinas-García et al. 2023). Bacanora's clandestine history has left the industry underdeveloped, and the competition from large-scale producers has stifled progress (Dominguez-Arista 2020). Until 2015, the Sonoran Council had done little to support producers who maintain traditional production methods and to reduce barriers to access to resources required to ensure regulatory standards (Hernández Ibarra 2015). Offering support through the certification process could increase accessibility for resource-poor producers. This could include providing packaging materials required to meet Sonoran Council standards or offering them at a reduced rate. Such changes would pave the way for

more small-scale producers to gain certification, helping them break into larger markets.

ii. Option 2: Accessibility in production

Another significant social gap is the accessibility of supplies and equipment essential to traditional bacanora production and required for meeting standards. Small-batch producers are at a disadvantage because acquiring machinery for increased productivity and to meet standardization regulations often requires taking out loans or raising bottle prices beyond what consumers are willing to pay (Bruce 2022; Salinas-García et al. 2023). This creates a barrier to the certification process and limits future profits. Establishing communal appliances should happen because “small-scale farmers are the basis of the industry” and the Sonoran Council must uphold the traditions central to bacanora’s DO status (Salinas-García et al. 2023). This policy could dramatically reduce social barriers for resource-poor producers and support the traditions of bacanora production within its municipalities while increasing the industry and producers’ revenue.

Challenges to implementation

Several key resources are necessary to implement this policy. Financial sponsorship from the Ministry of Economy, which oversees the Sonoran Council, is critical to fund the promotion of the initiative and provide needed subsidies. Additionally, the Sonoran Council must hire personnel to identify optimal locations for communal appliances, ensuring fair distribution and an adequate budget for future implementation. A well-funded initiative would help bridge social gaps within the bacanora industry by making subsidized materials and shared commercial appliances available to marginalized and small-scale producers.

However, several barriers could hinder the successful execution of this policy. A significant challenge is the skepticism of bacanora producers toward the Sonoran Council (Núñez Noriega and Salazar Solano 2009). Small-scale and traditional producers, due to mistrust in the government, often avoid regulations and continue selling their products under the assumption that their production is not regulated (Núñez Noriega and Salazar Solano 2009). The Council’s historical failure to support traditional production has fostered this mistrust, rooted in the

secrecy required during the production ban. Financial challenges also exist, as providing subsidies for packaging materials and shared appliances to all small-batch producers across 35 municipalities may be costly. The Ministry of Economy may not prioritize this issue, so the Sonoran Council must advocate for this policy to secure the necessary support.

The equitable placement of community equipment for scaling production is essential to avoid excessive competition and potential conflicts among producers. Thorough research is required to determine the best locations for these resources, ensuring fair access and reducing the risk of tension. Financial aid from the Ministry of Economy, which supervises the Sonoran Council, is crucial for generating the funds needed to promote the initiative and provide the necessary subsidies. Additionally, the Sonoran Council must employ knowledgeable personnel to identify optimal sites for communal appliances. Ensuring equitable distribution of these resources will help maintain balance within the industry and prevent conflicts among small-batch producers. A well-funded policy with subsidized materials and shared appliances is expected to help close the social gaps in the bacanora industry.

I. Environmental policy recommendations

The following policy recommendation seeks to reduce the environmental gaps in the bacanora industry. Due to its informal history and the economic challenges faced by traditional producers, there is significant pressure to make a living, often leading to overharvesting of agave and unsustainable practices (Salazar Solano 2007). To counter this, the Sonoran Council should support and expand efforts by non-profit organizations like the Borderlands Restoration Network and Colectivo Sonora Silvestre to promote sustainable agricultural techniques (Janzen 2022). Additionally, the Sonoran Council must revise its producer certification policy to ensure these sustainable practices are adopted.

i. Option 1: Mobilizing current conservation efforts

The most pressing threats to the longevity of the bacanora industry in Sonora include erosion, the gradual loss of agave genetic diversity, overharvesting, and a lack of data (Salazar Center 2020). Compounding these issues, rising

temperatures and droughts due to climate change jeopardize the future of bacanora by negatively affecting agave and the broader ecosystem (Ortiz Cano et al. 2023; Davis and Ortiz-Cano 2023). Producers have called on the Sonoran Council for support in agave-growing projects but have seen little response (Blust 2018). Non-profit organizations in the region are actively working to promote collaboration, knowledge exchange, and education among producers, scientists, and other stakeholders on traditional and more sustainable practices, like the 2024 N-Gen Agave Summit with the Agave Heritage Festival (Next Generation of Sonoran Desert Researchers 2024).

Adopting environmental conservation policies that build on existing efforts could reduce barriers to entry, enhance community acceptance, and improve agave harvesting regulations from the grassroots level. This could be encouraged by adapting the certification to require sustainable practices to improve environmental conditions and incentivize producers to adopt more sustainable methods. Beyond supporting current initiatives, the Sonoran Council must also promote conservation research to better understand the future implications of agave degradation. Educational programming and resources for resource-poor producers should complement these efforts. For example, conservation research on how plants use CAM (crassulacean acid metabolism), a process known through traditional agricultural practices, suggests that many agave species could thrive as alternatives to crops struggling with drought and rising temperatures due to climate change (Davis and Ortiz-Cano 2023). Another study highlights the shortage of mature agave plants and the challenges related to their reproduction (Núñez Noriega 2004). Policy changes by the Sonoran Council and a commitment to promoting conservation research would benefit the industry by reducing agave overexploitation and meeting the growing demand for a more sustainable production model (Blust 2018).

ii. Option 2: Necessary expansion of data on agave

To ensure the future sustainability of bacanora agriculture, the Sonoran Council must engage experts to conduct research and establish best practices for agave production and DO certification. Once these practices are developed, the Council should allocate personnel to educate producers and

provide necessary resources. This initiative will require financial support from the Ministry of Economy and active collaboration with producers throughout the research and program development phases. Ultimately, rediscovering traditional ecological knowledge can help shape sustainable agriculture strategies in the face of climate change and over-exploitation risks (Davis et al. 2023).

Challenges to policy implementation

While the environmental challenges within the bacanora industry are growing in importance to producers in Sonora, there are potential barriers to the success of mobilizing non-profit efforts and expanding data by the Sonoran Council (Lowden 2022). Securing financial assistance and necessary resources to implement these policy changes may prove challenging. Since the Ministry of Economy oversees the Sonoran Council and historically has not prioritized bacanora, this may limit the Council's autonomy and access to targeted funding. In 2021, the current governor of Sonora, Alfonso Durazo, announced his intention to make bacanora core to the state's economy (Martínez 2021). Recently, the Ministry of Economy has not prioritized the representation of marginalized communities and small-scale producers. This lack of prioritization reduces the Sonoran Council's ability to self-govern the production of bacanora and support its producers (Dominguez's-Arista 2020). Advancing these policy recommendations remains constrained by hierarchical barriers, slowing progress without adequately involving bacanora producers in research, program development, and decision-making. This hierarchical structure risks reinforcing exclusion rather than fostering a collaborative approach. Given the clandestine history of bacanora and the ongoing challenges for small-scale producers, the Ministry of Economy and the Sonoran Council must work together. Their collaboration should prioritize integrating traditional knowledge with scientific advancements to ensure equitable policies and promote long-term sustainability.

IV. Conclusion

Bacanora's traditional and cultural significance defines the spirit, yet the industry is burdened by a complex clandestine history and limited governmental support, particularly from the Sonoran Council (Domínguez-Arista 2020). Despite

its DO designation, the criteria outlined in the Official Mexican Standard of Bacanora do little to ensure equity for resource-poor producers or to foster a sustainable future in an expanding global market (Salazar Solano 2007). Additionally, unregulated practices and a changing climate threaten the industry's foundation. To address these gaps, social and environmental policy recommendations must be implemented. Given the unique barriers, necessary actions, jurisdictional differences, and involvement of various stakeholders, implementing separate policies may

help reduce barriers to entry. Funding support is needed to address systemic challenges faced by small-scale

producers, such as reducing material costs and providing access to conservation and education initiatives that promote more sustainable practices. As bacanora continues to expand in international markets, the Sonoran Council must take responsibility for ensuring a more equitable and sustainable path for its economic growth and long-term industrial viability.

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