

MARCH 2023

# Pistachio Market Overview

The United States pistachio market has displayed long-term growth over the past two decades. In particular, this crop has a sustained attractiveness due to an established supply that is facing future constraints. The scope of this report is a review of the overall pistachio market and opportunities in the market.

## Key Takeaways

- The United States is **capitalizing on strong demand trends** via a growing export market underpinned by changing consumption patterns.
- The **U.S. is the primary global supplier** of pistachios, leveraging the climate and infrastructure of the San Joaquin Valley, California.
- Supply faces **constraints due to the Sustainable Groundwater Management Act (SGMA)**.

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# Theme 1: Favorable Global Demand Trends

## Global Healthy Snacking Trends Boosts Pistachio Consumption

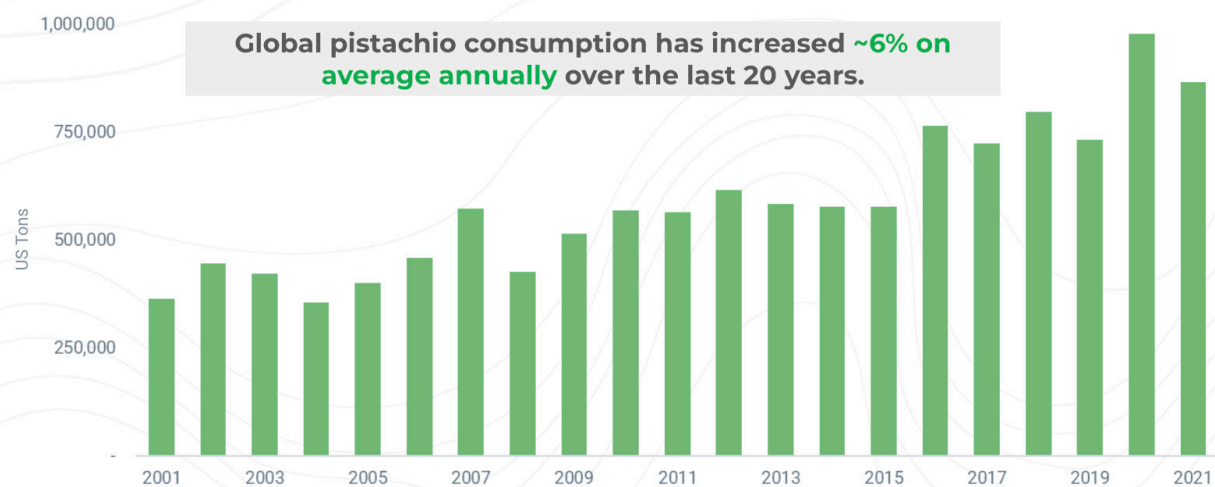
Considered the “royal” nut in ancient times, and often referred to as the “smiling” nut in Asian countries, pistachios have been consumed globally for centuries.

Global consumption of pistachios has been growing steadily over the past two decades, as a surge in consumer preference towards plant-based proteins and better-for-you snacks has bolstered the nutritious nut.

In addition to a distinct flavor, pistachios’ high nutritional content and versatility have contributed to their robust market growth. No longer exclusively served as ready-to-eat snacks, pistachios have also been incorporated into lattes, cocktails, spreads, alternative milks, and even pizza toppings.

The increased awareness of the nut’s unique flavor and benefits is an intentional effort largely on the part of the American Pistachio Growers (APG) trade association. Manufacturers and retailers are also creating product lines that better suit an urban, health-conscious demographic. Traditionally, pistachios—as well as other tree nuts—have been perceived as a “winter” nut, meaning sales of the product peaked around the holiday months and eventually trailed off the rest of the year. This has been changing as reflected by increased sales during the spring and summer months.

## Favorable Global Consumer Preferences



Source: USDA, FAS (2000-2021).

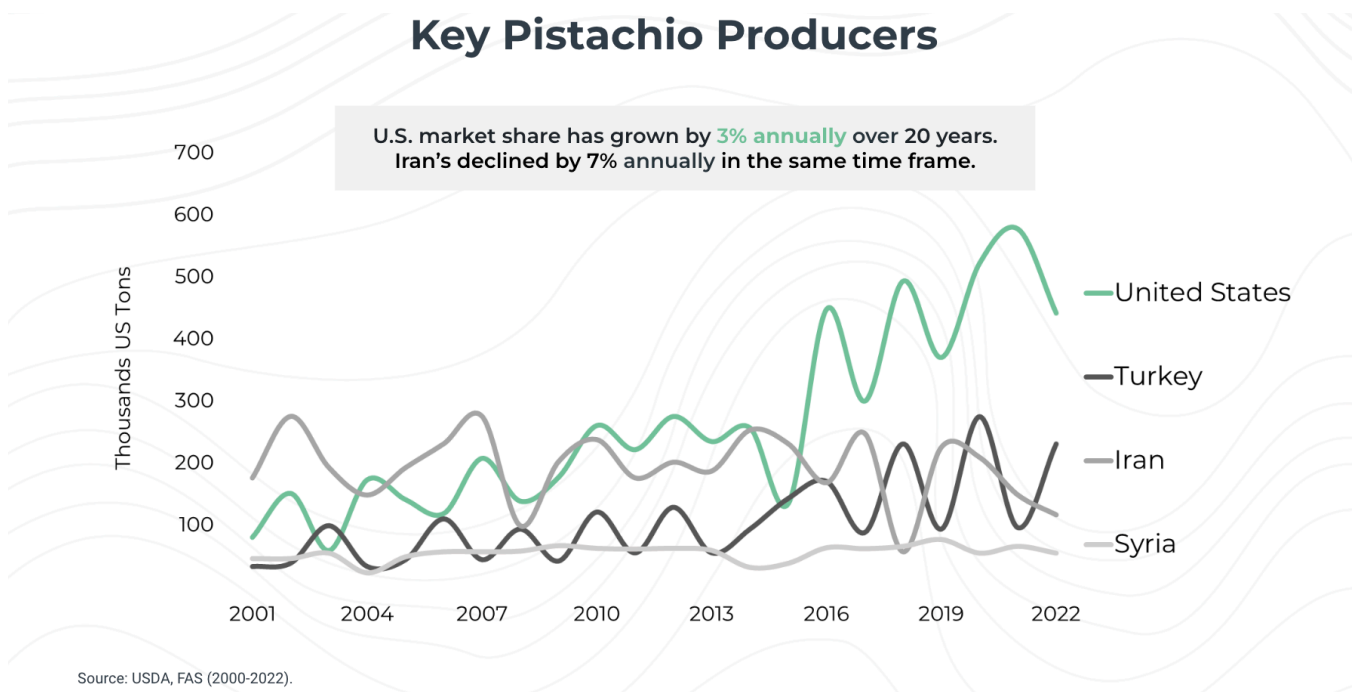
*Past performance does not guarantee future results and there is no guarantee this trend will continue.*

## The U.S. Supplies ~60% of the World's Consumption

Since the 1970s, when commercial production first officially began with a crop of ~680 tons, the U.S. has become a global supplier of pistachios. In 2021, the U.S. accounted for approximately 60% of total global production.

**Nearly all of the U.S. commercial output is produced in California.**

Historically, Iran stood as the undisputed global leader in pistachio production. However, an unintended consequence of the U.S. embargoes on Iranian exports during the late 1970s and early 1980s was that it opened the opportunity for California to become a world-class pistachio producer. While Iranian yields have been declining over time, U.S. pistachio growers have been maximizing yields by adopting advanced technologies and utilizing skilled labor. Furthermore, Iran's growers face an even bigger water crisis than California, losing 20,000-40,000 acres of pistachio trees each year to desertification. The global supply of pistachios has grown at ~4% annually. **American pistachio production has grown at a ~10% annual growth rate since 2001.**

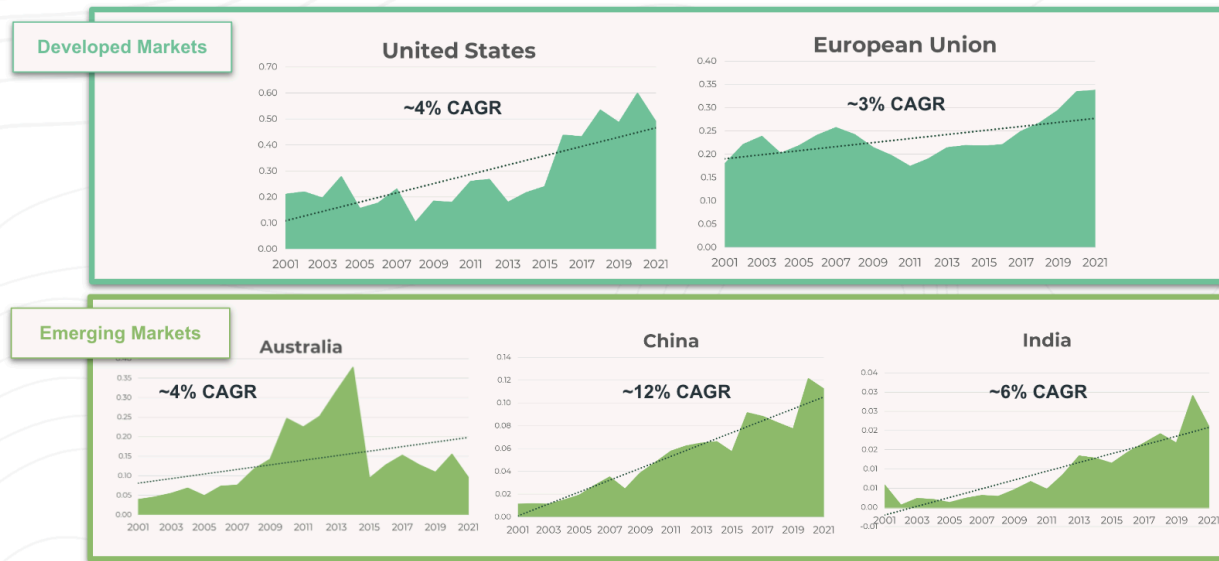


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## Trend Creates Opportunity to Grow American Pistachio Markets Abroad

Over two-thirds of American-grown pistachios are exported to more than 80 countries around the globe, **supplying over 60% of global demand.** This diversified network of trade partners provides insulation against geopolitical risks or market concentration.

## Per Capita Consumption Trends (2001-2021) (in US Tons per 1,000 Persons)



Note: "CAGR" = Compounded Annual Growth Rate. Source: USDA FAS, United Nations.

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Europe is the largest import region for pistachios, accounting for nearly a third of all world trade. The U.S. supplies the majority of that market, in part driven by strict import standards imposed by European governments which have favored American pistachios over other suppliers.

Outside of Europe, American supply has displaced Iranian imports in India, and the Indian demand is expected to grow. Globally, pistachio consumption is about half that of almonds on a per capita basis, implying that there is significant room for market growth, both in developed and emerging markets.

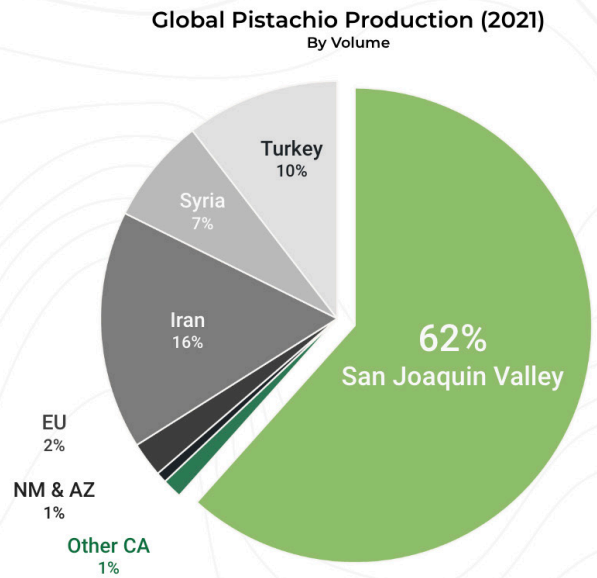
American pistachios have tripled their market share in the past two decades thanks to supportive marketing programs, experimentation, and technological innovation. Most importantly however, the U.S., specifically California, has one of the few climates in the world where pistachios can thrive.

## Theme 2: The San Joaquin Valley Is Positioned to Capture Growing Demand

### The San Joaquin Valley Has Historically Been the Heart of the American Pistachio Industry

Within the "Great Central Valley" of California, the San Joaquin Valley is the site of almost all the activity within the American pistachio industry due to its climate and infrastructure network.

## Global Pistachio Powerhouse: The San Joaquin Valley



Source: Administrative Committee for Pistachios Processors' Producer Delivery Reports.

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### The San Joaquin Valley Presents Ideal Pistachio Growing Conditions

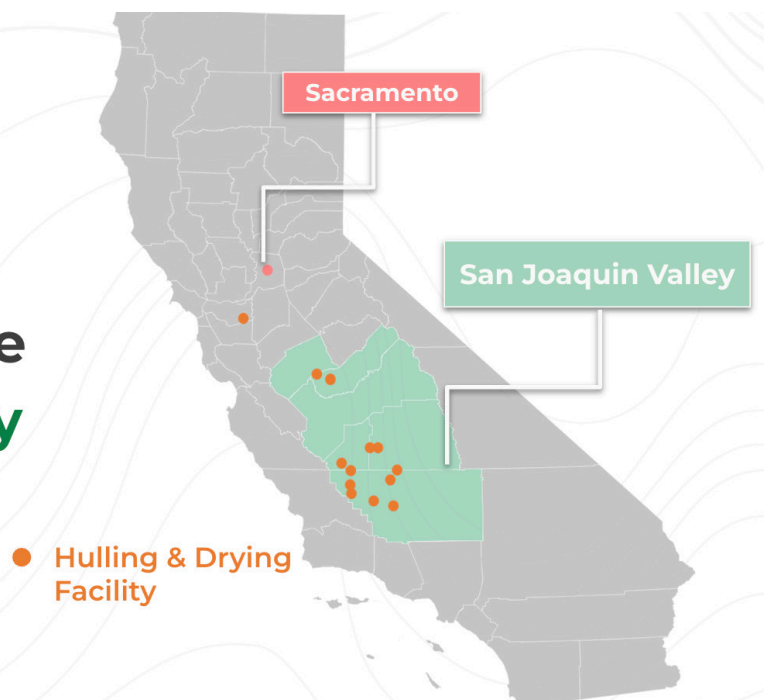
Pistachio trees thrive in extreme environments: the roots can grow in hot, drought-prone areas, but simultaneously need cold winters to fruit. Trees need adequate chill hours for the tree to exit dormancy in the spring, but also enough hot summer days to fully develop the kernels. Additionally, pistachio trees do not do well with excess water or humidity. **Essentially, pistachios need irrigated deserts, and very few places can provide this specific contrasting climate needed.**

### Access to Infrastructure Is Key to Product Quality

The first 24 hours following harvest are critical for pistachio growers. If the crop is not transported immediately to hulling and processing, growers run the risk of deterioration in the form of fungal growth and shell staining of their crop. Virtually all of California's pistachio processing facilities are located in the San Joaquin Valley (SJV). For regions outside of the SJV to match the volume (and quality) of output, substantial capital investment would need to be deployed into building adequate infrastructure channels. For most producers, the only option is increasingly high transportation costs.



## Most Pistachio Infrastructure is Located within the San Joaquin Valley



Note: Administrative Committee for Pistachios Inventory/Shipment Reports.

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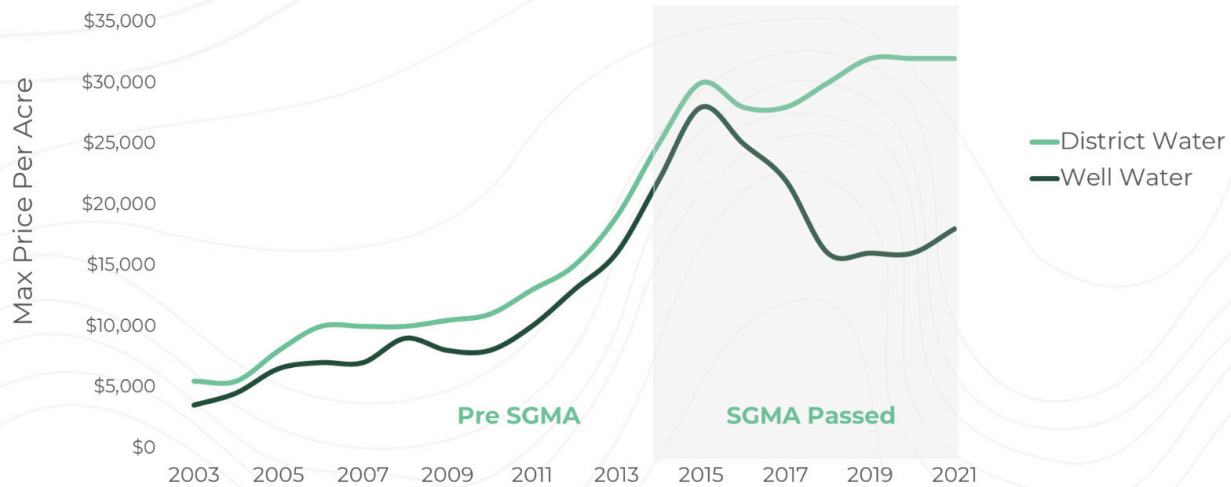
## Theme 3: Water Availability Constrains Supply But Presents Opportunity

As with most crops in California, water availability and a secure supply are critical components in weighing an investment opportunity. Interestingly, pistachio trees do not “die” during extended droughts; rather, their metabolism slows. Once water is supplied again, trees resume production. While pistachio trees are drought-tolerant, high levels of water stress can nonetheless cause low yields and poor fruit quality.

### A Quarter of California Pistachio Acreage Under Potential Constraint

Of the ~420,000 recorded bearing acres of pistachios, 75% are located within irrigation districts with varying amounts of surface water and groundwater availability. The other 25% lie in “white areas.” White areas are irrigated regions outside of an irrigation district. Acreage in deemed “white areas” have no access to surface water and depend entirely on groundwater.

## Fresno Cropland Values: District Water vs. Well Water (Max price paid per acre)



Note: The Sustainable Groundwater Management Act (SGMA) is 2014 legislation requiring that California's critical groundwater resources be sustainably managed by local agencies.  
Source: California Chapter ASFMRA Trends, 2003-2021.

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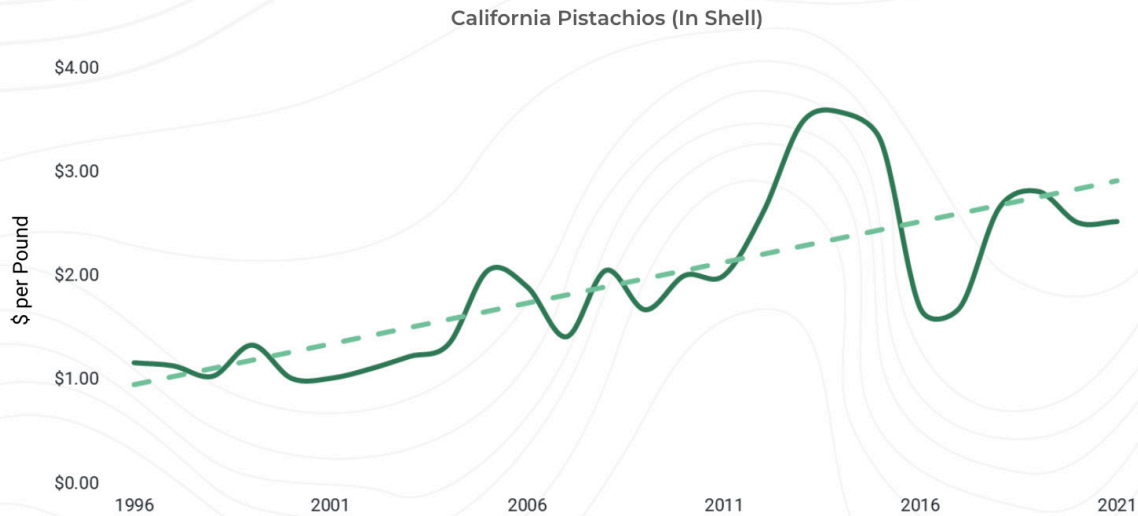
Water security is likely to be a key factor in agricultural land values going forward, as properties with access to strong water rights take advantage of supply reductions in less water-secure areas as a result of California's Sustainable Groundwater Management Act (SGMA). Overall, if effective supply strategies are not developed, SGMA's impact could lead to 900,000 acres of farmland being fallowed by 2040 in the San Joaquin Valley alone, an impact likely to be felt by pistachio acreage.

### Firm Future Pricing Based on Favorable Market Trends

Over the last 20 years, pistachio prices have increased by 10% on average. In the long term, with California facing supply constraints as a result of groundwater regulation and emerging markets continuing their consumption of healthy snack options, it paints a favorable picture for future pricing.



## Pistachio Prices have Grown ~10% Annually Since 2001



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## Final Thoughts

When seeking permanent crop investment opportunities, AcreTrader starts with a combination of restricted supply and strong demand trends. We find pistachio investments attractive due to favorable global demand trends and the potential limiting factor on future supply by SGMA regulations. The historically consistent growth in pistachio demand will need to be fulfilled by a supplier; if demand continues along the same trajectory, the U.S. is best positioned to fulfill those supply needs.

SGMA's implementation will bring scrutiny to pistachio acreage that is less water-secure. This means that the San Joaquin Valley, with its pistachio-suited climate, is also the site of the most current constraints to pistachio supply. Thus, we anticipate that land values for SJV pistachio acreage with relatively high water security will continue to outpace values for acreage with lower water security.

This supply constraint, along with growing global demand and a robust export market, will continue to reinforce our investment rationale for future pistachio opportunities.

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## About AcreTrader

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