CALIFORNIA Tomato GROWERS ASSOCIATION

EXECUTIVE SUMMARY

Tomato Industry Trends and Outlook: Regulatory Costs and Market Conditions

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Prepared by:

ERA Economics
Environment • Resources • Agriculture

OVERVIEW

California produces over 95% of U.S. processing tomatoes and nearly one-third of the global supply. The industry has been adjusting to change over the last several years. New laws and regulations affect California farming costs, California processing capacity has increased, and global demand for processed tomato products continues to change with consumer dietary preferences. Strong returns in 2014 and 2015 have given way to softer market conditions over the last few years. The California Tomato Growers Association commissioned this study to quantify these trends, understand economic drivers of change, and develop a future outlook for industry costs.

PROCESSING TOMATO INDUSTRY TRENDS:

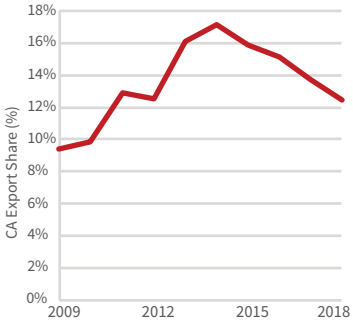
1. California tomato exports peaked at 17% of total movement in 2015. Since 2015, exports have dropped by 30%. This was caused by a combination of a stronger U.S. dollar against export market currencies and increasing competition in tomato production in other countries.

2. Global demand for processed tomato products was increasing at a rate of 5-7% per year through 2010. Since 2010, the growth rate has slowed to 1-2% per year.

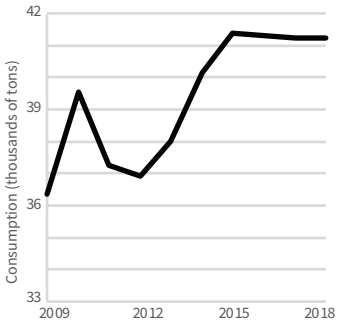
3. Between 2010 and 2018 California processing capacity increased by 17%, to over 15 million tons per year. Investment in processing capacity coincided with the increasing export market through 2015. Since 2015, processing capacity utilization decreased from over 80% to approximately 70% by 2018.

4. New laws, regulations, and policies are increasing the cost to produce tomatoes in California. Labor and water costs are increasing at the greatest rate, followed by materials and other regulatory compliance costs. The magnitude of these costs varies by region.

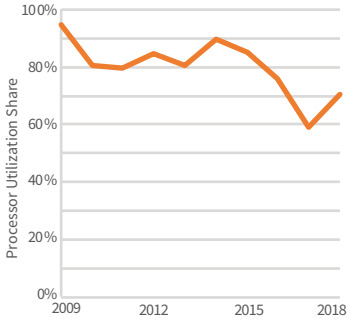
CA EXPORTS



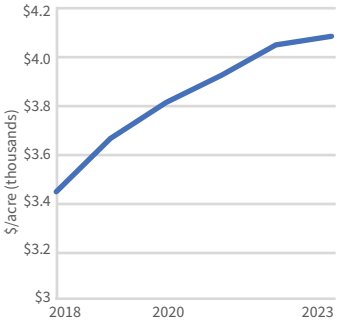
GLOBAL DEMAND



CA CAPACITY UTILIZATION



COST OUTLOOK



ECONOMIC DRIVERS OF CHANGE AND OUTLOOK:

1. Softer market conditions were a result of slowing global demand, decreased exports, and increased processing capacity.

2. The industry started to adjust to changing market conditions in late 2019 and early 2020. Total processing capacity and inventories are declining. This tends to put upward pressure on farm-gate price.

3. Sustainability, higher wages, and environmental stewardship are important for the long run viability of the industry. However, these changes come at a cost. Opportunities to grow the market through product innovation or expanding into new export markets can help offset some of these higher costs.

LAWS, REGULATIONS, AND POLICIES

Changing laws, regulations, and policies provide important benefits to the industry, workers, and the environment, but also impose direct and indirect costs. Direct costs include paying more for inputs. Indirect costs include management time, staff training, legal costs, and other paperwork.

LABOR OVERVIEW: Labor accounts for more than 20 percent of annual operating costs. This includes planting, harvest, hand weeding, irrigation, and other field work.

Laws, regulations, and policies: Senate Bill (SB) 3, Assembly Bill (AB) 1066, H-2A Visa Program
What is changing: Minimum wage (AB 1066) is increasing and overtime requirements (SB 3) are changing with phased implementation by 2023 and 2025. Many growers already pay more than minimum wage to retain crews.
Cost outlook: Labor costs are estimated to increase between 5% and 9% per year through 2023. Total costs increase by $100 - $200 per acre by 2023.

WATER OVERVIEW: Water costs are increasing due to water quality requirements, surface water changes that limit water supply availability, surface water programs that increase costs, and groundwater management requirements.

Laws, regulations, and policies: Irrigated Lands Regulatory Program (Basin Plans), Delta Conveyance Facility, Delta Water Quality Control Plan, Central Valley Project (CVP) and State Water Project (SWP) Long Term Operations (LTO) Plans, San Joaquin River Restoration Program, Sustainable Groundwater Management Act (SGMA).
What is changing: Water quality management requires controlling material runoff and proper waste discharge. Basin Plans specify regional requirements for water quality management and are updated frequently. Water availability is affected by environmental stream flow requirements and operation of SWP, CVP, and local projects. SGMA (see next page) reduces water supply.
Cost outlook: Water costs are estimated to increase between 5% and 10% per year through 2023. Total costs increase by $100 - $250 per acre by 2023.

MATERIALS OVERVIEW: State regulators continually review materials for evolving environmental standards. This affects what is registered for use, application rates, and management practices.

Laws, regulations, and policies: Various new regulations from the Department of Pesticide Regulation (DPR) and other state agencies.
What is changing: Public focus on the environment has resulted in increasing material regulations. For example, limiting aerial spraying within a ¼ mile of schools and regional limits on nematicide fumigant applications. New regulations impose compliance costs on growers and businesses.
Cost outlook: New regulations are difficult to anticipate but typically impose direct compliance costs and indirect costs for management and training. Material costs are estimated to increase between 2% and 4% per year through 2023. Total costs increase by $25 - $50 per acre by 2023.

AIR QUALITY OVERVIEW: Air quality standards lead to new laws and regulations. These regulations typically require a capital investment in new equipment or machinery.

Laws, regulations, and policies: AB 32, SB 32, Airborne Toxic Control Measure, regional air quality standards
What is changing: Implementation of GHG requirements, stricter air quality standards for PM 10, and other air quality standards increase California farming costs.
Cost outlook: Equipment costs are higher in California as a result of stricter regulations. Costs are estimated to increase between 1% and 3% per year through 2023. Total costs increase by $20 - $40 per acre by 2023.

SUSTAINABLE GROUNDWATER MANAGEMENT

The Sustainable Groundwater Management Act of 2014 (SGMA) is a set of laws (AB 1739, AB 1319, SB 1168) passed in 2014 that mandate "sustainable" groundwater use in California. SGMA is implemented in local groundwater subbasins that are defined by the Department of Water Resources. Local Groundwater Sustainability Agencies (GSAs) within each subbasin must develop Groundwater Sustainability Plans (GSPs) to achieve sustainability by 2040 (or 2042).

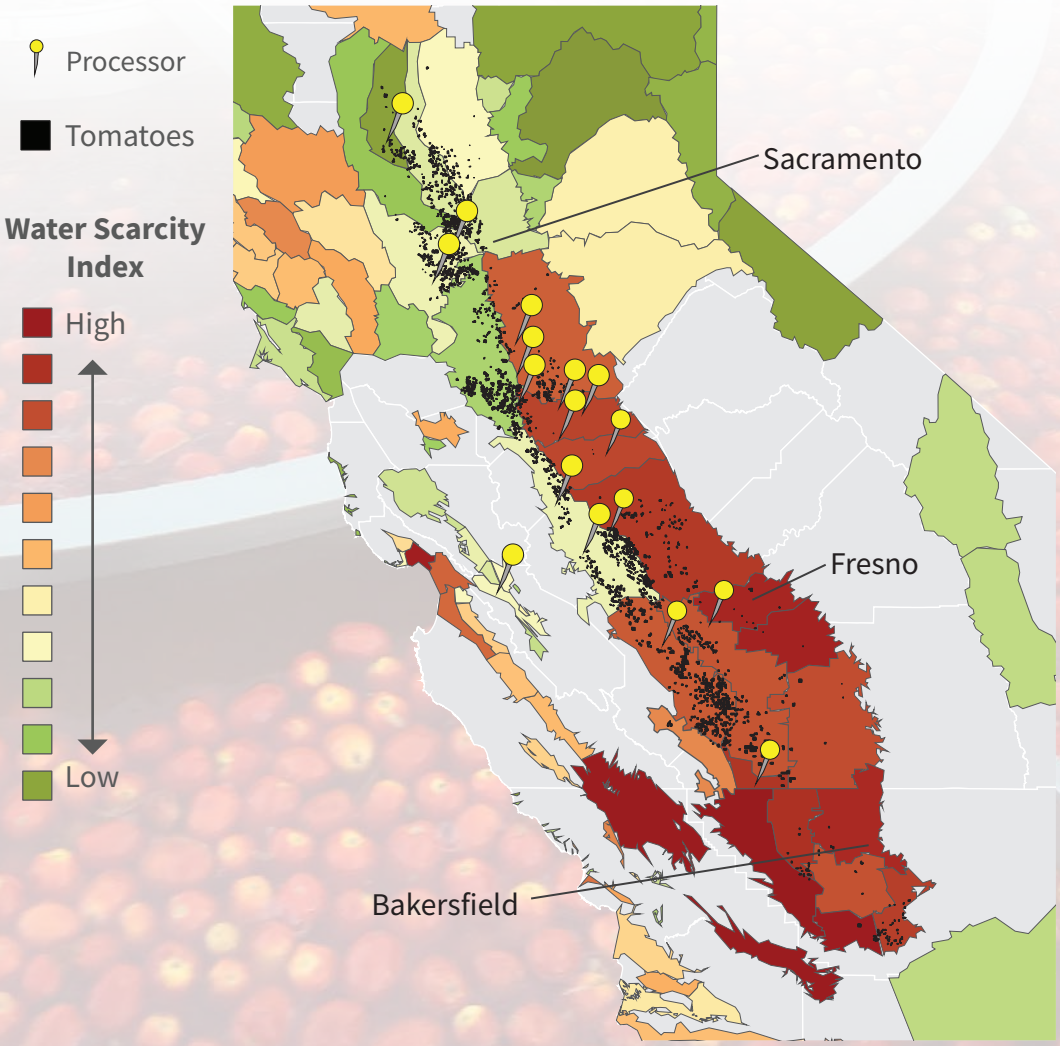
What does SGMA mean for a typical tomato farmer? Sustainable management fundamentally requires reducing the amount of groundwater that can be pumped to the sustainable yield. The sustainable yield varies by GSA (0.6 AF/acre in some areas and 2 AF/ac in other areas). In areas without access to district surface water supply the sustainable yield is less than the amount of water required to irrigate a crop.

Approximately 90% of California tomatoes are grown in groundwater subbasins that are classified as high priority or critically overdrafted. Restrictions on groundwater pumping under SGMA will increase competition for water, which increases the cost of water to growers in those regions.

Current (without SGMA) irrigation water costs vary between $50 and $250 per acre foot, depending on the water supply source and location. Some GSPs are identifying new water supply options. New water supply is expensive, with costs ranging from $300 to over $1,000 per acre foot, depending on location and water source.

SGMA increases tomato production costs by $75 to $235 per acre, or 3% to 7%, depending on production region. However, in "white areas" with no access to surface water SGMA is likely to restrict pumping to levels that make it impossible irrigate a crop, and costs would be significantly higher. Groundwater markets are being explored in some areas as one option to reduce costs. Market prices would vary by region, which would affect crops that could be profitably irrigated.

The figure illustrates water scarcity across the state and the location of tomato production and processors. Most production in the San Joaquin Valley is in water stressed areas.



PRODUCTION COSTS

The new laws, policies, and regulations summarized in the previous sections of this report mean that tomato production costs are increasing. Costs include direct compliance costs, overhead (capital investment) costs, and indirect management costs. It is important to note that these are real changes in cost over and above general inflationary pressure.

Costs are estimated to increase in real terms (not inflation adjusted) between 15% and 25% on a statewide average basis. Operating costs include all direct annual production costs (labor, planting, harvest, irrigation, fuel). Overhead includes all cash and non-cash costs, including land rent (or capital recovery).

FINANCIAL ANALYSIS

Increasing costs affect bottom-line returns. An example is developed to show the effect of return on investment (ROI). An average land value of $16,000 per acre is applied. Actual returns will vary based on operation-specific operating costs, land values, and prices received.

Production costs ($/acre): Current and Outlook

	Current	2023	% Change
Operating	$3,010	$3,650	21.3%
Overhead	$800	$820	2.5%

The figure illustrates historical returns to land, management, and capital between 2014 and 2019. Stronger market conditions in 2014 and 2015 resulted in returns in the 5% to 7% range, but have since dropped to under 3%.

Example Historical ROI ($16,000/acre land and 48 ton/ac yield)

The table summarizes returns to land, management, and capital under projected cost increases through 2023 at varying crop prices (ranging from $75 to $90 per ton). This example shows the impact of increasing production costs is a 1% to 3% reduction in return.

ROI Sensitivity Analysis over Hypothetical Outlook Prices

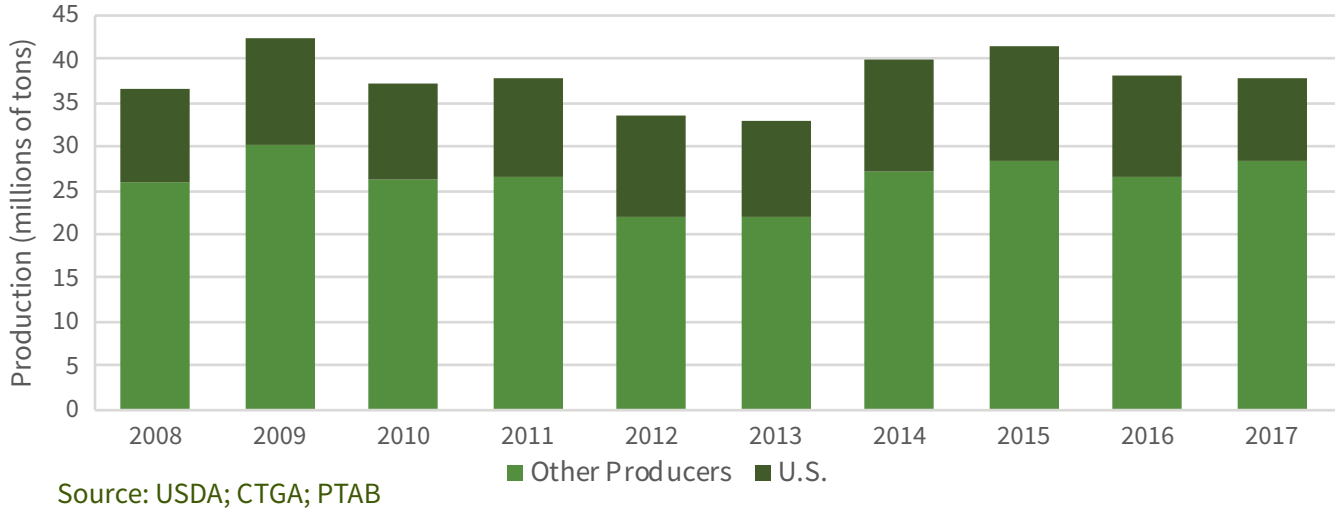
Price per ton	$75.00	$80.00	$90.00
2020	0.6%	2.1%	5.1%
2021	0.1%	1.6%	4.6%
2022	-0.6%	0.9%	3.9%
2023	-0.8%	0.7%	3.7%

MARKET CONDITIONS

There are two components of the tomato market: (i) consumer products that are produced by processors for domestic and export markets, and (ii) California raw tomatoes purchased by processors as an input for consumer products. These factors interact and change over time to determine farm-gate raw tomato prices. General trends in market conditions can be shown in terms of supply (raw tomato production in California and globally) and demand (consumer demand for tomato products).

SUPPLY. California accounts for 95% of U.S. tomato production and nearly one-third of global supply. California production peaked in 2015 at just over 14 million tons. Production has since declined by 27% to 11 million tons in 2019. Other producers including Italy, China, Spain, Ukraine, and South American countries have increased production, and the dollar has appreciated against export market currencies.

Global Tomato Production Trends, 2008-2017



Source: USDA; CTGA; PTAB

DEMAND. Since the mid 2000s, domestic (U.S.) per-capita consumption has fluctuated between 61 and 73 pounds, but overall is in a state of decline. Similar trends are observed in global consumption. Falling consumption is from a shift away from traditional tomato sauces and condiments towards more non-tomato based, regional, bold flavored products (e.g. red pepper spreads, Asian sauces, and herb spreads). New product innovation is needed to spur increases in consumer demand that would support higher prices.

Global Tomato Consumption Trends, 2002-2017

Source: USDA; FAS

PROCESSING CAPACITY

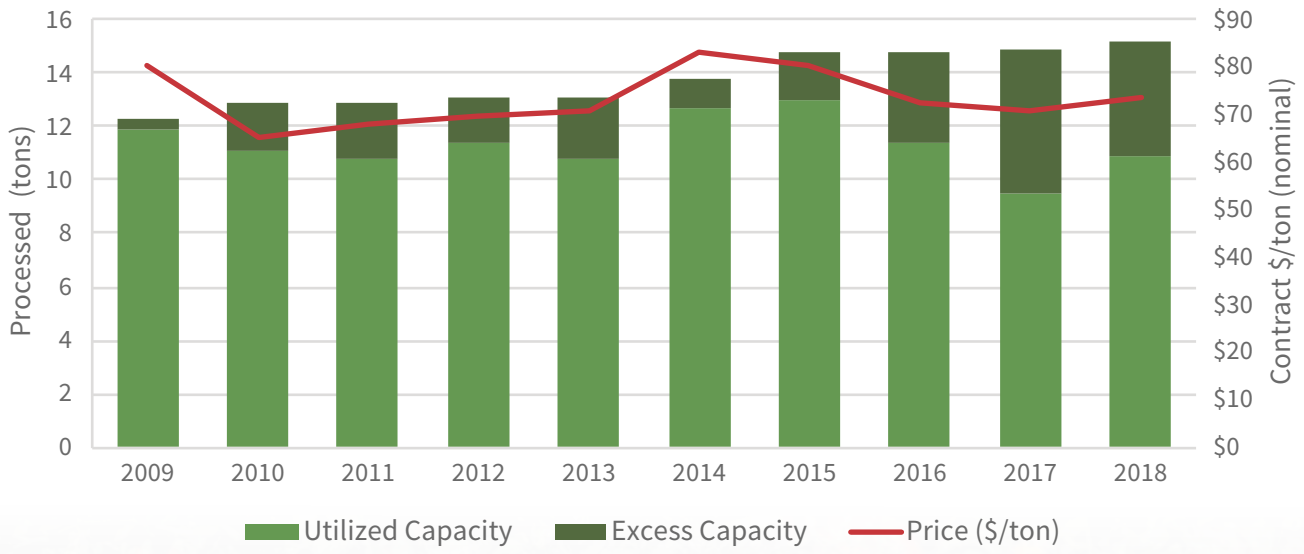
California tomato processing capacity expanded significantly in response to strong demand in the export market. Prices and profitability increased across the industry. By 2014, exports accounted for over 17% of total movement. Since 2014, exports have fallen by 30% and are currently closer to 12% of total movement. Exports fell because the U.S. dollar strengthened against export market currencies and tomato production in export countries increased, pushing out California imports.

As the export market expanded processors increased capacity. California processing capacity increased from 11 million tons in 2009 to over 15 million tons by 2018. As exports slowed and domestic consumption remained flat this left processors with capacity that was not being utilized.

Expanding capacity requires a significant capital investment. When capacity is not utilized it is not generating enough revenue to cover its costs. Since capacity investment is a fixed cost it is difficult to reduce, and focus shifts to reducing variable operating costs, including the cost of raw tomatoes. As a result, capacity underutilization tends to put downward pressure on raw tomato prices.

Between 2009 and 2014 total industry processing utilization averaged 88%. By 2017, utilization share was closer to 63%, and was around 71% in 2018. Raw tomato prices (in inflation-adjusted dollars) fell by more than $15/ton from the peak in 2009, before rebounding in 2014/15, and then declining through 2018.

California Processing Utilization and Farm Gate Contract Prices, 2009-2018



Source: PTAB; USDA
Note: Includes Olam and Mizkan facilities; Includes total processing capacity for tomato paste and contracted tons

Prepared for:

CALIFORNIA Tomato GROWERS ASSOCIATION

Visit us online:
www.ctga.org

California Tomato Growers Association
2600 River Plaza Drive, Suite 210
Sacramento, CA 95833

Prepared by:

ERA Economics
Environment • Resources • Agriculture

Visit us online:
www.eraeconomics.com

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ERA Economics, LLC
111 Kennedy Place, Suite 4
Davis, CA 95616