

Objectives 1-4 address major, interrelated challenges that San Diego County farms, fisheries, food businesses, and workers face in bringing food from farm and ocean to plate.

OBJECTIVE 01

Decreasing land in agriculture, declining fisheries, climate change impacts, limited succession planning among aging producers, and disparities in farmland ownership all threaten the future of long-term food production in the region.

OBJECTIVE 02

Market concentration within every sector of the food system decreases opportunities for small and midsize farms, fishing operations, and food system businesses to be viable.

OBJECTIVE 03

Major increases in food imports—in combination with market concentration—makes it challenging for local food products to make their way to grocery stores, corner stores, and restaurants.

OBJECTIVE 04

Wage stagnation over the past 40 years and low wages for food system workers limit the ability of our most essential workers to lead healthy, comfortable lives, and pursue viable careers.

OBJECTIVE



Preserve Agricultural Land and Soils, and Invest in Long-term Food Production

STRATEGIES AT A GLANCE

- Scale up agricultural land conservation efforts
- Develop an agricultural land trust
- Expand climate-smart agriculture
- Support coordinated efforts and collaboration to create a technical assistance & business assistance network for farmers and fishermen



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Farmers, ranchers, and fishermen are the backbone of our food system. We depend on them. We also depend on the land, soils, and marine resources that form the foundation of our food supply.

We are fortunate in California, where 25% of land is devoted to agriculture, there are over 70,000 farms, and we generate more agricultural sales—\$46.2 billion—than any other state in the country. We also border the Pacific Ocean, which is home to thousands of species of fish, including the largest tuna fisheries in the world.

Yet, even in a food system as large, diverse, and dynamic as California's, San Diego County stands out. No county in the United States with a population as large as ours—3.34 million—has higher combined agricultural and seafood sales, at over \$1.8 billion annually (Figure 1).3

San Diego County is the twelfth largest county in California by agricultural sales, and has the highest number of farms and producers—and the most relatively diverse producers—of any county in the state. As can be seen in Figure 1, nursery and greenhouse production have generated the majority of sales for several decades, but San Diego County is also the top avocado and fresh tomato producer in the country, and has 545 organic farms, the most of any county.⁴

San Diego was once known as the "Tuna Capital of the World," hosting a large fleet of tuna seiners and tuna-processing canneries, along with a variety of other fisheries. By the early 1980s, most of the canneries had moved offshore to U.S. territories and other countries (Figure 2). This was largely due to regulatory pressure, lower labor and processing costs overseas, and less stringent environmental oversight in other countries. Despite reduced fleet sizes, San Diego County's fishing communities have remained vital because of the continued productivity of the ocean's ecosystem and the proximity to large urban centers, which connect our region to domestic and global markets.⁵



- 4 California Department of Food and Agriculture, State Organic Program, https://www.cdfa.ca.gov/ is/organicprogram/reports. html
- 5 California Sea Grant, South Coast, https:// caseagrant.ucsd.edu/ project/discover-california commercial-fisheries/ regions/south-coast

Today, San Diego County's catch is very diverse, with California spiny lobster, spot prawn, and red sea urchin generating the most sales. Dozens of other species are also caught by fishermen in San Diego County. The value and total pounds of seafood landings in the region have consistently averaged over 2 million pounds and \$9 million in sales for the past 20 years (Figure 3). The year 2019 saw a big jump to 5 million pounds and \$11 million in sales, mostly from bigeye tuna landed by fishing vessels that returned to San Diego due to growing interest in direct markets. Seafood today is 0.6% of total agricultural and seafood sales in the County (Figure 1).

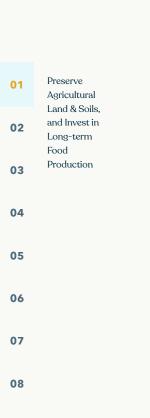
land in agriculture, number of farms, and value of sales comes from the 2017 USDA Census of Agriculture.

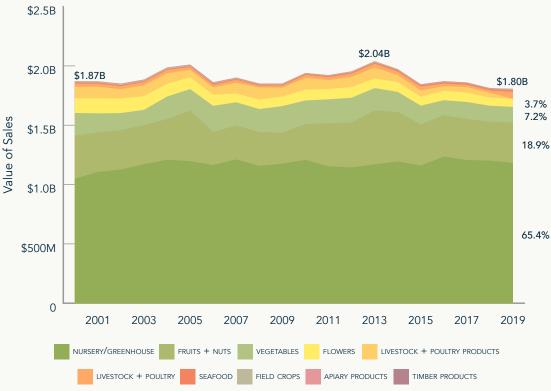
Comparative data for

- ² Post, Valerie, and Dale Squires. "Managing Bigeye Tuna in the Western and Central Pacific Ocean." Frontiers in Marine Science, vol. 7, 2020. Crossref, doi:10.3389/ fmars.2020.00619.
- ³ Of course, many U.S. counties generate either higher agricultural sales or seafood sales. For example, the New Bedford port in Bristol County, Massachusetts has the highest value of fishery landings in the United States (\$451 million in 2018 compared to \$10.8 million in San Diego). Five ports in Alaska ranked in the top 10 for the value of fisheries landings. But no county with a population as large as San Diego County has higher combined agricultural and seafood sales.

FIGURE 1

Total Agricultural and Seafood Sales in San Diego County, 2000-2019





Source: County of San Diego Agriculture, Weights & Measures, San Diego County Crop Report, www.sandiegocounty.gov/awm/crop_statistics.html. California Department of Fish and Wildlife, Final California Commercial landings, www.wildlife.ca.gov/Fishing/Commercial/Landings. Adjusted for inflation to 2019 dollars. Note: The values for livestock and poultry and livestock and poultry products were combined in 2019 data.

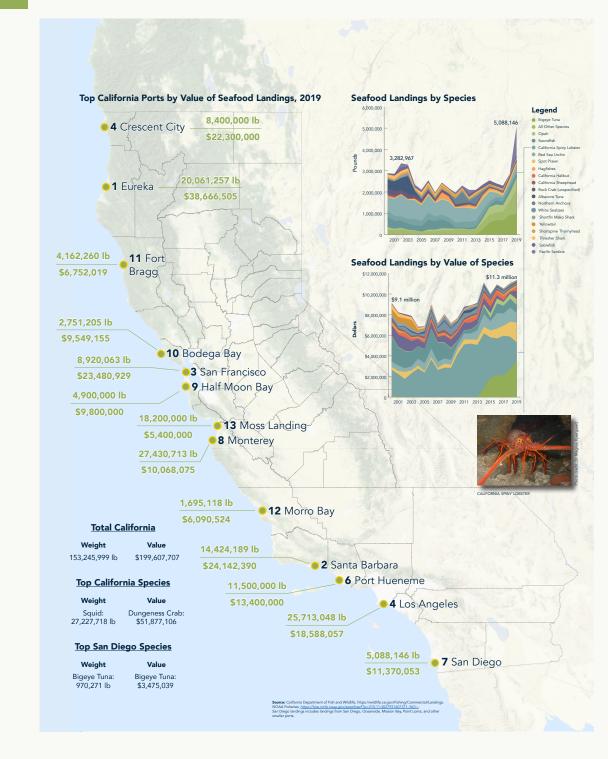
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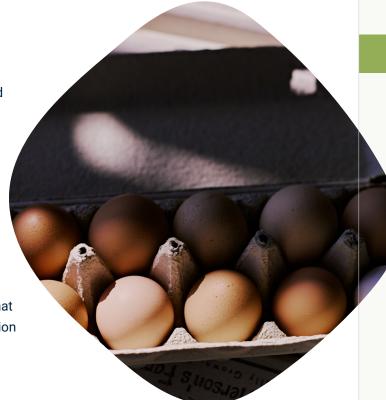
San Diego County Commercial Fisheries Landings



San Diego County and California Fisheries Landings and Value of Sales



Fruits, mostly avocados and citrus, accounted for approximately 63% of the value of food produced in San Diego County in 2019, while vegetables accounted for 24%, eggs at 6.4%, cattle and calves at 2.4%, seafood at 2.1%, chickens 0.9%, field crops at 1.3%, and apiary products at 0.7% of sales. The total amount of food produced, grown, or caught in San Diego County annually has remained relatively consistent around 400 million pounds of food (Figure 5) at a value that has fluctuated from \$550 million to \$788 million over the past 20 years (Figure 5).



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How Much Food Does San Diego Grow, Produce, or Catch? 2019

San Diego County grows, produces, or catches more than 462 million lbs • \$556,418,910



\$5.6 million sales

(*)*(*)

3.7 million lbs \$20.0 million sales



7.2 million lbs \$5.4 million sales 3.3 million lbs \$10.4 million sales

70.8 million lbs

\$140.1 million sales

? lbs \$114.1 million sales

5.1 million lbs \$11.4 million sales 1.6 million lbs \$1.4 million sales ? lbs \$33.9 million sales

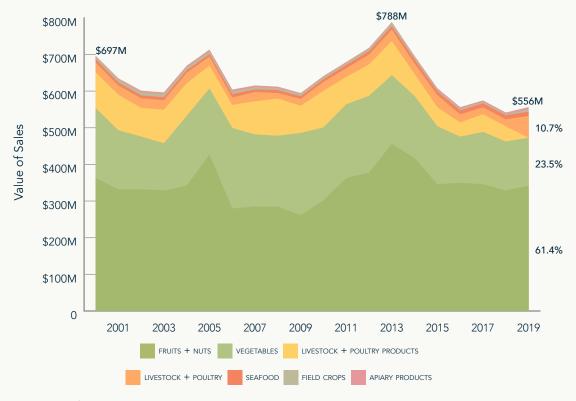
39.3 million lbs

\$62.1 million sales



FIGURE 5

Total Edible Agricultural and Seafood Sales in San Diego County, 2000-2019



 $\textbf{Sources:} \ \ \text{County of San Diego Agriculture, Weights \& Measures, San Diego County Crop Report,} \ \underline{www.sandiegocounty.gov/awm/crop_statistics.html}.$ California Department of Fish and Wildlife, Final California Commercial landings, www.wildlife.ca.gov/Fishing/Commercial/Landings. Adjusted for inflation to 2019 dollars. Note: The values for livestock and poultry and livestock and poultry products were combined in 2019 data.

Sources: County of San Diego Department of Agriculture, Weights, and Measures, 2018 Crop Statistics Report, www.sandiegocounty.gov/content/dam/sdc/ awm/docs/2018_Crop_Report_web.pdf. California Department of Fish and Wildlife, Final Commercial Landings, https://wildlife.ca.gov/Fishing/Commercial/ Landings. Adjusted for inflation to 2019 dollars. *The 2018 value for tomatoes, peppers, and eggs are depicted since the 2019 values were suppressed.

TRENDS IN AGRICULTURAL AND SEAFOOD PRODUCTION IN SAN DIEGO COUNTY

Several trends are visible in both agricultural and seafood production in San Diego County. Below is a snapshot of the major trends within the region.

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> Although there are a few positive trends, the total number of acres and sales of most agricultural categories has decreased over the past two decades (Table 1).

Avocado production may increase in the near

future. Despite reduced acreage and sales over the past twenty years, the impact of dense avocado stands coming into production may increase production from 6,000 pounds per acre now, to 15-20,000 pounds per acre in the future.

Orange acreage is declining. The trends of decreasing orange acreage appear likely to continue. Huanglongbing (citrus greening disease) is considered a grave threat to California's citrus industry, devastating Florida's citrus industry and having been recently found in Los Angeles, Orange, Riverside, and San Bernardino counties. On December 28, 2020, the California Department of Food & Agriculture found four Asian citrus psyllids (ACP) carrying the bacteria that can cause Huanglongbing on a citrus tree in Fallbrook. This was the first instance of finding ACPs with the bacteria in San Diego County.6 All protocols were followed and no quarantine was required, but increased vigilance will be necessary moving forward.

Veggie and vine crop acreage is decreasing. The trend for total acres of vegetables and vine crops is decreasing, although some variation is visible, including increasing acres and sales for both miscellaneous vegetables and herbs and spices. San Diego County also has the largest vine-ripened tomato producer in the country (680 acres), West Coast Tomato Growers, operated by the Singh family for more than 80 years.

Wine grapes are on the rise. Wine grape acreage and sales have increased significantly over the past twenty years. According to the San Diego County Vintners Association, the region now has 142 operating and under construction wineries.

Coffee and specialty crops: lots of interest, but few seeds in the ground so far. There is strong interest in specialty crops like coffee, passion fruit, and blueberries, but these crops are still emerging. Data is currently unavailable in the County Crop Reports.

Egg production is increasing. Egg production has steadily increased from 2000 to 2014, but has since been on a downward trajectory.

Ranching is steeply declining, but there's interest in bringing it back. The number of cattle and calves in San Diego County decreased 54% from 2000 to 2019, and there is no local livestock processing facility in the region. Livestock producers in San Diego County have to ship cattle to Pico Rivera in Los Angeles County. Several local producers however, are looking to revitalise livestock production in the region, integrating animal agriculture with tree crops and pursuing funding and zoning approval for a modular slaughterhouse.

Almost no dairy production. There are two remaining dairy farms in San Diego County, Konyn Dairy and TD Dairy, and all milk produced in the region is shipped out of the area for processing. The corporate headquarters of Hollandia Dairy however, is in San Diego County.

Table 1: Trends in Agricultural Production

Product	Total Number of Acres in 2019	Percent of Total Ag Acres	Percent of Change in Acres 2000- 2019	Value of Sales in 2019	Percent of Total Ag and Seafood Sales	Percent of Change in Sales 2000- 2019
Avocados	14,946	6.4%	-42.5%	\$140,116,363	7.8%	-36.9%
Oranges	5,179	2.2%	-37.2%	\$41,942,442	2.3%	-14.5%
Vegetables	3,164	1.3%	-65.8%	\$130,883,159	7.2%	-31.7%
Wine Grapes	1,511	0.6%	+763.4%	\$5,580,300	0.3%	3791.0%
Specialty Crops	No Data	No Data	No Data	No Data	No Data	No Data
Eggs*	No Data	No Data	No Data	\$33,976,378	1.9%	-52.3%
Livestock	No Data	No Data	No Data	\$19,099,451	1.1%	-29.5%
Dairy	No Data	No Data	No Data	\$7,588,911	0.4%	-69.8%

Source: County of San Diego Department of Agriculture, Weights, and Measures, 2018-2019 Crop Statistics Report. *Note: the 2018 values for eggs, livestock, and dairy are used since 2019 was suppressed.

Seafood

The total number of pounds and sales of most seafood produced in the region has also been decreasing over the past two decades (Table 2). However, there are a few species in particular that are increasing.

California spiny lobster is the region's top catch.

The California spiny lobster has been the most valuable total seafood catch in the San Diego region for nearly 20 years, and is frequently in the top five for total pounds caught. It is estimated that 95 to 99% of the spiny lobster caught in San Diego County is shipped abroad, primarily to Chinese markets.

Bigeye tuna may be rebounding. Since 2014, the Pacific bigeye tuna population has been above target population levels. This, combined with the return of several tuna boats to San Diego, has resulted in greater landings in San Diego County. Albacore tuna has not been caught in any large quantity by San Diego fishermen since 2004.

Spot prawns have top value. On a pound-for-pound basis, spot prawns are the most valuable species caught by San Diego County fishermen.

Only a few sea urchin divers remain. Red sea urchin have consistently been a top catch by value, but there are perhaps only 18 divers left currently harvesting red sea urchin in San Diego County.⁷

Ourckel, Donna, December 31, 2020, "State and County Investigate Citrus Disease in Fallbrook," County News Center.

⁷ Good, Dave, May 18, 2012, "Fishing With the Urchin King Pete Halmay," San Diego Magazine.

Table 2: Trends in Seafood Production

Product	Total Number of Pounds in 2019	Percent of Total Seafood Pounds	Percent of Change in Pounds 2000-2019	Value of Sales in 2019	Percent of Total Ag and Seafood Sales	Percent of Change in Sales 2000- 2019
California Spiny Lobster	14,063	2.8%	-48.1%	\$1,827,958	0.3%	-27.4%
Bigeye Tuna	970,271	19.1%	5,361.1%	\$3,475,039	0.6%	2,816.6%
Spot Prawn	63,684	1.3%	73.6%	\$941,772	0.2%	92.8%
Red Sea Urchin	337,343	6.6%	-47.7%	\$799,057	0.3%	-19.6%

Source: California Department of Fish and Wildlife, Final California Commercial Landings.

Global, national, and state trends however, all highlight declines in both land in agriculture and commercial fisheries landings. Farmers and fishermen in San Diego County are no exception, and the resources they depend on are at risk. In addition to increasing market concentration, there are several challenges to sustaining food production in the region, including growing development pressure, declining agricultural lands, increasing costs of water, the changing climate, aging producers, limited support services, and rising inequality.

Moving forward, we must proactively invest resources and significant funding to support food producers in the region, including urban and rural producers, small and midsize

producers, socially disadvantaged producers, and producers of color.

Land and oceans are vital for life. As stewards of these resources, farmers, ranchers, and fishermen play an essential role in feeding local communities, protecting our natural environment, and fighting climate change. In San Diego County in particular, we have some of the most responsible land and sea stewards in the country. Preserving agricultural land and soils, supporting farmers, ranchers, and fishermen, and investing in long-term food production in San Diego County will be essential to securing a thriving, local, and resilient food supply for today and decades to come.



Core Challenges

The core challenges to investing in long-term food production in San Diego County are:

- Protecting Agricultural Lands
- Revitalizing Fisheries
- Adapting To Climate Change
- Investing In The Next Generation Of Producers
- Reducing Disparities In Farmland Ownership

These challenges are connected to others across the food system, including market concentration, increased food imports, low wages, and wage stagnation—addressed in Objectives 2-4. Altogether, they create an environment that hinders our collective ability to secure a local, equitable, and resilient food supply.

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Protecting Agricultural Lands

"If we don't start preserving agricultural land, there is no future for food production in the region." — Steve Hobbs, California State Director, The Conservation Fund

Land is essential for farming. Agricultural lands also play an important role in creating a healthy environment, sustaining a nutritious, local food supply, purifying water and air, and mitigating climate change through carbon sequestration. In San Diego County and across the country however, we are rapidly losing agricultural land. Unfortunately, once agricultural land is lost, it usually disappears permanently.

As recently as 1954, San Diego County had nearly 1 million acres in agriculture or the equivalent of 36% of the county's land surface area.8 Since World War II, the combination of population growth and housing development has steadily chipped away at land in agriculture in the region. Other reasons for the loss of agricultural lands include the rising costs of water, increasing government regulations, challenges with accessing quality labor, growing

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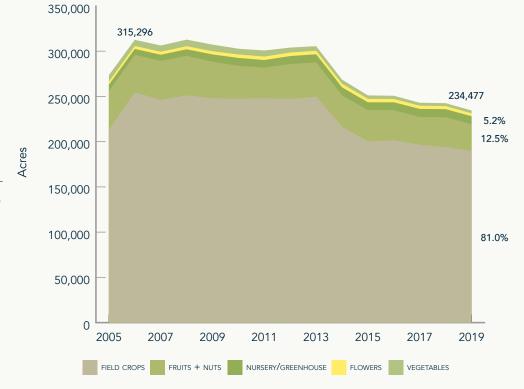
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⁸ USDA Census of Agriculture, 1954, California lost more than 13 million acres of land in agriculture from 1954 to 2019.

Land in Agriculture in San Diego County



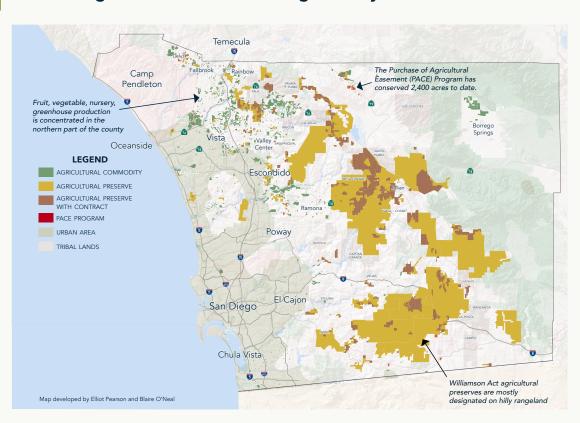
Source: County of San Diego Agriculture, Weights & Measures, San Diego County Crop Report, www.sandiegocounty.gov/awm/crop_statistics.html.

market concentration, and increasing global competition. Land in agriculture has dramatically decreased over the past several decades to about 234,000 acres (Figure 6), or about 8% of the County's land area.

Most agricultural land in San Diego County is concentrated in the unincorporated northern part of the County (Figure 7). Today, about 80% of land in San Diego County devoted to agriculture is rangeland, 12.5% is in fruits, 3.8% in nursery products, 1.4% in flowers, and 1.3% in vegetables.

FIGURE 7

Where is Agricultural Land in San Diego County Located?



Sources: County of San Diego Department of Agriculture, Weights, and Measures, Crop Statistics & Annual Report, multiple years. SANDAG, Regional GIS Data Warehouse, AG_COMMODITY_2020.zip, Agriculture_Preserve.zip, Agriculture_Preserve_zip. Note: available datasets do not map rangeland in agricultural production.

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OBJECTIVE INTRODUCTION CORE CHALLENGES STRATEGIES

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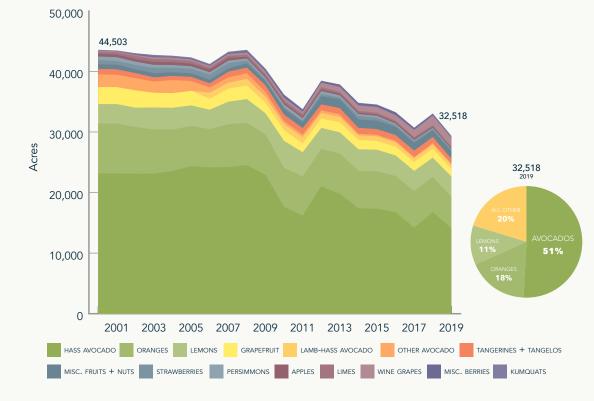
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Decline in Fruit Acreage in San Diego County, 2000-2019



Source: County of San Diego Department of Agriculture, Weights, and Measures, Crop Statistics & Annual Report, multiple years.

The significant decline in fruit acreage in particular is striking (Figure 8). From 2000 to 2019, orange acreage decreased 37%, Hass avocado acreage decreased 28%, and grapefruit acreage decreased 53%. There was also a steep 66% drop in the acres of vegetables and vine crops.

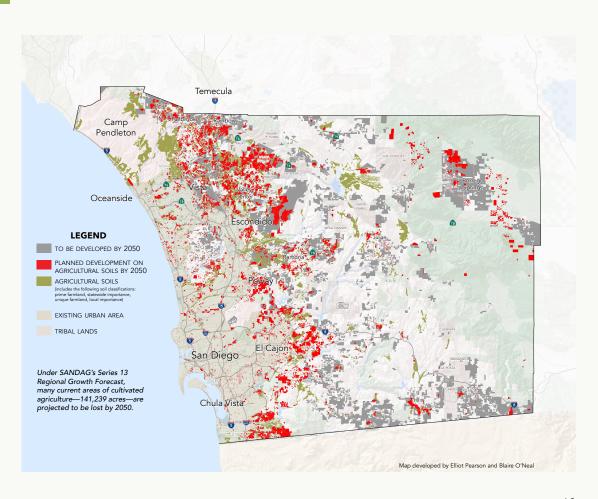
Unfortunately, these trends are projected to continue. <u>SANDAG</u>, a local planning organization, develops regional growth forecasts that inform <u>San Diego Forward: The Regional Plan</u>. The latest growth forecast projects an additional 1 million people living in San Diego County, putting pressure on land use and increasing development pressure in Valley Center, a key agricultural region. Agriculture in San Diego County would be dramatically impacted if this forecast is realized, and could even be completely eliminated by 2050 (Figure 9).

Slowing down these trends, and conserving agricultural lands in San Diego County will be essential moving forward.



FIGURE 9

Modeled Changes in Land in Agriculture by 2050



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Revitalizing Fisheries

Fisheries, especially tuna, were once a much more prominent feature of San Diego's economy and waterfront. However, as a result of environmental laws passed in the 1970s, including the Marine Mammal Protection Act, coupled with limited support provided to fishermen to transition to the new regulations, tuna and other inexpensive seafood imports began flooding the market. Canneries moved overseas to take advantage of low wages and tax incentives in Thailand, Puerto Rico, and American Samoa. By the 1980s, the tuna industry all but collapsed in San Diego, with most fishing and canning businesses closing or moving out of the region.

Today, San Diego County boasts some of the best managed fisheries, most productive and diverse waters, and most innovative and adaptable fishermen in the world. However, significant challenges impact long-term seafood production, including a historically small commercial fishing fleet, limited available waterfront to support fishing infrastructure, few restaurant chains purchasing from local fishermen, and consumer seafood eating habits that do not match the local catch.

A 2010 Port of San Diego Commercial Fisheries Revitalization Plan called for significant investments ranging from \$20 million to \$32 million to revitalize Driscoll's Wharf and Tuna Harbor, but it has been "gathering dust" since.9 Additionally, the effects of climate change are already evident in increasing ocean temperature, ocean acidification and hypoxia, and the disruption of ocean food webs.10

The opening of the <u>Tuna Harbor Dockside Market</u> in 2014 however, has reconnected San Diegans to local, affordable, fresh seafood, and has provided fishermen with the opportunity to meet their customers and diversify their sales. 11 Through Food Vision 2030 surveys, fishermen have expressed an interest in growing direct markets, including Community Supported Fisheries, along with the need for more shared storage facilities, equipment and processing infrastructure, and improved docking and offloading infrastructure, particularly at Tuna Harbor and Driscoll's Wharf.

Supporting local fishermen with revitalizing fisheries, overcoming challenges, investing in local direct markets, and building critical infrastructure will all be necessary moving forward.

- 9 Schoell, Mark, 1999, "The Marine Mammal Protection Act and Its Role in the Decline of San Diego's Fishing Industry," The Journal of San Diego History, 45(1).
- 10 Racino, Brad, October 27. 2016. "In the Shadow of Seaport," inewsource.
- ¹¹ County of San Diego, 2019, The State of the Food System in the San Diego Region.

Commentary

Fish Only Becomes Seafood Because of Fishermen

THERESA SINICROPE TALLEY, CALIFORNIA SEA GRANT, PETER HALMAY, SAN DIEGO FISHERMEN'S WORKING GROUP

The need for strong local food systems became crystal clear during the COVID-19 pandemic when household food shortages flourished while abundances of food rotted at ports and warehouses because pandemic-related shutdowns had halted distribution. We need reliable supplies of fresh, healthy, sustainable food-including seafood-to ensure resilience to future food chain disruptions, be they pandemics, trade wars, or climate change impacts. Sitting adjacent to some of the most diverse and productive ocean in the world, San Diego should be one of the easiest places to get a wide variety of locally sourced seafood, yet relatively little San Diegan catch makes it on to local plates. Aquaculture is up and coming in the region and needs to be a part of our seafood story, but for now we focus on the many reasons, in addition to food security, that San Diego should elevate its priority on strengthening our commercial fisheries.

California's fisheries and, really, any U.S. fisheries, are responsibly managed and provide the most sustainable seafood in the world. Our fishing fleet brings economic benefits that ripple throughout the region as jobs and support within the food system and in related businesses, such as gas, ice and refrigeration, and even tourism. As one of three industries on which this city was founded, fishing is an integral part of San Diego's heritage. Locally landed seafood is fresh, nutritious, and safe, and the variety ensures something for (almost) everyone. Despite the benefits, building a stronger seafood system will be rough waters to navigate. The needs of industry to responsibly grow span the supply chain, from ocean to plate, and require true collaboration across ocean resource and food system sectors. It is the gathering of otherwise disparate people to productively work together that can be the most challenging part of

solving problems, but recent successes in San Diego to support fishermen and get their fish into the hands of San Diegans provide hope. These efforts, such as the passing of the Pacific to Plate bill and the Fish to Families program, are the product of cross-sector relationships based on listening, communication, respect, and accountability.

One need is for reliable access to a greater diversity of species so that we can fish and, subsequently eat, more lightly across more species. This portfolio approach has benefits for fisheries, business, and human health by reducing risks associated with a reliance on very few food products. This can be achieved with many well-trained fishermen and diverse gear types-- hook and line, deep-set buoy gear, traps, longlines. Concurrently needed are more flexible fishery management strategies that allow fishermen to be adaptable to short- term challenges, such as seasonal closures and bad weather, and long-term changes such as ocean temperature regime shifts, fish population fluctuations, and climate change impacts.

marketing, such

equipment, gear

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be financial and technical support to help fishermen with establishing or expanding fishing operations and sales of their catch.

Fish only becomes seafood because of fishermen. We need to support and expand training for a new generation of skilled, responsible fishermen, and provide new skills to existing fishermen wishing to expand their businesses. And we need to broaden recruitment to attract fishermen who better reflect the diversity of our region, and who understand the cultures, traditions, and trends underlying seafood demand, and the limitations to access to help ensure that locally landed seafood is equitably distributed and accessible by all

Finally, informed consumers will be key to fueling a local seafood system. Needed is fact-based information about local fishery sustainability and importance, seafood availability, nutritional information, tips on handling and preparation, and recipes, especially for not-so-mainstream species. And a call to action to eat a greater diversity of seafoods, ask



Adapting to Climate Change

Climate change is dramatically impacting food production across the country and in San Diego County. Drought, wildfire, water stress, and temperature increase are all requiring farmers and fishermen to consistently adapt and evolve to changing conditions.

There is sufficient evidence that California's climate in particular has changed over the years, and will continue to do so moving forward, significantly impacting agricultural production in the state. Data analyzed by ProPublica and the New York Times suggests that climate change will profoundly disrupt the way we live and farm in the United States. Looking at the impact of seven risks—heat, the wet bulb effect (i.e., high heat and humidity), farm crop yields, sea level rise, large fires, and resulting economic damage, the analysis highlights that nearly every county in America will be impacted. The scores for impact to crop yields could range from 0 to 10, where 10 represents a significant decrease in yields. San Diego County scored a 4, partly due to the moderating effect of coastal low clouds and fog. However, avocado and citrus yields are still expected to decrease with increased temperature.

The effects of climate change are also evident in our oceans with increasing ocean temperature, ocean acidification and hypoxia, and the disruption of ocean food webs.¹⁵

Ultimately, drought, wildfire, water stress, and temperature increase will all contribute to "compounding climate calamities"¹⁶ across our planet. In the West and San Diego County, the greatest climate change risk is water stress (Figure 10, see following page).¹⁷

Impacts of Water Stress in California and San Diego County

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The impacts of water stress in California and San Diego County are significant. According to the California Water Action Plan, the future of California includes the following:

Uncertain water supplies: Water reductions from the Colorado River, Sacramento-San Joaquin Delta, and Sierra snowpack are all contributing to an uncertain water future.

Water scarcity and drought: California has always experienced droughts, including a major drought from 2012 to 2017, and more are predicted due to climate change.

Declining groundwater supplies: In the Central Valley, for example, overdrafting exceeds natural recharge, leading to compaction.¹⁸

Poor water quality: Water tainted with arsenic and fertilizers in the Central Valley is impacting millions of Californians.¹⁹

Declining native fish species and loss of wildlife habitat: Native fish populations are at or near historic lows, impacting ecosystem functioning, Indigenous communities, and recreational activities.

Floods: Climate change will increase the number of extreme rain events, more precipitation will fall as rain instead of snow, and snowmelt will occur earlier.

Supply disruptions: A major earthquake could disrupt water supply for months.

Population growth: California's population is projected to increase by another 10 million people by 2049.²⁰

The San Diego County Water Authority (SDCWA) highlights that our region—which only gets about 10 inches of rain a year—sits at the end of very long pipelines. While San Diego County's water supply has diversified over the years, most of it originates with the Colorado River, which is projected to experience severe water shortages due to climate change.²¹ The risks of ongoing water shortages will have a significant impact on the viability of farmers.

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- 17 Thompson, Stuart A. and Yaryna Serkez, September 18, 2020, "Every Place Has Its Own Climate Risk. What Is It Where You Live?" The New York Times.
- ¹⁸ Ojha, Chandrakanta, et al., June 12, 2018, "<u>Sustained</u> <u>Groundwater Loss in</u> <u>California's Central Valley</u> <u>Exacerbated by Intense</u> <u>Drought Periods</u>," Water Resources Research, 54(7).
- Del Real, Jose A., May 21, 2019, "They Grow the Nation's Food, but They Can't Drink the Water," The New York Times.
- California Water Action Plan, 2014.
- ²¹ Udall, Bradley and Jonathan Overpeck, February 17, 2017, "The Twenty-First Century Colorado River Hot Drought and Implications For the Future," Water Resources Research, 53(3).

One key strategy for addressing the impacts of water stress is water recycling. San Diego County is home to the country's largest seawater desalination plant and the biggest conservation-and-transfer agreement in U.S. history. The Escondido Growers for Agricultural Preservation (EGAP), has also been working with the City of Escondido to expand the use of recycled water for agriculture and construct another desalination plant in Escondido.

Moving forward, it will be vital to substantially increase the recycling of water in the region, both to secure water availability and lower water costs. San Diego County farmers currently pay more for water than all other farmers in California. Under a new program with SDCWA, participating farmers will pay a reduced rate (\$1,295 per acre-foot) for water. The catch however, is that they agree to a lower level of service during droughts.

Supporting farmers and fishermen in San Diego County with adapting to the changing climate will not only be essential for preserving their livelihoods, but also for securing our food supply in the region. In the years ahead, it is clear that we will need to increase funding and support for climate mitigation and adaptation, including support for climate-smart agriculture, indoor food production, and transitions to new crops and/or species.

Adapting to Climate Change

Climate change is dramatically impacting food production across the country and in San Diego County. Drought, wildfire, water stress, and temperature increase are all requiring farmers and fishermen to consistently adapt and evolve to changing conditions.

There is sufficient evidence that California's climate in particular has changed over the years, and will continue to do so moving forward, significantly impacting agricultural production in the state. Data analyzed by ProPublica and the New York Times suggests that climate change will profoundly disrupt the way we live and farm in the United States. Looking at the impact of seven risks—heat, the wet bulb effect (i.e., high heat and humidity), farm crop yields, sea level rise, large fires, and resulting economic damage, the analysis highlights that nearly every county in America will be impacted. The scores for impact to crop yields could range from 0 to 10, where 10 represents a significant decrease in yields. San Diego County scored a 4, partly due to the moderating effect of coastal low clouds and fog. However, avocado and citrus yields are still expected to decrease with increased temperature.

The effects of climate change are also evident in our oceans with increasing ocean temperature, ocean acidification and hypoxia, and the disruption of ocean food webs.¹⁵

FIGURE 10

Climate Change and Water Stress in California

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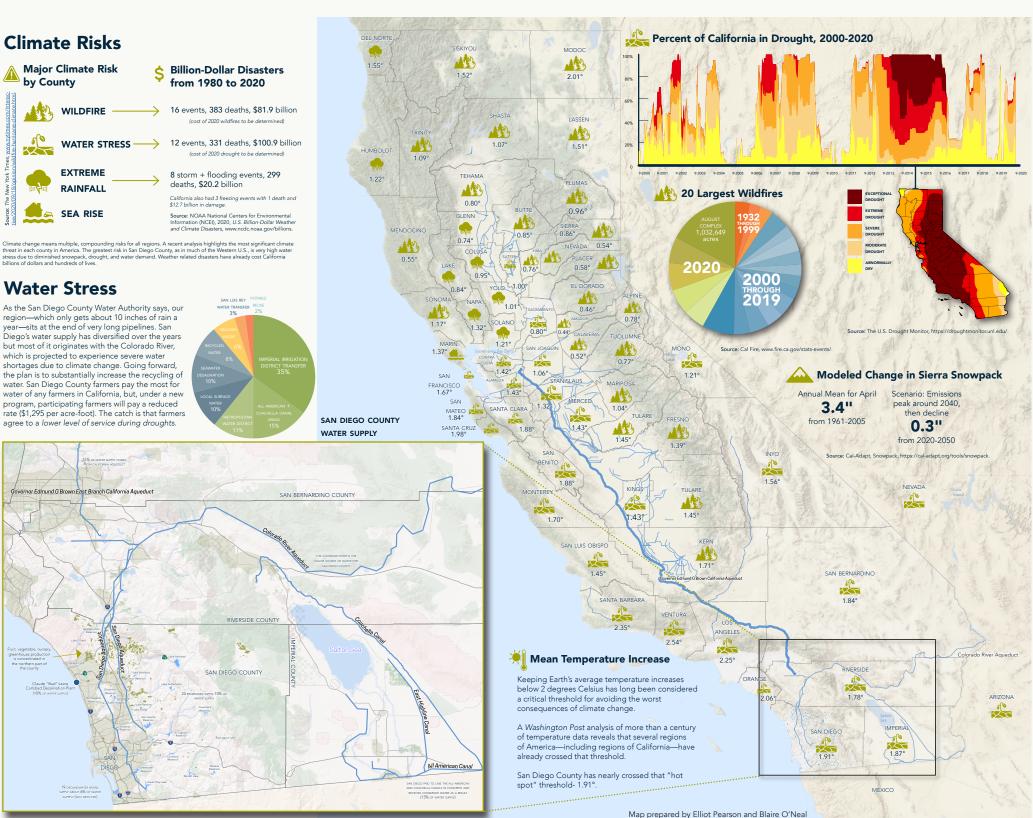
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Ultimately, drought, wildfire, water stress, and temperature increase will all contribute to "compounding climate calamities"¹⁶ across our planet. In the West and San Diego County, the greatest climate change risk is water stress (Figure 10).¹⁷

One key strategy for addressing the impacts of water stress is water recycling. San Diego County is home to the country's largest seawater desalination plant and the biggest conservation-and-transfer agreement in U.S. history. The Escondido Growers for Agricultural Preservation

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Investing in the Next Generation of Producers

The average age of farmers in San Diego County is 62 years old. San Diego County has the largest cohorts of age 45-54, 55-64, 65-74, and 75+ producers of any county in California (Figure 11).

While it is unknown how many farmers in San Diego County retire each year, the USDA estimates that 70 percent of U.S. farmland will change hands in the next 20 years. They also predict that many family farms have not yet identified the next generation that will take over the farm. Without an adequate plan for succession, farms are likely to go out of business, be absorbed by neighboring farms, or be converted to non-farm uses."²²

Despite having the largest cohort of older farmers in San Diego County, many producers have not yet begun to think about succession planning. According to the <u>San Diego Agricultural Growers Needs Assessment</u>, estate *planning* was the lowest business or financial concern expressed by producers. Similarly, the Food Vision 2030 survey of a smaller sample of San Diego County farmers also found that few producers identified Accessing support for succession *planning* as a challenge.

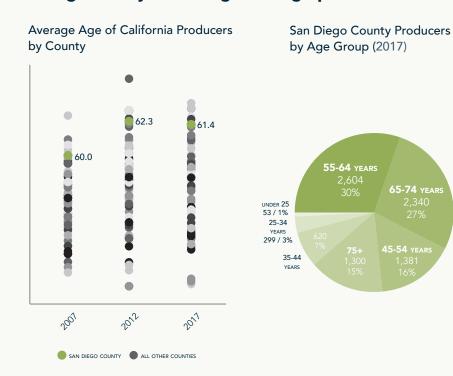
While it is common for people to avoid facing the end of meaningful work or retirement, there could be other reasons why succession planning may not be a priority for farmers. The intergenerational transfer of farms is a challenging process for farm families.²³

Farmers also may already be aware of resources that exist to help with succession planning such as <u>California Farmlink</u> and their <u>inventory of land listings</u>. And finally, balancing farm profitability and a decent quality of life is challenging. Many farmers may not want that



FIGURE 11

San Diego County Farmer Age Demographics, 2017



- A New and Beginning Producer is defined as a producer operating on any operation for 10 years or less. They may be on farms with producers who are not beginning producers.
- ²⁵ A Young Producer is defined as a producer 35 years of age or younger.
- Minkoff-Zern, Laura-Anne, 2018, "Race, Immigration and the Agrarian Question: Farmworkers Becoming Farmers in The United States," The Journal of Peasant Studies, 45(2): 389-408. Danish, Muna, April 15, 2019, "More Latinx. Farmers Own Their Land. Could They Make the Food System More Sustainable?" Civil Eats.

lifestyle for their children. In the words of one farmer, "We need a new idea for how to farm in this country. If you talk to a farmer about what they want for their kids, it's unfortunately not farming."

Despite having the oldest producer cohorts in California, San Diego County also has the largest number of New and Beginning Producers²⁴ of any county in California and ranks high among California counties for the number of Young Producers.²⁵ Although a nascent <u>San Diego New Farmers Guild</u> exists, it is clear that more resources and opportunities are needed to support transitions for the next generation of producers in the region.

In particular, opportunities to support farmworker to farmer transitions is an important strategy moving forward. Farmworkers, predominantly Hispanic/Latinx, hold significant technical expertise and knowledge, but are often underrepresented in current discussions around agrarian transitions.²⁶

In addition to supporting aging producers with succession planning and creating opportunities for the next generation of producers, it is equally important that we help farmers overcome the many challenges associated with achieving farm profitability (See Objective 2).

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²² USDA National Institute of Food and Agriculture, Family Farms.

²³ Ruhf, Kathy, Jerry Cosgrove, and Adriana Eliot, 2012, Farm Succession and Transfer: Strategies for the Junior Generation, Land for Good

SPOTLIGHT

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San Gabriel Ranch

Officially, Nick Stridsberg has been managing San Gabriel Ranch for seven years, since he took the reins at the 100-acre organic fruit farm in Valley Center while earning a degree in Business Administration at San Diego State University. Truthfully, he's been in the business for literally his entire life. "I'm sitting about 100 yards from where I was born and raised, on the original parcel of land that this farm was started on," he says. "Now I have an office here. It's come full circle."

At only twenty-nine years old, Nick talks about farming with an edge in his voice, a sign of the hard-won wisdom of someone who's been tested by the system and has seen his profession get tougher year after year.

"The price of fruit has not transitioned with the rising cost of labor, supplies, equipment, and water," he says. "Producers like us are getting squeezed from every direction. Giant retailers want ever-lower prices on their organic produce, which ultimately comes back to us farmers. Conglomerates are doing everything at scale, cheaper and cheaper, pushing small family farms out. Importers are also hurting U.S. farmers."

His tone changes, however, when he describes the opportunity he does see—a turning point he was initially forced to face last year, but now believes was a critical transition for San Gabriel Ranch, and a way forward for the future of farming in San Diego County.

"Our old business model was to sell bulk fruit to packinghouses. That allowed us to offload huge quantities of produce very quickly—but it's the least profitable option, and we had no idea where the fruit was going next," Nick says. "Now, we've transitioned to almost all direct sales. We no longer pack or market outside, we do it ourselves. We've built up a customer base through direct relationships with local retailers and institutions, and some processors outside the County."



The transition began when Nick packed 200,000 pounds of lemons for a packinghouse outside of San Diego County, and was paid only \$0.10 per pound—far less than what the fruit was worth. "It wasn't even enough to pay my water bill," says Nick. Later on, one of his main customers, a packinghouse in Oceanside, went out of business. "For us, this was the moment we either had to find a new customer, or go out of business ourselves." He dug his heels into making phone calls, sending emails, and forging new relationships, and started by selling fruit to school lunch catering services through an introduction made by CHIP's Farm to Institution Center, local business Daily Harvest Express, and others.

In spite of remembering this anxious period of pivoting the farm's business model just ahead of a pandemic year, Nick's reflective tone gives way to hope, and a deep resolve—for creating a safer and more secure future for fellow farmers in San Diego County.

"We survived a critical turning point, but a lot of people don't have reserves for that," says Nick. "I want to start a co-op, getting a bunch of farmers to push sales together. I'm thinking about how I can start my own packinghouse of sorts, a distribution operation that sources from all the small farmers in the area to feed our region. I've also thought about starting a juice business here, to process all the citrus that's prevalent in San Diego County."

For now, though, Nick has enough work on his hands with just San Gabriel Ranch. "We're 100 acres, but we're still a small business. At the moment, I'm the compliance, I'm the delivery driver, I'm fixing tractors, doing the books, writing paychecks. We've also recently transitioned thirty acres of avocados into exotic fruits that will get us a higher price per pound than many other crops," he says. He urges new and beginning farmers to start small, and diversify.

"As long as I'm growing, and I'm seeing room for expansion, I'll keep farming."

Reducing Disparities in Farmland Ownership

- ²⁷ Nguyen, Mai and Martin Lemos, April 2019, California Young Farmers Report 2019, National Young Farmers Coalition.
- Philpott, Tom, November 19, 2020, "Black Farmers Have Been Robbed of Land. A New Bill Would Give Them a "Quantum Leap" Toward Justice," Mother Jones.
- ²⁷ Newkirk II, Vann R., September 29, 2019, "<u>The</u> <u>Great Land Robbery</u>," The Atlantic
- ³⁰ California Department of Food & Agriculture, 2020, Equity: 2020 Report to the California Legislature on the Farmer Equity Act.

Farmers of color, socially disadvantaged, young, and beginning farmers all experience significant challenges with finding affordable, quality farmland, and securing land tenure.²⁷ Black, Indigenous, and people of color however, have experienced some of the lowest rates of farmland ownership specifically as a result of systemic racism and intentional discriminatory policies by the federal government.

In the decades after slavery ended, Black Americans accumulated a substantial amount of farmland. The number of Black farmers peaked in the *1910s*, with 200,000 farmers operating an estimated 20 million acres, mostly in the South.²⁸ After the <u>Great Land Robbery</u> where the federal government, namely the USDA, dispossessed Black farmers of nearly 98% of their land, massive transfers of wealth occured from Black farmers to White farmers. In 1965, the United States Commission on Civil Rights revealed blatant and dramatic racial differences in the level of federal investment in farmers.²⁹ Today, Black farmers make up 1.3% of producers and operate only 1.7% of U.S. farms and 0.5% of land in agriculture.

Similar land loss trends are visible across other farmers of color. According to the most recent USDA data, only 2.3% of the 3.4 million farmers in the U.S. identify as Native American or Alaskan Native, and less than 1% identify as Asian American. <u>USDA's own maps</u> explicitly show that areas of the country where farmers make comparatively less money—the South, Navajo Nation, Cherokee Nation, along the Mexican border—are all areas with higher concentrations of Black, Indigenous, and Hispanic/Latinx farmers.³⁰

In California, Hispanic/Latinx Americans make up about 39% of the state's population but only 12% of producers and operate only 16% of farms and 12% of land in agriculture.

In an effort to address disparities in farmland ownership, the state of California passed the Farmer Equity Act in 2017, requiring the California Department of Food and Agriculture to improve programs and policies for farmers of color and socially disadvantaged producers.

Nationally, there is also growing awareness and energy behind the movement from <u>disparity</u> to parity for farmers of color and socially disadvantaged producers. State and federal policies, such as the California Farmer Equity Act and U.S. Senator Cory Booker's proposed <u>Justice for Black Farmers Act</u>, attempt to reduce racial disparities in farmland ownership. The Justice for Black Farmers Act, if passed, would allocate \$8 billion to purchase agricultural land and return it to Black farmers. Native communities have also initiated the <u>Landback movement</u> to advocate for the return of land to the stewardship of Native people. And the <u>Native American Agriculture Fund</u>, a philanthropic organization dedicated to funding Indigenous producers, has estimated \$3.4 billion to reimagine Native food economies.

Several land trusts have also emerged across the country to specifically support land access and land justice for farmers of color. The <u>Black Family Land Trust</u> is a North Carolina-based land trust dedicated to preserving Black landowner assets, including farms and forests.

<u>Minnow</u> is an emerging organization in California that is focusing on agricultural land justice.

Although San Diego County has the largest number of White farmers of any county in California, it also has the most *relatively* diverse producers in the state. San Diego County ranks 3rd for the number of Hispanic/Latinx producers (1,121), 4th for the number of Asian American producers (384), and has the highest number of producers from more than one race (173), Indigenous producers (106), Native Hawaiian or Polynesian producers (55), Black producers (44), and female producers (3,501). Hispanic/Latinx Americans make up 33.5% of San Diego County's population and operate 26.7% of land in agriculture, the second highest percentage of any county in California.

Despite these trends in San Diego County, there is still a significant opportunity and need to reduce disparities for farmers of color in the region. Investing in long-term food production in the region, and creating a diverse and resilient food system will require diversity and equity in farmland ownership.

Commentary

Land is not a commodity. It is our collective responsibility.

MAI NGUYEN, MINNOW

I was born in San Diego and raised by the Vietnamese refugee community here. As displaced peoples making a new home on foreign soil, I was taught to cultivate healthy grounds, grow cultural foods, and share our harvest. Respect for farmers and valuing fresh food are central to our daily rituals. Yet, nutritionists, health experts, and well-intentioned poverty alleviation groups look at aggregated health outcomes data, or simply out of judgement, and tell us we don't know what's good for us.

Like many of the immigrant and refugee communities in our diverse border county, we know that the cause of our high rates of diabetes, asthma, and diet-related illnesses aren't because we lack knowledge. It's because of what white, dominant society will not share: power and land. With power and land, we can shape infrastructure to provide for our communities instead of relying on a system created by and for only a few, that harms us more than heals us.

Land is fundamental for life, so the forced dispossession of land from Indigenous peoples who are still here and the lack of access and secure land tenure for immigrants, refugees, Black, and people of color means that we're exposed to premature death. I'm a farmer dedicated to

feeding my community, but I had to move to the other side of the state to afford leased land. There are many more people like me, but we are not allowed the space to grow our culturally-relevant food, exercise our respectful and sustainable human-nature world views, and root down our traditions, histories, and intergenerational legacies.

San Diego County uniquely has farmland adjacent to cities. We can get fresh food year-round. Now, imagine if we enabled San Diego's ethnic and cultural diversity to be reflected in farmland ownership and food production. We have a landscape wherein immigrant, refugee, Black, and farmers of color and Indigenous land stewards could directly channel culturally-appropriate, healthful, fresh, and flavorful food to their urban communities, and everyone else!

First, we must preserve farmland. San Diego is losing precious farmland faster than any other county in the state. We need to protect farmland from development and non-agricultural industries; fertile soil isn't recoverable once paved. These protections can come in the form of community control and easements. Land is not a commodity and is a collective responsibility.

FIGURE 12

San Diego County Farmers (Producers) by Race

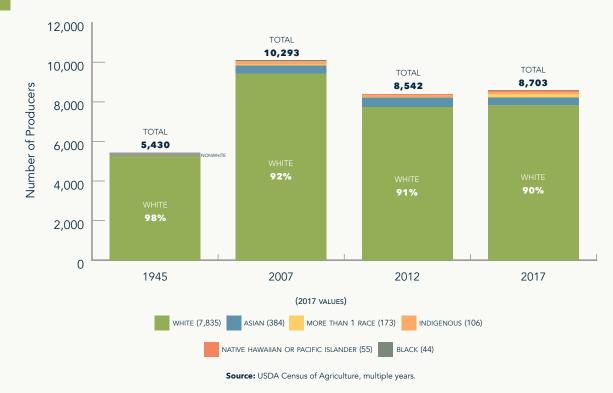
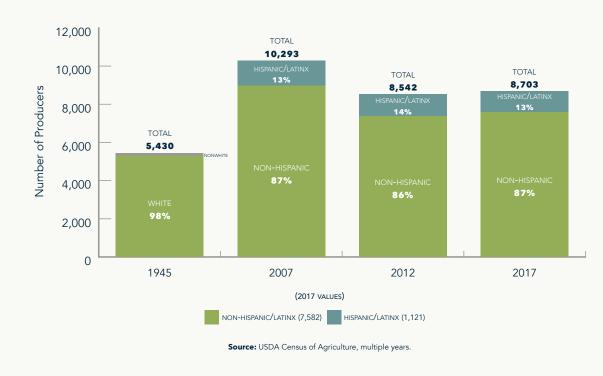


FIGURE 13

San Diego County Farmers (Producers) by Hispanic/Latinx Ethnicity



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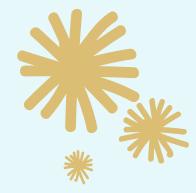
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Strategies

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03 EXPAND CLIMATE-SMART AGRICULTURE

04 SUPPORT COORDINATED EFFORTS AND COLLABORATION TO CREATE A TECHNICAL ASSISTANCE & BUSINESS ASSISTANCE NETWORK FOR FARMERS AND FISHERMEN

SCALE UP AGRICULTURAL LAND CONSERVATION EFFORTS

DEVELOP AN AGRICULTURAL LAND TRUST

San Diego County is unique. Unlike other parts of the country, it has an active farm and fishing industry in close proximity to a major metropolitan region. It also boasts a year-round growing season, and multiple land and sea microclimates. Over the past several decades however, the region has been losing agricultural land, farms, and fisheries at a rapid pace. Among others, threats include housing development, climate change, water stress, and market consolidation. Once land and ocean ecosystems are lost, it is very difficult to bring them back.

This coming decade may be our last, and best chance to safeguard food production in San Diego County. We have an opportunity to conserve farmland, and make investments in long-term food production for the region. We also have an opportunity to fight climate change through investments in local agriculture and fisheries. And finally, we have the opportunity to build greater equity and secure a more resilient local food system by investing in small and midsize producers as well as Black, Indigenous, and producers of color.



Strategies

SCALE UP AGRICULTURAL LAND CONSERVATION EFFORTS

Conserving agricultural land—both urban and rural—is key to preserving long-term food production. In San Diego County, there are a few efforts that support agricultural land conservation, including the Williamson Act Program and the County of San Diego's Purchase of Conservation Easement (PACE) program.

Since 1965, California's <u>Williamson Act Program</u> has empowered municipalities to designate large tracts of land as agricultural preserves by entering into multi-year contracts with landowners. As a result, land remains in agriculture, and landowners receive substantially reduced property tax assessments. Over 406,000 acres, including over 80,000 acres with contracts, are in Williamson Act preserves in San Diego County (Figure 8). The preserves have been designated mostly on rangeland that may or may not be in active production.

The <u>County of San Diego's Purchase of Conservation Easement (PACE) program</u> seeks out potential agricultural properties for conservation. Since 2013, the PACE program has conserved over 2,400 acres of land in agriculture (mostly citrus and avocado farms) through perpetual easements. In alignment with the <u>County of San Diego's Climate Action Plan</u>, the

PACE program has set a goal of preserving at least 443 acres per year through 2030 for a total of 4,370 acres, or a cumulative total of 6,830 acres.³⁶ However, with only 1% of land in agriculture currently conserved through the PACE program—and ultimately 3% by 2030—it is clear that more tools will be required to preserve agricultural lands in San Diego County (Figure 14).

Expanding participation in both the Williamson Act and the PACE program, will be key moving forward. It will also be important to include agricultural land conservation as an implementation strategy in local and regional plans related to SB 375—Sustainable Communities and Climate Protection Act of 2008—as well as other statewide policies.

In addition, another important strategy will be pursuing funding for agricultural land conservation through the <u>Sustainable Agricultural Lands Conservation Program</u> (SALC), and <u>California Farmland Conservancy Program</u> (CFCP). To date, San Diego County projects have not received funding through the SALC program. The <u>California Farmland Conservancy Program</u> (CFCP) provides grant funding for easement and planning projects that support agricultural land conservation across the state, including funding for land trusts to begin or expand agricultural conservation efforts.

FIGURE 14

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The PACE Program Has Conserved 2,400 Acres



Source: County of San Diego Purchase of Agricultural Conservation Easement (PACE) Program, www.sandiegocounty.gov/content/sdc/pds/advance/PACE.html.



Pixca Farm

At Pixca Farm, December showers quite literally brought Mother's Day flowers: golden calendula, gumdrop-like gomphrena, tall and delicate caspia, and Pixca's signature, bright orange cempasuchil—commonly known as Mexican marigold. Colorful bouquets have become a fixture at Pixca's farmstand, a special treat customers can take home along with their weekly stock of veggies: broccoli, kale, radish, herbs, bok choy, and blue corn in the summertime.

All of this bounty is grown on a half-acre plot in the South Bay, by Pixca's four farmers, who also co-own the farm.

While the flowers have become a Pixca signature, they actually started out as an urgent survival tactic. "On December 6, 2019, it didn't flood anywhere else, but it flooded where we were," Leonard Vargas, one of Pixca's founding farmers says with a rueful laugh. "We had just started to gain traction with our vegetable CSA, and we were suddenly forced to destroy everything and start over."

"However," he continues, "the flood, along with the pandemic a few months later, turned out to bring a silver lining with every storm."

After losing their vegetable crop, Leonard and his partners regrouped and decided to add flowers to the mix. Flowers can be grown again sooner, since there is less need to worry about contamination from the flood, as you would for edible products. "We met the Mother's Day demand nicely, especially when COVID-19 shut down larger cut flower operations," Leonard says. "That gave us a big boost in terms of revenue—and they are something we can fall back on in case we have another flood."

Leonard knows his way around growing both food and flowers. He's been growing both types of products for thirty years, and is a third-generation farmer who hails from a family that has been farming in Los Angeles and San Diego Counties since the 1940s.

When he reflects on the change he's seen in agriculture over the last quarter-century, Leonard invokes a grim pun. "It certainly has eroded, in my opinion. When I was growing up in the late 1970s and 80s, there were a lot of strawberry growers in North County who are no longer there. All that coastal plain we have in LA and San Diego Counties used to be farmland, and



there's no climate like coastal plain for growing. Now it's just high-priced housing. Globalization and imports have really eroded agriculture in this area."

Even after seeing agriculture in decline for decades, however, Leonard shows no signs of discouragement. In his practical, no-fuss way, he describes the process of starting Pixca Farm—a thriving, colorful patch in the South Bay that has withstood flood, pandemic, and a challenging economy, and continues to nourish residents while supporting its worker-owners with fair revenue and

collective agency. "Well, we did it pretty bootstrapped," he says, simply. "Forming the entity on our own, we often felt as if we were groping around in the dark."

SAN DIEGO COUNTY FOOD VISION 2030

After crossing that hurdle, there were further difficulties: growing on limited space, sourcing dependable compost, having limited supply and equipment retailers in Central and South San Diego County, which forces hours-long trips up north to pick up basic items.

Leonard shares that, all the same, he remains confident in Pixca's success, and our ability to shift the food system to better support growers, workers, and aspiring farmers.

"I think there's a real opportunity in getting people to focus on supporting local, instead of having food imported from elsewhere. People do want to walk down the block and buy from their local farmstand." On the future of farming, he says, "There are a bunch of young people who want to do this as a living, but they can't make it through the barriers. We need to make the pathway for them."

Just as he looked at a flooded field and saw flowers, Leonard looks at San Diego County's shrinking traditional agricultural sector and sees an opportunity for change. Pixca, with its collective ownership model and direct sales, will likely double in size soon—with hopes to supply the likes of Jimbo's and People's. Leonard also has his eye on a distant—but not too distant—vision: splitting a much larger piece of land in the South Bay into 5-acre plots, to nurture future farmers and support small operations in our region. "That could grow a lot of food!" he says.

After thirty years in the business, Leonard says farming still holds the same magic it always has for him. "Putting a seed in the ground is a way of looking into the future. People come by and say, 'Wow!' I like inspiring them to realize that they can do this, it's not impossible."

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DEVELOP AN AGRICULTURAL LAND TRUST

CORE CHALLENGES

Agricultural land trusts are an important strategy for conserving farmland. They restrict development, keep farmland in active production, and ensure affordable land access for the next generation of farmers.

By working with landowners to purchase or accept property donations, agricultural land trusts establish conservation easements, ensure permanent land protections, and foster land stewardship. Community agricultural land trusts-both urban and rural-focus on collective land stewardship, providing more accessible and just opportunities for land access and ownership.

San Diego County currently does not have a dedicated agricultural land trust. Exploring the feasibility of developing one in the region, specifically one that offers opportunity for collective land stewardship and centers Black, Indigenous, and Farmers of Color, is a key strategy moving forward. Agricultural land trusts can also be a powerful tool for facilitating the transfer of Native land back into native stewardship.



Pauma Tribal Farms

On the drive to Pauma Valley, it's wise to slow down on Cole Grade Road. Not just because there are two hairpin turns as the road drops eight percent, but because a perfect, panoramic view appears for only an instant at the top of the first bend: blue sky, straw-colored hills, a valley flush with sage- and olive-green fields. At sunrise, clouds hang low over Pauma Valley as if it were a theater set, and the scene is bathed in early morning light.

It's in this valley where Chairman Temet Aguilar, the passionate and visionary leader of the Pauma Band of Luiseño Indians, is hard at work.

"My title, 'Chairman,' is an artificial construct that was set up by the federal government," he says. "It has nothing to do with our traditions and our way of life. But we've massaged it using our customs and traditions, which are what the Tribe has relied on every day to survive and become successful-not just economically, but in terms of regaining some of our sovereignty. And most importantly, to regain a foothold on our land."

The Pauma Tribe recently acquired 140 acres of land contiguous to the reservation. "We own all the land from Highway 76 up Reservation Road now. If you've ever been to Pauma, you know the road. We now own both sides. And we're not even close to being done."

The 140 acres is mostly orange orchards, adding 14,000 trees to the 30,000 the Tribe already had. This year, they plan to appoint a Tribal Councilmember dedicated solely to maintaining Pauma Tribal Farms.



02

Strategies

On the farms, Pauma members are also growing avocados, grapefruits, lemons, and limes, and have recently planted olives and grapes. Pauma Gardens, in partnership with Solidarity Farm, produces seasonal vegetables, and members are learning how to grow food there. "This is just the beginning," says Chairman Aguilar. "There are other lands and possibilities that will really open up our opportunity to exercise our food sovereignty."

To once again have sovereignty over their foodways and exercise self-sufficiency in fulfilling nutritional needs, determining health outcomes, and overseeing land management practices, is something Pauma and all Tribal communities have universally fought for for generations. It is a long-awaited moment of healing, liberation, and reclamation.

The Chairman recounts his childhood on the reservation, being raised in a one-bedroom trailer on commodities, the food the federal government provides each reservation. "Food high in fat content, all canned, nothing fresh," he recalls. "There's a problem when food is made more for profit than it is for nutrients. That's why we see a high prevalence of obesity and diabetes in our

It's a bitter irony that a global pandemic is just what the Chairman thinks will flip the script in Pauma's favor. "We have seen pandemics before," he says. "This is nothing new to the Tribes. You're talking to people who haven't forgotten that the U.S. government tried to exterminate us through viruses."

"But it's during this pandemic," he continues, "that people are finally waking up to things we have always known. I've told the Council that this pandemic has proven one thing to us as Natives: that our traditional way of life is the way. On our reservation, nobody goes hungry, and nobody is left homeless, pandemic times or not. Can any other city, state, or nation say that? I've visited cities where elders and children are left on the street. Our people don't go hungry and they aren't left homeless because that is our way of life-and we are not wealthy. It means we're doing something right."

Investing in agriculture is another instance where Chairman Aguilar knows that Tribal ways will protect his people in a way that mainstream, profit-driven thinking can't.

"The first investment we made in agriculture, years ago, was a farm that was losing money," Chairman Aguilar remembers. "They wanted \$1 million for it. As an economic development project, that wasn't going to work. But to us, we saw all the value. That's the beauty of the Tribe. We don't do everything just because it has to make a profit. We do things because we know they're the right thing to do—and it pays off."

Chairman Aguilar welcomes non-Natives to join Pauma in reconnecting with the land and rethinking what makes a resilient society. As a professor at San Diego State University and Palomar College, he tells his diverse body of students, "Native history is your history, if you are here. If you plan on always living here and raising your children here, why not know its history? Why are we talking about European history? There is a history—and you have a history-here."

Allies are core to the Chairman's vision. Allies in farming, in land stewardship, in helping tell the Tribe's story using new technology and a bold media footprint. And allies in simply realizing that there is much to learn from Tribal ways.

"Without allies, our opposition is too big. There's too much money and power out there that will push our Tribes around, even with our status," says the Chairman. "We've seen it. We saw a pipeline go right through the Dakotas, until there was a different administration. Those were sacred lands, and they knew the pipeline would leak, and still it went through. It only takes one billionaire to change the game with big industry."

All around San Diego County, there is no question that agriculture is at risk. But not so in Pauma Valley. If we have any hope for preserving agricultural land and sustaining food production for the true long term, it's by uplifting and expanding projects like Pauma Tribal Farms, and listening to Tribal wisdom on resilience.

"During chaos is when change comes," Chairman Aguilar says. "This is our opportunity to reclaim our place. Learn who and what we are, again. Reconnect back to the land. It's a rough project, believe me, but we have some very strong members, employees, and allies on our side. Our story is about our survival, and our resistance. And our people are very good storytellers. We're so good, that we're still here.

"I don't care if we have to buy back our land, acre by acre-I'll buy it back, if that's the means for doing it. It's not so Indians can have more land. We want to bring balance to this region by providing jobs, providing opportunities for youth to learn about agriculture. We should have never lost our connection with food in the first place. We won't lose it again."

Below are a few examples of agricultural land trusts across the country that may serve as inspiration for San Diego County.

Organization	Description
Vermont Land Trust	The Vermont Land Trust (VLT) conserves farmland, forestland, and land important to communities. They match farmers with affordable farmland to encourage new businesses to grow, and they also work with owners of conserved land to make sur that land remains healthy and productive. Since 1977, VLT has conserved about 11' of the state's land area. Funding is secured through a combination of state, federal, and private grants. In 2019-2020, VLT's budget of \$16,087,596 was generated from government support (49%, from the Vermont Housing and Conservation Board, a statewide agency, with matching funds from USDA Natural Resources Conservation Service), individuals and businesses (32%, including over 3,500 members), foundations (13%), and investment returns (6%).
Kumeyaay Diegueno Land Conservancy	Since 2010, the <u>Kumeyaay Diegueño Land Conservancy</u> has been re-acquiring sacred lands in San Diego and Imperial counties, including the <u>Mosler Property</u> nea Julian that has apple and pear orchards.
Black Family Land Trust	The Black Family Land Trust (BFLT) is a North Carolina-based land trust dedicated to the preservation of Black landowner assets, including farms and forests. The BFLT uses the principles of land conservation and land-based community economic development to achieve their goals. Their programs are intergenerational in design, and they honor the legacy of the land stewards that came before them and create a pathway for those that will come after them.
Northeast Farmers of Color Land Trust	The Northeast Farmers of Color Land Trust is a hybrid model land trust, bringing together a community land trust model and a conservation land trust model to reimagine land access as well as conservation and stewardship of communities and ecosystems. This nascent land trust is advancing skills and knowledge with and for BIPOC farmers, land stewards, and earth workers, connecting them with the resources, training, education, and land that will enhance their ability to thrive.
New Communities	Born out of the Civil Rights Movement in 1969, New Communities, Inc. is a non-protofolic)(4) based in Albany, Georgia. Founded as a collective farm, New Communities is widely recognized as the original model for community land trusts in the US. Today, the founding members, including Charles and Shirley Sherrod, are dedicated to empowering the community through agribusiness and economic development.
Agrarian Commons	The Agrarian Commons is an innovative land-holding model committed to shaping just, resilient, healthy food system and farm economy for the communities it serves. The Agrarian Commons hold land in community-centered entities that are 501(c) (2) subsidiaries of the national 501(c)(3) Agrarian Trust. All decision making within an Agrarian Commons takes place in the local 501(c)(2) governance structure. These Agrarian Commons own assets and land to convey affordable and equitable leases for the purpose of chemical-free, regenerative, and ecologically sustainable diversified food production for community benefit. Each Agrarian Commons is supported in various ways by the national 501(c)(3) Agrarian Trust.

Strategies **03**

EXPAND CLIMATE-SMART AGRICULTURE

Climate-smart agriculture, or carbon farming, is a powerful solution for fighting climate change. It can increase agricultural productivity and farmer profitability, help adapt and build resilience to climate change, and reduce greenhouse gas emissions.

Climate-smart agriculture includes a suite of practices—such as cover cropping, reduced tillage, compost application, and silvopasture—that yield multiple benefits, including carbon sequestration, erosion control, and healthy soils.³¹ Most of these practices are not new and have been used by farmers for decades. In response to the rapidly changing climate however, there is now a heightened sense of urgency to scale up climate-smart agriculture.

Keeping farms in active production is an important climate-smart strategy and can dramatically increase carbon sequestration. In San Diego County, nearly 1 million orchard trees have been taken out of production from 2000 to 2015, resulting in a loss of more than 300,000 tons of carbon.³² When trees are removed, carbon dioxide is released and sequestration stops. It is clear that keeping farms in San Diego County actively working the land is a key climate-smart strategy moving forward.

There are several additional strategies for expanding climate-smart agriculture in San Diego County, including increasing farmer-led research to support climate mitigation and adaptation, leveraging available sources of funding, and intensifying and diversifying food production in the region.

Preserve Agricultural Land & Soils

and Invest in Long-

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³¹ Batra Ecological
Strategies, March 2018,
Linking Climate-Friendly.
Farming Practices to San
Diego County's Climate.
Action Plan: An Opportunity.
Analysis of Carbon Farming.
in the Unincorporated.
County, San Diego Food
System Alliance.

Batra EcologicalStrategies, March 2018.

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Expand Farmer-led Research to Support Climate Mitigation and Adaptation

The 2020 Climate Change Consortium for Specialty Crops, organized by the Climate Science Alliance and the California Department of Food and Agriculture, convened producers, researchers, and technical assistance providers to identify the major impacts of climate change and priority needs for producers in San Diego County. The top needs identified included the development of regionally-specific technical assistance programs, research on more resilient, new varieties, and types of cultivars suited for the region's climate, opportunities to integrate livestock rotation into crop systems, on-farm research demonstration projects, incentives for changing agricultural practices, and more efficient, flexible, and computerized irrigation systems.

Moving forward, ongoing farmer-led research and continued support is necessary for expanding climate-smart agriculture in the region. Local agencies that currently provide research and support for climate-smart agriculture, include UCCE San Diego, Mission Resource Conservation District, and Greater San Diego Resource Conservation District.

In addition, the Carbon Farming Task Force, led by San Diego County Farm Bureau and Solidarity Farm, is a farmer-led initiative that is bringing together producers, researchers, technical assistance providers, policymakers, and funders to develop and advance climatesmart agricultural strategies in San Diego County.

With an intimate knowledge of their farming operations, farmers are best positioned to identify the impacts of climate change on their crops and lead future efforts to scale up climate-smart agriculture in the region.



Carbon Farming in San Diego County

The Carbon Farming Task Force, led by the San Diego County Farm Bureau and Solidarity Farm, brings together producers, researchers, technical assistance providers, policymakers, and funders to develop and advance climate-smart agricultural strategies in the region.

Carbon sequestration in soils and vegetation is one of the few ways that communities can simultaneously address climate mitigation and climate resilience. Climate-smart agricultural practices (e.g., planting trees and shrubs, using compost and mulch) prevent soil erosion, increase soil fertility, and improve the soil's ability to absorb and hold water. These benefits conserve critical agricultural resources, support several Countywide efforts, including the County of San Diego Climate Action Plan, and will become increasingly important in the fight against climate change.

Perennial woody vegetation such as orchard trees have among the highest GHG reduction potential of any cropping systems. As San Diego County loses orchards, it also loses their carbon sequestration services. Moving forward, it will be critical to:

- Conserve the existing agricultural carbon storage and sequestration by addressing root drivers behind the decline in orchard crops.
- Collaborate across agencies to facilitate and incentivize key carbon farming practices that have resilience co-benefits, such as composting and riparian restoration, and several others such as cover cropping, mulching, and planting of perennial vegetation.



Support new, beginning, young, and farmers of color by helping them to succeed in carbon farming and regenerative agriculture.

Climate-smart agricultural practices reflect traditional Indigenous practices that have been used for centuries to conserve resources, protect biodiversity, and create harmony with the land.

In 2019, Pauma Tribal Farms, an 87 acre property co-managed with Solidarity Farm, organized the Carbon Sink Convergence, an event that drew 180 people to learn about re-integrating Indigenous foodways and climate-smart agricultural practices. At the Carbon Sink Demonstration Farm on Pauma Tribal Farms, they have measured an increase in the carbon in their soils from 1% to 4% as a result of planting trees, practicing no till farming, and using compost and cover crops.

Led by farmers, the Carbon Farming Task Force provides a platform for sharing best practices, identifying research priorities, and working together with others to advance policies in support of carbon farming in San Diego County.

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34 California Climate

Investments, https://

webmaps.arb.ca.gov/

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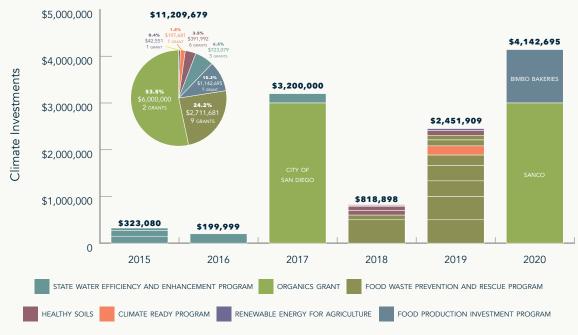
Leverage Available Sources of Funding for Climate Change Mitigation and Adaptation Practices

Leveraging available sources of funding and developing new and creative financing strategies will be vital to expanding climate-smart agriculture in San Diego County. Currently, there are several sources of public and private funding available to support with implementation.

A 2021 report by U.S. Farmers & Ranchers in Action, <u>Transformative Investment in Climate-smart Agriculture</u>, estimated an average of \$972 billion in capital flowing from large, private investors to food and agriculture businesses. The report also identified 19 financing mechanisms across the capital continuum, from climate bonds and on-bill-financing, to venture capital funds and ecosystem service payments, for driving money toward climate-smart agriculture.³³ Larger food producers and businesses have been the primary beneficiaries of these funds. Moving forward, it will be important to leverage funds to support climate mitigation and adaptation for San Diego County's small and midsize food producers and farmers of color.

FIGURE 15 Ca

California Climate Investments in San Diego's Food System



³³ U.S. Farmers & Ranchers in Action, February 2021, <u>Transformative Investment</u> in Climate-Smart Agriculture.

Source: California Climate Investments, https://webmaps.arb.ca.gov/ccimap/.

There is also a tremendous amount of cap-and-trade dollars administered through California Climate Investments that could be pursued for the food system in San Diego County. (Figure 15).

To date, San Diego County has received over \$333 million from California Climate Investments, mostly for transportation incentives and improvements.³⁴ Food system projects have received only \$11 million, or 3.4% of total county allocations. California Climate Investments cover a variety of programs, including the following:

State Water Efficiency and Enhancement Program

The California Department of Food and Agriculture provides grants to implement irrigation systems that reduce greenhouse gases and save water on California agricultural operations. To date, five local producers have received funding.

Organics Grant Program

CalRecycle administers this program to expand existing capacity or establish new facilities in California to reduce the amount of organic waste being sent to landfills. The City of San Diego received funding for composting and SANCO Services received funding for an anaerobic digester.

Food Waste Prevention and Rescue Program

CalRecycle administers this program to new or expanding existing food waste prevention projects to reduce the amount of food being disposed of in landfills. Eight organizations, including two upcycling food and beverage manufacturers (SoulMuch, a cookie company, and Misadventure Vodka) both received funding from this program.

Healthy Soils Program

The California Department of Food and Agriculture administers incentive and demonstration programs for improving soil health and sequestering carbon. Six organizations in San Diego received funding through this program.

Climate Ready Program

The Coastal Conservancy administers this program to support projects that use natural systems to assist communities in adapting to the impacts of climate change. Pauma Tribal Farms has been the only local recipient to date

Renewable Energy for Agriculture

The California Energy Commission offers grants that encourage the installation of renewable energy technologies serving agricultural operations to reduce greenhouse gas emissions. Hass Heights Growers received funding from this program to develop a solar photovoltaic array.

Food Production Investment Program

The California Energy Commission provides grants to help food processors save energy and money while reducing greenhouse gas emissions. <u>Bimbo Bakeries</u> received funding from this program to increase energy efficiency at its San Diego County facilities.

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And finally, there are opportunities for San Diego County to create financial incentives through the <u>Climate Action Plan</u> and their various agencies. As highlighted in <u>Building a Climate-Friendly San Diego from the Ground Up</u>, examples of ways the County can support financing for climate-smart agriculture include creating a mitigation fund for ecosystem services, developing a revolving loan fund to support with implementing best practices, and pooling together funds from agencies that benefit from the co-benefits of carbon farming.

Incentives are an important strategy for helping producers mitigate and adapt to the changing climate. Leveraging available funding sources and creating new financing mechanisms, especially for small and midsize farmers and farmers of color, will be essential to expanding climate-smart agriculture in the region.

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Intensify and Diversify Food Production

In light of the changing climate, it is clear that San Diego County food producers will need to be nimble and diversify crop production as much as possible. Avocado growers in many parts of the world have already adopted high density plantings (e.g., 300 or more trees per acre, compared to traditionally 109 trees per acre in California). Many farmers in San Diego County have also begun moving forward with high density plantings in the hopes of achieving higher productivity per acre, lower labor costs due to less pruning, and increased salt tolerance by using reclaimed irrigation water.³⁵ In addition, many San Diego County farmers are experimenting with new crops and niche products like coffee, passionfruit, sprouts, and other rare fruits.

Given the growing risk of water stress in California, there is also increased interest in indoor production, including aquaculture and hydroponics. Indoor crop production can lead to yields that are much higher than traditional methods, can use less water, and can be grown in three dimensions. San Diego County is home to Go Green Agriculture, one of the largest indoor organic hydroponic farms in the country. Several San Diego County producers, including Solutions Farms and Archie's Acres also use indoor production as job training opportunities for socially disadvantaged people and veterans. Brant Chlebowski turned his research at the Scripps Institution of Oceanography into the California Seaweed Company, an aquaculture business that is using native California species for culinary uses.

It will be essential to support producers with diversifying their products, developing proposals for the <u>USDA's Specialty Crop Block Grant Program</u> and other funding opportunities, and ensuring business and financing assistance to implement changes based on emerging research from San Diego County's educational institutions.

SPOTLIGHT

Solutions Farms

The greenhouse at <u>Solutions Farms</u> is cool, humid, and bright, vibrating with activity as employees tend rows of white trays overflowing with lettuces. Solutions Farms—a 2-acre, commercial aquaponic farm—opened in 2012 in Vista to serve as a social enterprise for the Solutions for Change family homelessness program. The farm employees are participants in the program, previously homeless adults who have overcome addiction and may have few of the appropriate skills to build a career to support their families. In the greenhouse, they gain experience working in a professional production facility and learn soft skills like teamwork to help them obtain and sustain employment.

Jennifer Pankey, previous manager of Solutions Farms and graduate of the Solutions for Change program, did not imagine she would ever work in soilless agriculture: "I was not interested in aguaponics. Not even a little bit. In fact, I don't even think I'd ever even heard of it before." In her position, she helped run the farm, managing its organic certification and mentoring its employees. Today, Jennifer acts as an Empowerment Director of Program Services, and gets to work closely with program participants, admittedly her favorite aspect of her time in the greenhouse. Like Jennifer and many of her peers, the Solutions Farms enterprise has proven an incredible success story. In 2017, Solutions for Changes reported that its participants on average tripled their annual income after their first year in the program to upwards of \$20,000, all the while building a career in the local food system. The farm has been a vital aspect of this success. Prior to the Covid-19 pandemic, the farm primarily sold their produce to restaurants. Today, you will find it in the Solutions Farms community supported agriculture (CSA) box alongside produce from over 30 other local, organic San Diego farms. The farm plans to expand in 2021 and provide even more opportunities for participants to participate in the food system and serve the local community.

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SUPPORT COORDINATED EFFORTS AND COLLABORATION TO CREATE A TECHNICAL ASSISTANCE & BUSINESS ASSISTANCE NETWORK FOR FARMERS AND FISHERMEN

Business services, technical assistance, and financing for farmers and fishermen are critical for the future of food production in the region. Assistance, including peer-to-peer and one-on-one, is needed in the following areas:

Business services include support with access to land, business planning, enterprise
analysis, financial record-keeping and management, marketing and sales, human
resources management, coaching, retirement planning, and succession planning.

Rolshausen, Philippe E., Mary Lu Arpaia, and Ben Faber, 2016, "High Density Planting for Avocado Production: A Chilean Perspective," From the Grove.

³⁶ Kateman, Brian, July 14, 2020, "<u>Is The Future of</u> <u>Farming Indoors?</u>" Forbes.

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- Technical assistance includes support with producing food, navigating regulations and permitting, using technology, building infrastructure, implementing food safety, developing value-added products (e.g., recipe development, product research, packaging, etc.).
- Financing includes support with accessing funding across the <u>capital continuum</u>, including loans, equity financing, royalty financing, grants, program-related investments, and crowdsourcing campaigns.

Several gaps in business services and technical assistance for farms and fisheries exist in San Diego County. Local resources—including the San Diego County Department of Agriculture, Weights, and Measures, San Diego County Farm Bureau, UCCE San Diego, Mission and Greater San Diego RCDs, NRCS, CHIP's Farm to Institution Center, UCSD Center for Community Health Urban Growers' Collaborative, and California Sea Grant—are available but efforts are siloed. In addition, there are few peer-to-peer and one-on-one opportunities and there are limited customized wrap-around services for businesses. There is also limited support for young and beginning producers and producers of color in the region.

Developing a network of business services and technical assistance providers to address existing gaps for farmers and fishermen is a key strategy moving forward. The types of assistance that are needed for producers of all scales include the following:

Organization	Description	
California FarmLink	California FarmLink works across California, with a focus on serving farmers of color and beginning and sustainable farmers. They partner with farm training programs, impact investors, public agencies and other nonprofits, weaving an ecosystem of support for next-generation farmers and ranchers. They invest in the prosperity of farmers and ranchers through lending, education, and access to land.	
Agriculture and Land-Based Training Association	The <u>Agriculture and Land-Based Training Association</u> (ALBA), based in Salinas, CA, operates a 100-acre farm and provides a training program specifically for helping low income farmworkers transition to farming.	
California Sea Grant	California Sea Grant offers a <u>Commercial Fishing Apprenticeship Program</u> that covers fisheries management, seamanship, and hands-on skills over the course of a year.	
The Center for Land-Based Learning	The <u>Center for Land-Based Learning</u> , based in Woodland, Yolo County, provides apprenticeships and the <u>California Farm Academy</u> , a farmer training program.	
Kitchen Table Advisors	Kitchen Table Advisors (KTA), offers a three-year one-on-one business advising program for sustainable small farms and ranches. At the end of three years, clients served from 2013-2019 had an average growth in take home pay of 65%. KTA's Alumni Program builds upon the trust and relationship developed through one-on-one advising and provides continued support to their clients long-term path toward economic viability.	
Intervale Center	The Intervale Center in Vermont offers farm incubation, customized farm business and succession planning services, and market development support.	
Black Family Land Trust	The Wealth Retention and Asset Protection (WRAP) program offered by the Black Family Land Trust (based in North Carolina) educates landowners about estate planning, financial management, conservation easements, and modern options for land use.	

Moving From Food Production to Business Viability

In addition to securing the long-term foundation for agricultural and seafood production in San Diego County, it is also necessary to support the overall success or viability of producers. Today, most farmers and fishermen struggle with making a living. In fact, many producers have second jobs or family members who help pay the bills. Objective 2 uplifts strategies for supporting coordinated efforts and collaboration to increase the viability of all local food businesses.

SAN DIEGO COUNTY FOOD VISION

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