2019 REPORT
The State of the Food System in the San Diego Region
COUNTY OF SAN DIEGO
A food system includes all processes and infrastructure in place to feed a population. The overarching components of the food system are inputs, production, manufacturing and processing, storage and distribution, consumption, labor and workforce development, and disposal of food and food-related products. All these components are interconnected and can effect positive or negative impacts to the social, environmental, and economic conditions of a population, also known as the triple bottom line. Using this triple bottom line as a lens to assess the conditions of a food system and to guide its future state recognizes the role that the food system plays in people’s health and wellbeing, as well as its effect on environmental sustainability and on the economic welfare of society.
EXECUTIVE SUMMARY

In 2016, the County of San Diego (County*) Board of Supervisors launched the Live Well San Diego Food System Initiative to work towards a robust and resilient local food system that builds healthy communities, supports the economy, and enhances the environment. One of the main priorities for the Food System Initiative is to develop the State of the Food System Report for the San Diego Region on a cyclical basis.

The purpose of this report is to understand what the food system looks like in San Diego county, its current state, its challenges, areas of opportunity. The report also identifies metrics to track progress in the different areas of the food system. The goal is for this report and its future iterations to serve as an informative resource for community education and engagement and also help inform programs and policy change.

The creation of the State of the Food System Report was led by the County in close collaboration with the San Diego Food System Alliance and with the input and contributions of representatives from government agencies, nonprofits, academic and research institutions, and industry groups from throughout the San Diego region.

Next steps will include establishing partnerships to identify, prioritize, and pursue key opportunities that stem from this report and previous efforts to make improvements in the different areas of the food system. This effort will require the continued collaboration of all organizations and stakeholders involved in the creation of this report as well as the engagement of community, industry, and decision makers in the region.

THE FOOD SYSTEM REQUIRES CRITICAL NATURAL, ENVIRONMENTAL, AND ECONOMIC INPUTS.

For example, agricultural land, soil, water, ocean and coastal waters, energy and equipment, and labor are essential. In San Diego county, 242,554 acres of land are occupied by the agricultural industry for grazing, orchards, vineyards, and the cultivation of field and specialty crops. There are 5,082 farms in San Diego county where approximately 70 percent are considered small as they operate on less than 10 acres. San Diego county has year-round agricultural production due to the mediterranean climate and the diversity of soils that support different commodities across marine to desert landscapes. Soils are crucial for the health of crops and to protect San Diego county agricultural land from destructive natural events such as flooding, wildfires, and drought.

The State of California was in a five-year drought from 2012 through 2016 where San Diego county was mandated to reduce water consumption by 25 percent in urban areas, and farmers were faced with a mandatory, 15 percent reduction on water usage. San Diego county has responded to water supply challenges through diversification efforts (e.g. groundwater, recycled water, seawater desalination and conservation, and water supplied through multiple irrigation districts), which have resulted in high water costs. This has led to innovation in water use technology, such as automatic drip irrigation, and the use of hydroponics and aquaponics.

With San Diego county located along the Pacific Ocean, commercial fishing and aquaculture utilize the bays and coastal waters to produce and harvest fish and seafood. There are three commercial fishing harbors in San Diego county with infrastructure that comprises only about 4 percent of the water and 1 percent of the land area that are potentially suitable for commercial fishing. Commercial aquaculture is at a smaller scale in San Diego county, with only one farm, which is located in the Agua Hedionda Lagoon.

*For the purposes of this report, County with a capital “C” refers to the County of San Diego government organization, whereas county with a lowercase “c” refers to the geographical area of the county.
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ALTHOUGH 95 PERCENT OF AGRICULTURAL LAND IN THE COUNTY IS DEDICATED TO FOOD PRODUCTION, ONLY 30 PERCENT OF THE TOTAL ECONOMIC VALUE OF AGRICULTURE DERIVES FROM FOOD PRODUCTION WITH THE REMAINING 70 PERCENT DERIVING FROM NURSERY AND CUT FLOWER PRODUCTS.

Commercial agriculture as a whole ranks as one of the largest industries in San Diego county and contributes significantly to the local economy through $1.8 billion in annual total sales and a total economic impact of $2.8 billion.

Approximately 91 percent of farms in the county are under 50 acres, and about 70 percent of the total farms are less than 10 acres, well below state averages, highlighting the prevalence of small farms in San Diego county. San Diego county has the highest concentration of organic farmers in the United States with more than 350 U.S. Department of Agriculture Certified Organic growers generating over $71 million in total organic product sales. The highest yielding edible crops grown in San Diego county are avocados, citrus, and vine-ripened tomatoes. Conducting business and profitability, along with water, soil, and pest management were identified as key challenges for commercial agriculture.

Furthermore, climate change may have an increased impact on production challenges, such as increased heat and a diminishing water supply. Urban agriculture is emerging in densely populated areas of San Diego county to provide food access and promote community development.

Examples of urban agriculture are community or school gardens, community supported agriculture based in urban areas, and the use of innovative food production methods such as hydroponics and aquaponics in urban settings. Some challenges with urban agriculture in San Diego county are the high cost of real estate, high cost of water at residential rates, and the diversity of policies and regulations related to urban agriculture throughout San Diego county’s 19 jurisdictions.

Commercial fishing operations in San Diego county currently harvest from the wild and land over 60 species valued at upwards of $10 million annually. Methods and techniques used for fishing comply with strict regulations and science-based management meant to safeguard against overharvest of stocks, capture of bycatch, and environmental impacts, making San Diego county’s local catch some of the most responsibly sourced in the world. Although local seafood is responsibly sourced, there is a lack of waterfront infrastructure, including offloading and storage, to support distribution, regulatory limitations, and a lack of workforce training and development which is limiting further expansion of the industry.

Commercial aquaculture, or the farming of seaweeds, fish and/or shellfish in tanks on land or in coastal waters, is a relatively young industry in the region. As such, there are regulatory obstacles in sitting facilities in San Diego county, and California in general.

THE NEXT STAGE OF THE FOOD SYSTEM IS MANUFACTURING AND PROCESSING WHICH TRANSFORMS RAW INGREDIENTS LIKE LIVESTOCK AND AGRICULTURAL CROPS INTO EDIBLE PRODUCTS FOR CONSUMPTION.

San Diego county imports raw products (e.g., wheat flour, corn meal, and yeast) for the production and manufacturing of bakery products and tortillas. Also, San Diego county imports cacao and coffee beans from overseas and locally manufactures chocolate (valued at $27.9 million in 2015) and coffee (valued at $63.4 million in 2015). In addition to importing, San Diego county exports milk production valued at $6.9 million in 2015.
The manufacturing and processing industry is regulated through a hierarchy of jurisdictions from the national to local level in order to ensure the nation’s food system protects the public from foodborne illness through food safety practices and regulations. Inspection and permitting for all local retail food facilities is conducted by the San Diego County Department of Environmental Health.

**FOOD PRODUCED IN SAN DIEGO COUNTY IS DISTRIBUTED THROUGH THREE PATHWAYS:**

1) Directly to the consumer through farmers’ and fisherman’s markets and shares in consumer supported agriculture (CSA), 2) directly to organizations and businesses, and 3) through traditional distributors to organizations and businesses.

The prevalence of small farms in San Diego county present challenges for farmers to work with distributors because the revenue split required to do so can cut into profits to levels that are not economically sustainable for the farmers. Therefore, some small farms choose to sell directly to small businesses and organizations and to consumers through CSA deliveries.

There is a strong geographic barrier to access locally sourced seafood within the city of San Diego. Therefore, distributors must source seafood from other local sources located within 1 km (0.6 miles) of the coast.

There is high demand for locally sourced food; however, distributors lack a coordinated system or platform to view their crop supply by farm in order to meet demand of locally sourced food. On the other hand, small producers do not benefit from economies of scale and it is difficult for them to meet the volume demanded from larger organizations and businesses. The challenges of distributors and producers are passed on to the consumer in the form of higher prices. Therefore, a concerted effort needs to take place to address equity issues for disadvantaged communities who may not be able to access and afford higher-priced, local food.

With these purchasing behaviors and San Diego county’s strong tourism industry, the state of the food system in the San Diego region drives consumer demand for local food.
HOW CAN RESIDENTS SUPPORT THE LOCAL FOOD SYSTEM?

- Choose stores and restaurants that source food locally and support workers.
- Ask for locally-sourced seafood at markets and restaurants and try the San Diego local varieties of seafood.
- Visit and shop at local Certified Farmers’ Markets and the Fishermen’s Market.
- Sign up for Community Supported Agriculture to receive a share of fresh produce from a local farm.
- Get involved with community gardens and urban agriculture.
- Buy produce that is in season.
- Buy “ugly” produce, which is aesthetically unappealing but just as nutritious.
- Track where and how food is wasted at home and reduce portion sizes.
- Donate excess edible food at your local pantry or food bank (San Diego Food Bank and Feeding San Diego).
- Contact a gleaning group to donate any excess produce grown at home.
- Volunteer with a small-scale farm, food bank, gleaning group, or local pantry.
- Limit your use of plastic (straws, silverware, bags, etc.) and styrofoam (takeout containers, dinnerware).
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- Buy seasonable produce.

The methods of production, processing and preparation, as well as consumption, all play a role in whether food helps to nourish the body or results in adverse health impacts. A shift towards large-scale commodity crop production coupled with technological advances has led to a rise in the production of inexpensive, highly processed, and nutritionally poor foods.

Prices and access to healthy foods remain a significant barrier to healthy eating. International organizations define food insecurity as a situation that exists when people lack secure access to sufficient amounts of safe and nutritious food for normal growth and development and an active and healthy life. In 2017, an estimated 443,000 (1 in 7) people in San Diego county experienced food insecurity.

In addition to food insecurity, food deserts also persist in San Diego county. Food deserts are residential areas with limited access to affordable and nutritious food. Living in a food desert has been linked to poor diet and greater risk of obesity, while people who live near grocery stores are more likely to consume fruits and vegetables and less likely to be obese. In 2010, approximately 23 percent (or over 700,000 people) of the San Diego county population lived in a food desert. As researchers have documented in the San Diego region and other regions in the U.S., food deserts have emerged over time as the result of policy and planning decisions that often times have not been favorable to
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Historically disadvantaged groups and have led to white flight, suburbanization, disinvestment and store closures among these areas. Organizations and programs such as BrightSide Produce and the Live Well Community Market Program work to reach food insecure and low-income communities with healthy affordable food.

HUMAN LABOR IS ESSENTIAL FOR EVERY COMPONENT OF THE FOOD SYSTEM.

Even though the food services and drinking places is one of the largest and fastest growing segments of the regional food economy, they are the lowest paid jobs in the San Diego food system. Furthermore, overall wages within the San Diego food system are significantly lower than in the rest of the economy. In addition to low wages, food system workers face other economic and social issues, including inconsistent implementation of legal protections, wage disparities, and economic insecurity. These issues are also related to race, ethnicity, immigration status, and gender of food system workers. In 2017, 37 percent of food system workers in San Diego county were immigrants (compared to 27 percent in non-food jobs) and 64 percent were people of color (compared to 51 percent in non-food jobs). The vast majority of workers throughout the food system were Latinos, especially in farming where Mexican immigrants alone represent 55 percent of the workforce.

WASTED FOOD OR FOOD LOSS IS ANY FOOD THAT IS GROWN AND PRODUCED FOR HUMAN CONSUMPTION, BUT THAT IS ULTIMATELY NOT EATEN.

In the United States, 40 percent of the food that is grown is never consumed, resulting in over 50 million tons of wasted food that ends up in landfills annually. At the State level, 6 million tons of food is thrown away each year, which makes up 18 percent of all the material that goes to the landfills. It is estimated that in San Diego county, over 500,000 tons of food is wasted each year, while 1 out of every 7 residents face food insecurity. In the San Diego region, face similar challenges in education and workforce development with the average age of commercial farmers and fishermen about or over 50 years old. Therefore, San Diego county food system education and workforce development is key to remain sustainable and resilient in the long term. Educational programs, formal and non-formal, are available in the county to provide the region and its residents access to information and classes. However, there is a greater need than the collective capacity of providers for food system training programs. Educational opportunities are further limited because the populations who could most benefit from training or further education face numerous barriers to program participation, including transportation, childcare, financial support during the duration of programs, and stable housing.
addition to source reduction and prevention, there are efforts to recover edible food before it is wasted through pantries and gleaners organizations. In 2016 the County of San Diego led the creation of a Food Donation Action Plan that was produced in collaboration with food system and food donation stakeholders in the region. The goal of the plan is to support and improve food donation in the San Diego region in order to help address food and nutrition insecurity, while also reducing food loss. In support of the Food Donation Action Plan, the County Board of Supervisors took action on December 12, 2018, to waive Department of Environmental Health permit and registration fees for pantries and to provide funding to support food donation efforts and food safety. Not only are valuable resources wasted when food is not consumed, organic material that is left to decompose in landfills creates methane, a greenhouse gas that contributes to climate change. Food that is no longer is still safe to eat versus when it should be discarded.

WHERE DO WE GO FROM HERE?

Continued collaboration and engagement of key stakeholders and decision makers will be key to the sustainability and advancement of the food system in the San Diego region. The following areas of opportunities can inform next steps for improving the different components of the local food system:

**INPUTS**

- Continued support of land preservation efforts to secure land for agricultural uses.
- Support farmers to implement smart irrigation technology to help reduce water use and costs.
- Investment is needed in infrastructure that supports commercial fishing, such as storage and processing facilities.
- Support water, waterfront, and land uses that help take advantage of the available potential of the commercial fishing and aquaculture industries.

**FOOD PRODUCTION**

- Commit financial resources to incentivize farmers and ranchers to implement regenerative practices and to support pilot projects.
- Promote “dense” planting among growers. The practice puts more trees in production per acre than previous practices. Outcomes include increased production per acre, reduced labor per unit produced, and reduced water use per unit produced.
- Support experimental plantings that could lead to established commercial production, which are currently taking place with coffee, dragon fruit (pitahaya), olives, mandarins, and other crops. Outcomes include increased production per unit produced, reduced water use per unit produced, and reduced labor per unit produced.
- Support the expansion of hydroponic and aquaponic production methods as environmentally sustainable alternatives for food production that can also help address issues of land availability.
- Support land use policies and regulations that accommodate more urban agriculture. For instance, the Urban Agriculture Incentive Zones Act.
- Incentivize the inclusion of urban agriculture components as part of new housing developments.
- Make parkland available for community gardens.
- Improve waterfront infrastructure in the San Diego region to capture a share of the $28 million worth of fish and seafood that is landed annually by San Diego county fishermen in ports north of the county.
- Promote the practice of harvesting lightly across an array of fish species to reduce the risks of impacting stocks, increase our ability to respond to climate change challenges, and provide a more stable business model.
- Seek opportunities to expand the establishment of fisherman's markets in the San Diego region.
- Provide consumer education on species that are sourced locally and how to prepare them and provide more information/conduct public outreach that addresses common concerns for surfing and aquaculture (e.g., environmental impacts and health concerns).
- Seek opportunities to expand the distribution of local aquaculture products throughout the San Diego region.

**MANUFACTURING AND PROCESSING**

- Support food manufacturing and processing infrastructure that promotes a shared economy by encouraging the development and shared use of community kitchen spaces.
- Increase opportunities for seafood direct marketing and other alternative marketing arrangements where fishermen sell to restaurants and markets, which would result in shorter, more local seafood supply chains that potentially increase the availability of local product within the county. An added benefit of more direct sales is the connection of seafood producers and consumers which raises awareness of local fisheries.
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**STORAGE AND DISTRIBUTION**

- Create a coordinated system or platform for displaying and sharing crop supply by
• Seek opportunities for small farmers to aggregate their crops for distribution in order to reduce costs and build collective economies of scale, such as the development of a local food hub.

• Seek opportunities for fishermen to collaborate with other producers (e.g. through port-wide marketing associations) to help meet demand and take advantage of economies of scale.

• Conduct outreach to raise public awareness around the value of local food, in order for businesses, organizations, and communities to place a higher value in local food.

CONSUMER DEMAND
• Develop methods to track and understand how much food produced locally remains within the county so opportunities can be identified to increase local food production and consumption in the region.
• Increase the accessibility of local food to underserved communities to ensure that it can be available to all.

NUTRITION AND FOOD SECURITY
• Continue to support nutrition assistance programs that help secure access to nutritious food for underserved populations.
• Seek opportunities to address underlying poverty conditions that lead to food insecurity.
• Support breastfeeding practices by advocating for worksite breastfeeding policies, breastfeeding-friendly community healthcare centers and childcare providers, home visiting programs, educational forums for families and providers, scientific research, direct breastfeeding counseling, and the establishment of the first milk bank in San Diego.
• Pursue opportunities to address food deserts by building on existing resources and supporting small stores through financial, marketing and technical assistance.
• Consider the effects of gentrification, suburbanization and disinvestment over historically disadvantaged groups when developing policies and plans that affect food access.

LABOR AND EMPLOYMENT
• Support policies that promote and advance fair labor practices for all.

EDUCATION AND WORKFORCE DEVELOPMENT
• Seek opportunities to make education and training opportunities related to the food system accessible to disadvantaged populations.
• Seek opportunities to expand Farm to School programs by developing policies and funding infrastructure to support consistency in programming at schools.
• Provide economic incentives for small school districts to start a Farm to School program.

WASTED FOOD
• Develop and fund directed educational campaigns to teach people how to properly store food, shop smarter, cook from root-to-leaf/nose-to-tail, and how to meal plan to reduce wasted food.
• Support the food donation network in the San Diego region by investing in incentive programs and grants that help address infrastructure needs, such as storage, refrigeration, and transportation.
• Support gleaners that help secure access to nutritious food for underserved populations.
• Seek opportunities to connect potential donors of food not suitable for human consumption to farms in need of spent grain and other food donations to feed animals.
• Explore strategies to utilize wasted food for biofuel and bio-products in order to incorporate use of alternative energy sources and mitigate the environmental and economic impact of wasted food.
• Invest in infrastructure to process food scraps and explore opportunities to co-locate organic waste processing facilities at landfill and wastewater treatment sites.
• Increase education and training around on-site residential and commercial composting and develop policies that support these efforts.

THE STATE OF THE FOOD SYSTEM IN THE SAN DIEGO REGION
INTRODUCTION

THE SAN DIEGO REGION FOOD SYSTEM

A food system includes all processes and infrastructure in place to feed a population; from all the inputs that are necessary to grow food, to the management of wasted food at the tail end, and everything in between: production, manufacturing and processing, storage and distribution, consumption, and disposal of food and food-related products. Each of these overarching components include other sets of systems that support more specialized functions, such as water systems for growing, supply chain for distribution, etc. All the components of the food system are interconnected and can have positive or negative impacts on the social, environmental, and economic conditions of a population, also known as the triple bottom line. Using this triple bottom line as a lens to assess the conditions of a food system and to guide its future state recognizes the role that the food system plays in people’s health and wellbeing, as well as its effect on environmental sustainability and on the economic welfare of society.
San Diego county is known for its nice weather, which favors the region’s $1.7 billion agriculture industry where a third of the crops grown are food. However, climate change presents an important challenge to the local food supply. With the changing climate the region has already started to experience more severe droughts and wildfires, which negatively affect the agriculture industry. Additionally, the high costs of land and water present an important barrier for new and young farmers to enter the commercial agriculture market, a concerning situation when considering that the average age of the region’s farmers is over 60 years, with no succession plan in place.

The region’s commercial agriculture landscape includes thousands of small farms (less than 10 acres) which are successful at producing a variety of food crops. These small farms face important obstacles to help get that food onto people’s plates locally, such as lack of economies of scale to compete with larger out-of-county producers and lack of infrastructure and few marketing channels that fit their production scale. Comparable challenges are shared by the local fishing industry, which once gave the region the title of the ‘Tuna Capital of the World’ and today faces challenges with a shortage of waterfront and regional seafood system infrastructure, regulatory limitations, a lack of workforce training and development, and the potential negative effects of climate change.

While most of the population in the San Diego region enjoys a secure and varied food supply, food access continues to be an issue. In 2017, 7% of San Diego county residents were food insecure. This comes at a time when 40% of the food produced in the nation is wasted. Sometimes, the very people working to produce that food and make it available to society face challenges to access it for themselves and their families. California has a number of labor laws protecting workers, but protections for workers across the food system are not implemented consistently and food system workers tend to have lower wages than workers from other industries. This situation coupled with our region’s high cost of living (housing, transportation, etc.) can negatively impact the quality of life of local food system workers.

ProduceGood gleans citrus from San Diego residential orchards that would otherwise go to landfill.

However, the food system in the San Diego region is well positioned to positively contribute to the triple bottom line. There is a growing awareness in San Diego county about the value of food and the importance of preventing its waste and rescuing edible food from going to the landfill to repurpose it for higher uses, such as feeding people who experience food insecurity. There is also growing interest in “zero waste” policies that keep organics, including food, out of the landfills to prevent greenhouse gas emissions as a result of the decomposing process. Additionally, San Diego county farmers are consciously willing to adapt and to adopt practices that enhance the environment and make the region more resilient against climate change. The very challenges that threaten our food supply have given way to innovation in the way we grow our food. The use of aquaponics and hydroponics are rising as new efficient, environmentally friendly food production methods which can also be implemented out of the fields in urban settings. San Diego county farmers look for opportunities to save water and implement water-saving irrigation techniques as a way of facing the challenges that drought conditions and water costs present to their operations. As the changing climate will continue to present challenges to local agriculture, climate-smart agricultural and ranching practices have the potential to significantly lower greenhouse gas emissions, improve soil health, reduce water use, increase crop yields, improve livestock health, and protecting lands against the threat of wildfires.

The steady growth of San Diego county’s agricultural diversity indicates that the agricultural industry is working to become more resilient to economic shocks and natural and human-driven hazards that have the potential to disrupt production. New experimental crops continue to emerge as viable economic opportunities for the region’s growers. This is an important opportunity to the local food system as market niches can develop for new and diverse crops taking advantage of the ethnic and cultural diversity of county residents and their unique tastes and needs for food. The regions diverse population includes a large group of millennials who have an increased interest in sourcing food locally and supporting the local food system.
The purpose of this report is to understand what the food system looks like in San Diego county, what is its current state, and what are its challenges and areas of opportunity. The report also identifies metrics to track progress in the different areas of the food system. The goal is for this report and its future iterations to serve as an informative resource for community education and engagement and also help inform programs and policy change.

Other important efforts in the region have taken place in previous years to examine the state of the food system. 1) The 2010 report Assessing the San Diego County Food System: Indicators for a More Food Secure Future from UC Davis Agricultural Sustainability Institute and the San Diego Food System Working Group; and 2) the 2011 Final Recommendations of the San Diego Urban-Rural Roundtable (SDURR), convened by the San Diego Food System Working Group and the nonprofit Roots for Change. The San Diego Food System Working Group was an ad hoc collaboration of growers, public health and environmental experts from local government and nonprofit agencies, and other food system stakeholders.

The SDURR consisted of a series of meetings among numerous leaders and stakeholders from throughout the San Diego region to develop a set of recommendations with the goal of improving the food system for all residents of San Diego county. Data and metrics identified by these two efforts were included in the State of the Food System Report.

The creation of the State of the Food System Report was led by the County in close collaboration with the San Diego Food System Alliance and with the input and contributions of dozens of food system stakeholders throughout the San Diego region (a full list is included in the Acknowledgments page) including representatives from government agencies, nonprofits, academic and research institutions, and industry groups. Stakeholder input was included through an initial stakeholder meeting in January 2018, which helped inform the content and develop an outline for the report. Subsequently, a Stakeholder Advisory Group—a subset of the initial stakeholder meeting—was formed and continued to convene through late 2019 to refine the content outline of the report as well as select metrics to research and include for the different areas of the food system. The Stakeholder Advisory Group also helped identify contributors from different sectors who would provide content and data to help write the different sections of the report. Content contributors provided key information, data, pictures, charts, and maps to produce the report. With close collaboration of County staff, content contributors, and the consultant MIG Communications, the final report was produced.

Next steps will include establishing partnerships to identify, prioritize, and pursue key opportunities that stem from this report and previous efforts to make improvements in the different areas of the food system. This effort will require the continued collaboration of all organizations and stakeholders involved in the creation of this report as well as the engagement of community, industry, and decision makers in the region.

DATA LIMITATIONS

The creation of the State of the Food System Report required the research and analysis of existing data from local, state, and federal sources, including government agencies, research institutions, and nonprofit organizations. Primary research was not included within the scope of this report. Although the focus of the report is on the local food system for the purposes of this report, local is being defined as contained within the boundaries of the county of San Diego. State and national data are also referenced in the report whenever local data was not available. Data has not been captured/researched for a number of metrics that were identified by the Stakeholder Advisory Group as key to tracking progress in the different areas of the San Diego region food system. A table with existing food system metrics is included as an appendix to this report. A wish list of additional metrics is also included to help inform potential future research opportunities to help close the gap for local food system data.

Some of the main data sources for this report include reports such as the United State Department of Agriculture’s Census of Agriculture (Ag Census), which is produced every five years. Given the availability of data to inform the State of the Food System Report, from the Ag Census and other important data sources that update information on a periodic basis, this report will be updated on a five-year cycle.
WHAT ARE THE INPUTS THAT ARE REQUIRED FOR FOOD PRODUCTION?

Food production requires natural, environmental, and economic inputs. The commercial agriculture industry requires land that is suitable for raising animals and growing crops, animal feed, nutrient-rich soil, seeds, fertilizer, and clean water to support food production. Healthy fish populations, waterfront property, and access to harbor water are essential inputs for commercial fishing and aquaculture operations, or farmed seafood, which is the breeding and cultivation of plants and animals in all water environments (2). Finally, energy, equipment, and labor are essential inputs to all food production methods. The availability and cost of each of these inputs is subject to a range of natural, market, and regulatory forces.
AGRICULTURAL LAND

According to the San Diego County 2018 Crop Statistics & Annual Report, in San Diego county, 242,554 acres of land are occupied by the agricultural industry for grazing, orchards, vineyards and the cultivation of field and specialty crops. Approximately 95 percent of agricultural land (230,279 acres) in the San Diego region is dedicated to food production with the remaining 5 percent to nursery and cut flowers (12,275 acres) (2). As a whole, the San Diego region farmland is comprised of 5,062 farms, more than any other county in the U.S., according to the U.S. Census of Agriculture (3). Approximately 70 percent of these farms are categorized as “small” as they operate on less than 10 acres (3).

High property values in San Diego county make the purchase of agricultural land an ongoing challenge for entry-level farmers. Land ownership is more desirable for landowners than leasing because farmers are hesitant to make long-term capital investments on leased land. Because land price proves as a barrier to entry level farmers, land prices are also a contributing factor to the aging population of principal farm operators in San Diego county whose average age now exceed 62 years (4). Many new farmers who do enter the food production market tend to be older and have access to adequate financial resources. Interestingly, farming is not the only source of income for the majority of agricultural producers in San Diego county. According to the University of California Cooperative Extension (UCCE) 2018 Growers’ Needs Assessment survey, roughly 74 percent of agricultural producers have an income outside of farming (4). The U.S. Department of Agriculture also highlights a similar statistic of 76 percent of farm owners relying on off-farm sources of income, which, on average, account for more than 90 percent of all farm household incomes in the U.S. (5).

PHOTO 1. The ability of the agricultural industry to secure the water supply has, however, resulted in a twofold increase in water prices over the past 12 years, which makes the production of several water-intensive food crops financially challenging in San Diego county (11). Although the diversification of water supply by local agencies has helped to secure municipal water for agriculture, it is worth noting that San Diego county is currently in abnormally dry conditions and that individual municipalities would be in a drought since 2017. Regions with abnormally dry conditions experience some water deficits and a slowing of water usage (12), so the availability of municipal water for agriculture becomes even more relevant for our region’s agricultural production.

The State of California was in a drought from 2012 to 2016, where in early 2014, then Governor Jerry Brown declared a State of Drought emergency known as the Metropolitan Water District of Southern California in 1991. In an effort to diversify and secure the region’s water supply, by 2020 about one third of the San Diego region’s water will be supplied by the Metropolitan Water District, about one third by the Imperial Irrigation District Transfer, and the remaining one third of water will be supplied through local diversification of groundwater, recycled water, seawater desalination and conservation (10). The cost to diversify and secure the water supply has, however, resulted in a two-fold increase in water prices over the past 12 years, which makes the production of several water-intensive food crops financially challenging in San Diego county (11). Although the diversification of water supply by local agencies has helped to secure municipal water for agriculture, it is worth noting that San Diego county is currently in abnormally dry conditions and that individual municipalities would be in a drought since 2017. Regions with abnormally dry conditions experience some water deficits and a slowing of water usage (12), so the availability of municipal water for agriculture becomes even more relevant for our region’s agricultural production.

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same restrictions as were experienced by residential and commercial users. However, with the continuation of the drought, in early 2015, then Governor Jerry Brown issued an Executive Order (EO B-29-15) which mandated reductions in water use statewide, specifically, reducing water consumption in urban areas by 25 percent (18). In this case, farmers and growers in San Diego county experienced a mandatory 15 percent restriction in water use for the remainder of the drought.

In addition to potentially being affected by possible water usage restrictions during drought events, farmers operating in groundwater basins governed by the State of California’s Sustainable Groundwater Management Act (Upper San Luis Rey, Borrego Valley, San Diego River Valley, and San Pasqual Valley) may be subject to new well-monitoring and pumping restrictions as a result of this regulation, in order to strengthen management and sustainability of local groundwater (17, 18).

In response to pressures on the cost and supply of water, farmers have invested in water use technology. For example, a San Diego county farmer adopted an automatic drip irrigation system along with wireless sensors in the soil of his avocado orchard, which enables the farmer to monitor and adjust the irrigation when necessary. With the implementation of this technology, the farmer is saving on water and overall production costs (2).

Other innovative strategies to address water constraints in the use of hydroponics, or the production of food or plants without soil, and aquaponics which is a subset of hydroponics, where fish and plants are produced utilizing the methods of hydroponics and aquaculture (19). Through an aquaponic production system, a farmer in San Diego county is concurrently growing lettuce and tilapia fish. This production system allows the farmer to use less water as the soilless water that flows through the fish tanks carries nutrients and acts as a filter to the lettuce (2).

An estimated 21 acres of harbor water and 8.5 acres of waterfront land is dedicated to commercial fishing across the county’s three commercial fishing harbors: San Diego Bay, Mission Bay, and Oceanside Harbor. These estimates total only about 4 percent of the water area and 1 percent of the land area that are potentially suitable for commercial fishing, but that are dedicated to other uses that have similar requirements. These other uses include operations and berthing by commercial marine sales and services, commercial recreational fishing and boating, and private sportfishing (20-22).

According to the San Diego Ocean Planning Partnership concluding that 1,800 acres inside the bay and about 7,000 acres outside the bay were farmable, however, commercial fishing and environmental groups have concern regarding competing water and waterfront uses that have similar requirements. These other uses include operations and berthing by commercial marine sales and services, commercial recreational fishing and boating, and private sportfishing (20-22).

The operational aquaculture facilities seem relatively small scale but estimating the water area that is potentially available for aquaculture is difficult and requires assessment of not only the physical and biological requirements of the farmed species and farm infrastructure, but also the needs of a multitude of other commercial users. A Preliminary Assessment Report with specific numbers was recently conducted for the San Diego Bay and adjacent waters by the San Diego Ocean Planning Partnership concluding that 1,800 acres inside the bay and about 7,000 acres outside the bay were farmable, however, commercial fishing and environmental groups have concern regarding competing water and waterfront uses that have similar requirements. These other uses include operations and berthing by commercial marine sales and services, commercial recreational fishing and boating, and private sportfishing (20-22).

Although difficult to assess in absolute terms due to a lack of information on potentially suitable land and water area in the entire San Diego region, the total area of San Diego coastal waters and adjacent waterfront land dedicated to commercial fishing and aquaculture is a relatively small fraction of potentially suitable area. Regulatory challenges surrounding seafood production, consumer choices (imports vs locally sourced seafood), and the community’s decisions regarding competing water and waterfront land uses all contribute to a seafood industry that operates well below its potential in San Diego county. The impacts of the are a loss of responsibly sourced food, job opportunities, and money. In 2019 the Southwest Fisheries Science Center revealed that between 1997-2016, San Diego county lost out on an average of 52,197 metric tons of seafood landings per year valued at $28.3 million per year to ports north of the county due to a lack of supporting infrastructure and resources in the San Diego region (25-27).
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Resources


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The State of the Food System in the San Diego Region
WHAT IS THE ROLE OF FOOD PRODUCTION IN THE LOCAL ECONOMY?

San Diego county’s Mediterranean climate and coastal setting allow for the local production and harvesting of food through a range of means including the year-round commercial cultivation of agricultural crops, animal husbandry (raising of cattle and calves for food production), commercial fishing, aquaculture, and urban farming.
Commercial agriculture is one of the largest industries in San Diego county and contributes significantly to the local economy with $1.8 billion in annual total sales (1) and a total economic impact of approximately $2.88 billion (2). According to the San Diego County 2018 Crop Statistics & Annual Report, there are 242,554 acres dedicated to commercial agricultural production in the county (1). Although 95 percent of agricultural land in San Diego county is dedicated to food production, only 50 percent of the total economic value of agriculture derived from food production. The remaining 70 percent of the total economic value of agriculture in San Diego county originated from nursery and cut flowers, which only make up 5 percent of the total agricultural land (1).

Avocados, citrus, and vine-ripened tomatoes are the highest yielding edible crops grown in San Diego county and are largely shipped out of the region, while miscellaneous fruits and vegetables remain in local markets. The most valuable crops are the highest yielding edible crops grown in San Diego county currently harvest from the wild and land over 60 species valued at over $10 million annually (3, 4). An additional $28 million is landed annually by San Diego county fishermen in ports north of the county, but could be landed at home with improved waterfront infrastructure (5). Growing interest in fisherman’s markets, like the Tuna Harbor Dockside Market, and other alternative marketing arrangements are helping to increase local availability of healthy food, strengthen demand for more of the region’s diverse seafood products, and revitalize the fishing industry (3, 6).

WHAT FOODS ARE PRODUCED?

In 2017, approximately 94 percent of farm businesses in San Diego county had a value of sales under $250,000, which is consistent with small farm operations (8). Approximately 91 percent of farms in the county are under 50 acres, and about 70 percent of the total farms are less 10 acres, well below state averages, highlighting the prevalence of small farms in San Diego county (9). In 2018 the University of California Cooperative Extension (UCCE) released the Growers' Needs Assessment for the San Diego region which found that among survey respondents, the majority (78 percent) of farmers in San Diego county are full owners, with about half of the farms operating as sole proprietors (48 percent). About one fourth (28 percent) of respondents use lease agreements and about half (52 percent) use hired labor in their farm operations (9).

COMMERCIAL AGRICULTURE AND FARMING METHODS IN SAN DIEGO COUNTY

In 2018, approximately 94 percent of farm businesses in San Diego county had a value of sales under $250,000, which is consistent with small farm operations (8). Approximately 91 percent of farms in the county are under 50 acres, and about 70 percent of the total farms are less 10 acres, well below state averages, highlighting the prevalence of small farms in San Diego county (9). In 2018 the University of California Cooperative Extension (UCCE) released the Growers' Needs Assessment for the San Diego region which found that among survey respondents, the majority (78 percent) of farmers in San Diego county are full owners, with about half of the farms operating as sole proprietors (48 percent). About one fourth (28 percent) of respondents use lease agreements and about half (52 percent) use hired labor in their farm operations (9). According to the 2017 Census of Agriculture, San Diego county has the highest concentration of organic farmers in the state of California, with 303 certified organic farms. The state average is 1.7 percent, while San Diego county had 5.2 percent, which is the highest in California (10).
HYDROPONICS AND AQUACULTURE

Hydroponics is the production of food or other products and hydroponics; or nursery potted plant production systems (9). For example, some farmers continue to use conventional farming practices (9).

Nearly nine percent of farmers report using controlled environment agriculture and ten percent indicate using a mix of production systems (9). For example, a farmer can utilize both field-grown organic products and hydroponics, or nursery potted farming along with aquaculture, or any other permutation of combining methods. Hydroponics is the production of food or plants in a solution of nutrients without soil, and aquaculture is a subset of hydroponics where fish and plants are produced utilizing the methods of hydroponics and aquaculture (10). Hydroponics allow for farmers to decrease water usage, use less land and soil, and control the environment to eliminate the need to use pesticides (1). The controlled environment has a tremendous increase over the past five years as growers work to intensify their farms to increase productivity.

URBAN AGRICULTURE IN SAN DIEGO COUNTY

Urban agriculture includes the production, distribution, and marketing of food and other products within the cores of metropolitan areas and at their edges. Examples of urban agriculture include:

- Community, school, backyard and rooftop gardens with a purpose extending beyond home consumption and education.
- Urban market gardens.
- Innovative food-production methods such as aquaponics that maximize production in small areas.
- Community supported agriculture based in urban areas.
- Family farms located in metropolitan greenbelts.

The most striking feature of urban agriculture, which distinguishes it from agriculture in rural contexts, is that it is integrated into the urban economic and ecological system. Such linkages include the employment of urban residents as laborers, use of typical urban resources (like organic waste as compost and urban wastewater for irrigation), direct links with urban consumers, direct impacts on urban ecology (positive and negative), being part of the urban food system, competing for land with other urban functions, and being influenced by urban policies and plans.

Urban agriculture provides benefits for communities by generating positive impacts in the following realms:

- Social impacts: Creates safe places, reduces blight, provides access to land, promotes community development, builds social capital, provides education and training, business incubation, market expansion for farmers, economic savings on food, and increased home values.
- Environmental impacts: Contributes to improved soil quality, reduction of storm water runoff, improved air quality, reduction of urban heat island effect, increased biodiversity, reduced carbon emissions, and waste reduction.

In San Diego county, farmers grow a range of vegetables, fruits, grains, honey, and other products and fish on small parcels of land that average less than an acre in productive areas. Most urban farming operations in the county are non-profit organizations and report gross sales of less than $25,000 per year. The Urban Growers' Collaborative Project managed by the University of California, San Diego Growers' Project is working to coordinate efforts between urban farming operations to increase efficiency and better meet market demands.

New for-profit urban farms have emerged all around the county in the last few years, indicating interest and demand from both consumers and entrepreneurs in investing in San Diego county's local food system. Additionally, some for-profit urban farming ventures show promise as a tool for social equity in our local food system as demonstrated by an urban farm that includes a CSA that serves low-to-moderate income Latino families in the South Bay and City Heights.

COMMERCIAL FISHERIES IN SAN DIEGO COUNTY

Commercial fishing in San Diego county is, by default, urban because of the location of the fishing harbors along the coast in heavily populated areas and the subsequent ties with the urban economic, social, and ecological system. According to the California Employment Development Department, there are approximately 20 relatively small-scale fishing operations in San Diego county, many are largely owned and operated by individual families (13). This is reflected in the predominance of the small-sized fishing vessels (60’ or less) that populate scenes of local fishing harbors. A variety of fishing techniques are used to land 60-70 species, including pots and traps, hoop and line, seine and nets, and hand collections while diving. All methods comply with strict regulations and science-based management (e.g., seasonal closures, catch limits, gear modifications) meant to safeguard against overharvest of stocks, capture of bycatch (species not intended to be caught through fishing activity), and environmental impacts, making San Diego county’s local catch some of the most responsibly sourced in the world (14-16).
FOOD PRODUCTION

SECTION 2

The role of farmers as stewards of the land and catalysts to slow down the impacts of climate change is not fully recognized and is underappreciated. The 2018 UCCE survey results demonstrate that farmers are consciously willing to adapt and to adopt practices that will enhance the environment and make the region more resilient against climate change. Sixty five percent of respondents of the survey indicated they are adopting a number of conservation practices in their farm operations, including but not limited to mulching (26.34 percent), compost application (21.68 percent), and no-till or reduced-till (17.38 percent). The most important benefits cited by farmers to justify the adoption of these practices include drought resistance (20.12 percent), environmental stewardship (18.67 percent), and yield improvements (17.01 percent). According to the 2018 County of San Diego Climate Action Plan (CAP), emissions from agricultural equipment accounted for 32 percent of all agricultural emissions in 2014. Most agricultural equipment, such as tractors and pumps, are petroleum-diesel-powered. The CAP includes strategies that support the conversion of such equipment to fuels with lower carbon emission rates, such as renewable diesel, compressed natural gas, and electric equipment. Currently, the San Diego County Air Pollution Control District provides financial incentives to convert gas and petroleum diesel-powered farm equipment to electric-powered equipment.

According to data provided by the California Department of Fish and Wildlife (CDFW), approximately 165 commercial fishing vessels are registered in the county annually, though not all boats are actively fishing throughout the year. The Carlsbad Aquafarm at the Agua Hedionda Lagoon has a 50-year history of shellfish and seaweed production and research conducted by farm staff and academic partners. The lagoon is approximately 390 acres and is divided into 3 sections where the area dedicated to aquafarming totals 66 acres. The Carlsbad Aquafarm grows oysters and mussels on suspended lines and in submerged trays above the seafloor, where the shellfish are protected and have access to nutrient rich tidal flows of the Pacific Ocean. Products from the farm are sold in markets throughout Southern California (7).

AQUACULTURE IN SAN DIEGO COUNTY

The Carlsbad Aquafarm at the Agua Hedionda Lagoon has a 50-year history of shellfish and seaweed production and research conducted by farm staff and academic partners. The lagoon is approximately 390 acres and is divided into 3 sections where the area dedicated to aquafarming totals 66 acres. The Carlsbad Aquafarm grows oysters and mussels on suspended lines and in submerged trays above the seafloor, where the shellfish are protected and have access to nutrient rich tidal flows of the Pacific Ocean. Products from the farm are sold in markets throughout Southern California (7).

THE TYPICAL COMMERCIAL FARMER IN SAN DIEGO COUNTY

Based on the 2018 UCCE survey, the typical farm owner and/or operator in San Diego county is a white male over the age of 50 with at least a 4 year college level education and almost 20 years of farming experience. More than seventy percent of farm producers in San Diego county are males (9), though the region still ranks first in California in the number of farms with a female principal producer (8). Approximately 70 percent of farmers identified themselves as white (not of Hispanic origin); while Hispanic or Latino (8.88 percent) and Asian (5.4 percent) comprise the two next largest single race groups of farmers (9).

Over 50 percent of farmers are 61 or older and may be on their way to retirement (9). Enacting policies and developing strategies that will encourage and facilitate access to land and other productive resources by younger farmers is not only needed but critical to sustain agriculture as a viable industry in the county.
FOOD PRODUCTION

Survey respondents identified profitability as the most important motive influencing their decision to farm. However, other factors like environmental stewardship and lifestyle or quality of life are also important drivers.

In contrast to farm owners and/or operators, farm workers are primarily Latino, young, and born outside of the United States. They represent the majority of the workforce in agriculture, especially in San Diego county where the cultivation of citrus, avocados, tomatoes, berries, and other fruits and vegetable crops requires significant labor inputs. According to 2017 U.S. Census data, among the 12,677 people employed in agriculture, forestry, and fishing in San Diego county, over 10,500 (83 percent) are hired laborers hired on a contract basis. Based on the number of fishing licenses issued by CDFW, as many as 800 people could be employed to calculate as crewmembers are often operated commercial fishing vessels is difficult to determine because they are preferred for pests and plant diseases. Warmer temperatures, and wetter climates increased concentration of carbon dioxide, which leads to increased runoff and risks of floods and mudslides. Moreover, an increased impact to these production challenges. Specifically, through increased competition related to markets and marketing include crop types and possible crop losses, and a increased in viable water costs which leads to a change in viable water supply, higher water costs which leads to a change in viable water supply, and a decrease in water holding capacity in soil which leads to increased runoff and risks of floods and mudslides. Moreover, an increased concentration of carbon dioxide, warmer temperatures, and wetter climates are preferred for pests and plant diseases. According to the California Department of Food & Agriculture, with the changing the major challenges to local commercial agriculture. Respondents of the 2018 UCCE survey identified the actual costs of doing business, laws and regulations, business planning and record-keeping, and regulations related to labor as their main challenges (9). The most important issues and challenges related to markets and marketing include sale prices, direct marketing opportunities, marketing alternatives, and trade or foreign competition. On the production side, water and irrigation management, soil and fertility management, plant diseases, and pest control strategies are the most important issues and challenges identified (9). Climate change may have an increased impact to these production challenges. Specifically, through increased heat and changing precipitation patterns, loss of farmland and rangeland due to wildfires, diminishing water supply, higher water costs which leads to a change in viable water supply, and a decrease in water holding capacity in soil which leads to increased runoff and risks of floods and mudslides (11). Moreover, an increased concentration of carbon dioxide, warmer temperatures, and wetter climates are preferred for pests and plant diseases. According to the California Department of Food & Agriculture, with the changing

THE TYPICAL COMMERCIAL FISHERMAN IN SAN DIEGO COUNTY

Based on anecdotal reports from San Diego county and a 2007 report from Santa Barbara, the typical commercial fisherman is a white male in his mid-50s who has been fishing for about 25 years. Not including crew, only 10 percent of fishermen were less than 40 years old in 2007 (18). The annual workforce that is required to operate commercial fishing vessels is difficult to calculate as crewmembers are often hired on a contract basis. Based on the number of fishing licenses issued by CDFW, as many as 800 people could be employed in the commercial fishing industry each year. The estimated earnings (total payroll) of an average fishing operation has ranged between $150,000 – $200,000 annually since 2010, according to California Employment Development Department (13).

WHAT ARE THE CHALLENGES FOR FOOD PRODUCERS IN SAN DIEGO COUNTY?

FOR COMMERCIAL AGRICULTURE

Factors directly impacting profitability or the ability to conduct business are considered

THE TYPICAL URBAN FARMER IN SAN DIEGO COUNTY

Based on a 2017 survey conducted by the University of California, San Diego Center for Community Health, the typical urban farmer in San Diego county is a white female in her mid-30s who has been farming for approximately 5 years (12). The typical commercial fisherman is a white male in his mid-50s who has been fishing for about 25 years. Not including crew, only 10 percent of fishermen were less than 40 years old in 2007 (18). The annual workforce that is required to operate commercial fishing vessels is difficult to calculate as crewmembers are often hired on a contract basis. Based on the number of fishing licenses issued by CDFW, as many as 800 people could be employed in the commercial fishing industry each year. The estimated earnings (total payroll) of an average fishing operation has ranged between $150,000 – $200,000 annually since 2010, according to California Employment Development Department (13).

WHAT ARE THE CHALLENGES FOR FOOD PRODUCERS IN SAN DIEGO COUNTY?

FOR COMMERCIAL AGRICULTURE

Factors directly impacting profitability or the ability to conduct business are considered...
climate, it is widely acknowledged that an increase in pest infestations may occur in California due to climate change. Therefore, pest and plant disease management and programs may shift and/or increase to adapt to changes (19).

FOR URBAN AGRICULTURE
The following factors present challenges for urban agriculture:
• The high cost of real estate makes urban land inaccessible and/or insecure (leasing) for most urban farmers.
• The high cost of water metered at residential rates is a barrier to economic farm viability.
• The inability to serve medium to large distribution channels due to lack of volume/coordination and lack of aggregation infrastructure and support amongst urban farmers.
• The diversity of policies related to urban agriculture throughout San Diego county’s 19 jurisdictions and a lack of centralized resources/technical assistance on policy is an entry and expansion barrier for urban farmers.
• The lack of aggregated and updated resources to meet the needs of would-be and existing urban farmers.

FOR COMMERCIAL FISHING AND AQUACULTURE
Challenges in the San Diego region and across the state include a lack of public awareness of local sourcing and products, a shortage of waterfront and city-wide seafood system infrastructure, regulatory limitations, and a lack of workforce training and development which is needed to step into continued growth (18, 20-22). The uncertain but impending challenges associated with a changing climate and ocean will likely result in shifts in the year-to-year and longer-term abundances and distributions of stocks, as well as interfere and potentially disrupt fishing operations at sea and along the waterfront (i.e., impacts of increased storms and sea level rise) (23).

While fisheries’ resources are abundant, the current conservative and strict regulatory structure may limit access to some viable fisheries’ resources and fishing grounds. Regulatory structures could be more flexible (adaptable) to increase resiliency in the face of a changing climate. For example, permit costs can be prohibitive in limiting equitable access to some fisheries, and fishery specific permits limit the ability to diversify catch, which would reduce the likelihood of depletion of particular species and provide a greater variety of fresh seafood products (26). Collaborative work is necessary to overcome barriers, seek opportunities, market products together, and benefit from economies of scale. For aquaculture, it is difficult to site facilities due to demands on shoreline and ocean space, and difficult to permit facilities because of environmental and safety concerns, and the many challenging and complex requirements from multiple agencies. Comprehensive and inclusive planning, including all ocean and waterfront users, regulators, managers, scientists, and aquaculture interest is necessary.

WHAT ARE THE OPPORTUNITIES FOR FOOD PRODUCERS IN SAN DIEGO COUNTY?

FOR COMMERCIAL FISHING
San Diego growers continue to thrive despite challenges caused by increased water
THE STATE OF THE FOOD SYSTEM IN THE SAN DIEGO REGION

FOOD PRODUCTION

SECTION 2

FOR URBAN AGRICULTURE

Several technical assistance providers have recently emerged to address the needs of urban farmers in San Diego county. Some examples include the South San Diego Small Business Development Center’s Business of Farming Course, Seeds @ City, EDFSA Urban Agriculture Working Group, and the Urban Growers’ Collaborative Project. The Urban Growers’ Collaborative Project is an example of collaboration and coordination between urban farmers to meet market demand more efficiently together and to develop multi-farm CSAs serving low-to-moderate income consumers and/or consumers living in areas without convenient access to affordable, high-quality, local produce options.

Land use policies and regulations could be modified to accommodate more urban agriculture. For instance, the Urban Agriculture Incentive Zones Act is a California bill originally passed in 2014 (AB 515) and recently extended to 2029 (AB 465). The Act is being implemented in the City of San Diego and the City of Chula Vista to offer tax incentives to private landowners willing to lease vacant land (up to 3 acres) to urban farmers for a minimum of 5 years (25, 26). New housing developments are also including plans for urban agricultural components.

FOR COMMERCIAL FISHING AND AQUACULTURE

The diversity of seafood resources in the waters of San Diego county are probably the greatest natural opportunity for the seafood industry. Harvesting lightly across an array of species reduces the risks of impacting stocks, increases our ability to respond to climate change challenges, and provides a more stable business model (23, 24, 27, 28).

Diversity of the harvested products also provides more choices for consumers, contributing to healthier diets. These rich ocean resources converge with several recent actions to contribute to the continued growth of the seafood industry in San Diego, including rebuoying fish stocks, such as rockfishes, and the exploration of new sustainable fisheries and aquaculture practices (e.g., native clams and seaweeds). Other opportunities include the 2015 State legislation (AB 226), dubbed Pacific to Plate, which streamlines the process for permitting and operating fisherman’s markets and the development of a program to train new fishermen (29). Additionally, the Seaport development in downtown San Diego will feature one of the county’s last working fishing harbors, Tuna Harbor, as a centerpiece of the development. Commercial fishermen and Protea Waterfront Development, along with the Port of San Diego, are working together to create a world-class fishing harbor that could help to address many of the infrastructure needs identified that are currently limiting the seafood system in San Diego (30). Further, consumers (and the food service industry) are providing opportunities for growth through strengthening of local and healthy food movements, and growing interest in local fisheries, fishermen, and fisherman’s markets as reflected by recent local media coverage, including Edible San Diego, KCET’s Food Reader, and San Diego Magazine (31 – 37).

The following strategies provide further opportunities to increase public awareness about locally sourced fish and seafood:

- Provide more information to the public about what species are sourced locally and how to prepare them.
- Encourage consumers to visit the local fisherman’s market, ask for local seafood at restaurants and markets, and try local seafood that may be novel to them.
- Provide information to the public that addresses common concerns surrounding fishing and aquaculture (e.g., environmental impacts and health concerns).

- Provide more information and conduct public outreach about the strict U.S. regulations surrounding environmental issues, food safety, and workers’ rights that make domestic seafood some of the most responsibly sourced in the world.
The San Diego County's Department of Agriculture, Weights and Measures (AWM) protects the food supply by trapping, identifying, excluding, and eradicating harmful agricultural organisms that threaten residential and commercial agricultural produce. One of the biggest threats to local agriculture is the spread of invasive pests on plants and produce imported into San Diego county from both domestic and international points of origin. In order to prevent the spread of pests, and protect the region’s agriculture and the environment, AWM maintains and manages the following resources and programs:

High-Risk Pest Evasion Program

Inspects thousands of plant shipments coming into the county each year to ensure they are free from harmful and poisonous pests not only reduces plant pests and diseases that threaten agriculture the county each year to ensure they are free from harmful and poisonous pests not only reduces plant pests and diseases that threaten agriculture, but also lessens the need for agricultural quarantines on local industry. Agriculture Detector Dog Team Program

The program supports the statewide pest prevention network via parcel shipments by using well trained detector dogs at parcel facilities. Part of the statewide 14 teams, AWM’s two dog teams are trained to effectively and efficiently find panels containing plant materials and agricultural products which are then subjected to inspections. The teams work at various terminals such as FedEx, UPS and the U.S. Post Office throughout the region. The teams also conduct outreach to educate and serve as ambassadors in the community. Pest Detection Program

Specialist place traps in fruit trees in residential yards throughout the county and check them on a regular basis as defense against the introduction and spread of agricultural pests, such as invasive fruit flies, Light brown apple moth (LBAM), Asian citrus psyllid (ACP), Japanese beetle, and Gypsy moth. Early detection of these pests allow for prompt eradication efforts to begin before pests multiplied and spread. Pesticide Regulation Program

AWM enforces State pesticide laws and regulations. AWM inspectors work to ensure pesticides are used in a safe and legal manner while protecting human and animal health, as well as the environment. Emergency Quarantine Projects

AWM collaborates with State and federal agencies, industry, stakeholders, and the public on emergency quarantine projects to eradicate or prevent the spread of pests of agricultural economic importance. Current quarantines in the region are for the LBAM and the ACP. Federal and State quarantines are established to protect agricultural trade when specific agricultural pests or diseases are detected. The goal of agricultural quarantines is to prevent the spread of pests and diseases as early as possible to ensure local growers can continue to market and ship their commodities to other counties, states, and countries. Citrus Quarantine Program

This program protects the sustainability of citrus production by preventing the artificial spread of the ACP that transmits the devastating disease of citrus called Huanglongbing (HLB). ACP and HLB threaten San Diego county’s $377.5 million citrus industry. AWM inspects hundreds of citrus growers, packers, transporters, and fruit sellers to ensure compliance with quarantine laws and regulations. AWM conducts outreach to enhance the public, growers’ awareness and provide information about the spread of the pests; devastating plant disease. Erosology and Plant Pathology Diagnostic Labs help local growers, agricultural professionals, and county residents to appropriately control pests in a timely, safe and effective manner by providing suspect pest determinations at no charge for the public and growers. Honey Bee Protection Program

This program promotes responsible hobbyist and commercial beekeeping and ensures public safety through outreach, best management practices, beekeeper registration, and compliance monitoring. Other Programs

AWM promotes agriculture by ensuring there is fairness and equity in the marketplace through inspections that verify produce maturity, certification of organic or local production, and through outreach efforts to help local producers on how to maintain compliance with laws and regulations and where to locate resources. Inspection programs ensure that our San Diego county farmers are not faced with unfair competitive disadvantages. The Direct Marketing Program certifies produce and market locations which come together to create Certified Farmers’ Markets. These markets bring the consumer face to face with local farmers connecting the consumer with their food source and producer. AWM assists those who are seeking to establish a Certified Farmers’ Market and encourages farmers’ market operators to accept Electronic Benefit Transfers, expanding the availability of fresh, locally grown fruits and vegetables to underserved communities. AWM partners with the County Department of Public Works’ Watershed Protection Program and the University of California Cooperative Extension, leveraging resources and knowledge to ensure protection of the environment and agricultural sustainability.
FOOD PRODUCTION

References


Resources


Section Contributors

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Kristen Koenigsen, Second Chance Youth Garden Program

Nina Verdes, California Sea Grant, UC San Diego

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Barrett Liddis, University of California Cooperative Extension

Theresa S. Talley, P.h.D. California Sea Grant, UC San Diego
WHAT IS FOOD MANUFACTURING AND PROCESSING?

The Food Manufacturing and Processing Industry is an important sector of the overall food system. Food manufacturing and processing operations transform raw ingredients like livestock and agricultural crops into edible products for consumption. Groups within the food manufacturing industry are distinguished by the raw animal or vegetable materials that are processed into food products.

WHAT DOES FOOD MANUFACTURING AND PROCESSING LOOK LIKE IN THE SAN DIEGO REGION AND WHAT ARE THE CURRENT TRENDS IN THIS INDUSTRY?

According to the Economic Contributions of San Diego County Agriculture report, the majority of food manufactured in the county utilizes imported raw products from outside the county, such as wheat flour, corn meal, and yeast for bread, bakery, and tortilla product manufacturing. For example, cacao and coffee beans are imported from overseas to locally manufacture chocolate (valued at $27.8 million in 2015) and coffee (valued at $63.4 million in 2015). In addition to importing, the county of San Diego exports raw products for manufacturing and processing. For example, almost the entire local fluid milk production, which totaled $6.9 million in 2015 left the county to be pasteurized and packaged (2).

Citrus and avocados are the largest crops grown in the San Diego region, with total values of $151.7 million and $121 million respectively (3). These crops target the fresh market and are mainly sold whole locally rather than going through processing and manufacturing. Small scale processing of other fruits into jams and jellies can be found as an option through farmer’s markets, which provides an option for products that do not meet cosmetic standards (ugly food) for the fresh market (2).

San Diego county could see an increase in home-based and small-scale manufacturing and processing in the coming years if regulations remain favorable and consumer preferences for local produce continue to trend upward as evidenced by the breadth of Certified Farmers’ Markets. Midsize manufacturing and processing ($1 million annual sales) will remain flat without a catalyst from inputs in the supply chain, such as an increase in the production of produce or a new livestock operation. Other influences that could increase manufacturing and processing could include subsidies for infrastructure, shifts in the political or economic conditions of neighboring counties, and shifts in cross border commerce between the U.S. and Mexico.

HOW AND WHY IS FOOD MANUFACTURING AND PROCESSING REGULATED?

The Food Manufacturing and Processing Industry is regulated through a hierarchy of jurisdictions from the national to local levels with a common goal of ensuring the nation’s food system protects the public from foodborne illness through food safety practices and regulations. Within each jurisdiction, there are multiple categories, types, and scales of manufacturing and processing. Further information can be found in each agency’s online directory.

The U.S. Department of Agriculture (USDA) maintains a listing of establishments that produce meat, poultry and/or egg products regulated by the Food Safety and Inspection Service pursuant to the Federal Meat Inspection Act, the Poultry Products Inspection Act, the Egg Products Inspection Act, and the Humane Methods of Livestock Slaughter Act (4).

At the state level, the Food and Drug Branch (FDB) of the California Department of Public Health regulates the manufacturing, processing, storage and distribution of food products. Processors of general food commodities (e.g. baked goods, noodles, snacks) must maintain permits.

California Department of Public Health, California State Permitted Facilities in San Diego County by City

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<thead>
<tr>
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SAN DIEGO COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH - NUMBER & TYPE OF SAN DIEGO COUNTY PERMITTED FACILITIES IN SAN DIEGO COUNTY

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<th>Facility Type</th>
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<tr>
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Total 15,000

Each year, the Department of Environmental Health processes APPROXIMATELY 700 FOODBORNE ILLNESS complaints for retail food facilities.

IN 2018,
18,125 INSPECTIONS yielded the CLOSURE OF 203 restaurants due to imminent public health risks.
FOOD SAFETY

The Center for Disease Control and Prevention estimates that each year in the U.S., 48 million people get sick from a foodborne illness, 128,000 are hospitalized, and 3,000 die (7). Foodborne pathogens such as bacteria, viruses, and parasites can contaminate food anywhere along the food production chain, from fields where food is grown to cutting boards in kitchens, to the hands that serve the food in restaurants.

Food safety regulations were created to prevent foodborne illness and are overseen by federal, state, and local authorities, such as the Food and Drug Administration (FDA), United States Department of Agriculture (USDA), California Department of Public Health and local environmental health jurisdictions, in order to protect food throughout the supply chain. Most cases of foodborne illness are preventable through best management practices, including protection from contamination, employee hygiene, foods from approved sources, proper temperature control when holding potentially hazardous foods and reaching minimum internal cooking temperatures for food which vary based on the type of food.

As a method to safeguard people from foodborne illness, the FDA and USDA have established elaborate systems to test food and monitor it for foodborne pathogens or contaminants. Food producers and manufacturers work with the FDA and USDA to recall their products from the marketplace when the products are mislabeled or when the food may present a health hazard to consumers because the food is contaminated or has caused a foodborne illness outbreak. Food recalls have increased by 10 percent from 2013 to 2018 and in the last quarter of 2018, 17 million pounds of food were recalled by the USDA (8). Additionally, recalls often cause consumers to throw away similar products because of the uncertainty around the product purchased being potentially associated with the recall.

By not maintaining food safety from farm to fork, food that would have otherwise fed humans or animals is wasted (more of this topic in Section 9). This comes at a time when California is struggling to find ways to reduce waste from going to our overburdened landfills and address feeding persons in need in our community. Food safety is a key element to a food system that ensures products are safe for people to consume.

THE CENTER FOR DISEASE CONTROL AND PREVENTION IDENTIFIES THE RISK FACTORS FOR FOODBORNE ILLNESS TO BE:

1. Improper holding temperature control of potentially hazardous foods
2. Improper cooking temperatures of potentially hazardous foods
3. Food from an unapproved source
4. Employee hygiene issues, such as improper handwashing
5. Contamination of food or food contact surfaces
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Resources


Section Contributors

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Ron Tatro, Alchemy.
HOW IS FOOD STORED AND DISTRIBUTED IN SAN DIEGO COUNTY?

Food that is produced in San Diego county reaches the general population through a process of distribution, a critical component of the overall food system. Locally sourced food is distributed through three main pathways: 1) directly to the consumer through farmers’ and fishermen’s markets and shares in consumer supported agriculture (CSA); 2) directly to institutions and businesses; and 3) through traditional distributors to institutions and businesses. In some cases, food is processed or packaged outside of the county and then it is re-imported into the county for distribution, as discussed in Section 3.
WHAT ARE THE CHALLENGES ASSOCIATED WITH FOOD STORAGE AND DISTRIBUTION IN SAN DIEGO COUNTY?

FOR FISHERMEN

Traditional seafood supply chains include large-scale dockside buyers that buy product from fishing vessels and sell the seafood on a long series of domestic and/or international export, processing, packaging and, in some cases, re-importation. Two recent studies revealed that the availability of San Diego-sourced seafood within the city of San Diego was limited to seafood markets and restaurants located within 1 km (0.6 miles) of the coast. This strong geographic barrier was particularly if buying directly from farmers, lead to higher transportation costs and take away valuable time from other farming operations for small farmers. Consequently, the local farmer cannot compete on price with the larger farmer, who is typically not local. As a result, distributors have to look for options outside the county to meet the local demand for food.

FOR BUYERS

The challenges associated with distributing local food are passed on to the buyer in the form of higher prices. This ultimately leads to food inequity, where low-income populations cannot afford and therefore do not have access to high quality, fresh, and local food. Particularly if buying directly from farmers, organizations often face challenges with ensuring that deliveries will be accurate and on-time. They may also pay higher transaction costs and be required to navigate more cumbersome management processes than when working with traditional distributors.

Similar approaches can be beneficial for the commercial fishing industry, which faces similar challenges of unpredictability in supply, a need to meet current demand with imports, and a need to collaborate with other producers to help meet demand and take advantage of economies of scale (e.g., through port-side marketing associations). Increasing opportunities for seafood direct marketing and other alternative marketing arrangements, where fishermen sell to restaurants and markets, could result in shorter and more local seafood supply chains. This would potentially increase the availability of local product within the county. An added benefit of more direct sales is the connection of seafood producers and consumers which raises awareness of local fisheries. However, until any of these strategies are implemented, a concerted effort needs to take place to build up community awareness around the value of local food, in order for businesses, organizations, and communities to place a higher value on local food. Efforts also need to take place to address equity issues for disadvantaged communities who may not be able to access and afford higher-priced, local food.
In order to generate increased demand for locally sourced food and provide greater incentives for distributors to work with local farmers, the San Diego-based non-profit organization, Community Health Improvement Partners (CHIP), has established the Farm to Institution Center. The Center has a two-part mission: 1) to improve community health by improving access and consumption of healthy foods and 2) to support farmers in the creation and growth of a vibrant, diverse, and local agricultural scene.

The Center has developed three institutional food service collaborative groups: the Nutrition in Healthcare Leadership Team, the Farm to School Taskforce, and the Farm to Institution Council. Each of these collaboratives are working to build momentum for the Farm to Institution movement in their respective sectors across San Diego county.

Success of this approach is indicated by local food procurement among San Diego county school districts increasing from $3 million in 2013 to $19 million in 2017, according to the State of Farm to School in San Diego County report. This has led to greater demand for distributors to source locally-grown food (4). For the purposes of the State of Farm to School Report, local food has a three-tiered definition: tier 1 is food grown, raised or produced in San Diego county, tier 2 is within 250 miles of the county, and tier 3 is in California. The tiered definition allows the school districts to support local food, incorporate a diverse range of products, and source at competitive prices (4).
CERTIFIED FARMERS’ MARKET

Certified Farmers’ Markets (CFMs) provide growers the opportunity to market directly to consumers without engaging food brokers or distributors. They are generally held on a weekly basis in public locations such as town squares or downtown streets. In these settings, local agricultural producers are able to educate consumers about how their food is grown and to suggest food preparation methods. San Diego county has 36 CFMs that operate throughout the region.

INTERVIEW WITH CATT FIELDS-WHITE
April 28, 2019

What was your background when you decided to become a CFM manager? I have been an entrepreneur and always in the food system. I worked with chefs, marketing consulting, owned a restaurant and published a trade publication for restaurants.

How did you get involved and what inspired you to open a CFM? It was a bit self-serving at first. I lived in Little Italy and at the time there was no grocery store or really any fresh food. I knew chefs and farmers, and chefs wanted fresh food. The Little Italy Business Improvement District encouraged me to start a market if I could figure out how it could be self-sustaining.

Do all your markets accept EBT, Market Match and WIC? Yes, at all the markets I manage. These programs increase the sales for farmers because you can use them to buy fresh produce here.

Do you remember what you felt like on the first day you opened the Little Italy Mercato Certified Farmers’ Market? Excited! I have 9 grandchildren and I didn’t want them to end up in a situation where they didn’t have access to fresh food. On that first day, my husband and I walked behind the stalls

Market managers are responsible for promoting CFMs and coordinating growers or vendors who pay a fee or percent of sales for booth space. Catt Fields-White is the CFM manager for the Little Italy Mercato (Saturdays and Wednesdays) and the Pacific Beach Market (Tuesdays). In the following interview, she shares her perspective on the San Diego county food system based on her 11 years of experience as a market manager.

All farmers participating at any CFM would benefit from EBT sales, but the federal program requires a lot of bookkeeping and it is difficult for small CFMs to resolve because the time to devote to recording keeping is too time consuming or the payroll to hire a person is too expensive that the market would not profit.

Do you remember what you felt like on the first day you opened the Little Italy Mercato Certified Farmers’ Market? Excited! I have 9 grandchildren and I didn’t want them to end up in a situation where they didn’t have access to fresh food. On that first day, my husband and I walked behind the stalls
STORAGE AND DISTRIBUTION
SECTION 4

Workers who are all Hispanic and they are here today still selling under the family banner. Were there lessons learned?

Advertisement. It was important to advertise where the market was and to profile the farmers. Some lesson market managers learn is that you need to give the shopper some choice so they can decide what tomato variety to purchase, for example, but not saturate the market where every vendor is allowed to sell tomatoes so that no one at the end of the day makes a profit. The market needs a good mix of different varieties to be successful. It’s a balanced experience for the shopper to be able to browse a little yet not get frustrated from there being too many choices.

Also, the farmers taught me that the market has to be open rain or shine because of them, since they harvest the fruit or pull the root out of the ground it can’t go back – they have to sell it or it goes bad. The customers trust the market to be open rain or shine so there is a commitment to be open for the market to be successful and sustainable. What we don’t want to happen is for customers to not trust the market to be open because those sales would go to a brick and mortar store, which is always open rain or shine.

Would you recommend opening a farmers’ market to others?

Yes, but it will take exactly the right location for it to be successful and there are many factors like the community’s need for one, enough residents who can access it, proximity to other markets where the market was and to profile the farmers. Most farmers can only do one or two markets a week because the farm size is not big enough to supply multiple market days in a week but many large established markets where farmers are successful are saturated where there is no more room for new farmers. I opened the Wednesday market to give small sized farms and new farmers a chance to become established and hope in the long-term it can build into a chef’s market.

From your lens, how have markets changed since you first opened?

CFMs attract more people because people are aware and want to know where their food comes from. The most important aspect is that customers come face to face with the farmer and have a chance to learn about the farmer’s farm practices and build a relationship with him/her.

Do you see trends?

I also see more young people, Millennials, shopping and asking questions about the farming methods and interested in food. I opened the Wednesday market to give small sized farms and new farmers a chance to become established and hope in the long-term it can build into a chef’s market.

What would you consider to be the reason for Farmers’ Markets as they relate to the State of the Food System?

Two reasons: 1) small farms can be financially sustainable through sales at farmers’ markets because the wholesale market is not as profitable for farmers. 2) as people become more aware of their food source, they want to know how the food is grown. There is an advantage when they come face to face with the farmer.

Do you see as the biggest concern for farmers? What do you see as the biggest concern for farmers?

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What do you see as the biggest concern for farmers? What do you see as the biggest concern for farmers?
For customers?
The crazy sense of community, better
tasting food, better value because it’s fresh
and has longer lasting shelf life.

For the region?
Happy residents. There is a turn up in real
estate because real estate brokers see
an added value when there is a farmers’
market in the area.

For non-ag vendors?
Low cost entry to get into business. It
is an alternative way to build a means of
financial support.

What would you say about the farmers who
operate in the context of CFMs?
Strong financially, they are more aware of what
people are looking for in a food system in
terms of what people want to eat as they get to
hear the shoppers’ requests. New farmers are
learning and networking with the older farmers
and the lessons are valuable.

You have stepped outside of being an
operator into being an educator which is
altruistic. Can you tell me why?
I’m a big fan of entrepreneurship. I learned
that farmers and food makers are passionate
about what they do, but do not have a
business background. I provide them with that
business education, and training on the various
permit processes and requirements because
I want them to be successful and financially
sustainable. The farmers’ market can only
be successful and sustainable if individual
farmers are successful and financially stable.
Remember, I have 9 grandchildren and I want
them to always have access to fresh food!

Is there anything else you would like to
share?
If people realize how valuable food is, there
will be less food wasted. They’d take care of
that purchase or consume it rather than throw
it away.

For example, if a bunch of carrots costs 50
cents, (a consumer) could easily allow it to
spoil and get thrown out. If that same bunch
is purchased at $2.50, it is now more of an
investment, therefore, it will get eaten and
enjoyed.
STORAGE AND DISTRIBUTION
SECTION 4

THE STATE OF THE FOOD SYSTEM IN THE SAN DIEGO REGION

In 2010, two young fishermen, Zack Roach, Jr. and Luke Halmay, began selling fresh seafood caught by their families and 10 other local commercial fishermen. An estimated 25-40 people came by the dock every Saturday morning to buy fresh fish directly from the F/V Addiction, Roach’s father’s boat docked in Tuna Harbor, in the Port of San Diego. With aspirations of growing this small, off-the-boat endeavor into a fishermen’s dockside market at Tuna Harbor, a group of San Diego fishermen, a couple of aquafarmers and a local maritime lawyer, formed the Tuna Harbor Dockside Market LLC in June 2013. Their efforts quickly came to a standstill, however, as there was no regulatory pathway to permit fishermen’s markets.

The hard work and tenacity of the Tuna Harbor Dockside Market group, along with the support of other fishermen and the community, turned things around quickly not only for this market, but for the State. In 2013, researchers from California Sea Grant and University of San Diego partnered to study the feasibility of establishing a fishermen’s market in San Diego and found widespread demand for local seafood and availability of enough supply to satisfy consumers (5). A local journalist, Clare Leschin-Hoar, published an article in the Voice of San Diego in June 2014 outlining the regulatory hurdles involved in establishing a fishermen’s market which mobilized local decisionmakers (6). Within weeks of this article being published, San Diego County Supervisor Greg Cox and Chairman of the Unified Port of San Diego, Bob Nelson helped fishermen acquire short-term permits to operate the Tuna Harbor Dockside Market.

On opening day, August 2, 2014, an estimated 1,300 people came to the newly opened Tuna Harbor Dockside Market over the course of five hours to buy local catch from ten vendors representing nine fishing vessels and one aquafarm. In its first few weeks of operation, the Market averaged 350 visitors per week who bought a total of 1.1 tons of seafood. The enthusiasm surrounding the fishermen’s market was reflected in the extensive local press coverage, including Eater San Diego, Edible San Diego, NPR, Times of San Diego, San Diego Union Tribune, Voice of San Diego, Fishermen’s News, and California Sea Grant News.

With help from a Fishermen’s Market Working Group, which included fishermen, scientists, seafood processors, restauranteurs, and representatives from federal, state, and local agencies, San Diego County Department of Environmental Health staff drafted a revision to State legislation that would allow for the streamlined permitting of outdoor fishermen’s markets. This would become Assembly Bill 226, dubbed “Pacific to Plate,” and introduced by Assembly Speaker Toni Atkins in early 2015 (7). The bill received unanimous support in the California Assembly and Senate and was signed into law by Governor Jerry Brown in October of 2015, providing a pathway for fishermen in other parts of the state to establish their own markets.

Tuna Harbor Dockside Market celebrates its five-year anniversary in August 2019, and since its founding, has grown in popularity attracting 450 - 550 members of the public each week and an ever-growing number of local chefs. More fishermen and their families have also gotten involved as vendors and more than 50 different species have been featured since opening. The Tuna Harbor Dockside Market has begun to reconnect San Diegans to local, affordable, fresh seafood and the seafood producers, which has been very limited in San Diego (8, 9). The fishermen’s market has also provided fishermen with the opportunity to meet San Diego’s seafood lovers, diversify their sales, and make a little more money for part of their catch by selling directly to consumers, who also save by buying direct.
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Local Press Coverage of Tuna Harbor Dockside Market:


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HOW DOES CONSUMER DEMAND INFLUENCE THE FOOD SYSTEM?

Consumer demand for food is a key driver in the development of food and agricultural policies at local, state, national, and global scales. Through their food choices, consumers influence food production, food processing, and food prices. At the same time, consumer food choices are impacted by several factors, including the following:

- Biological determinants such as hunger, appetite, and taste
- Economic determinants such as cost, income, and availability
- Physical determinants such as access, education, skills (e.g., cooking), and time
- Social determinants such as culture, family, peers, and meal patterns
- Psychological determinants such as mood, stress, and guilt
- Attitudes, beliefs, and knowledge about food

This section highlights consumer demographics, food purchasing and consumption patterns, and consumer demand for local food in San Diego county.
Though on average the region is prosperous, this prosperity is not enjoyed equally across the population. Males have an average income that is 1.26 times higher than that of females in the region (3). The income inequality index (GINI index) in San Diego county is 0.472, which is higher than the national average (a score of 0.0 on the GINI index means a society has perfect equality of income distribution; a score of 1.0 indicates total inequality where only one person holds all the income) (3).

According to the U.S. Census Bureau, the poverty rate in San Diego county is 11.9 percent (1). In addition, over 1 in 7 San Diegans experience food insecurity, which is defined as the lack of consistent access to enough food for a healthy life (5).

The population is comprised of various ethnic groups from a range of geographic regions with distinct preferences for flavors and products from their native lands. The largest ethnic groups in the San Diego region have origins or ancestries in Mexico, the Philippines, and Vietnam, but recent immigrants from various Southeast Asian and Eastern African countries have added to this diversity. An in...
depth look at these ethnic groups is critical because there may be opportunities for niche products and markets as is the case with long-time residents.

WHAT ARE THE EXISTING FOOD PURCHASING PATTERNS OF SAN DIEGO CONSUMERS?

Food is the third highest expenditure after housing and transportation in all three major metropolitan regions of California: Los Angeles, San Francisco, and San Diego. While data on the total dollar amount that San Diego county residents spend on food does not exist, San Diego county residents consistently allocated approximately 11 percent of their average annual expenditures to food (excluding alcohol) from 2010 to 2017 as shown in the chart on San Diego county food expenditures. This percentage has remained relatively constant and during this time frame, approximately 54 percent of this amount was for food purchased for consumption at home (mostly from supermarkets and grocery stores), while 46 percent was for food purchased away from home (restaurants, school meals, etc.) (6).

Compared with Los Angeles and San Francisco, San Diego county residents spent the lowest percentage of annual expenditures on food. Approximately 54 percent of this amount was spent on food purchased for consumption at home (mostly from supermarkets and grocery store), while 46 percent was spent on food purchased away from home (restaurants, school meals, etc.) (6).

According to the 2012 Economic Census, the total annual retail food sales in San Diego county were approximately $14 billion (7). Of this amount, total direct to retail sales from San Diego county farmers were $50 million (8). The chart on San Diego county retail food sales for 2012 highlights that approximately 45 percent of retail food sales occur through supermarkets and grocery stores, 38 percent through restaurants, and less than 0.1 percent through direct sales (7).

WHAT ARE THE TRENDS IN CONSUMER DEMAND FOR LOCAL FOOD?

Over the past several decades, consumer purchasing behaviors – particularly among the Millennial age cohort, the largest, most diverse cohort in U.S. history – have shifted due to the growing awareness of the connection between food, the environment, and health. This awareness has led to increased consumer demand for better food, food that is fresh, healthy, local, organic, and sustainable. In response, farmers markets, community supported agriculture (CSA) programs, farm stands, and various markets for local meats and seafood around the country have been expanding exponentially.

Recent market trends demonstrate that consumers are more engaged with how food is produced and more interested in knowing where food comes from. In addition, similar trends in the tourism industry resulting in increased demand for hands on tourism are also beneficial to farmers. For example, the County Board of Supervisors implemented the Agriculture Promotion program in 2017 in the unincorporated county to promote agricultural tourism, also known as agritourism. This action by the Board allows for small scale agricultural operations in the unincorporated county to connect with...
tourism by allowing agricultural homestays (guest rooms for visiting or obtaining education on an operating agricultural venture), agritourism uses (e.g. U-pick activities or on-site tours), agricultural stores (small and large), microbreweries/micro-distilleries (small and large, including tasting rooms), fishermen's market, and packaging/processing (e.g. boxing on-site agricultural products, grape crushing at a winery, etc.) (10).

These trends combined with the size of the local market, the popularity of San Diego as a tourist destination, and recent laws and regulations (e.g. the Cottage Food Law, Pacific to Plate, and the Agricultural Promotion Program in the unincorporated county of San Diego), present unique opportunities for producers to diversify their operations and revenue sources. Although producers are capitalizing on these opportunities as evidenced by the growth in agricultural and nature tourism operations, fishermen owned and operated markets, and the number of value-added products, there is room for growth.

In San Diego county there are several farms, ranches, and fisheries producing local food for local markets. In addition, there are several organizations and businesses committed to increasing local food production and availability. The county has 36 Certified Farmers’ Markets (CFMs), 17 CSA programs, 21 farm stands, 1 dockside fishermen’s market, and emerging local farm-to-table and ocean-to-table movements (11,2).

WHAT ARE THE CHALLENGES AND OPPORTUNITIES ASSOCIATED WITH INCREASING CONSUMER DEMAND FOR LOCAL FOOD?

Despite growing consumer interest, access to local food is limited and not available to all communities, affecting low-income people and people of color disproportionately (more on food security and food access on Section 6 of this report). Local food sales are likely still a small percentage of overall sales in San Diego county. Most food produced in the region is currently exported and as indicated previously, direct retail food sales account for less than 0.1 percent in the region (7).

Moving forward, there is an opportunity to better understand how much food produced locally remains within the county and whether opportunities exist to increase local food production and consumption in the region.

In addition, there is a need to increase the accessibility of local food to ensure that it can be available to all.

Most farm, fishing, and aquaculture operations in San Diego county are located within a 2.5 hour drive of a very cosmopolitan and ethnically diverse local and regional market comprising an estimated 20 million people (including the Los Angeles Metro Area, Riverside and Orange County, and Northern Baja California in Mexico). Although somewhat lacking for seafood products, there is supporting infrastructure available for most of the larger crops grown in the county (i.e. citrus and avocados) and a diversity of marketing options (for example CFMs and CSA programs) for some of the new and specialty crops grown as well (13).

Local farmers can benefit from the promotion of their products utilizing the “locally grown” or “locally made” nature of the goods they sell, such as the “San Diego Grown 365” promotional campaign. Similarly, local fishermen can benefit from use of the “San Diego Caught” label intended to increase visibility of seafood sourced in San Diego county, as well as provide traceability information, including fishing vessel, captain, date landed and the specific market or scientific name of the product.

In 2012, the retail food sales in San Diego county were as follows:

- $14,019,082,861 total sales
- $4.9% Supermarkets and Grocery Stores
- $2.1% Limited Service Restaurants
- $1.7% Full-Service Restaurants
- $2.4% Special Food Services
- $2.1% Convenience Stores
- $0.7% Liquor Stores
- $1.3% Snack and Beverage Bars
- $0.6% Specialty Food Stores
- $0.1% Catering
- $0.1% Cafeterias
- $0.1% Direct Sales
- $0.7% Mobile Food Services
- $0.6% Specialty Food Stores


THE STATE OF THE FOOD SYSTEM IN THE SAN DIEGO REGION

CONSUMER DEMAND

SECTION 5

THE STATE OF THE FOOD SYSTEM IN THE SAN DIEGO REGION
• Farm to Fork San Diego, a membership organization of local food producers, chefs, winemakers, and brewers, strengthens connections with consumers and supports increased local food sales in the region.

• Tuna Harbor Dockside Market, a fishing community-owned and operated open-air market with a mission to increase accessibility to the diversity of responsibly-sourced seafood in San Diego, raises awareness of local fisheries and aquafarms, inspires a sense of pride in San Diego’s fishing heritage, and strengthens connections between consumers and producers.

• San Diego county has a vibrant craft brewing scene with over 150 local breweries.

• Although there is only one retail food cooperative in the region, there are several independent retailers that feature local food products in their stores.

• The farm to institution movement is strong in the region with nearly all 42 school districts purchasing local food along with increasing sales at local universities, colleges, and healthcare facilities.
CONSUMER DEMAND

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Section Contributors

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The Farm to Institution Center Community Health Improvement Partners (CHIP). https://www.f2ic.org/Initiatives/the-farm-to-institution-center/
How does the food system shape human nutrition?

Nutrition provides the fuel necessary for life. The quality and availability of the food and drink we consume impacts the health and wellbeing of all people across our life span. The methods of production, processing and preparation, as well as the consumption choices people make, all play a role in whether food helps to nourish the body or results in adverse health impacts.
In the U.S., the population faces a unique challenge called the double burden of malnutrition, meaning people can be overweight, yet undernourished (1). It is not enough to simply have sufficient calories from ultra-processed products; it is essential that human beings have adequate intake of diverse micro nutrients (such as vitamins and minerals necessary for physiological functions to maintain health) and macro nutrients (such as carbohydrates, proteins, and fats necessary for energy production) (2). The shift towards large-scale commodity crop production coupled with technological advances have led to a rise in the production of inexpensive, highly processed, and nutritionally poor foods. These changes have had profound consequences on individual health, the environment, and local economies (3).

Prices and access to healthy foods remain a significant barrier to healthy eating. People are more likely to consume healthy food when they know where it comes from and are able to access and afford healthy food easily. In order to maintain a healthy and local food system, a community of consumers and producers understanding all the components of a food system (production, packaging, distribution, purchasing and disposal of food) is crucial to encouraging and facilitating decisions that impact the health and the well-being of residents (3). In addition, as discussed later in this section, addressing inequities in food access opportunities is also important to ensure nutritious food is available to all.

WHAT IS FOOD INSECURITY AND WHY IS IT RELEVANT?

Food insecurity is a complex societal, community, and individual issue. International organizations define food insecurity as a situation that exists when people lack secure access to sufficient amounts of safe and nutritious food for normal growth and development and an active and healthy life (6). Individuals facing food insecurity are at an increased risk for a variety of negative physical and mental health outcomes and health disparities, including obesity and chronic diet-related diseases such as diabetes, heart disease, and hypertension. Children experiencing food insecurity are at an increased risk for mental health problems, including delayed cognitive development and increased learning difficulties in school compared with food-secure children (7).

The cycle of food insecurity and chronic disease begins when an individual or family cannot afford enough nutritious food. The combination of stress and poor nutrition can make disease management even more challenging. Additionally, the time and money needed to respond to these worsening health crises drains the household budget, leaving little money for essential nutrition and medical care. This causes the cycle to continue. Many families experiencing food insecurity often have several, if not all, compounding factors which makes maintaining good health extremely difficult (8). The latest Community Health Needs Assessment conducted jointly by hospitals throughout San Diego county identified food security and access to food as the number one social determinant of health for San Diegans (9).

ARE SAN DIEGO COUNTY RESIDENTS EXPERIENCING FOOD INSECURITY?

Many residents in the San Diego region are forced to make difficult tradeoffs between paying for food, housing, healthcare, and other necessities. While the economic recovery has resulted in low unemployment and other positive outcomes for San Diego county, about one-third of San Diego residents face food insecurity (10). ProduceGood rescues excess produce from residential orchards, farms and Farmers Markets and helps provide nutritious fruits and vegetables to the 141,000 children who are food insecure in the San Diego region.
Momentum is building in support of healthy procurement practices and nutritional standards in institutional settings, such as government organizations, education institutions, and congregate living and care facilities. The County of San Diego’s Eat Well Practices (Practices) are the nutrition and sustainability guidelines for food purchased and served at the County of San Diego organization. The Practices are based upon the latest dietary science and food systems literature, best practices from other organizations including other local governments, and stakeholder input including County staff.

The Practices go beyond the common approach to nutritional standards that focus on micronutrient percentages or amounts, and instead look more holistically towards processing levels (from unprocessed/minimally processed to ultra-processed). In addition to considering processing levels, the Practices address the health of the population by framing healthy eating through the multi-layered food system so that food procurements and offerings by the County also consider sustainability, local agriculture, food waste, packaging, and some nutrient analysis guidelines. The Practices utilize a “triple bottom line” framework that considers the social, environmental, and economic impact of food and beverage offerings made by the County. The Practices have also served as a model for other organizations to improve food and beverage options, promote public wellness, and support a healthy food system.

WHO IS FOOD INSECURE IN SAN DIEGO COUNTY?

- In San Diego county, 58% are women and 42% are men. Furthermore, forty-three percent of low-income African Americans and forty-two percent of low-income Latinos in the San Diego region experienced food insecurity, compared to thirty-nine percent of low-income Whites and thirty-three percent of low-income Asians (11).

- Additionally, there are 197,000 people at risk of food insecurity should they lose their CalFresh or WIC benefits.

- The county’s population has insufficient income to make ends meet due to low wages, underemployment, unstable work schedules, and other challenges (11). According to the San Diego Hunger Coalition, in 2017 an estimated 443,000 (1 in 7) people in San Diego county experienced food insecurity. This represents 302,000 adults (of which over half are employed) and 141,000 children. Research also shows that there is disproportionality when it comes to the food-insecure population in the county. Of the total number of food-insecure adults in the region, 58 percent are women and 42 percent are men. Furthermore, forty-three percent of low-income African Americans and forty-two percent of low-income Latinos in the San Diego region experienced food insecurity, compared to thirty-nine percent of low-income Whites and thirty-three percent of low-income Asians (11).

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- Additionally, there are 197,000 people at risk of food insecurity should they lose their CalFresh or WIC benefits.

- Seventy-nine percent of food-insecure families in San Diego county are single-parent families (11).

- Additionally, there are 197,000 people at risk of food insecurity should they lose their CalFresh or WIC benefits.

- The State of the Food System in the San Diego Region
NUTRITION AND FOOD SECURITY
SECTION 6

Infants and young children have special nutritional needs that must be met to establish a foundation for health. The first food in the food system, breast milk, is perfect for meeting the needs of newborn and growing babies. Breast milk provides babies a matchless source of nutrients and cellular, bacterial, immune, hormonal, anti-inflammatory, and anti-infection components and more (4).

Breastfeeding also provides positive ecological, financial, and health impacts for communities. Breastmilk is a valuable renewable natural resource that is the most ecologically sound food source available and creates no pollution (4). Children who consume breast milk have reduced incidences of health problems such as asthma, infections, and obesity, thereby lowering health care costs for families and for society.

According to the American Academy of Pediatrics, it is recommended that an infant should exclusively breastfeed for the first six months, followed by breastfeeding with the introduction of complementary foods until at least 12 months of age, and then a continuation of breastfeeding for as long as mutually desired by mother and baby. However, according to the Centers for Disease Control and Prevention the rate of infants exclusively breastfeeding or continuing to breastfeed throughout a year falls short. In the United States, 83 percent (or 4 out of 5) infants started to breastfeed at birth but only 25 percent breastfed exclusively through six months, and 36 percent (or about 1 out of 3) infants were breastfeeding at 12 months (4).

Community acceptance and support are integral components of breastfeeding success. Local efforts to support breastfeeding include advocating for worksite breastfeeding policies, breastfeeding friendly community healthcare centers and childcare providers, home visiting programs, educational forums for families and providers, scientific research, direct breastfeeding counseling, and the establishment of the first milk bank in San Diego (5).

In order to normalize breastfeeding in the San Diego region, it is essential that health professionals, business leaders, and policy makers have access to accurate information and that they play a critical role in supporting and promoting breastfeeding. Policies and other programs that support breastfeeding and lactation for all families can contribute to making San Diego county a healthier and thriving community.

WHAT IS THE FIRST SOURCE OF NUTRITION IN THE FOOD SYSTEM?

Breastfeeding provides a foundation for health and is recommended for infants and young children. Breast milk is a perfect source of nutrients and biological components for newborns and growing babies.

Community support and policies are crucial for promoting breastfeeding. Local efforts include advocacy for worksite breastfeeding policies, breastfeeding-friendly facilities, home visiting programs, educational forums, scientific research, breastfeeding counseling, and the establishment of milk banks.

According to the Centers for Disease Control and Prevention, the rate of infants exclusively breastfeeding or continuing to breastfeed throughout a year falls short in the United States. 83 percent of infants started to breastfeed at birth, but only 25 percent breastfed exclusively through six months, and 36 percent were breastfeeding at 12 months.

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Driven by the 1 in 7 San Diegans facing hunger in our community, Feeding San Diego takes steps each day to feed, rescue, and unite to create this reality.

Feed
We provide more than 26 million meals every year through a decentralized rescue and distribution network, including 300 local charities, schools, faith communities, and food pantries.

Rescue
97 percent of the food we provide to the community would otherwise go to waste. We rescue food from over 500 locations in San Diego county and over 225 farms and packing sheds throughout California. Over 50 percent of all the food we distribute is fresh produce.

Unite
Feeding San Diego unites the community around the issue of hunger and inspires people to become a part of the solution through collaboration with partners and generous gifts of time, funds, and voice.
SNAP: the federal Supplemental Nutrition Assistance Program (SNAP), formerly known as the Food Stamp program, provides financial assistance for purchasing food to low-income California residents. This program is known in California as CalFresh Food. In San Diego, nearly 470,000 people (1 in 9) received CalFresh benefits in 2018.

SNAP-Ed: a federally funded grant program that supports evidence-based nutrition education and obesity prevention interventions and projects for persons eligible for SNAP, through complementary direct education, multi-level interventions, and community and public health approaches to improve nutrition. This program is known in California as CalFresh Healthy Living.

The Farm Bill
In California, there are two food assistance programs, SNAP and SNAP-Ed, that are funded by the federal Agricultural Improvement Act of 2018, commonly known as the Farm Bill.

WHAT KINDS OF FOOD ASSISTANCE PROGRAMS ARE AVAILABLE IN SAN DIEGO COUNTY?
In San Diego county, there are a number of food assistance programs for people facing hunger and malnutrition. This food assistance is provided through different delivery mechanisms including: community food distributions provided by food banks and pantries; WIC and CalFresh monthly benefits to be spent on groceries, free and reduced price school meals; and meals provided through other locally-administered programs, which are served at locations in the community or home-delivered for older adults.

Funding for food assistance comes from two primary sources: federal nutrition programs and private charitable resources. The overwhelming majority (91 percent) of food assistance serving San Diegans comes from federal nutrition programs. In 2016, federal programs brought 228.3 million meals to San Diego county, compared to 22.6 million meals paid for with private charitable resources. This means that for every 10 meals of food assistance in San Diego county, nine of those meals are provided by federal nutrition programs (12).

WHAT ARE FOOD DESERTS?
Food deserts are residential areas with limited access to affordable and nutritious food (13). Living in a food desert has been linked to poor diet and greater risk of obesity, while people who live near grocery stores are more likely to consume fruits and vegetables and less likely to be obese. To capture the idea that the ease of access to unhealthy food is also an important facet of poor diet, the term “food swamp” was coined by researchers to refer to neighborhoods where fast food and junk food inundate healthy alternatives. Low-income and racial-ethnic minorities are more likely than white residents to live near unhealthy food retailers, which has been associated with poor diet (14).

There are multiple definitions of food deserts, but the most commonly used version comes from the U.S. Department of Agriculture (USDA) which defines a food desert as a census tract that meets the following two conditions: 1) the poverty rate is above 20 percent (or at least 80 percent of families have incomes below the state or metropolitan median) and 2) a minimum of 500 people or 33 percent of residents live more than half a mile from the nearest supermarket. A supermarket is defined as a store that has...
annual revenues over $2 million and sells food from all major departments including fresh meat, produce, dairy, and frozen foods (15).

There is significant variation among areas that meet the USDA definition of food deserts. Some food deserts have no food stores at all, while others are home to a variety of markets that are too small to meet the USDA criteria, but serve an important role for local residents.

Federal and state policy programs such as the Healthy Food Financing Initiative tend to prioritize attracting large grocery stores to food deserts via tax credits and other financial incentives (13). Building on existing resources and supporting small stores through financial, marketing and technical assistance may, however, be a more effective and less costly approach to address urgent community needs.

Alternative schemes such as collective gardens, food hubs, community supported agriculture, street vendors and farmers markets may also be instrumental in addressing disparities in access to food. It is important to ensure that these types of programs serve residents of low-income neighborhoods and communities of color, rather than attracting affluent “foodies” neighborhoods and communities of color, of programs serve residents of low-income neighborhoods and communities of color, of programs serve residents of low-income neighborhoods and communities of color.

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ARE THERE FOOD DESERTS IN SAN DIEGO COUNTY?

Based on the USDA definition, about a quarter of all census tracts in San Diego county are considered to be food deserts. They are primarily located in urbanized and densely populated areas located near downtown San Diego, in the South Bay (National City, Chula Vista and San Ysidro), North County (Oceanside, Escondido, Vista and San Marcos) and the Eastern cities of El Cajon and Santee.

In San Diego county, according to data from the USDA, over 750,000 people lived in food deserts in 2010 comprising approximately 23 percent of the total population (14). Computations by Dr. Pascale Joassart-Marcelli, a geographer who studies food access at San Diego State University, show that residents of these census tracts had much lower median household incomes than those living in the rest of San Diego county: $47,206 compared with $85,046. About a third of San Diego county’s Latino and Black residents and 28 percent of foreign-born residents, lived in areas identified as food deserts, while less than a fifth of Whites and Asians resided in these census tracts (19).

Research shows that low-income neighborhoods of San Diego such as City Heights, have small markets, many of which are run by immigrants and ethnic entrepreneurs which play a key role in ensuring that residents have access to food that is fresh, affordable, and culturally appropriate (20). The following map shows food desert areas in the San Diego region. Work is being done to include additional layers, such as areas with disadvantaged communities. Please note that the large region in orange on the top right corner of the map is mostly natural open space.
BrightSide Produce

BrightSide Produce provides a service that increases the accessibility, availability and affordability of fresh fruits and vegetables by serving as a produce distributor that reaches food insecure customers in both underserved and university communities with the help of university students. The funding model for BrightSide relies on the proceeds from deliveries of produce on the San Diego State University campus to fund deliveries to BrightSide stores in underserved communities. By employing university students and volunteers and servicing multiple food insecure communities, BrightSide provides a sustainable, long-term solution for distribution that can be scalable to more communities as the venture grows.

Live Well Community Market Program

The Live Well Community Market Program (LWCMP) works with small- to medium-sized, independently operated community food markets that are located in low-income, ethnically diverse, and/or high minority population neighborhoods to improve and increase access to healthy affordable foods. The LWCMP provides technical assistance to work with owners and operators of small- to medium-sized markets to: improve interior and exterior store designs, expand promotion and availability of fresh and healthy foods, attract new shoppers and nurture shopper loyalty, and increase the bottom line. In 2016, a recognition framework was developed to incentivize and recognize healthy food and beverage changes in small- to medium-sized markets as well as to recognize full compliance with all alcohol, tobacco, and business regulations and recommendations. The LWCMP is funded by the County of San Diego and implemented by partner agencies.
REFERENCES


5. San Diego County Breastfeeding Coalition. https://feedingbakersfield.org/


12. Hospital Association of San Diego & Imperial Counties; and Institute for Public Health, food-insecurity/hunger-health-101/


RESOURCES


Feeding San Diego: https://feedingsandiego.org


Section Contributors

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Heidi Gerten, Ph.D. San Diego Hunger Coalition

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Ariel Hamburger, County of San Diego Health and Human Services Agency Public Health Services

Alicia Saake, Feeding San Diego: https://feedingsandiego.org

TipsandToolsOrgs/Food-Donation-Action-Plan-for-the-San-Diego-Region.pdf


Cassandra and Jocelyn San Diego Food Bank. https://sandiegofoodbank.org/about/


HOW MANY PEOPLE ARE EMPLOYED BY THE FOOD SYSTEM IN SAN DIEGO COUNTY?

Human labor is essential for every component of the food system, which includes production, processing, distribution, retail, service, and waste management. For example, food workers include laborers in fields and fisheries (production), bakers and slaughterhouse workers (processing), drivers and warehouse workers (distribution), grocery store cashiers and stockers (retail), restaurant servers, cooks, dishwashers, and street vendors (service), and solid waste collection and disposal workers (waste management).
The food system is a major sector of employment in the San Diego regional economy and it has continually increased. Since 2001, all jobs in the county have grown by 15.3 percent and specifically, food system jobs have grown by 37.3 percent, which is more than double the growth rate of all jobs in the county (1). According to data from the U.S. Census American Community Survey 5-year Estimates (ACS) (2013-2017), there are approximately 162,000 jobs in the San Diego region food economy, including farming, fishing, food manufacturing, the wholesale and retail, catering, restaurant and other food services. These jobs represent approximately ten percent of the county’s employment. The majority of food-system workforce but less than 1 percent of the jobs – about 8 percent of the food system employment accounted for 12,677 of these jobs (1). Farming and fishing, food manufacturing, wholesale and retail, catering, restaurant and other food services. These jobs represent almost 10 percent of the San Diego county’s employment but less than 1 percent of the jobs – about 8 percent of the food system employment accounted for 12,677 of these jobs (1). With these additions, the approximate total food economy is 163,281 employees (1). With these additions, the approximate total food economy is 163,281 employees (1). Jobs not highlighted in the total food economy jobs (162,000) but included in the food-related jobs in San Diego county were $11.76 compared to $20.11 in all other jobs (1). However, the top 13 percent of workers earn hourly wages above $50, reaching above $100 for the top 2 percent (2). As a result of low wages, poverty is higher among food workers in comparison with other non-food sectors. Estimates from 2013-2017 show that 12 percent of people working in the San Diego county food system lived in poor households, compared to 6 percent of other workers. Adjusting the poverty threshold to reflect the very high cost of living in San Diego county, reveals much higher rates of working poverty among food workers (50 vs. 18 percent). Compared to other workers in the local economy, food system workers also experience inequality as reflected in the high proportions of workers without health insurance coverage (23 vs. 10 percent), and individuals utilizing CalFresh benefits (12 vs. 6 percent) (2). Estimates from 2013 to 2017 also show that, some of the lowest paid jobs in the San Diego food system were in food services, the largest and one of the fastest growing segments of the regional food economy. This includes dishwashers, food preparation and serving-related workers, cooks in fast food restaurants, and hosts and housekeepers. For instance, in the restaurant industry, the median hourly wages of bartenders and cooks were $13.79 and $13.07 respectively (2). However, 2017 data from the U.S. Department of Labor, Bureau of Labor Statistics, Occupational Employment Statistics (OES) shows that bartenders in the City of San Diego-Carlsbad metropolitan area have an hourly mean wage of $16.70/hr making this region the ninth top paying metropolitan area in the country for the bartending occupation (2). These numbers illustrate both the overall low-wage and the inequality that exists within the food system.

WHAT ARE SOME SOCIOECONOMIC ISSUES FOR LABOR IN THE FOOD SYSTEM?

Wages within the food system in San Diego county are significantly lower than in the rest of the economy. Data analysis using ACS estimates from 2013 to 2017 shows that median wages in food-related jobs in San Diego county were $11.76 compared to $20.11 in all other jobs (1). However, the top 13 percent of workers earn hourly wages above $50, reaching above $100 for the top 2 percent (2).

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group has lower visibility, such as workers in the fields, processing plants, kitchens, etc. (including undocumented food system workers). The lower visibility of some food system workers and the informality in certain sectors of the food economy may contribute to low earnings, wage disparities, economic insecurity, and inconsistent legal protections in this industry sector, as found by a study conducted by the Center on Policy Initiatives, which highlights inconsistencies in the application of labor laws, including wages, breaks, overtime pay, and scheduling (5).

Low-wages, informality, and economic insecurity are also related to race, ethnicity, immigration status, and gender. Jobs in the San Diego county food system distinguish themselves from other jobs in the region by their high proportion of immigrants and people of color, who have historically experienced discrimination in the labor market. Analysis using ACS estimates from 2013 to 2017 also shows that 37 percent of food system workers were immigrants (compared to 27 percent in non-food jobs) and 64 percent were people of color (compared to 51 percent in non-food jobs). The vast majority of workers throughout the food system were Latinos, especially in farming where Mexican immigrants alone represent 55 percent of the workforce. Within specific sectors, women tend to be represented in low-wage subcategories. For instance, in the food service industry, few women work as chefs, bartenders, or managers of high-end restaurants – jobs that tend to pay higher wages. In contrast, many are employed as servers in cafeterias, fast-food, and lower-end restaurants where wages are significantly lower. In San Diego county, less than 20 percent of chefs are women, while 56 percent of fast-food workers and 76 percent of servers are women (2).

### Comparison of Workers and Wages of the San Diego Region Food System with the Non-Food Sector using estimates from ACS (2013-2017)

<table>
<thead>
<tr>
<th></th>
<th>Median</th>
<th>Average</th>
<th>Standard Deviation</th>
<th>Number of workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Food</td>
<td>$20.11</td>
<td>$30.07</td>
<td>$78.51</td>
<td>1,453,273</td>
</tr>
<tr>
<td>Farming &amp; Fishing</td>
<td>$10.78</td>
<td>$15.88</td>
<td>$18.83</td>
<td>12,677</td>
</tr>
<tr>
<td>Food Sales (Retail &amp; Wholesale)</td>
<td>$13.73</td>
<td>$17.80</td>
<td>$19.28</td>
<td>35,946</td>
</tr>
<tr>
<td>Restaurants and Food Services</td>
<td>$11.36</td>
<td>$13.71</td>
<td>$17.22</td>
<td>102,281</td>
</tr>
<tr>
<td>Food Manufacturing</td>
<td>$14.71</td>
<td>$19.02</td>
<td>$20.62</td>
<td>10,949</td>
</tr>
</tbody>
</table>
LABOR AND EMPLOYMENT IN THE FOOD SYSTEM

References


Resources


Section Contributors

Joann Lu, Food Chain Workers Alliance
Pascale Joassart-Marcelli, Professor, Department of Geography, San Diego State University
In order for the San Diego food system to remain sustainable and resilient in the long term, it is essential that a well-trained workforce be prepared to address the challenges of the future across all aspects of the food system. The intent of this section is to provide an overview of both the formal and non-formal training/educational programs for different components of the food system that are currently available in the region and to identify the challenges and opportunities associated with workforce development.
WHAT TYPES OF EDUCATION AND WORKFORCE DEVELOPMENT PROGRAMS ARE CURRENTLY AVAILABLE IN SAN DIEGO COUNTY?

ELEMENTARY AND SECONDARY EDUCATION
Opportunities to learn about many aspects of the local food system are available to students in San Diego county beginning in elementary and high school through Farm to School programs, 4-H, and Future Farmers of America Clubs. Classes in hydroponics and/or freshwater aquaculture are available at a few high schools in the county, such as Patrick Henry High School and Hoover High School.

POST-SECONDARY EDUCATION
Several local colleges and universities offer post-secondary education in food system-related topics including sustainable agriculture, horticulture, agribusiness, and culinary arts.

SAN DIEGO COUNTY POST-SECONDARY EDUCATION IN AGRICULTURE AND FOOD PRODUCTION
San Diego City College
San Diego, CA
- A.S. in Sustainable Urban Agriculture
- A.S. in Plant Science
- 3 certificates in agriculture production

Miracosta College
Oceanside, CA
- A.A. in Sustainable Agriculture
- A.S. in Viticulture and Enology
- Various horticulture programs

Archi’s Institute for Sustainable Agriculture
Escondido, CA
- 6 & 12-week courses in Organic Agri-business with credit through Cal Poly Pomona

Cuyamaca College
Ornamental Horticulture program

Southwestern College
Landscape and Nursery Technology

SAN DIEGO COUNTY POST-SECONDARY EDUCATION IN FOOD PROCESSING AND HANDLING
Mesa College

San Diego State University
B.S. in Hospitality and Tourism Management

SAN DIEGO COUNTY POST-SECONDARY EDUCATION IN NUTRITION
San Diego State University
B.S. in Foods & Nutrition

CONTINUING EDUCATION
In addition to formal, degree-granting educational opportunities, there are a range of organizations that provide adult and continuing education opportunities including trainings and workshops related to food system topics.

CONTINUING EDUCATION PROGRAMS IN FOOD SYSTEMS
- Master Gardener
- Wild Willow Farm and Education Center
- Community Gardens throughout the region
- University of California Cooperative Extension
- International Rescue Committee farms
- Kitchens for Good
- Brightside Produce

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COUNT OF YOUTH CLUBS BY SAN DIEGO COUNTY LOCATIONS

4-H CLUBS
FUTURE FARMERS OF AMERICA CLUBS

4-H CLUBS
- Warner Springs
- Julian
- Spring Valley
- lemon Grove
- La Mesa
- Poway
- Penasquitos
- Carmel Mtn.
- Jamul
- Escondido
- San Marcos
- Oceanside
- Vista
- Carlsbad
- Valley Center
- Alpine
- Pine Valley
- Encinitas
- Ramona
- Lakeside

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WHAT ARE THE CHALLENGES AND OPPORTUNITIES FOR INCREASING EDUCATION AND WORKFORCE DEVELOPMENT?

Agriculture and seafood production face similar challenges in education and workforce development with the average age of commercial farmers and fishermen about or over 50 years old. There is an opportunity to utilize the knowledge and experience of the current workforce to train a new generation of farmers and fishermen to grow and collaborate in order to overcome barriers and market the benefits of the locally sourced and produced agriculture and seafood.

Traditional farming and fishing are both high-cost, high-risk endeavors that require access to land or waterfront, and capital. These factors pose significant barriers to those who may wish to enter the food production workforce. In addition, some face a stigma associated with farmers and fishermen, particularly children of parents who left farming to “find a better life”.

For those who are interested in entering careers in the food system, there is a scarcity of training programs available. The need is far greater than the collective capacity of providers at this time. Educational opportunities are further limited because the populations who could most benefit from training face numerous barriers to program participation, including transportation, childcare, financial support during the duration of programs, and stable housing.

Despite these challenges, there is growing demand for fresh food across all social and economic classes and people continue to seek connections to the land, the ocean, and their food. Through the internet, information on growing, selling, and marketing food is now widely available. Opportunities also exist online for communities to develop farmer-to-farmer support networks and to collaborate across sectors and organizations.

There are vast numbers of people who would benefit from education and workforce programs across San Diego County. In addition, there are many model programs in the region upon which others could build and there is funding available for programs that can successfully address workforce readiness. Farming and aquaculture can be reimagined for small spaces and urban settings as growing edible gardens for schools, institutions, restaurants and private residences continue to gain popularity. There is also significant research and support to encourage regenerative and responsible farming and fishing practices that promote biodiversity in the region.
Farm to School (F2S) programs provide students access to healthy, local foods and education opportunities through local food procurement, nutrition education, and school garden development. These programs generate the following benefits for students and their communities:

- **Economic Development and Job Creation:** According to the United States Department of Agriculture, every dollar invested in local food has a multiplier effect in stimulating local economic activity.

- **Student Engagement and Academic Achievement:** Activities provide opportunities for student’s social and emotional growth, improved life skills, social skills, and behavior.

- **Environmental Sustainability:** Increased F2S activities are correlated with reduced food waste, along with increased sustainable approaches to food production, processing, packaging, and transportation.

### The Farm to School (F2S) Landscape in San Diego County

According to CHIP’s 2016-17 State of Farm to School in San Diego County report (1):

- Across school districts in San Diego county, more than $19M is spent on local, California-sourced food (a 500+ percent increase from school year 13-14 to 16-17), 11 percent of which is sourced directly from San Diego county growers. 78 percent of school districts in the county led activities related to F2S, with over 481 salad bars and 228 school gardens reported.

- The Farm to School Taskforce (F2ST) was formed in 2010 through Community Health Improvement Partners (CHIP), which spearheads the F2S movement in San Diego county and facilitates collaboration among school districts, growers, distributors, and other stakeholders in the county around F2S. F2ST member organizations represent 74 percent of overall San Diego county student enrollment and span 23 of the 42 school districts.

### Opportunities for Growth

- **F2S Institutionalization:** While there is growing F2S support in San Diego county, sustainability of efforts requires institutionalization through school district wellness policies and funding, along with State and county-level support. F2S sustainability is a major challenge, as most school districts do not have the policies and resulting funding infrastructure to support the consistency in programming.

- **Grow efforts around local food promotion:** With school meal participation remaining relatively stagnant over the last few years, focused F2S marketing is needed to shift community perception of school food quality. Local food marketing to improve parental perception would likely increase school meal participation, providing school district food service additional funds for improving kitchen infrastructure, improving meal quality, and purchasing local foods.

- **Economic incentives:** Policy initiatives to financially incentivize local sourcing is recommended, particularly for smaller school districts, to take on the initially higher costs of local food and prompt further F2S activities and healthier school meals.

### The State of the Food System in the San Diego Region

#### Food Purchasing

<table>
<thead>
<tr>
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<tbody>
<tr>
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#### State of School Districts Purchase Direct from Local Farms

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<th>Districts Purchasing Direct from Local Farms</th>
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<tbody>
<tr>
<td>Integrating F2S in the Cafeteria (14 School Districts)</td>
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11% of local food is sourced from within the County ($2.0m)

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**Notes:**
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Healthy Day Partners created the Encinitas Union School District (EUSD) Farm to School program in 2013 to support their foundational pillars of health and wellness and environmental stewardship. EUSD started with a few raised beds at individual school sites and that has grown into a district-owned certified organic farm at their 10-acre Farm Lab, which was transformed from a parking lot into an organic farm with the help of Coastal Roots Farm. The farming is currently done through a partnership with The Ecology Center.

Over 20,000 pounds of organic produce was harvested at Farm Lab over the past year that was incorporated directly into the district’s school lunch program. Fresh produce (including lettuce, carrots, watermelon, and cucumbers) was served daily on the salad bar, and tomatoes, peppers, and basil were used to make pizza and pasta sauces from scratch. Harvested sweet potatoes were served in burritos and as a vegetable side. When students buy lunch in EUSD, they are eating an organic, locally sourced, scratch made meal.

The farming partnership has produced up to 40 percent of the district’s produce needs annually; the end goal is 75 percent. This past spring over 200 trees were planted to support the district’s citrus, stone fruit, and avocado needs in the coming years.

In addition to housing Farm to School crop fields, Farm Lab boasts 6 classrooms that host all 5,400 students in the district for project-based learning engagements that center around agroecology and environmental stewardship.

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The University of California Division of Agriculture and Natural Resources (UC ANR) and the University of California Cooperative Extension (UCCE) supports the food system in the San Diego region with applied research, technical assistance, non-formal education, and resources for a variety of food and agricultural audiences. These audiences range from crop producers in residential, school, and community gardens to urban and small-scale farms to larger commercial farms, agritourism, and direct marketing enterprises. Licensing preparation resources and continuing education training is also available for vertebrate, insect, and disease pest control professionals, who provide services towards healthy food production. Healthy food and nutrition education including consumer awareness, and food safety and preparation is delivered to limited resource residents through train-the-trainer and direct-to-consumer activities.

UCCE provides beginning beekeeper training and resources, a critical program in fostering a healthy beekeeping industry and environment in the San Diego region. UC ANR supports the Master Gardener program, training volunteers who deliver residential, school, and community garden information. Additionally, the 4-H Youth Development program is supported by UC ANR. With more than 25 community and military clubs currently active throughout San Diego county, youth members are gaining essential life, leadership, and career building skills, many related directly to food systems.

The Kitchens For Good (KFG) model is based on similar models around the country. The basic premise is around using kitchens as multi-faceted centers for synergistic operations. For example, KFG rescues produce with its partners and turns that rescued produce into healthy meals for the food insecure. While KFG uses some volunteers for that effort, the primary labor is provided by the students in its Culinary Job Training Program. Thus, the synergy amongst the various enterprises strengthens the whole.

The largest difference and the greatest reason for KFG’s particular success, unlike almost every other non-profit model, is that KFG is and always will be, a revenue first model. Simply put, KFG developed a revenue stream to ensure sustainability first and then began its programs. To this day, 60 percent of KFG’s total operating budget comes from earned revenue that is generated from its businesses.

Lastly, KFG has a laser focus on who the organization is and what it does. At the top of its organizational chart are its students. Every person who works for KFG is a teacher and has responsibility for getting students employed. At KFG’s core, the organization is about getting, and keeping, its students/graduates employed.

Chuck Samuelson, Kitchens For Good Founder

“Where Food Changes Lives”
Wild Willow Farm is a 5-acre working, educational farm that was established in 2010. Located just 15 minutes south of downtown San Diego on the banks of the Tijuana River, the farm grew out of a need to reconnect people to agriculture by creating a space where there are opportunities to learn how to grow food and find community. Wild Willow Farm is demonstrating an alternative food system that promotes diversity in the soil, in the food grown and, in the people served. The Farm educates consumers and growers on the importance of healthy productive soils as part of their global commonwealth and at the foundation of the food system. Over 400 students have graduated from the Farming 101 course designed to educate future farmers, gardeners and food activists on soil building, composting, irrigation, pest management, and propagation.

On an annual basis, Wild Willow Farm:

- Serves over 1,500 students, parents, and teachers through hands-on educational tours
- Connects over 350 volunteers to the land and their food
- Delivers over 7,000 lbs. of food to the community through their CSA program

Wild Willow Farm and Education Center
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WASTED FOOD

SECTION 9

HOW MUCH FOOD IS WASTED AND WHAT IS THE SIGNIFICANCE?

Wasted food or food loss is any food that is grown and produced for human consumption, but that is ultimately not eaten. According to the Natural Resources Defense Council (NRDC), in the United States 40 percent of the food that is grown is never consumed, resulting in over 50 million tons of wasted food that ends up in landfills annually (1). Food loss results in significant economic and environmental impacts in the US. The nonprofit think-tank ReFED, found that over $200 billion in resources are required to grow, process, and transport food that becomes waste each year (2).
Not only are valuable resources wasted when food is not consumed, organic material that is left to decompose in landfills creates methane, a greenhouse gas that contributes to climate change. To address these impacts of wasted food, source reduction strategies that are designed to prevent food from becoming waste in the first place are the highest priority and provide the greatest social, economic, and environmental benefits. Project Drawdown, a research and communication organization focused on collaborating with various stakeholders to research, analyze, and provide climate change solutions, identified the reduction of wasted food as the third ranked strategy to reduce emissions of carbon dioxide (3).

When food does reach a point in its lifecycle when it is no longer considered marketable, it continues to remain valuable to feed people facing food insecurity and to feed animals and the soil through composting. At the State level, 6 million tons of food is thrown away each year, which makes 18 percent of all the material that goes to the landfills (4). In San Diego county, over 500,000 tons of food is wasted each year, while 1 out of every 7 residents face food insecurity (5). Food recovery and rescue efforts focus on the collection of edible food for distribution to local food assistance programs. Food that is no longer suitable for donation can be diverted from landfills for agricultural and industrial uses and for composting and anaerobic energy production.

FOOD LOSS AT EACH STAGE OF THE FOOD SYSTEM IN THE UNITED STATES (IN TONS)(1)

<table>
<thead>
<tr>
<th>Stage of the Food System</th>
<th>Tons of Food Lost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Production</td>
<td>10,100,000 TONS</td>
</tr>
<tr>
<td>Processing and Manufacturing</td>
<td>1,065,000 TONS</td>
</tr>
<tr>
<td>Storage and Distribution</td>
<td>7,972,268 TONS</td>
</tr>
<tr>
<td>Consumption-Commercial</td>
<td>16,945,585 TONS</td>
</tr>
<tr>
<td>Consumption-Residential</td>
<td>26,560,793 TONS</td>
</tr>
</tbody>
</table>

THE STATE OF THE FOOD SYSTEM IN THE SAN DIEGO REGION

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FOOD PRODUCTION

10,100,000 TONS

Market Conditions: A crop’s price at time of harvest may not warrant the labor and transport costs required to bring it to market.

Imperfect Produce: Selective harvest for appearance, shelf-life, and other requirements leads to crops left in the field.

Labor Shortages: When harvest timing is critical, a labor shortage can lead to lower harvest rates.

Bycatch*: Unintended and/or unmarketable seafood species are caught during fishing, but not sold.

* (10.1 M tons only for farm waste, no data for bycatch)

1,065,000 TONS

Trimming: Removal of edible but undesirable portions (peels, stems, skin, fat) along with inedible portions (bones, pits).

Processing Inefficiencies: Some steps in operations may lose more edible food than necessary.

Equipment, Packaging, and Forecasting Errors: Mistakes and malfunction can lead to surplus or unsaleable product.

7,972,268 TONS

Improper Handling: Overhandling, improper temperature, lengthy transportation, and disruptions to cold chain can lead to damaged product.

Stock Management: Large inventories, full shelves, and improper stock rotation can lead to excess, old, or damaged product.

Display: Excessive product may be displayed in order to create the effect of abundance, which is believed to increase sales.

16,945,585 TONS

Kitchen Practices: Overproduction, trim waste, mishandling, and poor inventory management. High staff turnover exacerbates these problems.

Portions: Large and inflexible portions lead to diners not eating everything on their plate.

Expansive Menu Options: Extended menus complicate inventory management and require more ingredients to be kept on hand.

All you-can-eat offerings have particularly high waste.

26,560,793 TONS

Lack of Awareness and Information: Many consumers are not aware of how much food they waste or its implications. Some also lack information or skills to properly store and “use up” food.

Poor Storage: Food spoils in homes due to suboptimal storage, poor visibility in refrigerators, partially used ingredients, and misjudged food needs.

Poor Planning: Consumers may overbuy because they fail to plan meals, fail to use a shopping list, inaccurately estimate what is needed for meal preparation, or decide on impromptu restaurant meals.
WHERE DOES WASTED FOOD COME FROM?

CITY-LEVEL WASTED FOOD DATA

Capturing sector-specific data of wasted food at the city level is challenging, but city-wide analysis provides valuable information for designing specific reduction strategies.

The North County Food Policy Council, Palomar College Geographic Information Systems (GIS) Department, and the San Diego Food System Alliance (SDFSA) partnered to create GIS layers that display estimated quantities of wasted food produced at sector-specific sites. Estimates are based on waste hauler data and CalRecycle’s wasted food conversion factors.

The map shows data from Oceanside, Vista, Escondido, San Marcos, Del Mar, Chula Vista, and La Mesa.

IS FOOD LOSS PREVENTABLE?

IN HOUSEHOLDS

According to a 2017 NRDC report, households in New York, Nashville, and Denver were found to average 44 percent of wasted food as inedible for human consumption, i.e. coffee grounds, eggshells, banana peels, etc. The remaining 56 percent of wasted food was preventable and recoverable for donation (6).

Strategies for Households:

Strategically directed educational campaigns can teach people how to properly store food, shop smarter, cook from root-to-leaf/nose-to-tail, and meal plan for success.

IN ORGANIZATIONS

Data from the SDFSA Smart Kitchens San Diego initiative, which has implemented wasted food tracking technology in fourteen hotels, hospitals, and universities in San Diego county, provides a glimpse of what wasted food looks like in large organizations. Blinded data from a 10-month period shows that out of all food loss, approximately 15 percent occurs as trimmings and byproducts. The remaining 85 percent could be prevented or recovered for donation as nourishing meals (7).

Strategies for Restaurants/Organizations:

Commercial kitchens and restaurants can employ waste tracking and analytics systems, smaller portions and plates, and trayless dining to reduce food loss.
Strategies for Food Processors, Manufacturers, and Entrepreneurs:

Food processors, manufacturers, and entrepreneurs can maximize efficiencies by embracing imperfect produce and improving packaging technology.

WHAT EFFORTS ARE UNDERWAY TO PREVENT AND REDUCE FOOD LOSS AT THE SOURCE IN SAN DIEGO COUNTY?

The best method for reducing wasted food is not generating it in the first place. Source reduction is the best strategy for preventing food from becoming waste. Investing in food waste prevention offers the greatest social, environmental, and economic benefits and should always be prioritized as the top strategy for reducing food loss. According to ReFED, prevention creates three times the Societal Net Economic Value of recovery and recycling combined (2).

SAVE THE FOOD SAN DIEGO (STFSD) CONSUMER EDUCATIONAL CAMPAIGN

STFSD is a countywide food waste awareness partnership that leverages the national “Save The Food” public service campaign. STFSD is raising awareness and inspiring behavior change for food loss reduction and donation of edible food to those in need.

Activities:
- Working collaboratively with local and state government agencies to develop and support peer networks and resources for both wasted food generators and food recovery networks.
- Providing education and technical assistance for the reduction and possible donation that wasted food producers across sectors, including households, restaurants, retailers, institutions, and schools.
- Building regional networks and catalyzing resources and infrastructure needed for both wasted food source reduction and increased healthy food donation.

Impact to date:
- Two million San Diego county residents have been reached through a consumer education campaign that has employed billboards, radio plays, digital ads, mailers, newsletters, and community convenings.
- Over 200 Save The Food San Diego champion institutions have been engaged. Champions received a monthly social media toolkit with tips and trade for reducing wasted food.

WHAT EFFORTS ARE UNDERWAY IN SAN DIEGO COUNTY TO RECOVER FOOD BEFORE IT IS WASTED?

FOOD RECOVERY AND DONATION

Together, the San Diego Food Bank and Feeding San Diego distributed 51.2 million pounds of food locally in 2017, serving hundreds of thousands of people each year through their more than 550 non-profit partner agencies (pantries) with feeding programs. The food banks receive food donations from a range of sources including locally run food donation drives, the U.S. Department of Agriculture (USDA), growers, gleaners, retailers, and wholesalers.

The term “pantry” refers to feeding organizations of various sizes and scope, from small, volunteer-run operations that collect and distribute non-perishable items, to large organizations that may collect and distribute all kinds of food and may also prepare and serve (or deliver) meals to food-insecure customers. Gleaning, as defined by USDA, is “the act of collecting excess fresh foods from farms, gardens, farmer’s markets, grocers, restaurants, state/county fairs, or any other source in order to provide it to those in need.” (10).

Pantries either receive deliveries or pick up food directly from the food banks’ warehouses and from retailers and distribute the food to people in need in their communities. Some larger pantries may also serve as food donation hubs for smaller pantries in the community. Pantries also conduct their own food drives and receive donations directly from donors, such as households, gleaners, supermarkets, and restaurants.

Food banks and pantries distribute donated food to the end consumer through boxed
distributions, consumer choice systems, and many other programs.

Challenges
While this food donation network is effective in recovering food for donation, there are numerous challenges that need to be addressed in order to continue to assist food-insecure individuals and families:

- Understanding applicable regulations, exemptions, registrations or permitting needs for food pantries.
- Most pantries and gleaners do not have reliable access to transportation to pick up donated food thus they rely on volunteers for their operations and use their volunteers’ vehicles to pick up food from donors.
- Pantries often lack access to a refrigerator or freezer and therefore have limited ability to accept donated food that requires refrigeration.
- Some potential donors fear that if the food they donate causes someone to become ill, then they may be held liable. This perceived liability might dissuade donors from donating food. In fact, food donors are fully protected from liability when donating food to a non-profit in good faith.
- Some individuals and businesses may not know how to safely donate food or where to donate it. Similarly, individuals or families experiencing food insecurity might not know where or how to access food or nutrition assistance programs.

AGRICULTURAL USES
Food not suitable for donation to people experiencing food insecurity may be valuable for farmers as animal feed.

Examples:
- Konyn Dairy in San Pasqual Valley is using spent grains donated by local breweries to feed animals.
- The Ramona Unified School District donates food scraps from schools to feed animals in a neighboring animal sanctuary.

Opportunities:
- The San Diego County Farm Bureau can serve as a source of information about which farms are in need of spent grain or other food donations.
- Explore online platforms for creating food systems networks that have been adopted in other counties throughout the state.

INDUSTRIAL USES
Fats, oils, and grease are materials that should not be disposed of through sinks and sewer systems as they clog pipes and can impact sewer lines and water treatment facilities. Furthermore, liquid fats, oils, and grease should not be sent to landfills because they can be converted into fuel for various industrial uses. There is increasing interest in finding strategies to utilize wasted food for biofuel and bio-products in order to incorporate use of alternative energy sources and mitigate the environmental and economic impact of wasted food (14).

Examples:
- New Leaf Biofuel collects used cooking oil from restaurants in San Diego county and converts the cooking oil that would otherwise be discarded, into biodiesel fuel, which is a clean alternative to petroleum diesel.
- Buster Biofuels partners with different businesses and corporations to collect and repurpose their used kitchen oils and grease to convert it into biofuel.

With one simple and low-cost act, the San Diego Unified School District (SDUSD) reduced their average salad bar waste by 66 percent. That’s the equivalent of 2,070 lbs. of food per day across the district’s 180 schools (9).

How did they do it?
SDUSD asked staff to reduce the size of some of the serving pans on their salad bar from four inches deep to two inches deep. This change limits the amount of excess food that gets put on the line, availing it for use the next day or for donation.

Down-sizing serving pans was part of the district’s comprehensive effort to reduce and divert wasted food from landfills and save money. In addition, SDUSD partners with Feeding San Diego to rescue edible food from the 19 kitchens and provides opportunities for schools to compost any leftover salad bar waste on-site through a Cafe to Compost program.
In 2016 the County of San Diego led the creation of a Food Donation Action Plan that was produced in collaboration with food system and food donation stakeholders in the region. The goal of the plan is to both support and improve food donation in the San Diego region in order to help address food and nutrition insecurity, while also reducing food loss (11).

The Plan includes 21 recommendations to:

• Enhance food safety
• Improve pantry capacity including refrigeration and transportation
• Provide food distribution materials
• Improve and increase outreach to potential food donors and pantry customers
• Develop guidance for pantries to establish volunteer driver programs
• Provide training to improve pantry operations
• Conduct further research to leverage existing infrastructure and resources

The County Board of Supervisors took action on December 12, 2018 to waive Department of Environmental Health permit and registration fees for pantries and to provide funding to support food donation efforts and food safety (12). These actions are an important step in supporting safe food donation in the region, as outlined in the Food Donation Action Plan, by helping pantries and related operations to obtain the necessary health permit or registration to operate and eliminating the financial burden that can cause. This action allows pantries to maximize their resources in fulfilling their mission of feeding food-insecure individuals.

Opportunities

According to the San Diego County Residential Possibilities report published by My Momma’s Place in 2018, an estimated 1 in 5 (or approximately 100,000) single family residential households in San Diego county grow fruit producing trees. If just 10 percent of the produce from these trees were donated, over 2 million pounds of fruit could be diverted to those in need (13).
GLEANING IN THE SAN DIEGO REGION

San Diego county is privileged to have a good climate, a long growing season and a great history of agriculture. Many areas still have abundant groves of fruit trees. There is an estimated potential of 111,997 fruit and citrus trees in residential yards in the county. If 10 percent of those residents donate to gleaners, 2,352,000 pounds of fruit and citrus produced yearly can feed the needy and be kept out of the landfill. San Diego gleaners are providing a solution from this enormous surplus from entering the landfill, while also helping provide nutritious produce to food insecure San Diego county residents (13).

The three largest gleaning groups in San Diego county: ProduceGood, Senior Gleaners and Harvest CROPS have contributed greatly in reducing wasted food.

ProduceGood

ProduceGood provides an avenue for farmers to easily donate their surplus produce through the Market Share program. This initiative was started by the SDFSA Wasted Food Prevention and Recovery Working Group and filled an unmet need to rescue unsold produce from Farmers’ Markets. The Market Share program is currently operating at the Hillcrest, La Jolla, La Jolla, and Solana Beach Farmers’ Markets. Approximately 2,000 pounds a week or 52 tons a year of edible food is recovered from these 4 markets. ProduceGood sources, collects, and supplies 11,000 fresh servings per week to the Charitable Fresh Produce Provision Network of agencies that distribute or directly serve those in need. These include the two major food banks in San Diego county, twelve nonprofit agencies and one for-profit organization that houses and feeds low income and disadvantaged people in the county. Since 2010, ProduceGood has recovered over 340,000 pounds, and provided over 1 million servings through its role as a connector between 118 fresh produce sources and food insecure populations.

Senior Gleaners

Since 1994, gleaner volunteers have recovered over 7.5 million pounds of produce gleaned from residential backyards and stores pick up, providing over 23.5 million servings and diverting 3,750 tons of food waste from the landfill.

HarvestCROPS

Since 2009, Harvest CROPS has recovered 269,000 pounds of produce gleaned from residential backyards, providing 807,000 servings with the help of 4,950 volunteers.

- 63,835 pounds of produce recovered in 2018
- 191,505 servings provided in 2018
- 31 tons of edible produce diverted from landfill in 2018
- 729 volunteers in 2018

The state of the food system in the San Diego region
COMPOSTING AND ANAEROBIC DIGESTION

If food can no longer be fed to humans or to animals, and cannot be used for industrial uses, composting and/or anaerobic digestion can be considered the next steps for managing wasted food.

COMPOSTING

Composting is nature’s way to recycle. It is the controlled, natural decomposition of organic matter (i.e. animal manure, grass, twigs, food waste). Macro and microorganisms break down organic materials into compost, or humus, a nutrient-rich soil amendment that can be used to improve the health and efficiency of our region’s soils.

Examples:

• SDFSA’s Healthy Soils Toolkit provides model language for jurisdictions to consider zoning changes to facilitate siting of organic processing facilities.
• The County offers ongoing composting trainings for unincorporated residents.
• The County offers ongoing composting assistance to businesses and institutions in the unincorporated area.
• Public composting demonstration sites exist throughout unincorporated San Diego county.
• The County has implemented an on-site composting program in order to provide training and resources to unincorporated schools, community gardens, farmers, ranchers, and businesses.
• The County offers low-cost backyard compost bins for unincorporated residents.

Opportunities and Challenges:

• Residential and commercial education and training around on-site composting could be increased.
• The agriculture sector could play a role in processing organic materials into healthy soils while reducing their use of fertilizer, conserving water, and increasing their resilience against climate change.
• Increase education to gleaners about composting rather than landfilling fallen fruits and vegetables.

ANAEROBIC DIGESTION

Anaerobic digestion is a collection of processes by which microorganisms break down biodegradable material in the absence of oxygen. The initials “AD” may refer to the process of anaerobic digestion or the built system where anaerobic digestion takes place, also known as a digester. Food scraps (including fats, oils and greases) unfit for human or animal consumption can be processed in a digester. The anaerobic digestion process converts food scraps and other organic material into a renewable energy source called biogas. The materials left over after the AD process is finished can be sent for composting.

Opportunities and Challenges:

• Facilities are available for processing yard trimmings and landscape materials, but limited infrastructure exists for processing food scraps.
• There are limited locations available to process organics though there may be opportunities to co-locate facilities at landfill and wastewater treatment sites.

IS THERE A LEGISLATIVE EFFORT TO REDUCE WASTED FOOD?

New legislation and regulations are designed to divert organic material from landfills, including food, as a way to reduce greenhouse gases. Additionally, there are laws that support reduction of wasted food by facilitating food donation and helping people make informed decisions about when food is still safe to eat versus when it should be discarded.


This law requires businesses and multifamily complexes that generate a specified amount of organic waste per week to arrange for recycling services for that waste, and for jurisdictions to implement a recycling program to divert organic waste from businesses subject to the law. Strategies for businesses to reduce organic waste may include donation of surplus edible food. Jurisdictions can exempt businesses and multifamily complexes from the requirements of the law if the business or multi-family complex implements actions such as food donation) that result in the recycling of organic waste. (continued on page 132)
Sheraton San Diego Hotel & Marina

In 2017, a program was established at the Sheraton Hotel & Marina in San Diego to eliminate sending usable food to the landfill or compost. The Hotel has partnered with the San Diego Rescue Mission, who has a staff and refrigerated truck that picks up food from the Hotel 3 times a week. Benefits of the program are being seen in the methods of food preparation by monitoring potential waste, and in 2018 the Hotel donated a total of 36,000 pounds.

San Diego Airport Authority

The Airport Authority started a wasted food diversion program in 2013. Food scraps generated by the on-site food prep in all 40 of the airport’s restaurants, three prep kitchens, and the USO Airport Center are composted at the Miramar Greenery. They also have a food donation program that is directed to their USO Sport Center.

Sharp Memorial Hospital

Since 2012, the hospital has composted all their wasted food at the Miramar Greenery. In 2016 the hospital also started donating their edible food scraps to local charities.

Ramona Unified School District

The District’s innovative and award-winning program finds the highest and best uses for unserved food and food scraps. Unserved food is collected by a local pantry and donated to feed people; vegetable and bakery food scraps suitable for animal feed are delivered to the district’s agricultural program; food scraps are donated to feed animals in a neighboring sanctuary; and high school students compost other food scraps in an on-site Earth Tub composting unit. Landscape trimmings help provide the “brown” carbon materials needed in the composting process, and the finished compost is used in school landscapes and gardens.

San Diego Unified School District

The District partners with Feeding San Diego on a food rescue program that began in September 2016. Through their Love Food Not Waste pilot program the District recovered leftover prepared food from over 170 school kitchens. The food is consolidated at 19 production kitchens where local hunger relief organizations, coordinated through Feeding San Diego, pick up the school food on a daily basis. These organizations are then able to provide a meal to those facing food insecurity in and around the school communities.

Vista Unified School District

All 27 school sites in Vista Unified School District utilize share coolers and participate in a donation program. During meal service, sometimes students choose more food than they care to eat — by placing those un-opened foods into the share cooler, the foods become accessible to any other student who may want to eat it. Whatever remains at the end of the day are included in the donations to the San Diego Food Bank. In addition, the schools donate any foods and/or beverages that cannot be served to students, including unserved entrees that cannot be reheated. For the 2017-2018 school year, Vista Unified was able to donate 38,036 pounds of food that would have otherwise ended up in the landfill.
Short-lived Climate Pollutants: Methane
Emissions: Dairy and Livestock: Organic
This law requires statewide reduction of organic
disposal volumes by 50% by 2020 and 75% by
2025 and recovery of 20% of edible food by
2025. Food waste prevention, food donation,
and having the necessary infrastructure in
place to manage food donations will be key in
meeting these requirements.

Bill Emerson Good Samaritan Food Donation
The purpose of this law is to encourage the
donation of food and grocery products to
nonprofit organizations that distribute food
to people in need. The Good Samaritan Act
provides that a person or gleaner be protected
from civil and criminal liability from the nature,
age, packaging, or condition of food donated
in good faith to a nonprofit organization for
ultimate distribution to needy individuals.

California Good Samaritan Food Donation
Act – AB 1219 (2017)
This law expands liability protections to cover
past-date foods that are evaluated to be fit for
human consumption by the donor at the time
of donation, and states that no person, gleaner,
or food facility will be liable for any damage or
injury resulting from the consumption of the
donated food, except for injury resulting from
the negligence or intentional misconduct in the
preparation or handling of donated food.

Tax Deduction for Charitable Contributions
(Internal Revenue Code, Section 170)
This section of the Internal Revenue Code
pertains to the allowance of deduction
for charitable contributions and gifts and
encourages donations by allowing “C”
corporations to earn an enhanced tax
deduction for donating selected surplus
property, including food.

Food Donations and Pupil Meals: Schools –
SB 557 (2017)
This law allows food service staff, students,
and faculty at public schools to donate
unopened food to “share tables” (share tables are predesignated tables where
individuals can place unopened food and
drinks that they are not going to consume for
others to take) that are available to students
during the course of the school year, or to a
food bank or any other nonprofit charitable
organization. The California Department
of Education is tasked to update specified
guidelines on the donation of leftover food.

Food Labeling: Quality and Safety Dates –
AB 954 (2017)
This law addresses confusing food date
labels such as “sell by,” “best by,” and “best
before” to prevent people from throwing
away safe food. The bill requires the California
Department of Food and Agriculture to
publish information to food manufacturers,
processors, and retailers that promotes the
consistent use of uniform terms on food labels
to communicate quality and safety dates.

Limited Service Charitable Feeding
Operation - AB 2178 (2018)
This law exempts limited service charitable
feeding operations, such as food pantries
doing limited preparations, from the definition
of food facility. The purpose of this law is
to provide greater regulatory flexibility for
non-profit charitable feeding operations to
serve wholesome food to those in need with
a primary focus on food safety and provide a
clear direction and guidance to both operators
and local enforcement agencies.

THE STATE OF THE FOOD SYSTEM IN THE SAN DIEGO REGION
WASTED FOOD
WASTED FOOD

SECTION 9

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The State of the Food System in the San Diego Region

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The following tables include metrics that were identified as key to tracking progress in the different areas of the San Diego region food system. The metrics were selected by the Stakeholder Advisory Group during the creation of the State of the Food System Report and they informed the development of each of the sections of this report. A wish list of additional metrics is also included to help inform potential future research opportunities to help close the gap for local food system data.
THE STATE OF THE FOOD SYSTEM IN THE SAN DIEGO REGION

Subtopic: Land

Acreage of land in agriculture
2018: 242,054 acres
2017: 243,029 acres
County of San Diego Agriculture, Weights & Measures: Crop Statistics & Annual Report 2018
https://www.sandiegocounty.gov/awm/crop_statistics.html

Acreage and % of soils classified for food production
2018: 230,279 acres, which is approximately 95% of all agricultural land
2017: 230,480 acres
County of San Diego Agriculture, Weights & Measures: Crop Statistics & Annual Report 2018
https://www.sandiegocounty.gov/awm/crop_statistics.html

Subtopic: Soil

Number of operations using fertilizers (including line and soil conditioners)
2017: 3,103 farms
2012: 3,546 farms
2007: 3,184 farms
2007 & 2012 & 2017 Census of Agriculture

Commercial fertilizer expenditures
2017 CA: $2,082,908 ($1,000), San Diego county: $27,006 ($1,000)
2012 CA: $2,082,908 ($1,000), San Diego county: $27,006 ($1,000)
2017 Census of Agriculture

GHG emissions from agriculture
5% emissions from agriculture
https://www.sandiego.wa.gov/environment/energy/climate-action-plan

Subtopic: Water

Number of polluted waterways and relevant clean-up plan
Please visit links provided for qualitative information.
San Diego Regional Water Quality Control Board, San Diego Coastkeeper

Subtopic: Ocean

Number of commercial fishing ports (docks/wharves & associated facilities)
16 fuel and pump-out docks total -- 13 sanitary stations and fuel docks, 3 fuel docks only.
Port of San Diego

Total acreage/percentage dedicated to marine agriculture
27 acres/6% of harbor water and 8.5 acres/1% of waterfront land (including San Diego Bay, Western Bay and Ocean Freeway)
Port of San Diego Master Plan 2017, San Diego Unified Port District
https://pantheonstorage.blob.core.windows.net/waterfront-development/Port-Master-Plan-master-plan千万不要在开始写之前忘记阅读！
## Commercial Agriculture

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## Gross cash farm income

2017: Average net cash income of operations is $11,462; the average market value of agricultural products sold per farm is $459,397 (all reported statewide).

2012: Average net cash income of operations is $17,587; the average market value of agricultural products sold per farm is $314,058 (all reported statewide).

## Farm revenue by crop variety

Please see below for local production farm revenue under each subtopic.

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## Farm sizes

San Diego county average size of farm is 44 acres (median 5 acres); California average of 348 acres.

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## Number of certified producers

2017: 270 certified farmers, 3 to 4 years 305 farms, 5 to 9 years 1,297 farms, 10 years or more 459 farms.

2016: 270 certified farmers, 3 to 4 years 305 farms, 5 to 9 years 1,297 farms, 10 years or more 459 farms.

2015: 293 certified farmers, 3 to 4 years 318 farms, 5 to 9 years 1,098 farms, 10 years or more 409 farms.

## Organic farms

Acreage of certified organic farms is about 95% of total agricultural acreage (2017).

The state of the food system in the San Diego region:

- Number of farms: 5,082 in 2017.
- Farm revenue by crop: 2017: Average net cash income of operations is $11,462; the average market value of agricultural products sold per farm is $459,397 (all reported statewide).
- Gross cash farm income: 2017: Average net cash income of operations is $11,462; the average market value of agricultural products sold per farm is $459,397 (all reported statewide).
- Farm sizes: San Diego county average size of farm is 44 acres (median 5 acres); California average of 348 acres.
- Economic impact of agriculture: Commercial agriculture has a total economic impact of approximately $2.88 billion.
- Total crop acreage and percent of acreage dedicated to food production: 230,279 acres, which is about 95% of total agricultural acreage dedicated to food production.
- Number of certified growers and registered organic growers: 210 local certified growers and 360 registered organic growers.
- Number of certified vendors: 2017: 293 certified vendors; 2016: 270 certified vendors.
- Age distribution of farmers: 21 to 40 years (24.66%), 41 to 50 years (10.05%), 51 to 60 years (22.7%), 61 to 70 years (31.57%), over 70 years (24.64%);
- Number of years by farm as principal farmer: 2 years or less- 513 farms, 3 to 4 years- 1,008 farms, 5 to 9 years- 1,617 farms, 10 years or more- 4,459 farms.

SECTION 2: FOOD PRODUCTION

### SUBTOPIC: METRIC SUMMARY/ANALYSIS OTHER/PAST YEARS DEPT REFERENCE/SOURCE LINKS

#### Other/Previous Years

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Number of farms and acreage producing honey
25 commercial beekeepers and certified producers, no data on acreage
County of San Diego Agriculture, Weights & Measures

Field crops - acreage and value
2018: 194,013 acres valued at $3,763,857
2017: 196,506 acres valued at $4,120,952
County of San Diego Agriculture, Weights & Measures, Crop Statistics & Annual Report 2018

Number of farms producing grains
57 grain producers
County of San Diego Agriculture, Weights & Measures

Number of farms producing grains
57 grain producers
County of San Diego Agriculture, Weights & Measures

Number of certified organic farms producing grains
2 certified organic farms
County of San Diego Agriculture, Weights & Measures

Number of hop producers
7 hop producers
County of San Diego Agriculture, Weights & Measures

Number of craft breweries
148 independent craft breweries, 175 total operating craft brewery locations
San Diego Brewers Guild

Number of distilleries, wineries and cideries
13 distilleries, 62 wineries, 10 cideries

Number of fishing operations
2017: 20 operations
2016: 20 operations
https://www.labormarketinfo.edd.ca.gov/qcew/cew-select.asp

Number of marine aquaculture farms or facilities
5 marine aquaculture facilities — 2 nearshore, 3 inland
Only 1 is commercial (Carlsbad Aquafarm), the rest are pilot programs
San Diego Coastkeeper; Carlsbad Aquafarm

Total commercial fish landings by weight and value
2017: 2,246,752 pounds valued at $10,071,731
San Diego: 562,348 pounds; Mission Bay: 428,285 pounds; Oceanside: 351,901 pounds; Point Loma: 899,986 pounds, La Jolla: 1,668 pounds; Other ports: 2,564 pounds (2017)
California Department of Fish and Wildlife
https://www.wildlife.ca.gov/Fishing/Commercial/Landings#260042120-2017
### SECTION 3: FOOD MANUFACTURING & PROCESSING

#### SUBTOPIC METRIC SUMMARY/ANALYSIS OTHER/ PAST YEARS DEPT REFERENCE/SOURCE LINKS

**Products that are imported for manufacturing and processing**
- Import wheat flour, corn meal, and yeast for tortilla and bakery manufacturing.
- Import cacao and coffee beans for chocolate and coffee manufacturing.

**County of San Diego Agriculture, Weights & Measures’ Economic Contributions of San Diego County Agriculture Report**
https://www.sandiegocounty.gov/content/dam/sdc/awm/docs/SDAgImpact.pdf

**Products that are exported for manufacturing and processing**
- Export fluid milk production, cattle, and calves for processing.

**County of San Diego Agriculture, Weights & Measures’ Economic Contributions of San Diego County Agriculture Report**
https://www.sandiegocounty.gov/content/dam/sdc/awm/docs/SDAgImpact.pdf

**Number of cottage food production/types**
- 299 Cottage Food Operations: 169 Class A operations which are direct sales only and 93 Class B operations which are direct and indirect sales

**County of San Diego Department of Environmental Health**

**Revenue generated from cottage food producers**
- Each cottage food producer is limited to no more than $50,000 in gross annual sales. There is no data on exact revenue generated.

**County of San Diego Department of Environmental Health**

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### SECTION 4: STORAGE & DISTRIBUTION

#### SUBTOPIC METRIC SUMMARY/ANALYSIS OTHER/ PAST YEARS DEPT REFERENCE/SOURCE LINKS

**Main food distributors**
- US Foods, Sysco, Specialty Produce, Sunrise Produce, American Produce, and Diamond Jack

**Community Health Improvement Partners; 2018 San Diego County Food Hub Needs Assessment**

**Number of and sales at grocery stores**
- 699 grocery stores – $5,463,597,000

**County of San Diego Health and Human Services Agency, Community Health Statistics Unit**

**Number of Certified Farmers’ Markets**
- 36 Certified Farmers’ Markets

**County of San Diego Agriculture, Weights & Measures**
https://www.sandiegocounty.gov/awm/farmers_markets.html

**Number of Community Supported Agriculture (CSA) programs**
- 17 CSA programs

**Edible San Diego**
http://www.ediblesandiego.com/shop/map-farms-csa-programs-san-diego-county

**Number of Farm Stands**
- 21 Farm Stands in San Diego County

**Local Harvest**
https://www.localharvest.org/san-diego-ca/farm-stands

---

WISHLIST: number of food processors/manufacturers, food manufacturing as a % of total overall manufacturing, revenue generated annually by food manufacturers, number of food manufacturers by category, number of packing houses/types of goods.
### SECTION 5: CONSUMER DEMAND

#### Local Food

**Number of farmers using the San Diego Grown 365 label**

166 contracts with SD Grown 365 label

San Diego Farm Bureau

**Promotion of 365 labels at County workshops, in publications, etc.**

Brand is only passively promoted through the Farm Bureau's printed material (e.g. Quarterly newsletter).

San Diego Farm Bureau

### SECTION 6: NUTRITION & FOOD SECURITY

#### Adult overweight and obesity rates

Approximately 33% of adults in San Diego county are overweight and 26% are obese. (2010 data)

Centers for Disease Control and Prevention


#### Childhood overweight and obesity rates

Approximately 17.4% of San Diego county sixth, seventh, and ninth grade children enrolled in public schools are overweight and 16.4% are obese. (2014-15 school year)

Community Health Improvement Partners - San Diego County Childhood Obesity Initiative


#### Percent adults who eat fast food at least once a week

Data from 2007-2010 show that adults in the U.S. consumed an average of 11.3% of their daily calories from fast food.

Centers for Disease Control and Prevention

https://www.cdc.gov/nchs/products/databriefs/db114.htm

#### Percent of children who eat fast food at least once a week

In 2011-2012, children and adolescents in the U.S. consumed on average 12.4% of their daily calories from fast food.

Centers for Disease Control and Prevention

https://www.cdc.gov/nchs/products/databriefs/db213.htm

#### Sugary drink consumption for adults

2014 sugar drink consumption (times per day)

- 18-24 years: SD County - 16.4%
- 16-17 years: 14.9%

California Health Interview Survey database

http://csc-ehs.uc.edu/ AAI/CHIS/tools/ Layapdfs/ AAI/CHIS/Tool/home.aspx# geography

#### Number of meals eaten outside of the home

20% of Americans visit quick service restaurants once a week.

Statista

### SECTION 4: NUTRITION & FOOD SECURITY

#### Breastfeeding

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<td>Breastfeeding</td>
<td>Percent of women who breastfeed</td>
<td>San Diego county - 96.1%; any breastfeeding, 80.9% exclusive breastfeeding; California - 94%; any breastfeeding, 69.4% exclusive breastfeeding (2016)</td>
<td>CalWIC</td>
<td><a href="http://www.calwic.org">storage/documents/Factsheets2017/San_Diego.pdf</a></td>
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#### National Breastfeeding Rates

| National Breastfeeding Rates | Data shows the different estimates of the RFEI throughout SD County. The mean estimate (20.2) is greater than the median estimate (17.4), meaning there are more of less healthy retailers of the total food retailers. | National Breastfeeding Rates, Center for Disease Control and Prevention | [https://data.chhs.ca.gov/dataset/modified-retail-food-environment-index](https://data.chhs.ca.gov/dataset/modified-retail-food-environment-index) |

#### Food Security

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<td>Retail Food Environment Index (RFEI)</td>
<td>Data shows the different estimates of the RFEI throughout SD County. The mean estimate (20.2) is greater than the median estimate (17.4), meaning there are more of less healthy retailers of the total food retailers.</td>
<td>California Department of Public Health</td>
<td><a href="https://data.chhs.ca.gov/dataset/modified-retail-food-environment-index">https://data.chhs.ca.gov/dataset/modified-retail-food-environment-index</a></td>
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#### Population living more than one mile away from a supermarket


#### Number of zip codes without a grocery store


#### CalFresh Program Recipients

| CalFresh Program Recipients | Eligibility Operations, County of San Diego Health and Human Services Agency | [https://www.cde.ca.gov/ds/sh/cw/](https://www.cde.ca.gov/ds/sh/cw/) |

#### Number of markets participating in the LWCMP

| Number of markets participating in the LWCMP | Currently there are 20 sites. | County of San Diego Health & Human Services Agency | [https://performance.sandiegocounty.gov/stats/goals/mtj4-7wcj/bcmn-v9 resil-k5uj](https://performance.sandiegocounty.gov/stats/goals/mtj4-7wcj/bcmn-v9 resil-k5uj) |

#### Percent of students qualifying for free/reduced lunch

| Percent of students qualifying for free/reduced lunch | FY 2017-2018, 28 million pounds (23.3 meals, 9.5 of which was fresh produce) | San Diego Food Bank, Feeding San Diego | [https://sandiegofoodbank.org/about/hunger-facts-research/](https://sandiegofoodbank.org/about/hunger-facts-research/) |

#### Annual distribution of food from food banks

| Annual distribution of food from food banks | FY 2017-2018, 28 million pounds (23.3 meals, 9.5 of which was fresh produce) | San Diego Food Bank, Feeding San Diego | [https://sandiegofoodbank.org/about/hunger-facts-research/](https://sandiegofoodbank.org/about/hunger-facts-research/) |

#### Number of people served at food banks on a monthly basis

| Number of people served at food banks on a monthly basis | San Diego Food Bank - 350,000 people/month; Feeding San Diego - 6,000 people/week | San Diego Food Bank, Feeding San Diego | [https://sandiegofoodbank.org/about/hunger-facts-research/](https://sandiegofoodbank.org/about/hunger-facts-research/) |
Food insecurity calls to 211 San Diego: Please visit 211 website (link provided) and go to ‘Nutrition’ to see data.

Food insecurity households: 443,000 (1 in 7) people: 302,000 are adults 44% of adults and 45% of children live in households below 200% of FPL and experience food insecurity (2016)

San Diego Hunger Coalition: https://static1.squarespace.com/static/55130907e4b018f9300f3e63/t/5b7f2e4403ce64cbcbc5a60e/1535061572952/HFSD+Data+Release+-+2016+Food+Insecurity+FINAL.pdf

Children who are food insecure: 141,000 children (2017) 22.3% of total children population - 163,000 children (2016)

WISHLIST: (food security) overall poverty and income levels by age, gender, race, ethnicity, etc., WIC participation rates, redemption rate of CalFresh and WIC at Farmers’ Markets, units of food and water available for emergency preparedness.

Number of people employed in the food system: 163,281 jobs in the San Diego county food system


Number of people employed in farming and fishing: 12,677 people

U.S. Census Bureau, American Community Survey 5-year Estimates (ACS) (2013-2017) (Compiled and analyzed by Pascale Joassart-Marcelli)

Wages in farming, fishing, and forestry: Managerial positions: $15, farming and fishing: $10.73, agricultural workers: $9.80 (median hourly wages)

U.S. Census Bureau, American Community Survey 5-year Estimates (ACS) (2013-2017) (Compiled and analyzed by Pascale Joassart-Marcelli)

Number of people employed in food preparation and serving related jobs: 102,281 people and accounts for 63% of total food system employment.

U.S. Census Bureau, American Community Survey 5-year Estimates (ACS) (2013-2017) (Compiled and analyzed by Pascale Joassart-Marcelli)


U.S. Census Bureau, American Community Survey 5-year Estimates (ACS) (2013-2017) (Compiled and analyzed by Pascale Joassart-Marcelli)
Number of people employed in food manufacturing: 10,949 people
U.S. Census Bureau (Compiled and analyzed by Pascale Joassart-Marcelli)

Wages in food manufacturing: $14.71 (median hourly wage)
U.S. Census Bureau (Compiled and analyzed by Pascale Joassart-Marcelli)

Food system jobs as a percentage of County employment: 10% of the regional economy
U.S. Census Bureau (Compiled and analyzed by Pascale Joassart-Marcelli)

Number of people employed in agriculture statewide:

Estimated CA Annual Average for 2018 was 420,400 people employed

Estimated California Annual Average for 2017 was 418,300 people employed

California Secretary of State Office’s Employment Division

Number of people employed in agriculture in state and nation:

9.2% of total employment, $12.30 mean hourly wage
Bureau of Labor Statistics

Number of schools offering a degree in agriculture:

4 in San Diego County (Mira Costa, Southwestern College, San Diego City College, and Cuyamaca College)
Niche

Number of colleges farming:

4 in San Diego County (Mira Costa, Southwestern College, San Diego City College, and Cuyamaca College)
http://www.caflora.org/farming/

Number of people employed in food storage, aggregation and distribution, total and average wages in food storage, aggregation and distribution, number of migrant and seasonal farm and food workers.

Number of school gardens: 688 school gardens (July 2018)
Master Gardeners Association of San Diego County
http://www.mastergardenersnd.org/search-school-gardens/

Number of Farm to School programs: 252 programs
2015-2016 State of Farm to School Report, Community Health Improvement Partners

Number of schools participating in a number of Children’s Food Culture Garden program: 28 schools are participating in these programs in San Diego, Carlsbad, La Jolla, Solana Beach, San Marcos, Solana Beach, Oceanside, and Vista.

County of San Diego Department of Environmental Health

Participation rates in 4H, FFA and afterschool programs:

2017-2018: 5,408 participants
2016-2017: 2,226 participants
University of California Agriculture and Natural Resources

Number of food system incubator programs:

Archies’ Acre - the Veterans Sustainable Agriculture Training program
San Diego Food System Alliance
http://www.caflora.org/farming/

Number of colleges offering a degree in agriculture:

4 in San Diego County (Mira Costa, Southwestern College, San Diego City College, and Cuyamaca College)
Niche
https://www.niche.com/colleges/search/best-colleges-for-agricultural-sciences/

WISHLIST: participation rates in Master Gardener program, number of farm camps/education centers, number of farm internship/apprenticeship programs, number of fishing or aquaculture apprenticeship programs, number of universities/colleges offering a degree in aquaculture, fishing, fisheries biology.
### Section 9: Wasted Food

#### Subtopic: Metric Summary/Analysis Other/Past Years Dept Reference/Source Links

<table>
<thead>
<tr>
<th>Metric</th>
<th>Summary/Analysis</th>
<th>Other/Past Years</th>
<th>Dept Reference/Source</th>
<th>Links</th>
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<tbody>
<tr>
<td>Amount of food wasted annually in the U.S.</td>
<td>40 percent of the food that is grown is never consumed, resulting in over 30 million tons of food that is wasted. About 80 percent of this ends up in landfills annually (2012)</td>
<td>Natural Resources Defense Council</td>
<td><a href="https://www.nrdc.org/resources/wasted-america-listing-40-percent-of-food-farm-to-landfill.html">https://www.nrdc.org/resources/wasted-america-listing-40-percent-of-food-farm-to-landfill.html</a></td>
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<tr>
<td>Value of wasted food (globally)</td>
<td>About $680 billion (U.S. dollars)</td>
<td>Food and Agriculture Organization of the United Nations</td>
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<td>Percent of Organic Material in the Region’s Landfills</td>
<td>1,384,993 tons (2018) where 40% of that is compostable (made up of 20% food waste, 15% green materials, and 4% wood)</td>
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<tr>
<td>Food scraps sent to landfills or incinerators per year</td>
<td>532,649 tons in 2018 with the potential for 15% of that to be edible or recoverable</td>
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<tr>
<td>Percent of green waste recycled</td>
<td>Total organics disposed: 1,333,464 tons where 41% was compostable (including food), 15% green materials, 4% wood. disposal (2017)</td>
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<td></td>
</tr>
<tr>
<td>Tons of food gleaned</td>
<td>ProduceGood, Senior Gleaners, and Harvest CROPS. 499,371 pounds were recovered in 2018</td>
<td>From 4 San Diego gleaning groups, 498,000 pounds were gleaned in 2016</td>
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#### Subtopic: Subtopic: Wasted Food

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  - Source: Natural Resources Defense Council
  - [Link](https://www.nrdc.org/resources/wasted-america-listing-40-percent-of-food-farm-to-landfill.html)

- **Value of wasted food in the U.S.**
  - Over $200 billion in resources are required to grow, process, and transport food that becomes waste each year.
  - Source: ReFed

- **Value of wasted food (globally)**
  - About $680 billion (U.S. dollars)
  - Source: Food and Agriculture Organization of the United Nations

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- **Number of organic processing facilities**
  - 20 organic processing facilities in San Diego county
  - Source: County of San Diego Department of Public Works

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**Note:** 4% of food scraps diverted to feed people and animals and produce compost. 8% of food waste and consumer food waste, tons and $ value of food rescued, number of composting facilities and % certified to process food waste, tons and $ value of compost sold.