UNEARTHING THE EXPERIENCES OF LOS ANGELES LANDSCAPERS

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ECONOMIC JUSTICE

The socioeconomic effects of the COVID-19 pandemic and a current surge in unionization efforts and collective action have redefined popular notions of social and economic justice in the United States.

From the Hollywood Writers Guild Strike to the formation of new coffee shop unions, there is a reinvigorated interest in the role that economic development can play in advancing racial and social justice by fostering thriving local economies. This pertains not only to formal businesses but also to workers employed in informal industries.

Los Angeles County, renowned for its legacy economic sectors in entertainment, aerospace, and the creative arts, also hosts a robust informal services economy encompassing domestic work, construction, street vending, and landscaping. Unfortunately, these informal economic sectors are frequently sidelined by local economic development efforts. In some cases, the contributions of these industries and their workforce may not only be overlooked but could even face marginalization or criminalization due to their informal nature. Complicating matters is the informal arrangement aspect of these industries, making them among the most accessible for employment to many immigrants, working-class individuals, and undocumented workers. However, it is this accessibility (or low barrier to entry) that leaves many informal workers with few protections, benefits, and stagnating wages.
In light of this background, we embarked on this exploratory research project aimed at better understanding and supporting workers in the Los Angeles landscaping industry.

It is crucial to recognize the inherent challenge in assessing the well-being, economic conditions, and working conditions of the landscaping industry due to its high degree of informality. Hence, the core objective of this research project was to establish initial connections with the landscaping industry, comprehend its workforce dynamics, and identify crucial labor concerns and needs.

THE ULTIMATE GOAL

Pave the way for creating sustainable pathways that enable public institutions and community-based organizations to respond to these needs, fostering greater inclusivity in the local economy for landscaping workers.
For this research project, we adopted a mixed methods approach, integrating various research methodologies to ensure a comprehensive understanding of the informal landscaping industry in Los Angeles County. We conducted in-depth interviews in Summer 2023 with key stakeholders, including four business owners, four workers, and three property owners, to gain an initial understanding of the landscaping industry.¹ The following Fall, we administered surveys to a sample of 38 landscaping workers, six business owners, and five property owners to gain insights into the workforce’s most pressing concerns.²

As part of the survey outreach, our team engaged with the community by conducting field canvassing efforts; interacting with over 170 workers on-site which was the primary way we administered the surveys. The targeted outreach areas are higher-income neighborhoods with single-family homes attached to large yards, including Westwood, Santa Monica, Hancock Park, Burbank, Pasadena, and San Marino. This approach allowed us to establish initial connections and trust with workers and compile an important base that we can rely on for future engagements with this industry. Lastly, to complement these primary methods, our research also incorporated a thorough literature review and leveraged public datasets, as well as geospatial analysis, to enrich both the quantitative and qualitative dimensions of our findings.
INFORMALITY WITHIN THE LANDSCAPING INDUSTRY

The landscaping industry provides a wide range of activities aimed at optimizing and maintaining outdoor spaces and enhancing the health and appearance of lawns and gardens. These services may include mowing, blowing, fertilization, weed control, aeration, tree trimming, etc.

Ultimately, landscaping workers provide essential services to ensure that lawns are well-maintained, healthy, and visually appealing, all of which contribute to the overall beauty and functionality of both public and private outdoor spaces across Los Angeles County.

In the landscaping industry, a common operational structure revolves around landscaping "routes," where both route owners and ayudantes (workers) support operations. Route owners (in effect, business owners) handle responsibilities such as selecting and procuring clients, hiring workers, and purchasing the equipment necessary for the services they provide. In contrast, ayudantes are the workers on the route, usually hired by the route owner, and generally do not take on business administration responsibilities; their focus is solely on their assigned tasks.
It is crucial to break down how “informality” manifests in the landscaping sector.

Generally, the informal labor market is defined as works that are not taxed or registered by the government. In the landscaping context, informality can be observed through:

- Informal working arrangements characterized by verbal and handshake agreements and the absence of formal contracts.
- Under-the-table transactions, where route owners receive cash payments from clients or compensate workers off the books.
- Unregistered business operations, where the business is not registered with the federal, state, or local authorities.
- The undocumented immigration status of landscaping workers, which means these workers cannot be legally employed leading to no or limited access to common workers’ rights protections and benefits (e.g., unemployment benefits)
Informal workers contribute significantly to the local economy through their input in sectors such as street vending, construction, domestic works, agriculture, and landscaping. While some estimates have established that 15% of Los Angeles County’s total workforce is composed of informal workers, to our knowledge, presently, there is no database that tracks informal workers specifically in the landscaping services industry. Below, we estimate the number of workers who are employed informally to understand its scale within the industry. Data points and estimates for the formal sector are also provided for comparison.

**FORMAL & INFORMAL WORKFORCE**

Informal workers contribute significantly to the local economy through their input in sectors such as street vending, construction, domestic works, agriculture, and landscaping. While some estimates have established that 15% of Los Angeles County’s total workforce is composed of informal workers, to our knowledge, presently, there is no database that tracks informal workers specifically in the landscaping services industry. Below, we estimate the number of workers who are employed informally to understand its scale within the industry. Data points and estimates for the formal sector are also provided for comparison.

**LANDSCAPE NEEDS**

- **530 SQ MI OF PRIVATE GREENSPACES**
- **10% OF LA COUNTY’S LAND AREA**
- **40% PROFESSIONALLY MAINTAINED BY WORKERS IN THE LANDSCAPING SERVICES INDUSTRY**

**FORMAL WORKFORCE**

- **1.3K ESTABLISHMENTS**
- **14K FORMAL WORKERS**
- **50 SQ MI OF GREENSPACES MAINTAINED EVERY TWO WEEKS**
- **75% 11,000 ARE FIELD WORKERS**
  (including landscaping and groundskeeping workers, first-line supervisors, and tree trimmers and pruners)

**INFORMAL WORKFORCE**

- **24K ESTIMATED SIZE OF THE INFORMAL LANDSCAPING FIELD WORKFORCE**
- **160 SQ MI EVERY TWO WEEKS IN THE COUNTY**

Using the same field worker-to-establishment ratio as the formal sector for estimation, the county could have over 2,800 informal landscaping establishments, although the number is likely higher given the informal establishments likely have a smaller portion of administrative staff compared to the formal establishments.
COMPENSATIONS

The 2022 annual wage per employee in the landscaping services industry in Los Angeles County is $48,343 (63% of the average wage of all industries), while landscaping field workers are estimated to average around $44,463.¹¹ The average year-to-year inflation-adjusted wage growth over the last ten years for the landscaping services industry is 2.5%. Despite the higher growth compared to the average that of all other private industries (0.8%), landscapers’ wages are still far below all other industries, as shown in Figure 1, which compares the wages and growths over the years. With the high inflation starting in late 2020, workers across the county experienced negative real wage growth in 2021 and 2022.

Information on informal landscape workers’ wages is limited. Based on the literature we found, an interview study found the common wage commanded by informal landscape workers was $80 per 10-hour-day in 2011 or $107 per day in 2022 dollars ($33,446 a year assuming six-day work).¹² Applying the same year-to-year rate of change of the formal sector, the projected annual wage for informal landscape workers is approximately $41,000 in 2022, 8% lower than the field workers ($44,463) in the formal industry (Figure 1). Although the wages of informal workers appear to be comparable to their formal counterparts, it is worth noting that informal workers often have longer workdays and work weeks (1.5 times more hours per week) and are unlikely to have employer-sponsored benefits. Finally, it is key to note that the average wages of both informal and formal landscaping workers are just over half that of all other industries and still below the living wage in Los Angeles County.¹³
WHAT WORKERS SAY

On average, the workers we engaged with have been in the landscaping industry for ten years. The majority resides in Los Angeles County, while about 10% travel from out of the county to work, some as far as commuting from Rialto to Burbank, a 120-mile round trip commute. Additionally, over 90% of the workers we engaged with work full-time as a landscaper, and the majority of them (65%) plan to work in the industry for five or more years. Although we did not collect demographic information from the workers, we observed the workers are predominantly middle-aged Latino men and many preferred to use Spanish in their conversations with us.

Based on our engagement with workers, we discovered that at the top of workers’ minds are issues regarding lawn equipment electrification, upskilling opportunities, insufficient wages and compensation, and equipment theft. Table 1 below shows workers’ level of concern with different issues we identified through the preliminary interviews.

<table>
<thead>
<tr>
<th>TABLE 1. WORKER CONCERNS REGARDING THE LANDSCAPING INDUSTRY AND THEIR WORKPLACES (N = 38).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transition to Electric Lawn Equipment</td>
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<tr>
<td>Upward Mobility within the Industry</td>
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<tr>
<td>Pay and Compensation</td>
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<tr>
<td>Job Security*</td>
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<tr>
<td>Consistency in Work Schedule &amp; Hours</td>
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<tr>
<td>Professional &amp; Skill Development</td>
</tr>
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<td>Flexibility in Work Schedule &amp; Hours</td>
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</table>

* From the responses of some workers, this option may have been misinterpreted as workplace safety”
CHALLENGES IN SWITCHING TO ELECTRIC LAWN EQUIPMENT

Across our interviews, surveys, and field engagements, landscaping workers expressed great concern regarding the electrification of lawn equipment sprung by CA Assembly Bill No. 1346. Signed into law in 2021, AB 1346 aims to “eliminate exhaust emissions from small engines that create smog and contribute to global warming” by instituting a complete ban on the sale of small off-road engines, which include lawn equipment, in California by 2024.¹⁴ At the time of our engagement with the workers, only a few months were left before the ban went into effect. The urgency was reflected in workers’ survey responses, as 91% of the workers surveyed were either very or somewhat concerned with the issue (Table 1).

Workers perceive electric lawn equipment to be less efficient, taking more effort and time to do their job. They also reflected that electric equipment powered by batteries does not last long enough for commercial uses. Some workers hold conflicted views about electric equipment, recognizing its environmental and occupational health benefits while remaining skeptical about its efficiency.
Aside from concerns with the performance of electric equipment, landscaping workers revealed a sense of being targeted by various government forces. They perceived both the upcoming ban on the sale of gasoline-powered lawn equipment, as well as renewed efforts by local municipalities to penalize the use of gasoline-powered equipment, as problematic and frustrating. Workers feel that instead of being acknowledged for their contributions to maintaining and beautifying the highly visible areas of our cities, such as front yards and sidewalks, the government is targeting their sector with regulations and fines.

Numerous workers and route owners who identified as workers in the survey shared that these regulations could and have led to both involuntary and voluntary loss of clientele. This is primarily due to homeowners being reluctant to bear an increased service fee to offset the transition to more costly electric equipment as well as the hassles for both businesses and property owners dealing with fines and enforcement associated with using non-electric equipment. Some workers went as far as expressing the possibility of leaving the industry altogether if gas equipment is prohibited.

These concerns above are logical, given that most landscaping routes operate on a low-cost, high-volume model. Route owners strive to keep service costs low to stay competitive, often servicing ten or more homes per day to maintain profitability. This operational approach sets a brisk pace for landscapers’ working conditions, contributing to sentiments that electric equipment would only complicate their jobs. Electric equipment’s potential issues (e.g., battery life, the potential downtime due to recharging, and perceived lower power compared to gas equipment) could prolong workers’ workday hours while unlikely to result in overtime pay, which they see as detrimental.
“My boss would refuse to pay us overtime when a job ran late and workers needed to stay past normal work hours in order to finish the job.”

-Anonymous
LACK OF BENEFITS AND FAIR COMPENSATION

A substantial percentage of the landscaping workers we engaged with expressed strong concern about the level of compensation and benefits. According to the survey responses, the second and third most concerning issues for workers after equipment electrification are upward mobility within the industry and pay and compensation, where 70% and 58% of the respondents indicated they are very or somewhat concerned regarding the issues, respectively (Table 1).

The informal employment and business practice within the landscaping industry, as well as the lack of immigration status for some of its workforce, pose significant barriers to fair compensation and essential benefits such as healthcare, social security, and workers’ compensation. Operating informally also left businesses and workers with limited recourse when disputes arise. Some of our interviews highlighted the difficulties in informal work arrangements where route owners delayed payments to workers as well as customers refusing to pay the business for the work completed by citing fabricated issues. The informal business practice and undocumented status of some workers complicate their ability to speak up, assert their rights, and turn to the authorities for assistance.
“[El patrón] no nos quiere pagar más, y como no tengo estatus legal, no hay seguridad y en cualquier momento te pueden despedir.”

(“[The boss] doesn’t want to pay us more, and since I don’t have legal status, there is no security and they can fire you at any moment.”)

-ANONYMOUS
Considering the occupational safety risks and physical demands associated with landscaping, it is understandable that healthcare emerged as the most beneficial assistance for landscaping workers. Table 2 below shows the workers’ perceived level of benefit provided by each assistance or program where access to affordable healthcare ranked the most beneficial. Although we only provided healthcare as an option in the survey for benefits commonly provided by employers, workers’ comments indicated that they also would benefit from other workplace benefits and assistance, such as paid sick days and workers’ compensation. Workers commonly reflected on the lack of any benefit in the context of not just their respective employers but the industry in general. Some workers shared experiences of physical ailments, with one individual disclosing having had no benefits or assistance to support him through a stroke he experienced in the last two years.

| Table 2: Workers’ Perceived Benefits Regarding Services and Assistance for Their Job (N = 38). |
|---------------------------------------------------------------|---------------------------------------------------------------|
| Access to Affordable Healthcare | English Classes |
| 3% Not Beneficial | 8% Neutral | 24% Somewhat Beneficial | 66% Very Beneficial |
| Expanding Landscaping Skills | 8% Not Beneficial | 16% Neutral | 37% Somewhat Beneficial | 39% Very Beneficial |
| Expanding Plant Knowledge | 5% Not Beneficial | 14% Neutral | 43% Somewhat Beneficial | 38% Very Beneficial |
| Joining Worker Cooperatives | 3% Not Beneficial | 16% Neutral | 51% Somewhat Beneficial | 30% Very Beneficial |
| Technical Support for Starting a Business | 3% Not Beneficial | 24% Neutral | 46% Somewhat Beneficial | 27% Very Beneficial |
| Joining a Workers Association | 0% Not Beneficial | 27% Neutral | 46% Somewhat Beneficial | 27% Very Beneficial |

Workers commonly reflected on the lack of any benefit in the context of not just their respective employers but the industry in general. Some workers shared experiences of physical ailments, with one individual disclosing having had no benefits or assistance to support him through a stroke he experienced in the last two years.
Professional development, inherently tied to better compensation, is seen as beneficial to the workers too. The three subsequent options following healthcare in Table 2, ranked by the percentage of workers who find it highly beneficial, are all connected to professional development. During the interviews, workers shared that acquiring skills such as tree pruning and obtaining a driver’s license serve as a pathway to increase compensation in what they described as a low-paying industry with infrequent pay raises. Aside from monetary benefits, the deep knowledge of plant and landscaping the workers accumulated over the years is also frequently cited as what brings them a sense of pride.

“Que nos dieran beneficios porque yo tengo trabajando 35 años en esto y no hay beneficios en esta profesión.”

(“They [employers] should give us benefits because I have been working in this for 35 years and there are no benefits in this profession.”)

-ANONYMOUS
EQUIPMENT THEFT

The prevalence of lawn equipment theft emerged as a significant challenge for landscaping workers, with nearly 30% of respondents voluntarily expressing their concerns about theft in the open-ended survey questions. This trend remained consistent during our field engagement, where workers frequently shared personal experiences with equipment theft, often unprompted.

In contrast to the active enforcement of gasoline equipment bans in some cities, workers expressed frustration with the apparent lack of protection by law enforcement around ongoing theft issues, resulting in substantial financial losses, often upwards of $1,000, with each occurrence. While we did not directly inquire about employers holding workers accountable for lost equipment, it is plausible that route owners may exert pressure or assign responsibility to landscaping workers if the equipment is stolen under their watch. The potential blame for stolen equipment could indeed contribute to workers’ heightened concerns about equipment theft, as they may feel responsible for any business or monetary loss incurred under their watch. The combination of these challenges, coupled with the already high costs of electric equipment and batteries, may further compound the apprehensions of landscaping workers.
In addition to landscaping workers, we also engaged with route owners or landscaping business owners to understand their business challenges and needs. The result for this section is mainly derived from the four in-depth interviews and field canvassing engagement since we received minimal survey responses (n=6) from respondents who identified as route owners or business owners.

The top themes surfaced for business owners are challenging business operations and electric equipment regulation.
CHALLENGING BUSINESS OPERATIONS: STAGNANT PRICES, NARROW PROFIT MARGINS, AND WORKER RETENTION

The business owners revealed that their landscaping businesses function within narrow profit margins, with fierce competition exerting downward pressure on the market price for their services. The median self-reported annual revenue of the businesses we engaged with is approximately $120,000, which seems low considering the median employee size is four.¹⁷ Based on our estimate of the full-time annual salary for informal workers, which is $41,000, the payroll alone for four employees would exceed the reported revenue. A plausible explanation is that perhaps not all employees work full-time. But even with just two full-time equivalents, the business owners are still left with a modest profit, especially after operational expenses such as equipment and gas.

According to the interviewees, many competitors undercut the market prices by hiring new or undocumented immigrants who are willing to do the job for less compensation. Concurrently, the high inflation rate and surging fuel prices since late 2020—which six out of six survey respondents viewed as very concerning—coupled with the imminent capital costs associated with transitioning to electric equipment, are increasing their operational expenses and reducing the profit margin. The prevalent equipment theft—which, again, six out of six survey respondents viewed as very concerning—and the replacement costs further stress the business finances. This is especially troubling given that customers are unwilling to pay more. One interviewee stated that in an attempt to address the increasing cost of doing business, he increased his service fee by 20%, which led to the loss of customers. Four other survey respondents out of six reported similar experiences. The low willingness to pay more for landscaping services was also reflected by the property owners we interviewed.
The thin profit margin also contributes to workforce retention as business owners might be recalcitrant to pay their workers better. Some business owners expressed concerns about a consistent decline in workers’ commitment to their work, with sentiments such as “no one wants to work hard these days.” In an interview, a business owner who also works in the field asserted that workers are expected to endure challenging conditions such as high heat and that “there should be no reason that you shouldn’t work.” Although we did not inquire about the compensation provided to workers, the workers we spoke with commonly reported that they were not remunerated for the level of effort required of them. The demanding and sometimes harsh working conditions coupled with modest compensation could be significant contributors to the high turnover rate in the industry, as highlighted by business owners in the survey.

Some of the workers’ concerns discussed in the previous section could potentially be addressed with formalized business practices, but the thin profit margin in an industry dominated by informal businesses could be a major challenge to formalization. For example, one business owner who operates her business formally shared about the high cost of workers’ compensation insurance for the landscaping industry, which has an average base rate of 10.5%, four times that of coffee shops.¹⁸ This industry-specific challenge and other expenses associated with formalization, such as payroll taxes, bar or disincentivize businesses to formalize and compensate the workers fairly in an industry that has low entry barriers, high competition, and stagnant prices.
Parallel to the concerns voiced by workers, business owners also have reservations about the efficiency and performance of electric equipment in comparison to gas-powered counterparts. In our survey, we prompted business owners to assess their level of concern across six frequently mentioned attributes related to electric equipment. Notably, performance and efficiency emerged as top concerns, even more so than other financial-related concerns.¹⁹ This, however, doesn’t imply that businesses are neglecting the financial and logistical aspects of transitioning to electric equipment. Common worries include the need to acquire multiple batteries to sustain the use of electric equipment throughout the entire workday, along with the associated costs of procuring additional batteries.

Adopting electric lawn equipment amidst a period marked by heightened equipment theft poses additional hurdles for businesses. The introduction of new regulations is anticipated to amplify the demand for electric equipment in the black market. Batteries, owing to their portable size and compatibility with various non-landscaping tools (e.g., power drills), are particularly susceptible to theft. During our field canvassing, we have noted instances where batteries are left unsecured in the truck bed, charging while landscaping workers are momentarily out of sight.

“I recently had a gas mower stolen, worth $1,500, and had to go to the flea market to purchase another one, maybe a stolen one from someone else”

-ANONYMOUS
In our initial interactions and exploratory research with landscaping workers and business owners, we identified their most pressing concerns and challenges. These encompass the shared worries of both workers and business owners regarding the implications of equipment electrification. There’s a collective desire to see minimal operational and financial disruptions during this transition. Workers express the hope for fair compensation and adequate benefits. Simultaneously, business owners grapple with the ongoing challenges of maintaining profitability amid inflation and other financial stressors.

**IMMEDIATE ACTION & NEXT STEPS**

1. **FACILITATE DIALOGUE**
   Initiate community dialogues to collaboratively address identified issues and concerns among workers and business owners.

2. **CONNECT TO SERVICES AND RESOURCES**
   Connect landscapers with existing services, programs, and organizations to provide immediate benefits, such as enrolling in Medi-Cal or accessing financial support (e.g., subsidies or low-cost loans) for transitioning to electric equipment.

3. **BUILD PARTNERSHIPS**
   Coalesce partners focusing on relevant issue areas (e.g., workers’ rights and protection, equipment electrification) to support and amplify landscapers’ voices.
ACKNOWLEDGEMENTS

We are grateful to Our Future Los Angeles for providing financial support for this research. We are also grateful for the insightful guidance from Joan Ling, Glen Dake, and the landscaping business owners and workers who were gracious enough to share their wisdom and lived experience with us.
APPENDIX A. Landscaping Worker Survey

1. What utilities do you provide landscaping services to?

2. What utility do you reside in?

3. What's your employment status as a landscaping worker?
   - Full time
   - Part time
   - Temporary (for example: only for a few months)
   - On-call, project/seasonal basis
   - Through staffing agency (for example: day labor center)
   - Other: ____________________________

4. Check off your level of concern regarding the following issues as it relates to your work:

<table>
<thead>
<tr>
<th>Issue</th>
<th>Very Concerned</th>
<th>Concerned</th>
<th>Neutral</th>
<th>Not Concerned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional &amp; Skill Development Opportunities</td>
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<tr>
<td>Job Security</td>
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<td>Flexibility in Work Schedule &amp; Hours</td>
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<tr>
<td>Consistency in Work Schedule &amp; Hours</td>
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<tr>
<td>Upward Mobility within Industry</td>
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<tr>
<td>Transition to Electric Lawn Equipment</td>
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<tr>
<td>Fair compensation</td>
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</tbody>
</table>

5. Other concerns:

6. How beneficial would the following services and assistance be to you and your job?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very Beneficial</th>
<th>Somewhat Beneficial</th>
<th>Neutral or Unsure</th>
<th>Not Beneficial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joining Worker Cooperatives</td>
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<tr>
<td>English Classes</td>
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<tr>
<td>Expanding Landscaping Skills (for example: water system installation &amp; repair)</td>
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<tr>
<td>Technical Support for Starting a Business</td>
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<tr>
<td>Expanding Plant Knowledge (for example: how to care for exotic plants)</td>
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<tr>
<td>Joining a Worker's Association</td>
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<tr>
<td>Access to Affordable Healthcare</td>
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</tbody>
</table>

6. What changes would you like to see at work or in your profession?

7. I see myself working in the gardening or landscaping industry for the next ________?
   - Six months or less
   - Six months to one year
   - One to three years
   - Three to five years
   - More than five years

8. What about your work are you most proud of?

   Additional comments: ____________________________

   Phone Number or Email: ____________________________

I am interested in receiving information and invitations to free workshops pertaining to the issues or assistance mentioned in the survey:

YES  |  NO
APPENDIX B. Landscaping Business Owner Survey

7. Have you raised the fee charged to customers in the past 2 years? Why or why not?
   Yes | No
   Comment: ____________________________

8. Are there any services or resources that could help your business grow?
   (for example: loans, business coaching, employee training, retail for new equipment, etc.)
   ____________________________
   ____________________________
   ____________________________

9. What about your business are you most proud of?
   ____________________________
   ____________________________
   ____________________________

10. Does your business currently own any electric lawn equipment? Yes | No

11. Regarding electric or battery-powered equipment, how concerned are you with:

<table>
<thead>
<tr>
<th>Concern</th>
<th>Very Concerned</th>
<th>Concerned</th>
<th>Neutral</th>
<th>Not Concerned</th>
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</thead>
<tbody>
<tr>
<td>Purchase cost of equipment (not including battery)</td>
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<td></td>
<td></td>
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<tr>
<td>Purchase and replacement cost of batteries</td>
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<tr>
<td>Charging batteries during workday</td>
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<tr>
<td>Equipment performance and efficiency</td>
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<tr>
<td>Enforcement and fines with non-compliance</td>
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</tbody>
</table>
ENDNOTES

1. Some survey respondents who self-identified as workers may be route owners or independent contractors in actuality. For example, in open-ended survey responses, some respondents identifying as workers stated that they wished the homeowners, who usually pay the route owners, would pay them better.

2. Sample survey questionnaires can be found in Appendix A, Landscaping Worker Survey and Appendix B, Landscaping Business Owner Survey.

3. Our definition of formal workers is workers whose payroll taxes are paid, either by the employer or by workers themselves if self-employed.


5. Estimated by using normalized difference vegetation index (NDVI) rasters generated using Landsat 2 data (at 30m by 30m resolution) capture in February 2023. Calculated as total areas in the county with NDVI value greater than 0.1 less the area of lands that are road (the area in the county not covered by assessor parcel data), publicly owned, and farmland. The value is then multiplied by ratio of nonbuilding area to building area on residential parcels (76.4% for all 1 to 4 unit properties; calculated with the assessor parcel data) and then multiply again by 75%, the assumption for the percentage of the nonbuilding area on the parcel that is unpaved.


8. Assuming formal workers work eight hours a day (with 20% of that time spent traveling from site to site and breaks), five days a week, and capable of maintaining 2,000 squarefeet of green space per hour.

9. Assuming informal workers work 10 hours a day (with 20% of that time spent traveling from site to site and breaks), six days a week, and capable of maintaining 2,000 squarefeet of green space per hour. The work days per week and work hours per day are suggested by Alvaro Huerta’s interviews with informal gardeners.

10. Additional factors can impact the number of informal landscape services establishments. An example is formal establishments can also hire informal workers which means there can be less informal establishments.


13. Living wage in Los Angeles County in 2022-2023 for a person in a household with two working adults and one child was $49,878, according to Glasmeier, Amy K. Living Wage Calculator. 2023. Massachusetts Institute of Technology. https://livingwage.mit.edu

14. Dan Walters, 2021, California’s gas lawn equipment ban hits the little guys.

15. In most cases, the fines are charged to the landscaping company or workers, however, some cities hold the property owner or tenant liable, such as the City of South Pasadena.

16. A reason contributing to the small sample size of business owners is that route owners might self-identified as workers, as we have observed in the field. Some route owners engaged in conversations with us from the business owner perspective (e.g., discussing operating expenses) later identified as workers when we followed up with phone calls to complete the survey. Another explanation is that route owners might be more cautious in responding to surveys that they perceived to potentially jeopardize their business.

17. Businesses may underreport their revenue. However, our back-calculated revenue using the median properties served (55 properties) and an assumed rate of $200 per house per month results in $132,000, close to the reported $120,000 figure.

18. A 10.5% base rate means, for example, the workers’ compensation insurance premium will be $10,500 for a $100,000 payroll. The average base rate was calculated using data from the California Department of Insurance’s 2023 Workers’ Compensation Rate Comparison.

19. The six options provided in the survey are: purchase cost, battery capacity (i.e., running out of energy during workday), battery life (i.e., battery not storing as much energy over time), logistics associated with charging batteries during workday, performance and efficiency, enforcement and fines with non-compliance.
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