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Tequila boom drove agave planting into protected forests despite Mexico’s deforestation safeguards

An investigation found blue agave acreage rose 218% since 2017 even after the industry adopted a deforestation-free certification

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When Manuel García Castro set aside part of his land in the Tequila highlands of Jalisco for blue agave in 2019, the crop looked like a way to earn far more than cattle or corn. A friend financed the venture, and García put in the field work. They planted 15,000 shoots across about three hectares and nearby grazing land. Within a few years, the market that had drawn them in turned against them. By 2023, the price paid for agave had fallen by as much as 92% from the levels seen between 2017 and 2019, and the two men abandoned the fields.

His case reflects a wider cycle in Mexico's tequila belt. An investigation by Mongabay Latam, backed by official figures, satellite analysis and academic studies, found that the tequila boom drove a sharp expansion of blue agave planting into forested and ecologically sensitive areas in Jalisco and other tequila-producing regions, even after authorities and the industry introduced a certification meant to prevent deforestation.

The scale of the expansion is large. Mexico's Agriculture Ministry, known as Sader, reports that the area planted with agave for tequila rose 218% between 2017 and 2025, increasing from 86,722 hectares to 276,043 hectares. Over a similar period, tequila production surged from 273.3 million liters in 2016 to 583.5 million liters in 2025, according to the Tequila Regulatory Council, or CRT. Production peaked at 651.4 million liters in 2022. Exports also climbed, from 286.7 million liters in 2020 to 418.9 million liters in 2022, while Sader says shipments increased another 5.2% between 2023 and 2025, with the United States as the main market.

The growth helped make tequila one of Mexico's strongest global drinks categories. It also attracted new brands, including celebrity-backed labels aimed mainly at U.S. consumers. But the same demand for agave, researchers say, encouraged farmers and investors to replace food crops and pasture with monoculture fields, and in some cases to move into areas that had been forest, scrubland or protected buffers.

In Jalisco, the country's main tequila-producing state, geospatial specialist Maximiano Bautista Andalón of ITESO began tracking agave fields through satellite images in 2019, when prices were at their height. He counted roughly 100,000 hectares planted with agave in the state that year. Six years later, he found that the area had reached about 200,000 hectares. His analysis identified newer plantations in places where natural

vegetation had been removed, where machinery had cleared land, or where fires had preceded planting. He said some fires may have been natural, but he did not rule out the possibility that others were set to help change land use.

A 2023 report by the Governors' Climate and Forests Task Force, a coalition of subnational governments that includes Mexican states, also linked the expansion of agave for tequila and mezcal to forest loss. In Jalisco, the report said, annual forest loss averaged about 23,368 hectares between 2019 and 2021, a period that matched the strongest push in blue agave planting. The report described the rise in demand and prices for these spirits, especially tequila, as a trigger for cyclical expansion of agave into forest ecosystems.

From highways in the Valles, Sur and Ciénega regions of Jalisco, agave fields now stretch up hillsides and ridges. Around the town of Tequila, whose agave landscape has UNESCO recognition, the crop has spread far beyond the traditional core. Bautista said some of the most recent planting has appeared near important water bodies and in areas that once served as a buffer between forests and farmland.

One example is in Cerro Viejo, in the municipality of Tlajomulco, about 28 miles from metropolitan Guadalajara. Satellite imagery reviewed by Bautista showed land that was subtropical scrub about six years earlier, then became induced grassland, later burned, and is now planted with agave. The area lies in the buffer zone of a state protected area between Cajititlán Lake and Lake Chapala, Mexico's largest lake. The mountain holds pine and oak forests and native flora with protected status.

The expansion has also changed the landscape in southern Jalisco. Oscar Raúl Mancilla of the University of Guadalajara said researchers studying land-use change in the Autlán region found that blue agave cultivation increased 60% there between 2015 and 2026. He co-authored a 2026 paper that measured agave-linked deforestation at 39.7% of the territory studied and found mild to moderate soil erosion, especially on farmer-managed plots.

Mancilla said the way agave is planted often makes the damage worse. Many producers, he said, lay out furrows in the same direction that rainwater runs down a slope, which speeds erosion. He estimated that losing one centimeter of topsoil across

one hectare amounts to about 100 tons of soil. On some agave parcels, he said, erosion exceeds 30 centimeters in a single rainy cycle.

The crop’s impact on water is also a concern. According to the same study, agave plots in the area absorb only about 10% to 20% of rainfall into the aquifer, while 80% to 90% runs off down slopes, when healthy land would generally do the reverse. Researchers say that runoff can carry soil, organic matter and agrochemicals into streams, reservoirs and lakes. Both Mancilla and Bautista pointed to the use of herbicides and pesticides, including glyphosate, as another risk for nearby water sources such as Lake Chapala and smaller reservoirs that serve local communities.

In 2021, the CRT and the Jalisco government launched the Agave Responsable Ambiental certification, known as ARA, to support deforestation-free tequila supply chains and meet sustainability standards. Eduardo Ibarra Arellano, who leads sustainability projects at the CRT, told Mongabay Latam that the system provides factories and growers with a map that marks more than 2.67 million hectares deemed available for planting across Jalisco and parts of Guanajuato and Michoacán. Growers are supposed to check whether their fields fall inside those boundaries and register with the CRT under the Mexican tequila standard, NOM-006-SCFI-2012. If a parcel was forest or protected land before 2016, he said, authorization should not be granted.

Even so, the investigation found evidence that the system has not stopped agave from expanding into areas it was meant to avoid. Ibarra said it is widely known among producers that intermediaries, or coyotes, can be used to sell agave illegally. In November 2025, Mexico’s federal environmental enforcement agency, Profepa, shut down an illegal property in Valle de Guadalupe, Jalisco, after a land-use change for agave cultivation affected 202 hectares of oak forest.

The issue also reaches protected land. In the federally protected La Primavera forest near Guadalajara, satellite images in the ARA mapping system show at least nine parcels marked as eligible for crops with what appear to be rows of agave. Gabriel Vázquez, a La Primavera official, told Mongabay Latam that those parcels had been cultivated before the forest received protected status and were originally milpa fields growing corn, beans and squash. He said owners later switched to agave because of its

higher returns, even though the soils are fragile and poorly suited to the crop.

For tequila producers and international drinks buyers, the findings point to a broader business problem beyond the environmental damage. If agave from unauthorized or environmentally sensitive land enters the market through intermediaries, it could create traceability gaps and raise potential sourcing and reputational risks for brands that market tequila as sustainable or premium.

The market boom that drove the expansion has also turned into a burden for many small growers. Data from the CRT show the number of registered producers rose from 5,988 in 2017 to more than 43,000 in 2025. During the strongest years of the agave rally, from 2017 to 2022, one hectare could generate as much as 3 million pesos, compared with roughly 40,000 pesos a year for corn, according to a field worker cited by Mongabay Latam. That difference pushed many farmers to sell livestock, borrow money or stop planting food crops in order to enter the agave business.

But the seven- to eight-year growing cycle left many exposed when prices reversed. Data from agaves.pro, a technical platform used in the sector, show that blue agave sold for 26 to 30 pesos per kilogram between 2017 and 2020 and reached 32 pesos in 2021. By 2025, the price had dropped to just 1 or 2 pesos per kilogram. In July 2026, the CRT acknowledged the problem of abandoned agave fields, though no official total has been made public. In ejido areas, some farmers have also struggled to complete the property documentation needed to register crops legally under the tequila standard, leaving them with mature plants but no clear path to sell them into the formal market.