



# GROWER NEEDS ASSESSMENT FOR SUSTAINABLE FOOD PRODUCTION

IN SAN DIEGO COUNTY

*Final Report*  
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**University of California  
Cooperative Extension San Diego**

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# SUPPLEMENT TO THE FINAL REPORT

The Grower Needs Assessment Final Report and Supplement Report can be viewed on the project website at: <https://ucanr.edu/p/63742>. (S– Page located in Supplement Report)

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# EXECUTIVE SUMMARY

This report provides results and background information of the *Grower Needs Assessment for Sustainable Food Production in San Diego County*, a project conducted by the University of California Cooperative Extension (UCCE) with funding support from the County of San Diego Land Use and Environment Group.

## ***Purpose***

Local farming and local agriculture are an integral component of San Diego County's economy and sustainable food systems; however, changes in food production practices, food markets and marketing, the agricultural industry, natural resources and social environments and regulations may influence farmers and the local agricultural economy from year to year. The primary goal of this research project is to develop a better understanding of local farmers and the current situation of local agriculture, industry trends, issues and challenges impacting its long-term sustainability. The study will provide farmers, policy makers, agricultural organizations and sustainable food systems supporters, service providers, and community members with current information to promote local food systems and enhance the economic viability of farms and ranches in San Diego County.

## ***Process***

This study was conducted in four phases. First, a descriptive cross-sectional survey was selected as the most appropriate method to conduct a comprehensive needs assessment among farm owners and operators in San Diego County. An advisory group including local agriculture and food systems representatives and stakeholders was organized to determine relevant needs assessment survey topics and to develop and validate survey questions. Second, the resulting survey instrument to conduct the needs assessment was submitted for review and research approval from the University of California, Davis Institutional Review Board. The third phase comprised the administration of the survey instrument, including promotional efforts and/or announcements, subject recruitment, and data collection. The fourth and final phase included data entry, data processing and data analyses conducted using the SPSS® statistical software package (SPSS, 2013).

Data collection for this research was conducted using an anonymous Qualtrics® online survey (Qualtrics, 2018).. A descriptive cross-sectional survey was first administered on June 8, 2018 via the University of California Cooperative Extension, San Diego County Farm Advisor's client mailing lists and closed to potential participants on July 31, 2018. The clients targeted with the survey included both growers and non-growers; however, the invitation to participate requested or encouraged responses from those with decision making responsibilities representing commercial (for profit) agricultural farming businesses in the San Diego County region. Additionally, two forms of incentives were offered to increase the response rate.

## ***Results***

The survey generated 296 responses, but the number of responses to individual questions varied because of survey display logic depending on responses to key questions and because respondents had the option to opt out of certain questions. See the Survey Results section of this report for salient findings and preliminary analyses.

## ***Core Topics***

This study was conducted to develop a profile of growers in the county, to document the growers' production practices and to identify issues of interest, concern and farming related needs. Therefore, the survey was designed to collect data under eight core topics:

- Production Systems and Crop Information
- Farm Business and Management Information
- Marketing
- Food Systems and Environment
- Your (Grower) Concerns
- Information Sources and Delivery Methods
- Demographic Information
- UCCE Customer Satisfaction

## ***Next Steps***

This needs assessment research provides current documented data and information useful to policy makers, educators, agricultural organizations, sustainable food systems supporters and service providers in their efforts to help growers and sustain agriculture in the County. In addition to helping guide our research and educational program design and implementation, the UCCE will continue presenting and discussing this information with stakeholders and interested individuals and organizations. This will help UCCE continue to develop grower profiles that will inform targeted educational programming and will investigate future research options based on growers' interests, concerns and needs.

# BACKGROUND

## ***Purpose***

Agriculture is the fifth largest industry in San Diego County, after Defense, Manufacturing, Tourism and Biotechnology providing significant contributions to the local economy and sustainable food systems. In 2017, there were 243,029 acres devoted to commercial agriculture, generating over \$1.7 billion in direct sales and a total economic impact of \$4.77 billion (Department of Agriculture Weights and Measures, County of San Diego, 2017). In addition, local farmers contribute greatly to the diversity and quality of life by producing and providing access to more than 200 locally grown crops, utilizing a variety of innovative production systems and techniques that enhance the landscape and environmental quality of the rural-urban interface in the county. However, changes in food production markets, industry, natural resource and social environments and regulations may influence farmers and the local agricultural economy from year to year and impact sustainable farming for the county.

To best promote the economic viability of local farms and ranches as well as local farm communities and sustainable food systems, taking steps to address local growers' specific needs and interests is critical. In an effort to better understand local farmers and the farming community, the University of California Cooperative Extension (UCCE) partnered with a number of local organizations and stakeholder groups to conduct a *Growers' Needs Assessment for Sustainable Food Production in San Diego County*. The study was achieved with funding support from the County of San Diego Land Use and Environment Group.

The goals of this assessment were to develop a profile of growers in the county, to document the growers' production practices and to identify issues of concern and farming related needs. This study was significant as the last formal, comprehensive growers' needs assessment conducted by UCCE was two decades ago. The intention of this research is to provide farmers, agricultural service providers and community members with the necessary information that may lead to policies, strategies or procedures that will help sustain agriculture in San Diego County.

## ***UCCE San Diego Role***

The UC Cooperative Extension San Diego office was responsible for the overall coordination and administration of this needs assessment project. Specific primary tasks included survey development, implementation and administration and all associated communications and reports. Project staff recruited the assistance and collaboration of the UCCE Evaluation Specialist and staff based at UC Davis to assist with survey review and development, application for Institutional Review Board, survey data processing and analyses. The Institutional Review Board, UC Davis provided research review and approval, required for all research studies involving human subjects.

# METHODS

This study was conducted in four phases. First, a group of local agriculture and food systems stakeholders was organized as an advisory body to determine needs assessment survey topics and questions. Using the results from this stakeholder group, UCCE determined the best methods and instrument to conduct the survey and obtained research approval from the University of California, Davis Institutional Review Board. The third phase was survey administration including announcements, subject recruitment and data collection. Finally, data processing and analyses were conducted.

## *Phase I: Survey Development*

To better ensure the development of a comprehensive survey, UCCE organized an advisory group of UCCE and local agriculture and food systems stakeholders (see Acknowledgements for list of advisory group members). We held two in-person group meetings and several group e-mail communications to determine survey topics, develop questions and discuss best methods of presentation and organization. The survey was designed to collect data under eight core topics with a total of 77 questions. This was an anonymous survey and responses to all questions were voluntary.

<i>Survey Organization</i>	
<b>Topic</b>	<b># of qn.</b>
Production Systems and Crop Information	4
Farm Business and Management Information	23
Marketing and Sales	11
Food Systems and Environment	7
Your (Grower) Concerns	9
Information Sources and Delivery Methods	11
Demographic Information	8
UCCE Customer Satisfaction	4

Figure 1

## ***Phase II: Survey Instrument & Review***

This research was administered with an anonymous online survey using Qualtrics© software and platform, accessible by any digital device with an Internet browser function. Although designed as an online survey, UCCE offered two offline options by request for survey participation: a printed survey by mail option or personal interview. The survey was developed by County Extension Personnel in consultation with a Grower Advisory Board, other County Staff and an Evaluation Specialist from UC Davis. These stakeholders established the face and content validity of the survey while a pilot test with seven members of the Advisory Group established the reliability. The survey design utilized various question formats including text entry, multiple choice – both single and multiple answer options and matrix tables (*Appendix A*). As previously mentioned, the survey was voluntary containing no forced response questions. There were multiple questions which contained a logic display function, dependent on participants' responses in previous related questions. As designed, the estimated time required for participants to complete the survey ranged from 10 – 30 minutes, depending on their responses. There were two additional surveys developed and offered, which are described in more detail below: Survey Incentive Opt-In and Subscribe to UCCE E-mail list.

The University of California requires all research protocols involving human subjects to be reviewed and approved before implementation to minimize potential risk and harm to human subjects. UCCE submitted the application for review and the research was initially approved on May 31, 2018 by the University of California, Davis Institutional Review Board ID: #1250886-1.

**INCENTIVES:** Due to the scope of the survey and value of the survey data results, two forms of incentives were offered to increase the response rate: a \$25 VISA® card for survey completion and an entry in potentially two opportunity drawings for several prizes. Both incentives were offered on a voluntary, opt-in basis. Descriptions of the incentives and qualifying requirements were included in all survey announcements. Upon completion of the survey, respondents were provided a link in which they could sign up for the incentives by providing their name and contact information via a second short online questionnaire.

The \$25 VISA® cards were mailed to recipients within a few days of receiving a participant's sign-up information. In accordance with California and UC regulations, the opportunity drawings were open to anyone who requested an entry; however, there were no requests for such other than those who participated in the survey and elected to sign up for the incentives. The first opportunity drawing was held on June 25, 2018 and a second opportunity drawing was held on August 1, 2018. Winners were informed of their prize via email and all prizes were distributed by mail. A full listing of prizes offered for each drawing may be found in *Appendix B*.

### ***Phase III: Communications & Survey Administration***

This descriptive cross-sectional census survey was administered to commercial (for profit) farm business operators in the county beginning June 8, 2018. Initially, the survey was scheduled to end June 30, 2018; however, UCCE extended the end date to July 31, 2018.

The sampling frame was developed from UCCE San Diego client mailing lists ( $n \sim 1,610$ ). The clients included both growers and non-growers; however, subjects recruitment targeted those individuals with decision making responsibilities on behalf of commercial (for profit) agricultural production businesses in the San Diego County region. The survey was inclusive, open to all commercial growers with farm operations in the region regardless of age; length of time farming; or size (acres, gross profits), commodities, production systems or location.

Survey announcements with an invitation for commercial growers' participation were sent via e-mail. An initial invitation email followed by four reminders to non-respondents were administered. In addition to UCCE survey announcements, members of the advisory group and other agricultural partner organizations promoted the survey to their organizational contacts, per UCCE requests. Other project communications included an illustrated graphic and webpages created for this research project, featured on the UCCE San Diego website, <http://ucanr.edu/p/62528>. A link to subscribe to the UCCE e-mail list was included on the project webpage and announcements. Also, survey announcements were posted to the UCCE social media channels on June 13, 2018 and July 13, 2018 (*Appendix C*).

### ***Phase IV: Survey Data Processing & Analyses***

The survey response data was collected, stored and output using the Qualtrics© 2018 platform (Qualtrics, 2018). IBM SPSS Statistics® software (SPSS, 2013) was used for correlation analyses.

# SURVEY RESULTS

296 growers responded to the online survey and there were no requests to take the survey via either offline option. The response rate for the survey is 18.4% if calculated using the 1610 targeted farmers in our UCCE mailing list. However, per USDA 2012 data, there are 5,732 farms in San Diego County (USDA-NASS, 2014). Data from the 2017 Census of Agriculture is not yet available; however, the current number of farms is estimated to be closer to 6,000. Therefore, the response rate to this growers' needs assessment survey represents 4.9% of the farms in the region, based on the estimated number of 6,000 farms.

## *Frequency Distribution of Survey Respondents by Zip Code*

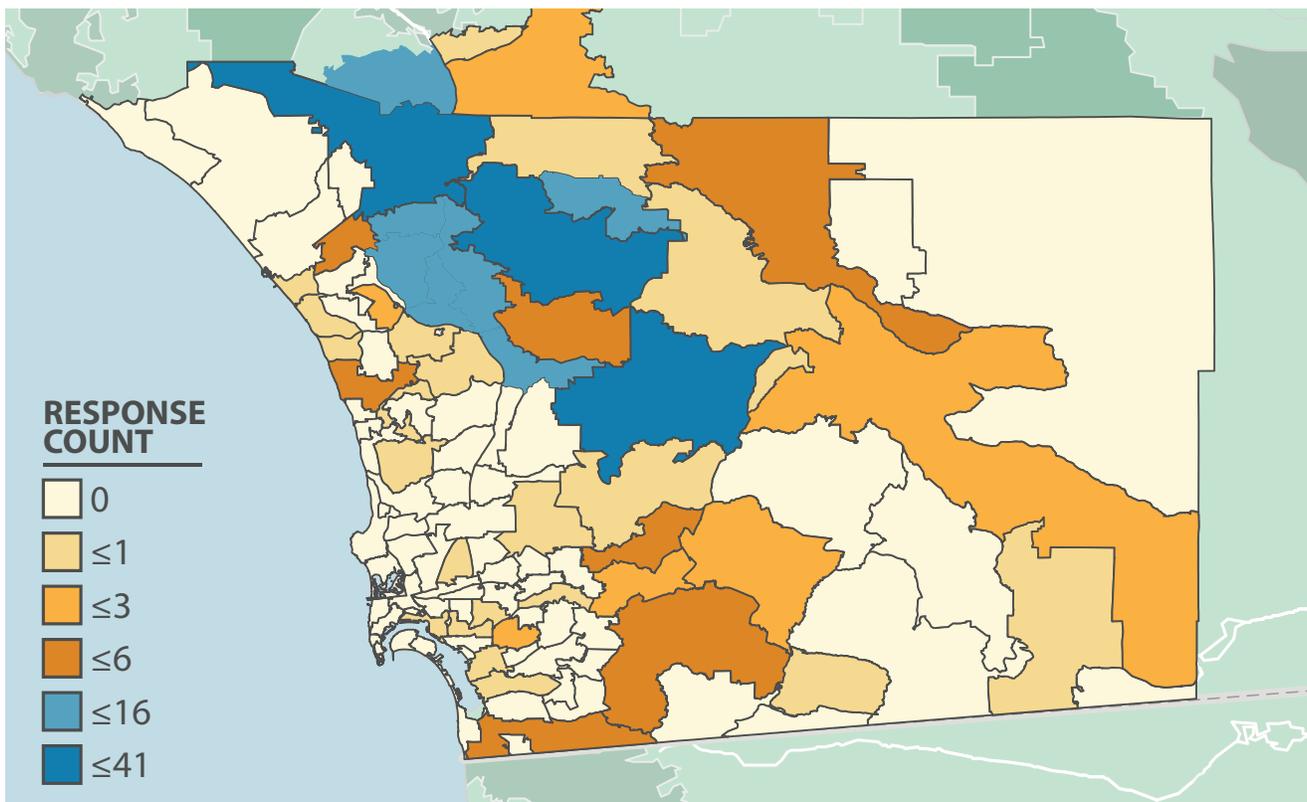


Figure 2

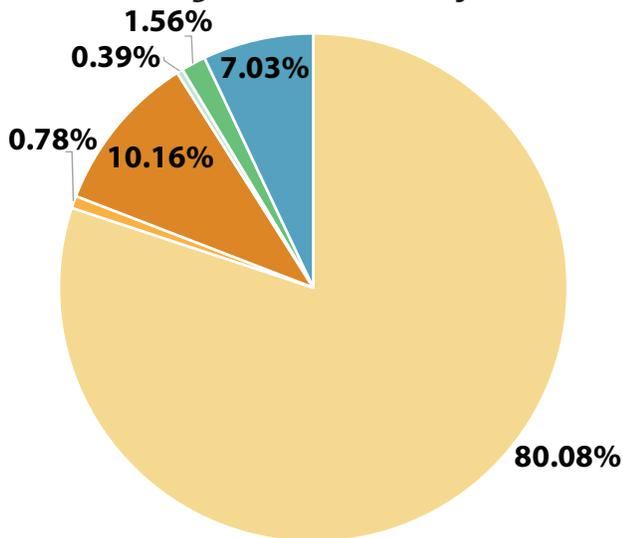
## Salient Findings

Salient findings, demographic profiles and initial analyses are presented below.

### Production Systems and Crop Information

- A great majority (80.08%) of the respondents are owner operators practicing conventional farming (36.40%) followed by organic farming (certified= 16.23%; not certified= 17.98%).

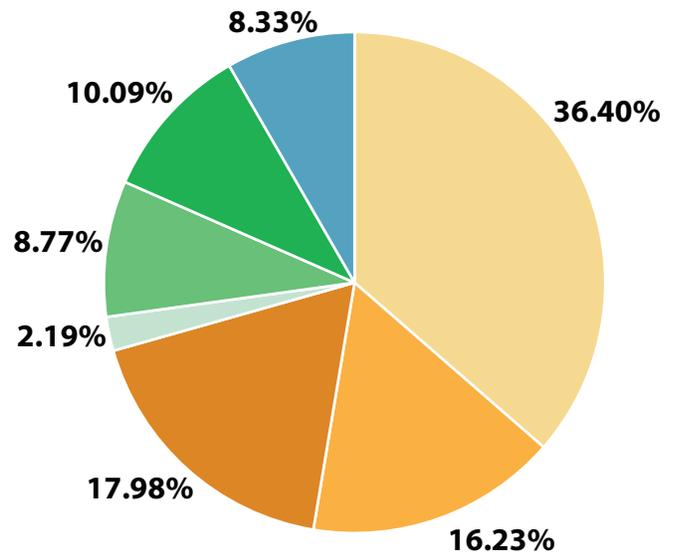
**Primary Role in San Diego County Agriculture Industry**



- Owner Operator
- Absentee Owner
- Farm/Grove Manager
- Agricultural Production
- Pest Control Adviser (PCA)
- Other:

Figure 3

**Production System Use**



- Conventional Farming and not in transition to organic
- Certified Organic Farming
- Organic Farming, but not "certified"
- Transitional to organic (actively implementing farming practices towards achieving organic certification)
- Controlled Environment
- Mix (e.g. organic and conventional)
- Other:

Figure 4

## Commodities by Production System

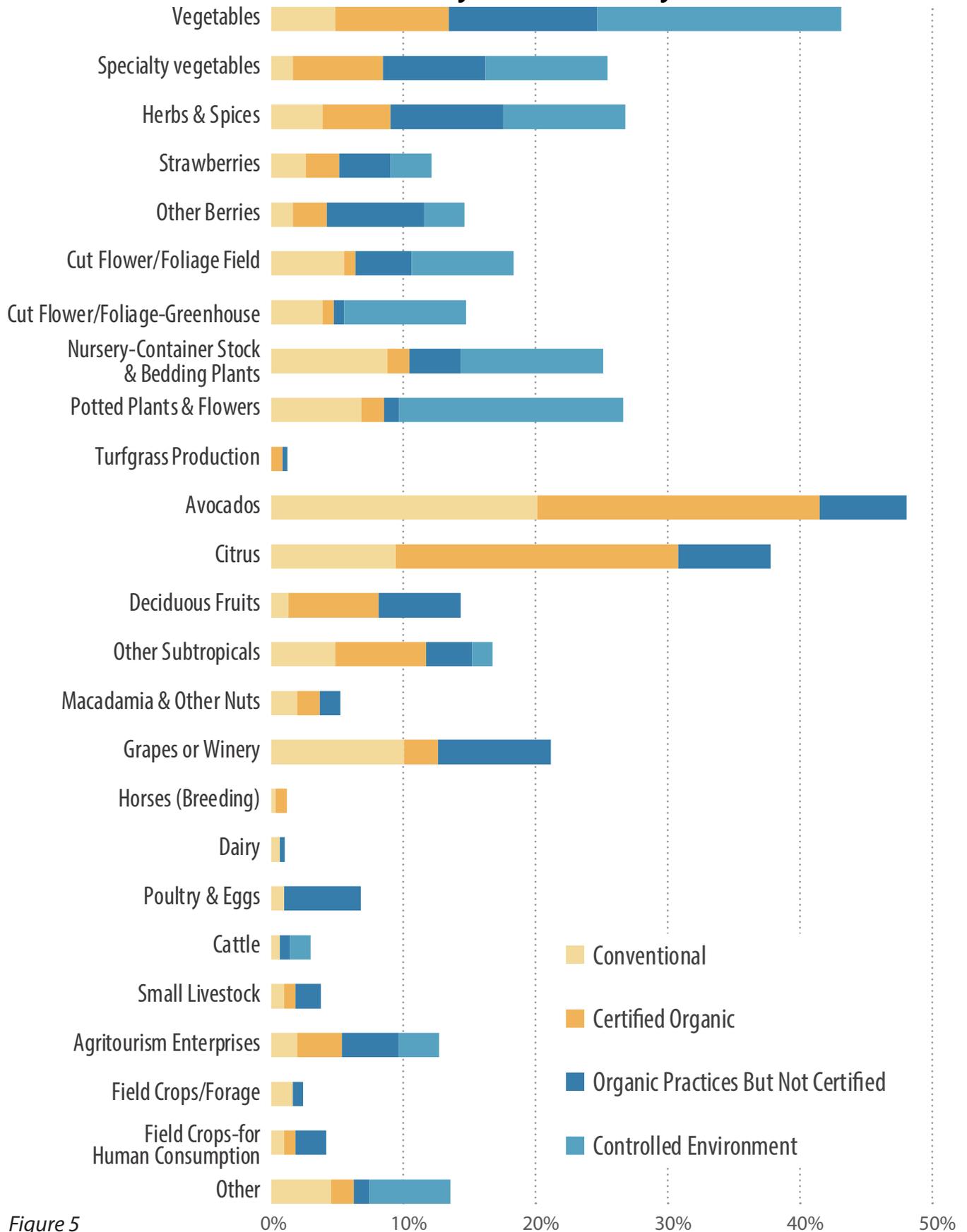


Figure 5

## Farm Business and Management Information

- The average farming experience of the respondents is 19.5 years (with a median score of 15 years).
- About half (47.48%) of the respondents are individual or sole farm proprietors, and a great majority (78.06%) are full owners.
- A little more than one-fourth (28%) of respondents using leasing agreements have lease agreements for five years. A great majority (82.61%) are cash rent – fixed lease agreements.
- 84.26% of the respondents own/control and farm under 49 acres in San Diego county.

**Acres Currently Farmed**

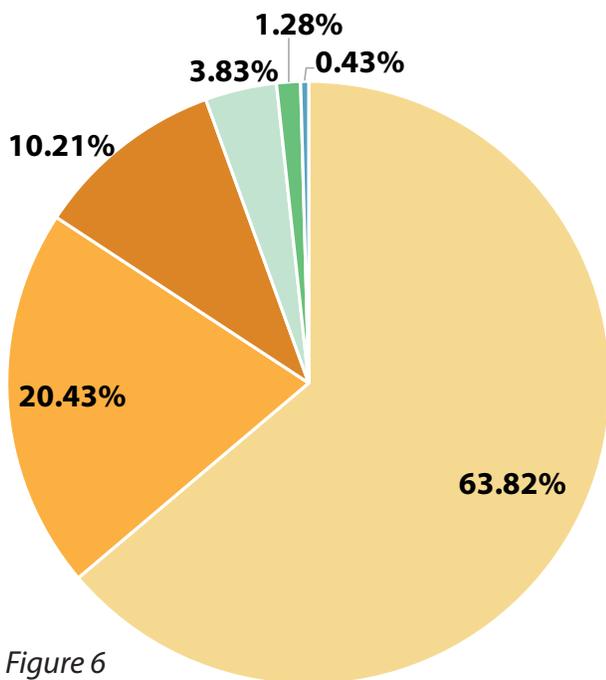


Figure 6

**Acres Owned or Controlled**

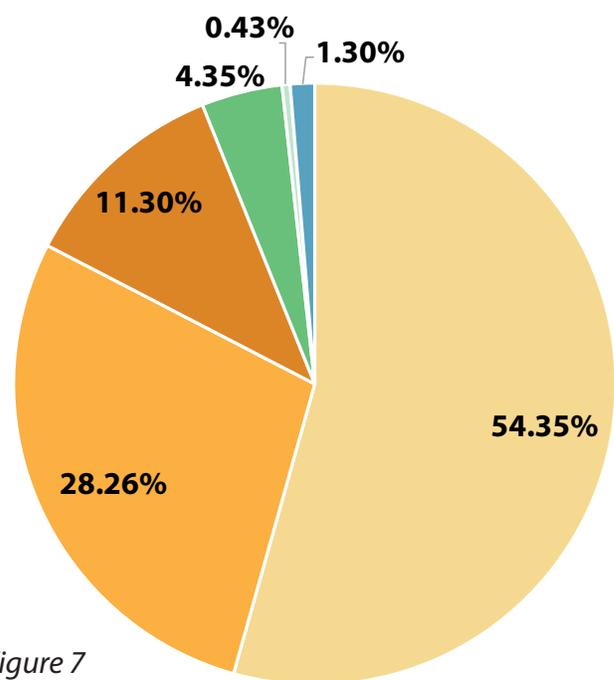
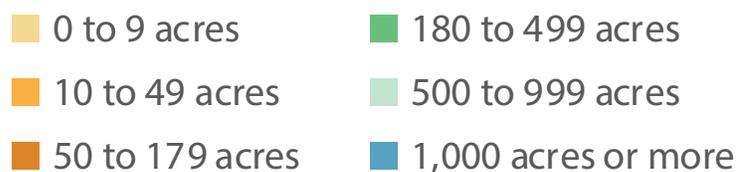


Figure 7



- A majority (52.16%) of the respondents indicated that their farm operation is not profitable and 10.34% are not sure if their farm is profitable.

- Respondents are equally distributed in terms of annual gross sales from their farm operation ranging from less than \$1,000 to more than \$1,000,000. The USDA defines small farms as all agricultural operations with annual gross revenues of \$250,000 or less, regardless of the acreage farmed. Using this definition, 76.75% of farms in the county are small, 10.09% would be considered mid-sized, grossing between \$ 250,000 and \$1,000,000 and 13.6 % would be considered large, grossing more than \$ 1 million annually.

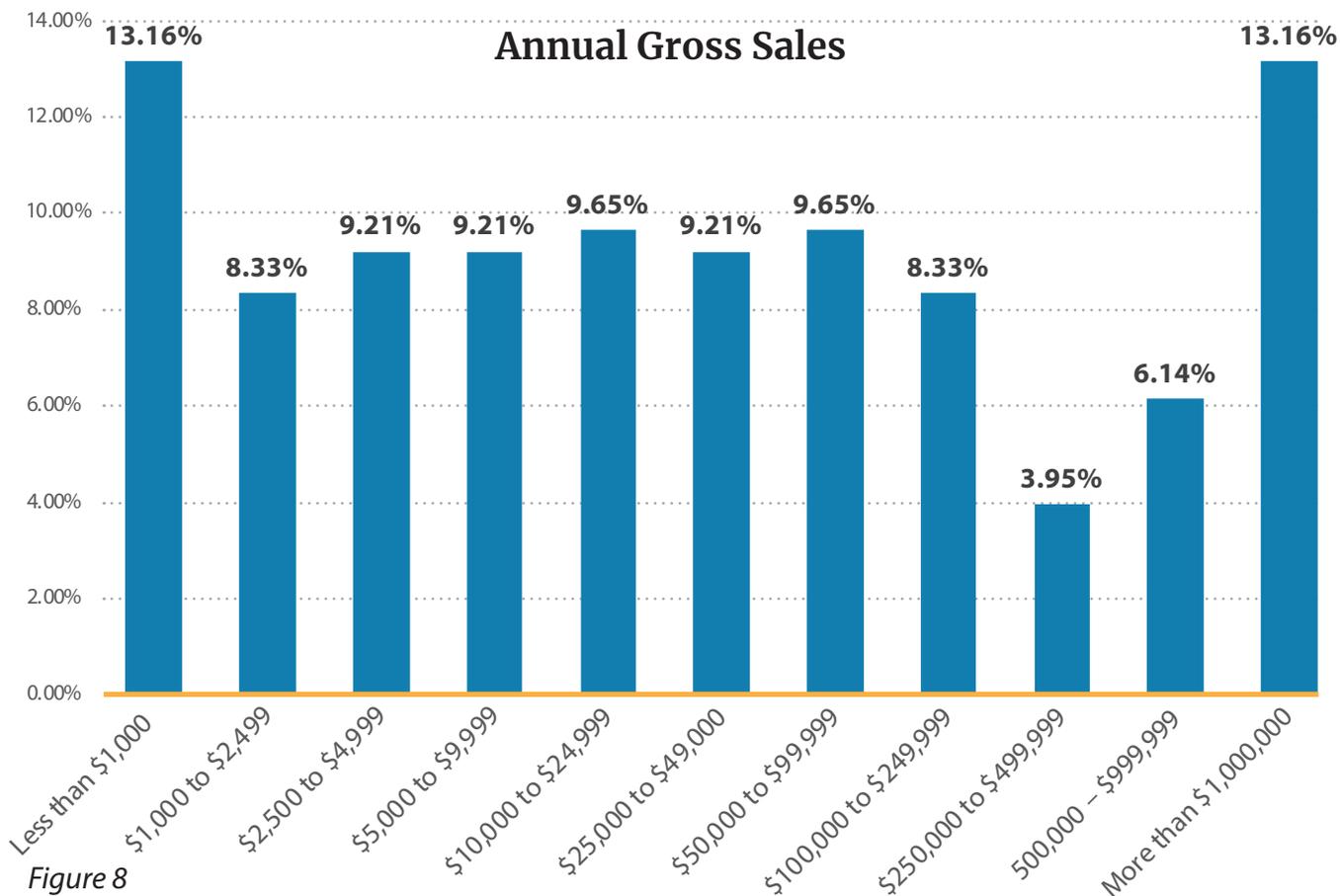


Figure 8

- A great majority (75.50%) of the respondents are using mobile smartphones and computers in their farming operation. They are using a wide variety of Apps or programs on those devices.
- The majority (55.22%) are using outside labor in their farming activities. However, a good number (44.78%,  $n= 103$ ) are not using any outside labor. Those employing outside labor are mainly employing field workers, consultants/subcontractors, Pest Control Advisers and office staff. Overall, these growers are employing two employees each, with 52% of their employees being permanent/year-round hires and manage their own hiring (64.46%)
- The most common risk management strategies used in the farm operations are having general liability, property and personal insurances (66.99%). A majority use production/yield-based crop insurance (52.38%).

- The most significant barrier preventing the respondents from adopting new practices in their farming practices is the cost to make those changes (48.43%)
- The most common ways to finance their farming operation include personal funds (49.58%) and reinvestment of profits (25.21%). For those that take loans or borrow money for financing their farming operation, the common sources are private banks (56.06%) followed by family/friends/relatives (16.67%) and production credit associations (10.61%). This money is primarily spent toward production operation (30.77%), capital improvements (26.92%) and land acquisition (21.15%).

## Marketing

- The most commonly used marketing channels for the farm products included packing houses, wholesalers, retail outlets or stores, online sales and restaurants/food establishments.

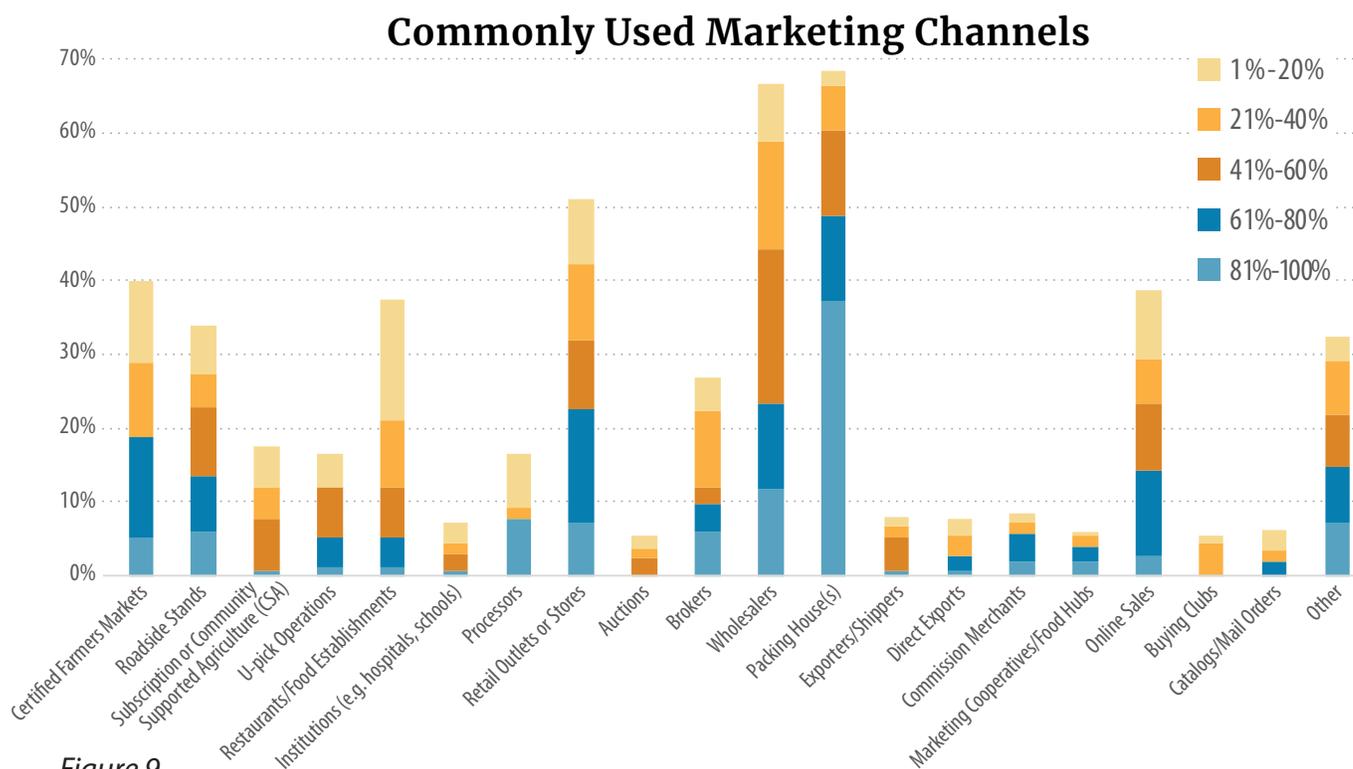


Figure 9

- A majority of the respondents (51.35%) are interested in aggregating their products with others to expand their marketing opportunities. However, a good number are not interested in doing so (48.65%) because they fear loss of individual brand value (29.22%) and think that it would take too much time for such collaborative activity (20.13%). About 1/5<sup>th</sup> (20.78%) also indicated that they do not need new markets.
- A great majority (74.21%) of the respondents expressed a desire to expand their production for accessing profitable market outlets.

## Food Systems and Environment

The contributions that agriculture and farmers make to the local environment and quality of life for urban residents and the role of farmers as stewards of the land and catalysts to slow down the impacts of climate change is not fully recognized and underappreciated at best.

- The respondents are adopting mulching (26.34%), compost application (21.68%) and no-till or reduced-till (17.38%) conservation practices in their farms. The most important benefits from doing so were drought resistance (20.12%), environmental stewardship (18.67%) and yield improvements (17.01%).

### Motives Influencing Farming Decisions

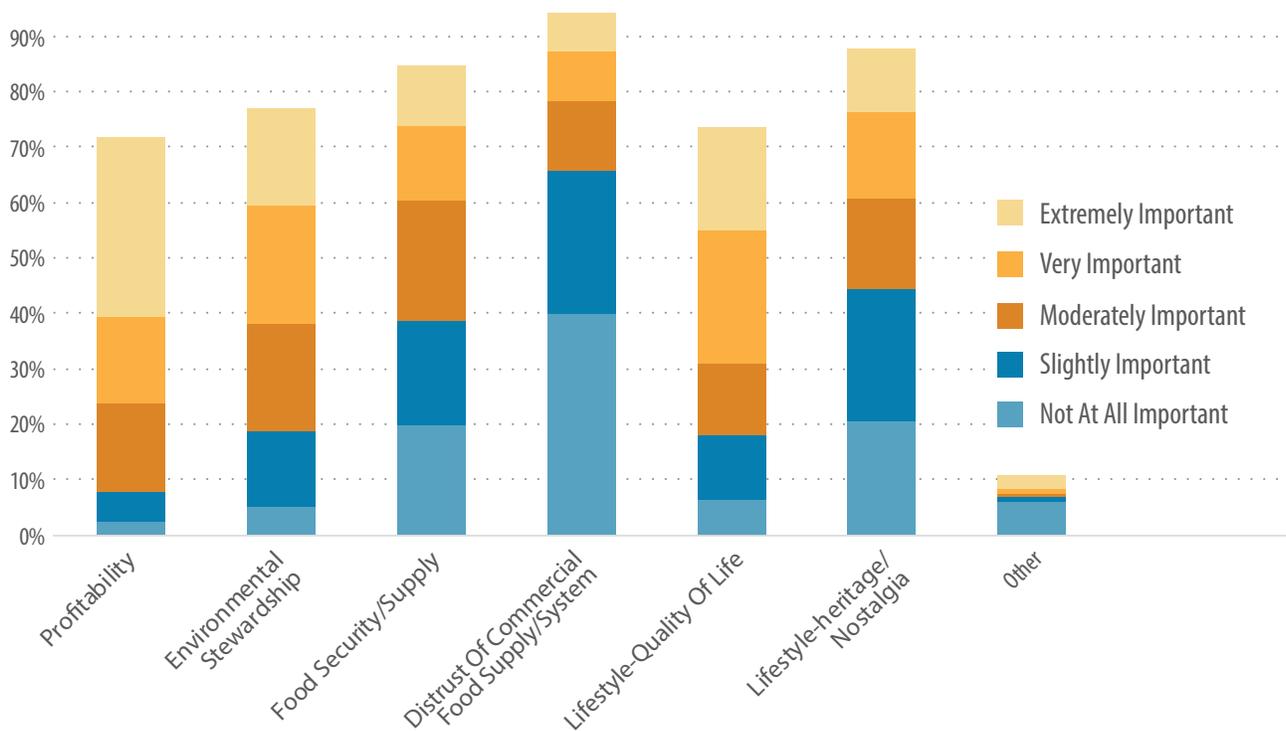


Figure 10

## Your (Grower) Concerns

- Among a variety of concerns expressed, the respondents are most concerned about costs of farming (63.26%), laws and regulations (46.41%) and labor supply issues (43.50%).

### Business & Financial Concerns

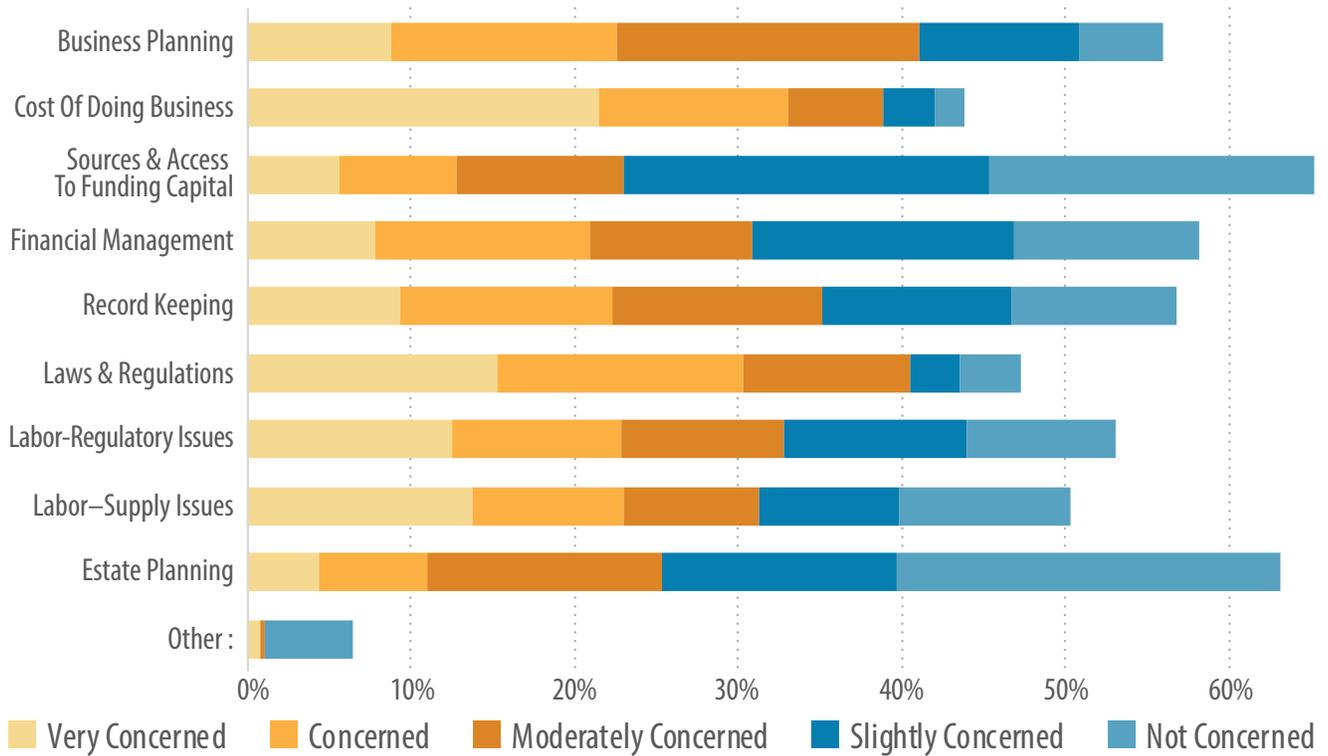


Figure 11

### Farm Production Concerns

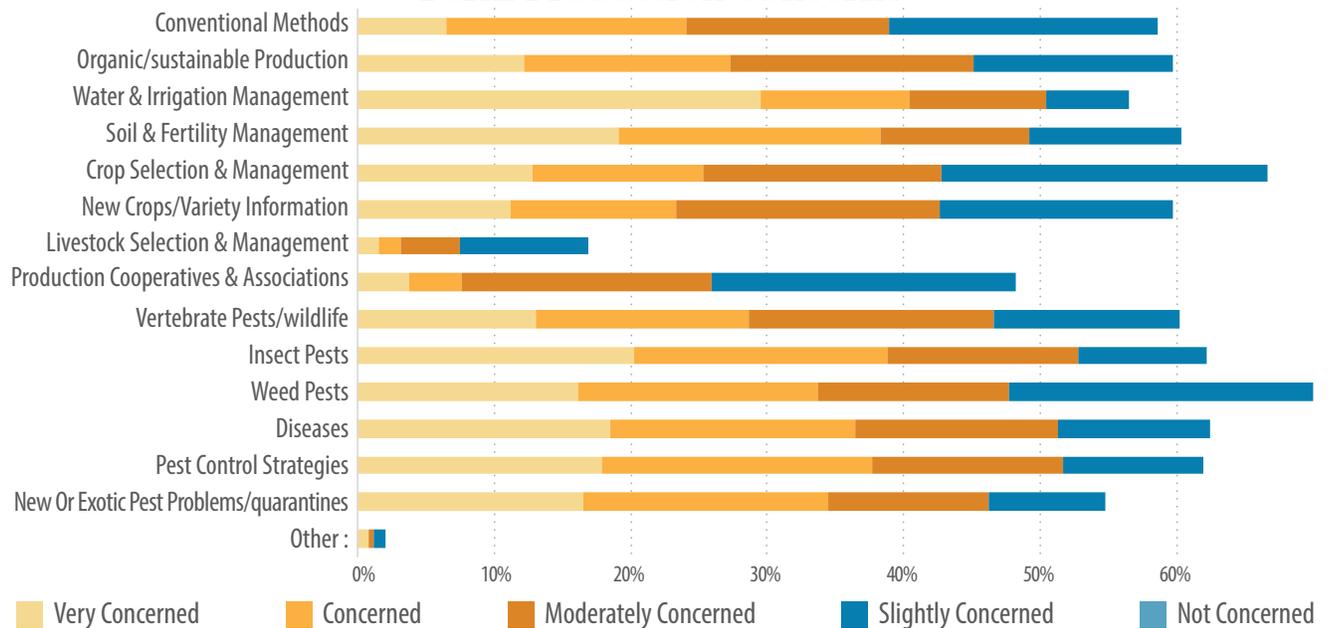


Figure 12

- The respondents expressed needs in irrigation technology and equipment (33.05%), irrigation management assessment (18.88%) and training on current research and best management practices (17.38%) as it relates to water management/water use efficiency on their farms.

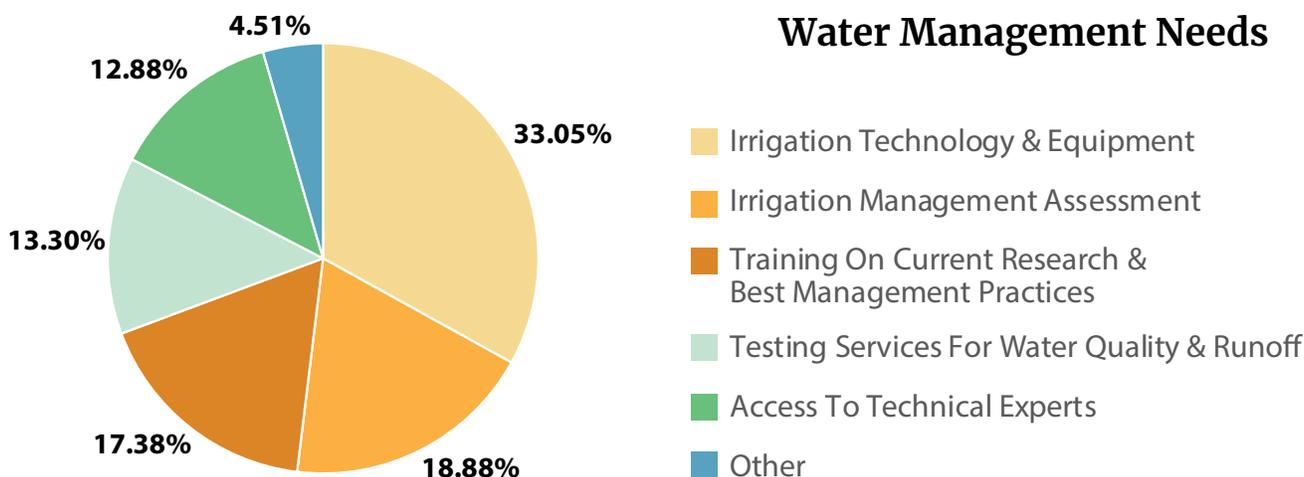


Figure 13

- A great majority (74.21%,  $n= 164$ ) of the respondents are *not concerned* about post-harvest issues in their operations. The chart below illustrates feedback by respondents who do have post-harvest concerns for their farm operations.

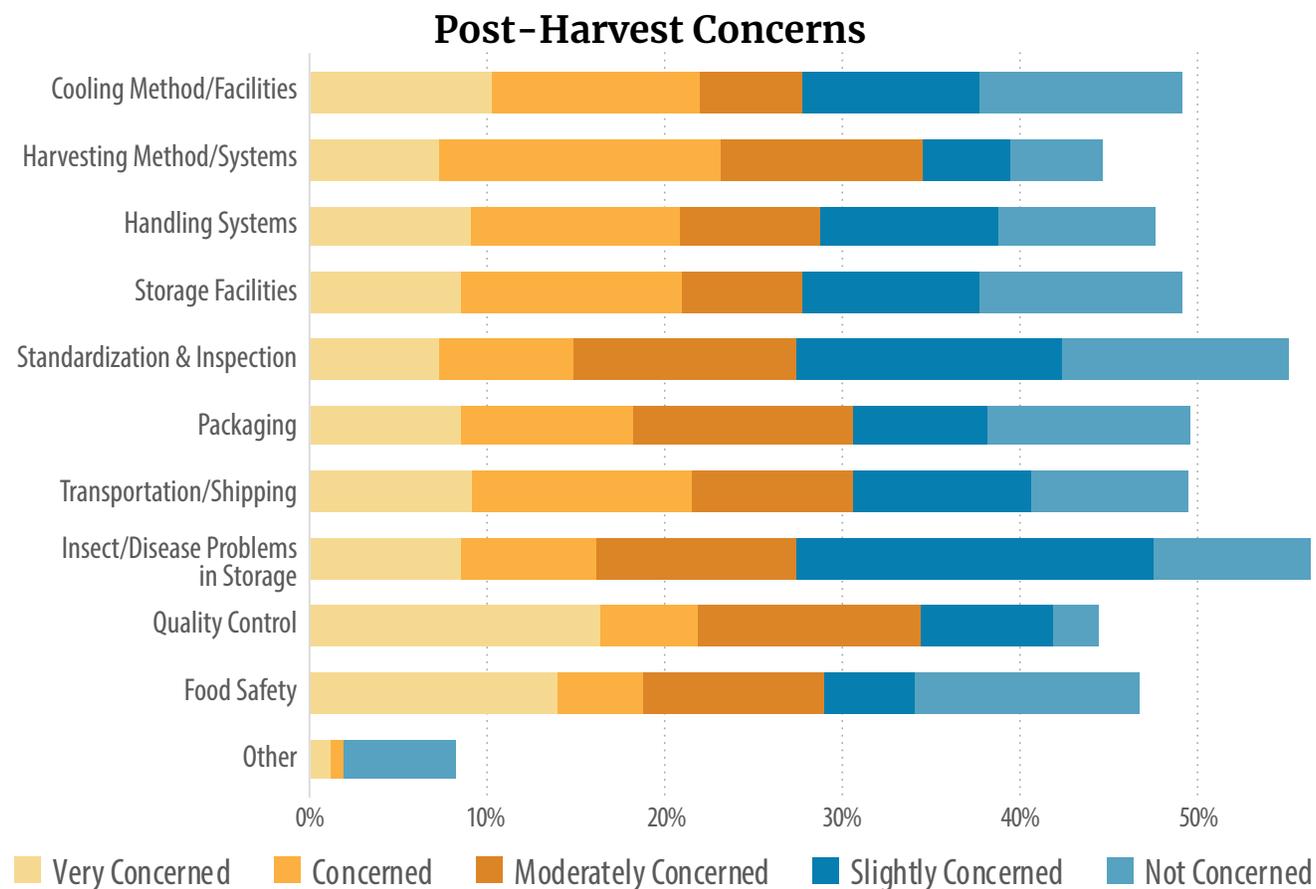


Figure 14

## Marketing Concerns

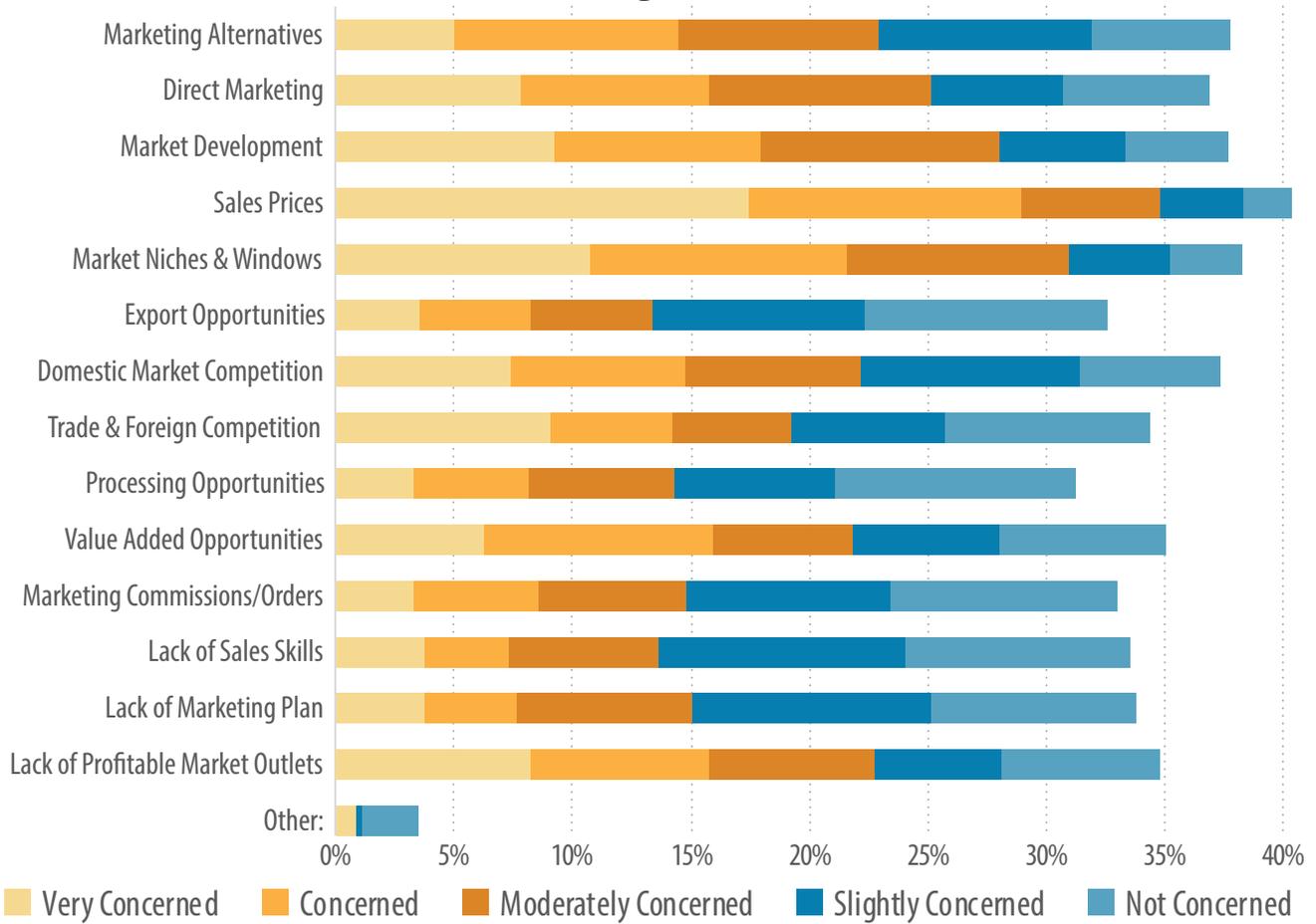


Figure 15

## Information Sources and Delivery Methods

- The common channels the respondents use to receive information about farming are websites; e-newsletters and mail; in-person meetings, workshops and conferences, and personal networking.
- Mornings (64.22%) and afternoons (19.12%) on Wednesdays (27.14%) and Tuesdays (25.13%) work for most of the respondents to attend educational meetings. The preferred location for such meetings is North County (73.56%).
- Almost one-third (63.43%) of the respondents are interested in participating in a forum with other growers, elected officials, industry groups and other people involved with agriculture. They would participate in such forums at quarterly or bi-annual frequency.

## UCCE Customer Satisfaction

- A great majority (76.39%) of the respondents have not contacted UCCE San Diego county office in the last 12 months. The most common modes of contact with the county extension office were attending workshops/seminars, email and internet, and telephone calls.
- Two-thirds (68.97%) of the respondents are satisfied with the responses received from UCCE San Diego county office at any time.

## Grower Demographic Profiles

Demographic information such as age and education level were collected to understand the relevant background information of the growers. In addition, this data will be used to understand if needs, concerns and interests differ by demographics. The data will also be used to test associations between demographics and farming practices, needs, concerns and interests.

- Demographic Profile Summary: A great majority of the respondents are white (70%), over 50 years of age (79%), male (70%) and with 4-year college or higher (~66%) degrees.

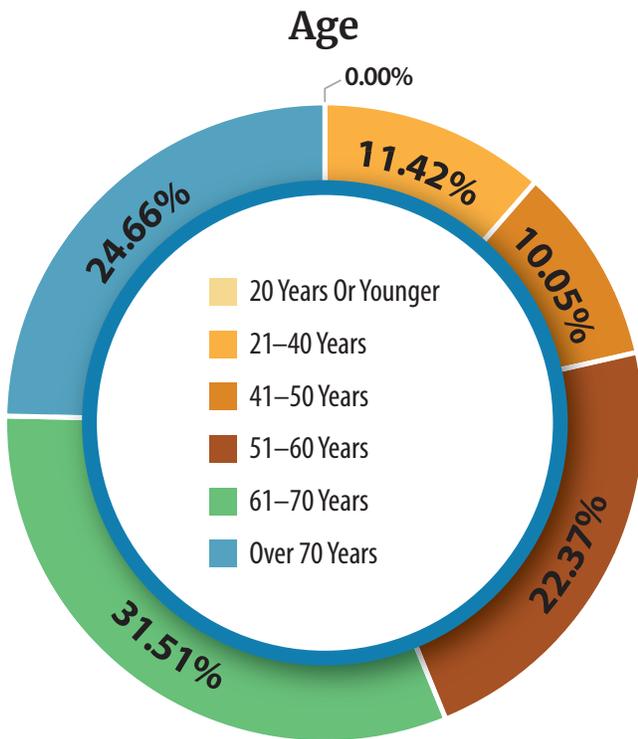


Figure 16

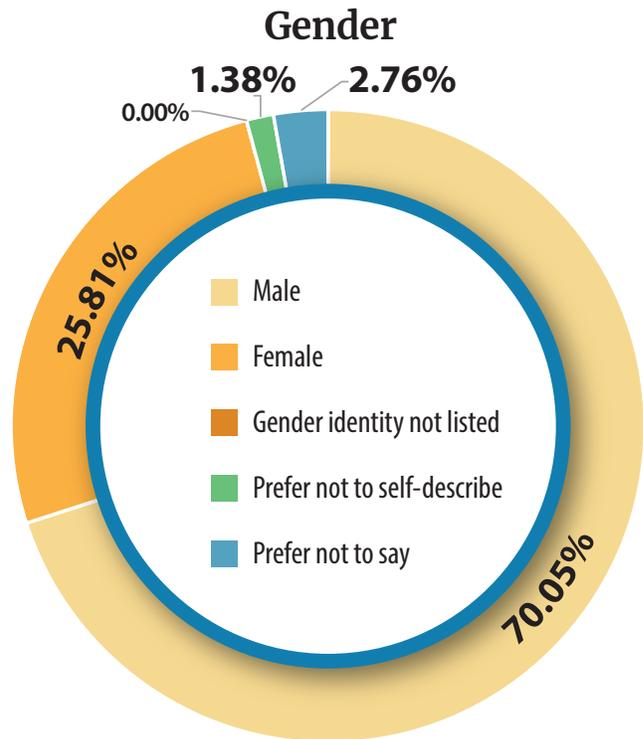


Figure 17

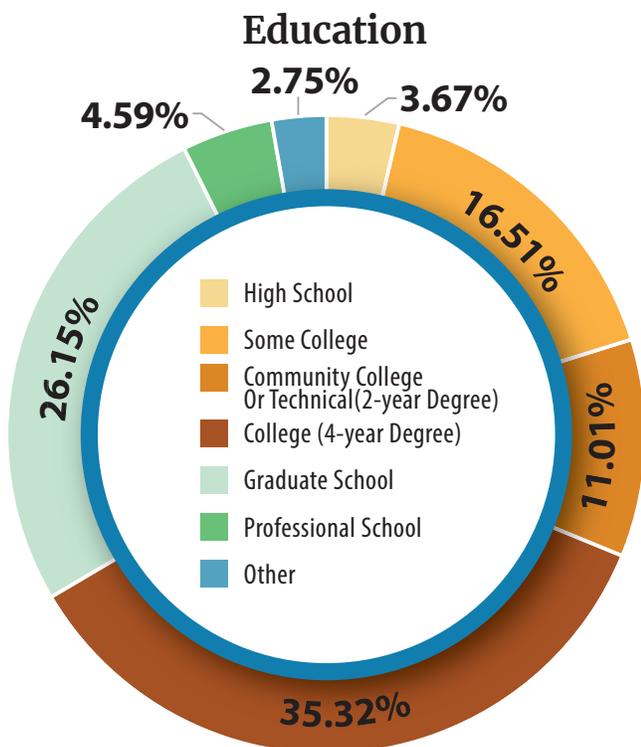


Figure 18

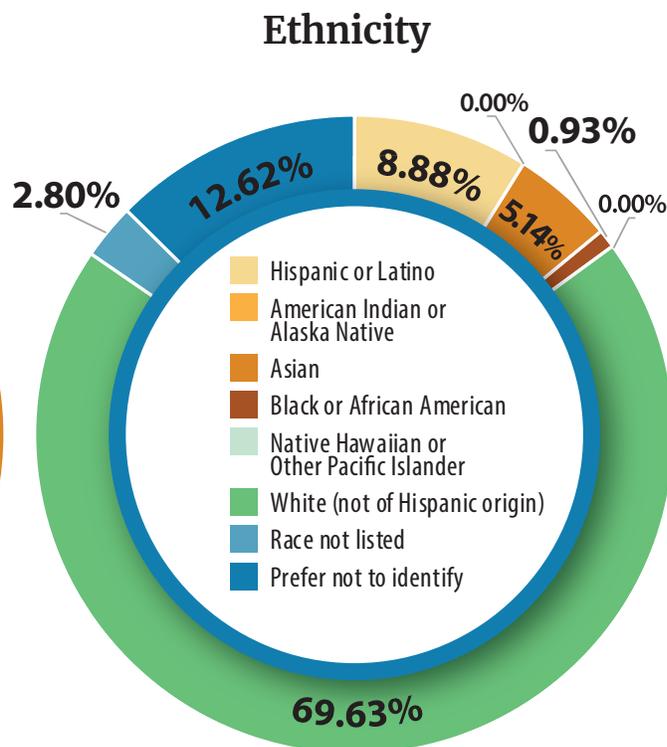


Figure 19

### Income Outside of Farming

■ No    ■ Yes



Figure 20

## Initial Analyses

The preliminary analyses indicate that having more farming experience was correlated at a statistically significant level with a higher preference for conventional farming compared to organic; higher interest in aggregating products with others; a distrust of commercial food supply/system; lower concern about laws, regulations, labor supply issues and trade and foreign competition. Further, bigger farm size was correlated at a statistically significant level with lower concern for labor costs, labor supply issues, pest problems, marketing alternatives, marketing commissions, and trade and foreign competition.

## ***Limitations of the Study***

The limitations for this study are primarily linked to time, which impacted the response rate for the survey. With more time, we could have administered the survey to a more targeted population to gain a larger sample. Another limitation for the study is the sampling frame error. As mentioned previously in this report, there are an estimated 6,000 farmers in San Diego County, but we could reach out to only 1,610 farmers and advisors. Survey recruitment announcements delivered by UCCE partner organizations may have reached additional growers.

In addition to time limitations, competing and concurrent surveys targeting the same farming clientele also played a factor. There were three extensive farming data collection activities (surveys and focus group interviews) planned and conducted within the same year by other federal, state and county organizations; therefore, to minimize the demand of time on San Diego's commercial agribusiness owners and operators, it was decided to postpone the personal interviews and focus group components of this project for this report. However, this qualitative component of our research effort will be re-scheduled in the near future as another method to expand our data collection efforts to fill in data gaps and to verify this survey response data with selected sub-sectors or commodity organizations representing the agricultural industry.

Although this was a comprehensive survey and there was diversity in responses, it is important to consider these limitations when reviewing results.

## NEXT STEPS

Following the distribution of this final growers' needs assessment report, UCCE will be participating in stakeholder meetings to further present and discuss the research and results to interpret findings and develop strategies to address identified needs in a participatory manner. UCCE is continuing work to prioritize the needs, concerns and preferences related to farming practices, marketing channels, laws and regulations, extension program delivery, and technology and information usage patterns. Further, regression analyses will be computed to test if the correlations have causal effects. As previously reported, UCCE will consider conducting additional qualitative research in the form of individual interviews and focus groups, as originally planned. Results from follow-up research and additional causal relationships will be shared as they become available.

Certainly, the information obtained through this research will enhance the quality and effectiveness of current programming and strategic communications by farm educators and support organizations already established. Results from this survey may spark ideas for future studies such as a deeper investigation and cost-benefit analyses of regulatory issues and concerns that impact growers and farming communities in the county. Additionally, information obtained through this research will not only help justify the need but also provide benchmarks when seeking funding support for programs designed to address local growers' needs and concerns.

In closing, it is important to recognize that although Agriculture is economically important for San Diego County, local agriculture is only a small part of a larger, more complex and dynamic system that includes the state of California, the Western States Region and the US as a whole. UCCE acknowledges that there are some issues identified through this study that can be addressed on a local scale, but there are also several barriers coming from outside the county that are impacting farmers, which cannot be addressed locally. These larger system issues will require a concerted collaborative and coordinated effort from local agricultural and possibly cross-sector stakeholders to help find solutions that best support sustainable farming and food systems in San Diego County and in within these larger and complex systems as well (Cheshire County Conservation District, 2011).

# ACKNOWLEDGEMENTS

Many individuals and organizations contributed to the successful completion of the Grower Needs Assessment for Sustainable Food Production in San Diego County. The efforts of those noted below are especially appreciated; please refer to the main report for more detailed acknowledgments.

## ***Owners And Decision Makers Of San Diego County Farms***

Thank you to the owners, operators and advisors of commercial farm and ranch enterprises that took the time to complete the survey and share this important information.

## ***County Of San Diego – Land Use & Environment Group (LUEG)***

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## ***UCCE Partners Survey Announcement Support***

UCCE acknowledges and sincerely appreciates these collaborating partners for supporting this project by sharing the survey announcements with their organizational contacts.

**California Avocado Commission**

**California Citrus Research Board**

**Community Health Improvement Partners**

**County of San Diego, Department of Agriculture, Weights and Measures**

**County of San Diego Food Systems Initiative**

**Ramona Valley Vineyards Association**

**San Diego County Farm Bureau**

**San Diego County Vintners Association**

**San Diego Food Systems Alliance**