

Farming Technology Occupations

Labor Market Analysis: Imperial County

June 2026

Summary

NEW PROGRAM RECOMMENDATION?	EVIDENCE OF A SUPPLY GAP?	AT OR ABOVE THE LIVING WAGE?	EXPECTED LEVEL(S) OF EDUCATION
 Proceed with Caution	 	 	☐ Doctorate Degree ☐ Master's Degree ☐ Bachelor's Degree ☐ Associate Degree ☐ Some College or Certificate ☒ HS Diploma or Equivalent ☒ Less Than a HS Diploma ☐ Apprenticeship
SUPPORT FOR PROGRAM MODIFICATION?	NUMBER OF INSTITUTIONS THAT PROVIDE TRAINING	NUMBER OF ANNUAL JOB OPENINGS	
 	MEDIUM 	HIGH 	

The San Diego & Imperial Center of Excellence (COE) developed this brief to assist the region's community colleges with strategic planning and program development. *Farming Technology Occupations* include "Agricultural Equipment Operators," "Farm Equipment Mechanics and Service Technicians," "Farmers, Ranchers, and Other Agricultural Managers," "Farmworkers and Laborers, Crop, Nursery, and Greenhouse," and "Farmworkers, Farm, Ranch, and Aquacultural Animals." According to available data, *Farming Technology Occupations* in Imperial County have a labor market demand of 801 annual job openings (while average demand for a single occupation in Imperial County is 13 annual job openings), and one institution supplies 17 awards for these occupations. Entry-level wages are above the living wage. This brief recommends proceeding with caution when developing a new program and supports a program modification because 1) there is a supply gap; 2) a high number of annual job openings exist for these occupations; 3) Entry-level wages are above the living wage. However, the expected level of education is a high school diploma or equivalent or less.

Introduction

This report provides labor market information in Imperial County for the following occupational codes in the Standard Occupational Classification (SOC)¹ system:

- **Agricultural Equipment Operators** (SOC 45-2091): Drive and control equipment to support agricultural activities such as tilling soil; planting, cultivating, and harvesting crops; feeding and herding livestock; or removing animal waste. May perform tasks such as crop baling or hay bucking. May operate stationary equipment to perform post-harvest tasks such as husking, shelling, threshing, and ginning.
- **Farm Equipment Mechanics and Service Technicians** (SOC 49-3041): Diagnose, adjust, repair, or overhaul farm machinery and vehicles, such as tractors, harvesters, dairy equipment, and irrigation systems.
- **Farmers, Ranchers, and Other Agricultural Managers** (SOC 11-9013): Plan, direct, or coordinate the management or operation of farms, ranches, greenhouses, aquacultural operations, nurseries, timber tracts, or other agricultural establishments. May hire, train, and supervise farm workers or contract for services to carry out the day-to-day activities of the managed operation. May engage in or supervise planting, cultivating, harvesting, and financial & marketing activities.
- **Farmworkers, Farm, Ranch, and Aquacultural Animals** (SOC 45-2093): Attend to live farm, ranch, open range or aquacultural animals that may include cattle, sheep, swine, goats, horses and other equines, poultry, rabbits, finfish, shellfish, and bees. Attend to animals produced for animal products, such as meat, fur, skins, feathers, eggs, milk, and honey. Duties may include feeding, watering, herding, grazing, milking, castrating, branding, de-beaking, weighing, catching, and loading animals. May maintain records on animals; examine animals to detect diseases and injuries; assist in birth deliveries; and administer medications, vaccinations, or insecticides as appropriate. May clean and maintain animal housing areas.
- **Farmworkers and Laborers, Crop, Nursery, and Greenhouse** (SOC 45-2092): Manually plant, cultivate, and harvest vegetables, fruits, nuts, horticultural specialties, and field crops. Use hand tools, such as shovels, trowels, hoes, tampers, pruning hooks, shears, and knives. Duties may include tilling soil and applying fertilizers; transplanting, weeding, thinning, or pruning crops; applying pesticides; or cleaning, grading, sorting, packing, and loading harvested products. May construct trellises, repair fences and farm buildings, or participate in irrigation activities.

For the purpose of this report, these occupations are referred to as *Farming Technology Occupations*.

¹ The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. <https://www.bls.gov/soc/>.

Projected Occupational Demand

Between 2024 and 2029, businesses in Imperial County will need to hire **801** employees annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example (Exhibit 1). Most of this labor market demand comes from Farmworkers and Laborers, Crop, Nursery, and Greenhouse, which is projected to have the most annual job openings with **570** openings each year between 2024 and 2029.

Exhibit 1: Number of Jobs for Farming Technology Occupations (2024-2029)²

Occupational Title	2024 Jobs	2029 Jobs	2024 - 2029 Net Jobs Change	2024 - 2029 % Net Jobs Change	Annual Job Openings (Demand)
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	4,135	3,498	-637	-15%	570
Farmers, Ranchers, and Other Agricultural Managers	1,079	918	-161	-15%	105
Farmworkers, Farm, Ranch, and Aquacultural Animals	523	434	-89	-17%	72
Agricultural Equipment Operators	356	317	-39	-11%	50
Farm Equipment Mechanics and Service Technicians	57	52	-5	-9%	4
Total	6,150	5,219	-930	-15%	801

² Lightcast 2026.01; QCEW, Non-QCEW, Self-Employed.

Earnings

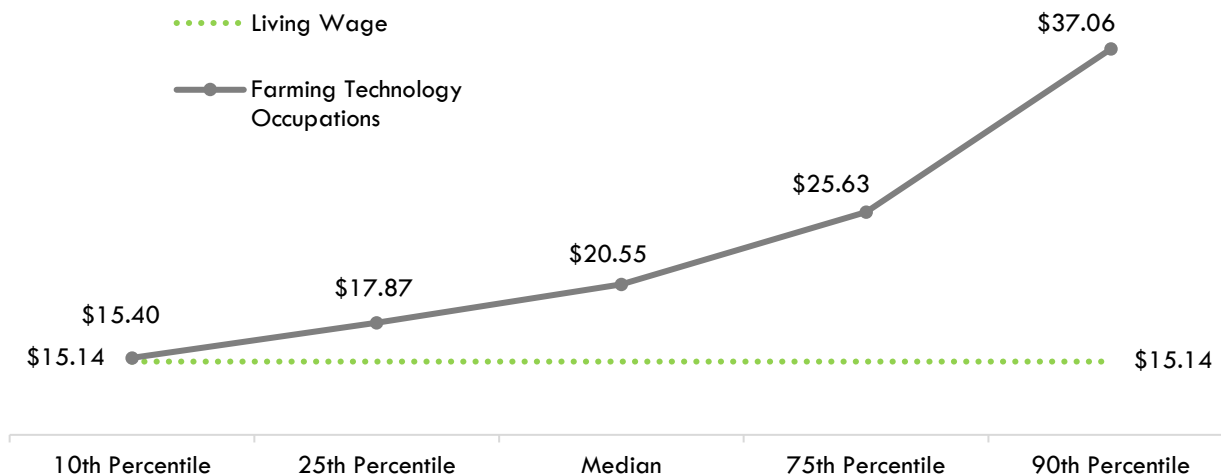
According to traditional³ labor market information (LMI), entry-level hourly earnings for *Farming Technology Occupations* range from \$16.00 to \$25.11 per hour (Exhibit 2).

Exhibit 2: Hourly Earnings for Farming Technology Occupations in Imperial County⁴

Occupational Title	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Farm Equipment Mechanics and Service Technicians	\$25.11	\$32.74	\$34.83
Agricultural Equipment Operators	\$16.19	\$17.80	\$21.52
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	\$16.04	\$16.67	\$18.71
Farmworkers, Farm, Ranch, and Aquacultural Animals	\$16.00	\$16.04	\$18.08
Farmers, Ranchers, and Other Agricultural Managers	\$16.00	\$19.49	\$35.01

On average, the entry-level hourly earnings for employed *Farming Technology Occupations* are \$17.87—or \$37,169.60 annual salary⁵; this is more than the living wage for a single adult in Imperial County, which is \$15.14 per hour (Exhibit 3).⁶

Exhibit 3: Hourly Earnings⁷ for Farming Technology Occupations in Imperial County⁸



³ Traditional LMI is generally historical data captured by the U.S. Bureau of Labor Statistics (BLS) or the California Employment Development Department (EDD). It does not account for recent technological, economic, or legislative changes that may affect labor market demand and wages.

⁴ Lightcast 2026.01; QCEW, Non-QCEW, Self-Employed.

⁵ Annualized salaries assume a full-time position with 2,080 hours. Multiplying the hourly wage with 2,080 yields the annual salary.

⁶ Center for Women's Welfare, University of Washington. (2024). The self-sufficiency standard for California 2024.

selfsufficiencystandard.org/California.

⁷ 10th and 25th percentiles could be considered entry-level wages, and 75th and 90th percentiles could be considered experienced wages for individuals who may have been in the occupation longer, received more training than others, etc.

⁸ Lightcast 2026.01; QCEW, Non-QCEW, Self-Employed.

Due to insufficient online job postings between January 1, 2023 and December 31, 2025, employer-advertised wage information was unavailable for Farming Technology Occupations in Imperial County (Exhibit 4).⁹ Consequently, no conclusions can be drawn regarding employer-advertised wages or wage trends based on online job postings data.

**Exhibit 4: Entry-Level Advertised Salaries in Online Job Postings for
Farming Technology Occupations in Imperial County (2023-2025)**

N/A	N/A	N/A
2023	2024	2025

Expected Level of Education

According to traditional LMI (data reported to EDD and BLS), *Farming Technology Occupations* have a national educational attainment ranging from [no formal educational credential](#) to a [high school diploma or equivalent](#) (Exhibit 5).¹⁰

Exhibit 5: National Educational Attainment for *Farming Technology Occupations*¹¹

Occupational Title	Typical Entry-Level Education
Farm Equipment Mechanics and Service Technicians	High school diploma or equivalent
Farmers, Ranchers, and Other Agricultural Managers	High school diploma or equivalent
Agricultural Equipment Operators	No formal educational credential
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	No formal educational credential
Farmworkers, Farm, Ranch, and Aquacultural Animals	No formal educational credential

⁹ Lightcast 2026.01; "Job Posting Analytics." 2023-2025.

¹⁰ Lightcast 2026.01; QCEW, Non-QCEW, Self-Employed.

¹¹ Lightcast 2026.01; QCEW, Non-QCEW, Self-Employed.

Similarly, online job postings between January 1, 2023 and December 31, 2025 in Imperial County had a [high school or GED](#) as the most requested educational requirement for *Farming Technology Occupations*; however, employers also expected the following certifications (Exhibit 6).¹² Due to limited posting volume, only one certification met the reporting threshold.

**Exhibit 6: Top Certifications for *Farming Technology Occupations*
in Imperial County in Online Job Postings (2023-2025)**¹³

1. Valid Driver's License
2. N/A

Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of awards in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes. There are [15](#) TOP codes and [16](#) CIP codes related to *Farming Technology Occupations* (Exhibit 7).

Exhibit 7: Related TOP and CIP Codes for *Farming Technology Occupations*¹⁴

TOP or CIP Code	TOP or CIP Program Title
TOP 0101.00	Agriculture Technology and Sciences, General
TOP 0102.00	Animal Science
TOP 0102.30	Dairy Science
TOP 0102.40	Equine Science
TOP 0103.00	Plant Science
TOP 0103.10	Agricultural Pest Control Adviser and Operator (Licensed)
TOP 0104.00	Viticulture, Enology, and Wine Business
TOP 0109.00	Horticulture
TOP 0109.10	Landscape Design and Maintenance
TOP 0109.30	Nursery Technology
TOP 0112.00	Agriculture Business, Sales and Service
TOP 0115.00	Natural Resources
TOP 0116.00	Agricultural Power Equipment Technology
TOP 0947.20	Heavy Equipment Maintenance
TOP 0947.30	Heavy Equipment Operation

¹² Lightcast 2026.01; "Job Posting Analytics." 2023-2025.

¹³ Lightcast 2026.01; "Job Posting Analytics." 2023-2025.

¹⁴ This brief uses a conservative estimate of program supply and only calculates awards from the TOP code listed in Exhibit 7.

TOP or CIP Code	TOP or CIP Program Title
CIP 01.0102	Agribusiness/Agricultural Business Operations
CIP 01.0104	Farm/Farm and Ranch Management
CIP 01.0201	Agricultural Mechanization, General
CIP 01.0204	Agricultural Power Machinery Operation
CIP 01.0205	Agricultural Mechanics and Equipment/Machine Technology/Technician
CIP 01.0207	Irrigation Management Technology/Technician
CIP 01.0302	Animal/Livestock Husbandry and Production
CIP 01.0304	Crop Production
CIP 01.0306	Dairy Husbandry and Production
CIP 01.0307	Horse Husbandry/Equine Science and Management
CIP 01.0308	Agroecology and Sustainable Agriculture
CIP 01.0309	Viticulture and Enology
CIP 01.0601	Applied Horticulture/Horticulture Operations, General
CIP 01.0606	Plant Nursery Operations and Management
CIP 01.1101	Plant Sciences, General
CIP 01.1105	Plant Protection and Integrated Pest Management

According to TOP data, [one](#) community college supplies the region with awards for these occupations: [Imperial Valley College](#). According to CIP data, no non-community college supplies the region with awards (Exhibit 8).

**Exhibit 8: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions
(Program Year 2021-22 Through Program Year 2024-25 Average)**

TOP6 or CIP Code	TOP6 or CIP Program Title	3-Yr Annual Average CC Awards (PY22-23 to PY24-25)	Other Educational Institutions 3-Yr Annual Average Awards (PY21-22 to PY23-24)	Total Average Supply (PY21-22 to PY24-25)
0103.00	Plant Science	11	0	11
	Imperial	11	0	
	• Associate degree	8	0	
	• Certificate 16 < 30 units	3	0	

TOP6 or CIP Code	TOP6 or CIP Program Title	3-Yr Annual Average CC Awards (PY22-23 to PY24-25)	Other Educational Institutions 3-Yr Annual Average Awards (PY21-22 to PY23-24)	Total Average Supply (PY21-22 to PY24-25)
0112.00	Agriculture Business, Sales and Service	6	0	6
	Imperial	6	0	
	• Associate degree	5	0	
	• Certificate 16 < 30 units	1	0	
Total				17

Demand vs. Supply

Comparing labor demand with labor supply¹⁵ suggests that there is a **supply gap** for these occupations in Imperial County, with **801** annual openings and **17** awards. Comparatively, there are **45,590** annual openings in California and **3,079** awards, suggesting that there is a **supply gap** across the state (Exhibit 9).¹⁶

Exhibit 9: Labor Demand (Annual Openings) Compared with Labor Supply (Average Annual Awards)

	Demand (Annual Openings)	Supply (Annual Awards)	Supply Gap or Oversupply
Imperial	801	17	784
California	45,590	3,079	42,511

Please note: This is a basic analysis of supply and demand of labor. The data does not include workers currently in the labor force who could fill these positions or workers who are not captured by publicly available data. This data should be used to discuss the potential gaps or oversupply of workers; however, it should not be the only basis for determining whether or not a program should be developed.

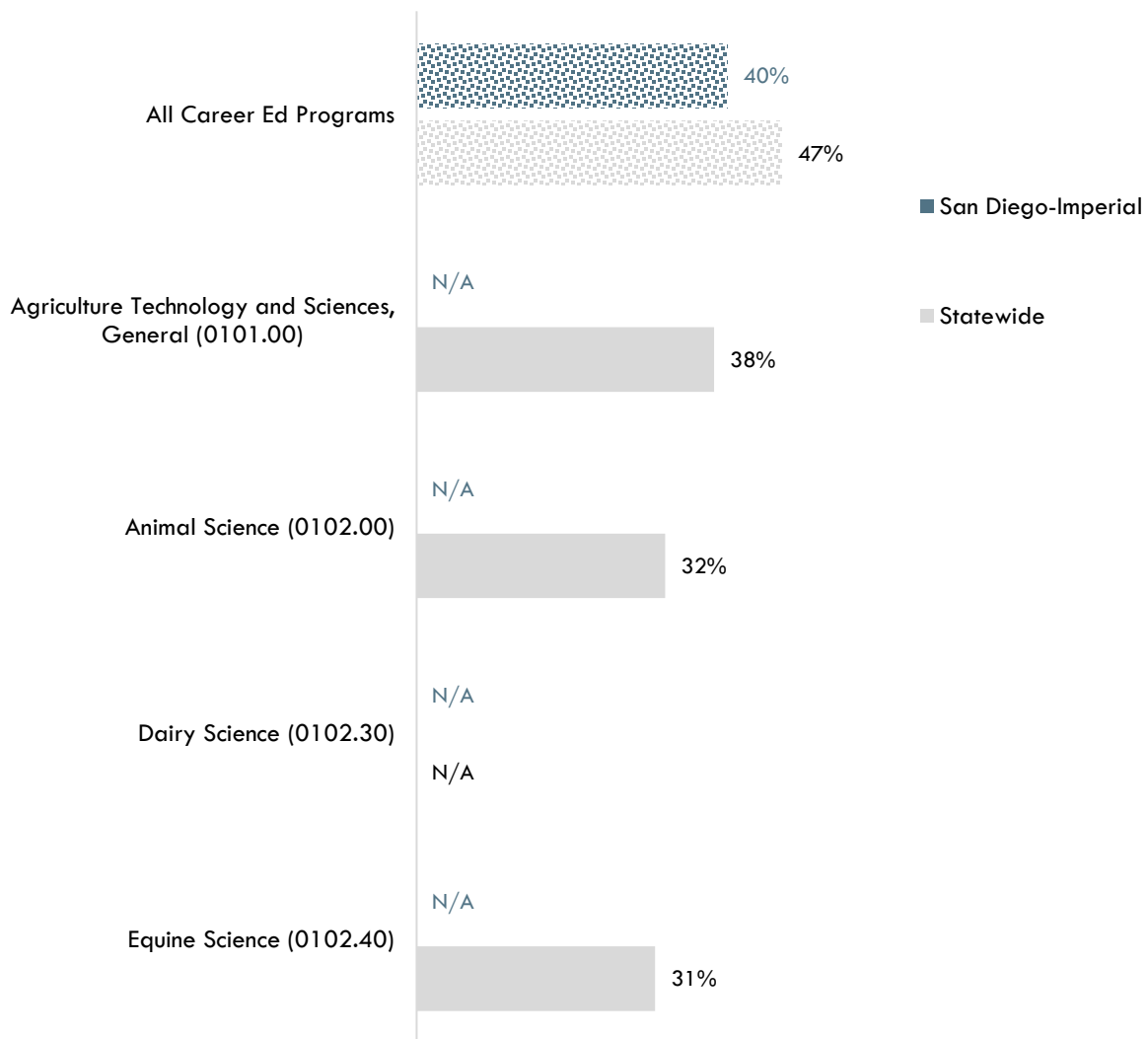
¹⁵ Labor supply can be found from two different sources: Lightcast or the California Community Colleges Chancellor's Office MIS Data Mart. Lightcast uses CIP codes while MIS uses TOP codes. Different coding systems result in differences in the supply numbers.

¹⁶ "Supply and Demand," Centers of Excellence Student Outcomes, coecc.net/our-resources.

Student Outcomes and Regional Comparisons

According to the California Community Colleges DataVista, 44% of students in the San Diego-Imperial region earned a living wage after completing a program related to *Farming Technology Occupations*, compared to 31 to 75% statewide and 47% of students in Career Education programs in general across the state (Exhibit 10).¹⁷

Exhibit 10: Percentage of Students Who Earned a Living Wage by Program, PY2023-24¹⁸

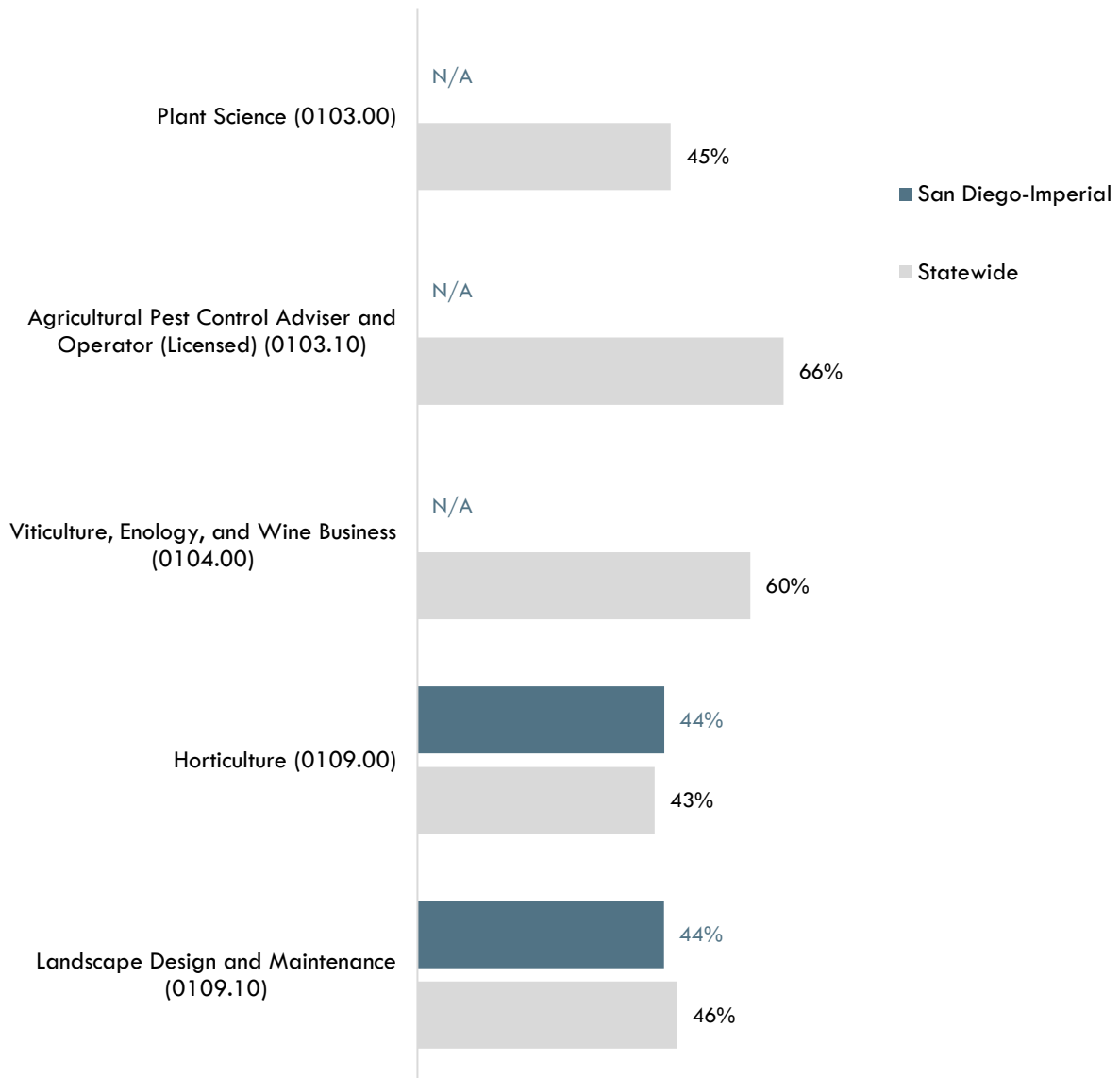


"N/A" indicates insufficient data

¹⁷ DataVista, California Community Colleges, datavista.cccco.edu/.

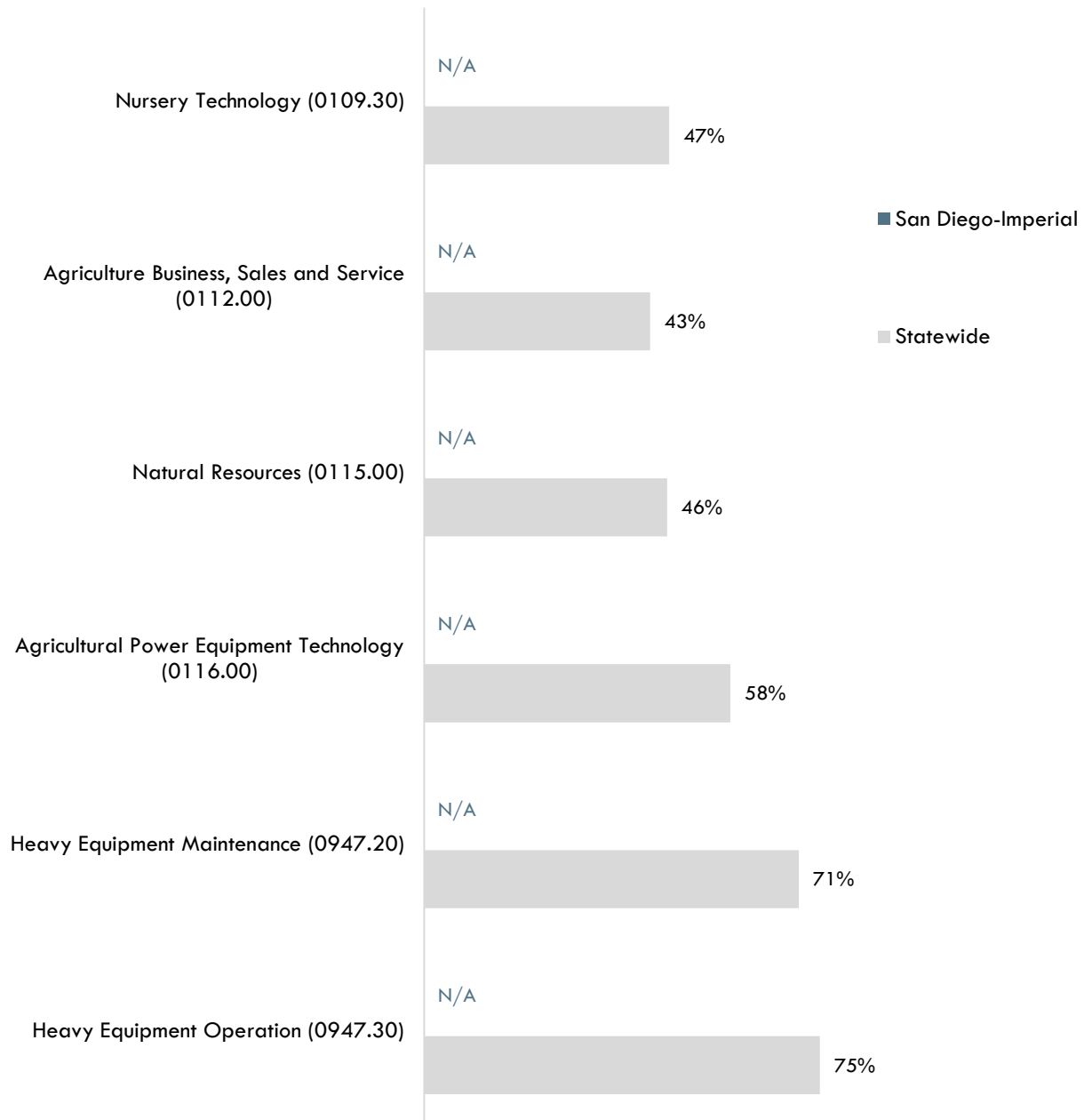
¹⁸ Most recent year with available data is Program Year 2023-24. Among completers and skills builders who exited, the percentage of students who attained a living wage.

Exhibit 10: Percentage of Students Who Earned a Living Wage by Program, PY2023-24 (continued)



"N/A" indicates insufficient data

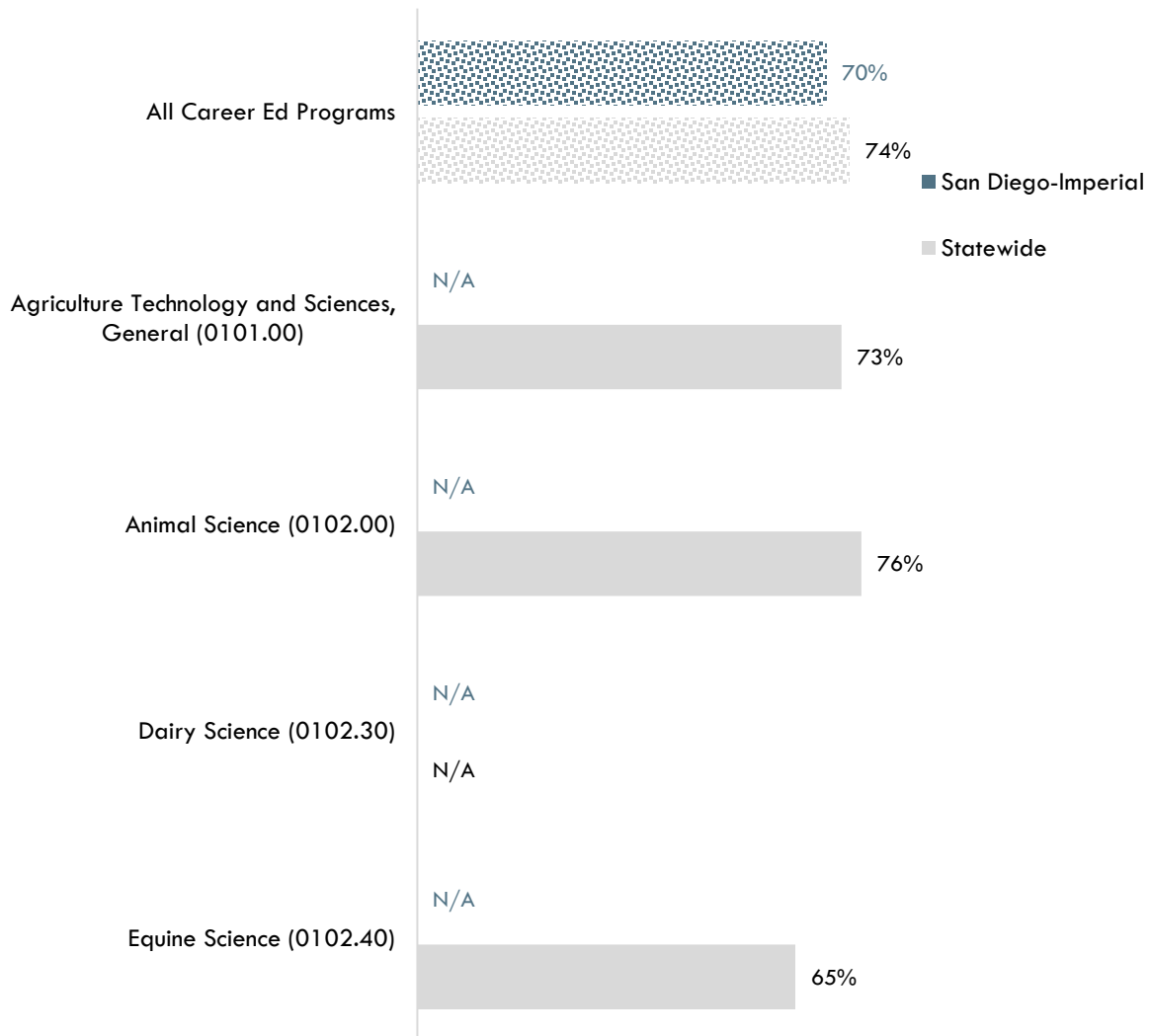
Exhibit 10: Percentage of Students Who Earned a Living Wage by Program, PY2023-24 (continued)



"N/A" indicates insufficient data

According to the California Community Colleges DataVista, there was insufficient data regarding students in the San Diego-Imperial region who obtained a job closely related to their field of study after completing a program related to *Farming Technology Occupations*. Statewide, 65 to 76% of students obtained a job closely related to their field of study after completing one of the requested programs, compared to 74% of students in Career Education programs in general across the state (Exhibit 11).¹⁹

Exhibit 11: Percentage of Students in a Job Closely Related to Field of Study by Program, PY2022-23²⁰



"N/A" indicates insufficient data

¹⁹ DataVista, California Community Colleges, datavista.cccco.edu/.

²⁰ Most recent year with available data is Program Year 2022-23. Percentage of Students in a Job Closely Related to Field of Study: Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.

Exhibit 11: Percentage of Students in a Job Closely Related to Field of Study by Program, PY2022-23 (continued)

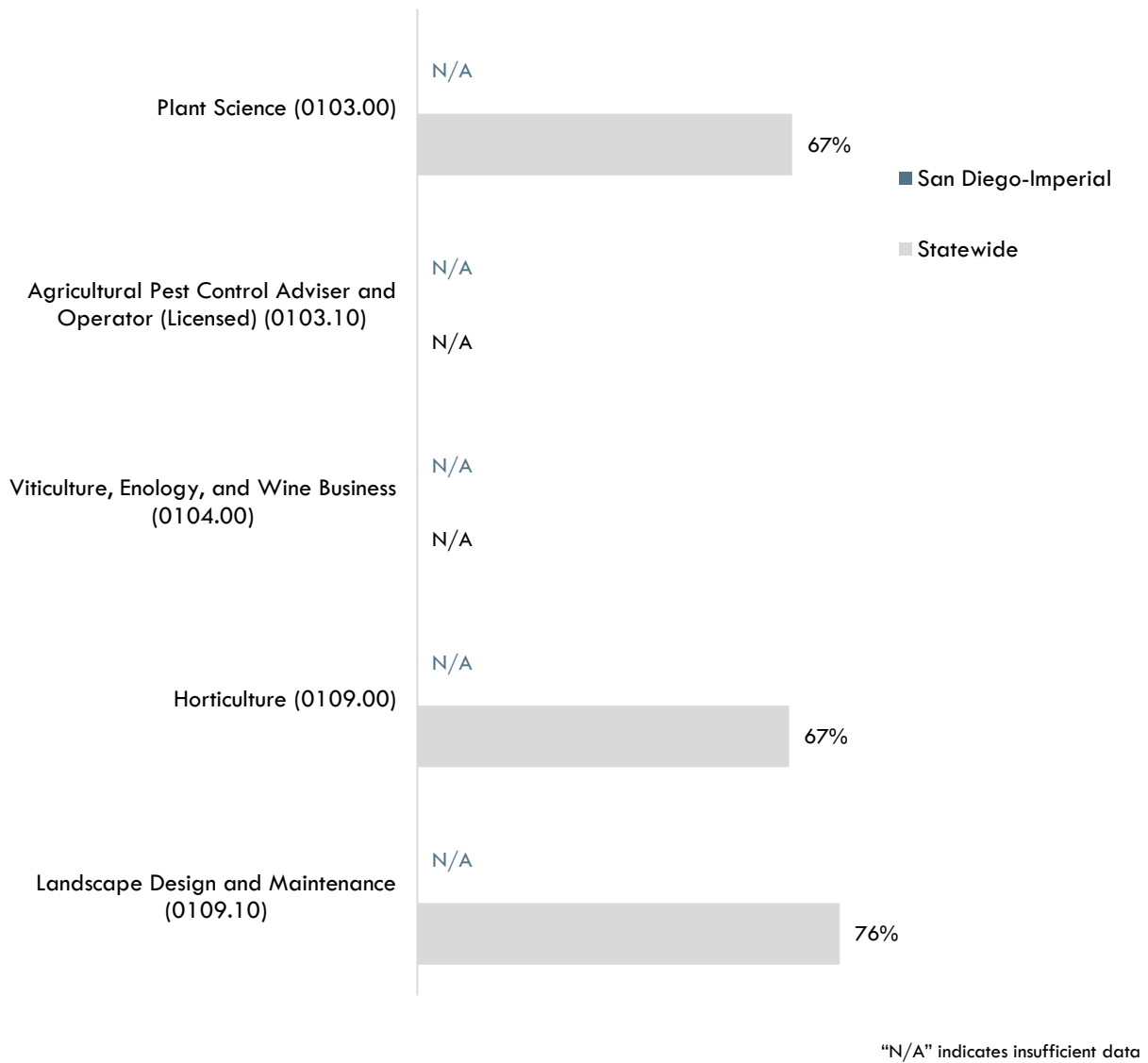
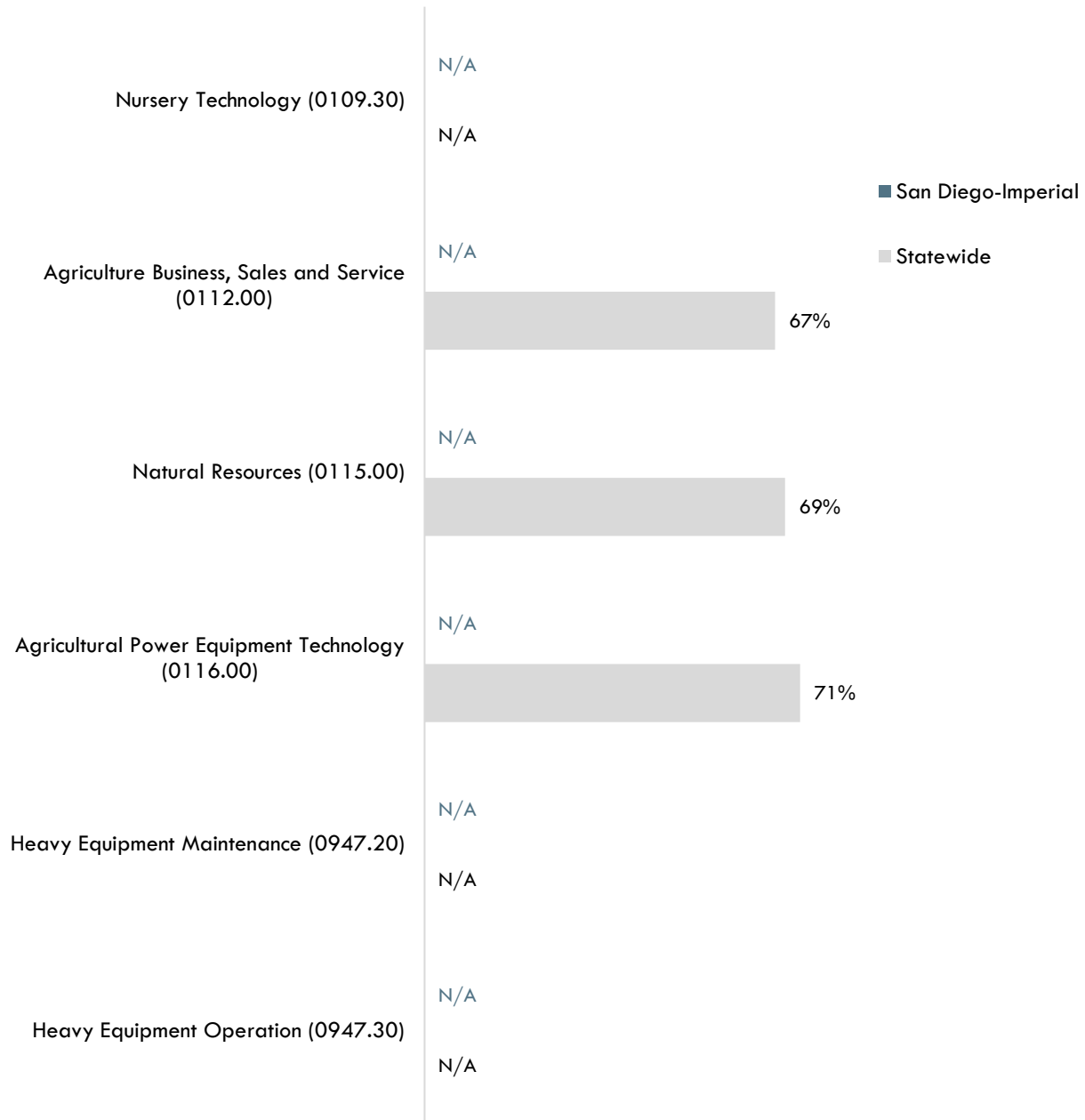


Exhibit 11: Percentage of Students in a Job Closely Related to Field of Study by Program, PY2022-23 (continued)



"N/A" indicates insufficient data

Employers

Between January 1, 2023 and December 31, 2025, the top employers in Imperial County for *Farming Technology Occupations* included *State of California, University of California, Walmart, Grimmway Farms, and Imperial Valley Conservation Research Center* based on online job postings (Exhibit 12).

Exhibit 12: Top Employers for *Farming Technology Occupations* in Imperial County²¹

Top Employers	
• State of California • University of California • Walmart • Grimmway Farms • Imperial Valley Conservation Research Center	• D&H Farms • Empire Cat • Fondomonte California • Mike Abatti Farms • La Valle Sabbia

Skills

Exhibit 13 lists the top specialized, soft, and software skills that appeared in online job postings between January 1, 2023 and December 31, 2025.

Exhibit 13: Top Skills for *Farming Technology Occupations* in Imperial County²²

Specialized Skills	Soft Skills	Software Skills
• Work Order • Irrigation • Agricultural Equipment • Cognitive Processing • Hand Tools • Forklift Truck • Loading And Unloading • Farm Equipment • Pesticides • Licensing • Machinery • Pruning • Instructional Manuals • Shears • Disease Control	• Spanish Language • Management • Operations • Communication • Cleanliness • English Language • Planning • Research • Training And Development • Leadership • Troubleshooting • Quality Control • Bilingual (Spanish/English) • Supervision • Report Writing	• N/A

²¹ Lightcast 2026.01; "Job Posting Analytics." 2023-2025.

²² Lightcast 2026.01; "Job Posting Analytics." 2023-2025.

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