Harvesting Food Insecurity: Exploring Food Access Challenges Among Gilroy's Farmworkers and the Role of SB 1000

Jane Tovar

ABSTRACT

Food insecurity is a widespread public health and environmental justice issue. Despite the abundance of food in the United States, 12% of the U.S. population experienced food insecurity in 2022. Food insecurity arises due to various factors categorized within the 5 A's of food security: availability, accessibility, adequacy, acceptability, and agency. Farmworkers, who form the backbone of the U.S. agricultural economy, consistently face some of the highest rates of food insecurity. This study explored food insecurity challenges among Gilroy's farmworkers and examined the potential of a new environmental justice land use policy, SB 1000, to address these issues. Through a survey assessing food insecurity, the study found significant levels among farmworkers, with 79% of Hispanic respondents and 100% of Hispani farmworkers experiencing food insecurity in the past 12 months. Accessibility emerged as a primary concern, with farmworkers struggling with physical and economic access to food. Semi-structured interviews with SB 1000 policy researchers revealed that the implementation of SB 1000 provides an opportunity to prioritize food justice at the local level. These interventions include prioritizing land for affordable housing and community gardens. By examining the situation in Gilroy, the study offers insights applicable to other agricultural communities and emphasizes the importance of promoting food security and equity.

KEYWORDS

Food security, environmental justice, food justice, land-use planning, agricultural labor, local policy

INTRODUCTION

Food insecurity is a global public health and environmental justice issue. In the latest global report from 2021, 3.1 billion people worldwide, or 42% of the global population, could not afford a healthy diet (FAO 2023). Global hunger is also a pressing issue, with undernourishment affecting around 9.2% of the world's population in 2022 (FAO 2023). These numbers underscore the ongoing challenges in ensuring food security and access to healthy diets worldwide. Despite the United States abundance of food, the issue of food insecurity is still highly prevalent.

According to the most recent reports from the U.S. Department of Agriculture (USDA), 12.8 % of households experienced food insecurity at some point during 2022, a statistically significant increase from 10.2% in 2021. The USDA defines food insecurity as having limited access to adequate food due to a lack of money and other resources that prevent active, healthy living. Of the surveyed households, 5.1% faced very low food security, which is also a significant rise from 3.8% in 2021 (Rabbit et al. 2023). Very low food security is a severe form of food insecurity where a person experiences reduced food intake and disrupted eating patterns (Rabbit et al. 2023). Substantial research has been done on the disproportional burden of food insecurity on Hispanic populations (Driver et al. 2023, Munger et al. 2015, Potochnick et al. 2019). However, limited research has been done on Hispanic farmworkers, especially on the central coast of California (Matias et al. 2020).

The U.S. agricultural industry is an integral and large component of the global food system and the U.S. economy; altogether, it is a \$1.053 trillion industry (Zahniser and Kassel 2024). Additionally, California is the largest overall producer of agricultural goods in the US, producing over a third of the country's vegetables and nearly three-quarters of the country's fruits and nuts (Keough, Gary, et al. 2022). This substantial economic value is not possible without farm labor. Farmworkers provide indispensable labor that produces the country's food supply, boosts the economy, and strengthens our communities. Although farmworkers are arguably the backbone of the US food system, they consistently find themselves in a paradox: they create an abundance of food but face high levels of food insecurity. (Smith and Cuesta 2020, Minkoff-Zern 2014). Farmworkers weed, pick, harvest, and pack our food, yet agricultural

workers remain one of America's most vulnerable populations as they face poverty, unstable housing, harsh working conditions, and food insecurity (Smith and Cuesta 2020).

Increased levels of food security can be achieved in many ways, but this research focuses on how local governments can impact food insecurity through land use policies and their potential to promote food justice. Research has shown that local governments can create positive change, including increased food security, when policies are created through a lens of environmental and food justice (Arnold 2007, Baptista et al. 2023). Considering the farmworkers' experience, they are in urgent need of environmental and food justice. In California law, "Environmental justice" means treating all people fairly, regardless of race, culture, or income when it comes to creating, adopting, carrying out, and enforcing environmental laws, regulations, and policies (Cal. Gov. Code, § 65040.12, subd. (e).).

In 2018, SB 1000 went into effect requiring local governments to identify environmental justice communities (called "disadvantaged communities") in their jurisdictions and address environmental justice in their general plans (Bonta 2019). According to recent research, solutions at the local level are immensely effective because they have a unique opportunity to create policies and involve residents in land-use practices to transform patterns that have adversely affected low-income and communities of color (Zuñiga and Méndez 2023). This suggests that local governments can promote and advance food justice by thoughtfully designing and managing their development to address environmental justice challenges (Nunes 2017). The Berkeley Food Institute recently researched the application of SB 1000 for food justice in Gilroy. My research aims to fill a gap by focusing on food justice for farmworkers in Gilroy, who are vital to Gilroy's agriculture-based economy.

To better understand the link between farmworker food insecurity, land use planning, and food justice I studied farmworkers in Gilroy, CA, one of the first cities in California to integrate SB 1000 into its general plan. My first objective sought to uncover the scope of this issue by measuring the prevalence of food insecurity among Gilroy farmworkers with surveys that utilized a USDA standardized tool. These surveys also addressed my second objective which sought to better understand the factors that contribute to farmworker food insecurity and how these factors relate to aspects of the city that are created from land-use planning. Lastly, I used the information from the surveys to assess the role of Senate Bill 1000 in addressing farmworker food insecurity and triangulate data from interviews with policy researchers and Gilroy

stakeholders. Through this research, I aim to provide insight into local policy strategies that can foster food security for farmworkers beyond Gilroy and how cities can plan for food justice.

I hypothesize that food insecurity levels among farmworkers are extremely high thus it is a significant urgent matter that should be highly prioritized at any and all government levels and capacities. I predict that the primary factors affecting farmworkers' food security are their economic and physical access to food, primarily due to the lack of affordable housing and transportation in the area. Although the city of Gilroy's environmental justice element is considered comprehensive by state law standards, I believe that Gilroy's environmental justice element has apparent weaknesses. Therefore, I predict that my document analysis and interviews will reveal recommendations for Gilroy to better address the needs of their farmworkers.

BACKGROUND

The farmworker experience in California

Farmworkers' food insecurity in California is an environmental justice issue. Despite performing labor-intensive work, they often cannot reap the fruits of their labor. Moreover, their work is closely connected to various environmental factors, including the impact of climate change on agriculture and the risk of pesticide exposure. Elena Esparza's story highlights environmental injustices that farmworkers experience. Her work begins at 3:30 am to beat the heat, and throughout the day she picks ten cases at \$2.15 each, earning her \$46.30 for the day, Elena hopes to reach \$8,000 by season's end (Lopez 2007). At 4:15 pm her earnings are stretched thin, barely affording necessities like beans, rice, and onions for her family (Lopez 2007). Fruits and vegetables in abundance in the fields she tends become a luxury beyond her reach at the grocery store. Such experiences underscore the harsh reality faced by farmworkers, whose labor sustains the agricultural industry yet leaves them struggling to make ends meet.

Farmworkers are exposed to heavy farm machinery, posing high injury risks and resulting in an average death rate five times higher than that of workers in other industries (Ahn et al. 2004). Furthermore, climate change causes extreme weather events and droughts, that reduce employment opportunities and lower the income of workers. For example, the drought experienced in California in 2015, led to the elimination of 10,100 temporary farm positions

(Howitt et al. 2015). Throughout California, there exist agricultural-based cities where farmworkers experience varying degrees of this environmental injustice.

A Brief history of Gilroy's agricultural identity and land-use

Gilroy, California, is located in southern Santa Clara County near Silicon Valley and is also home to significant agribusiness. It stands 35 miles away from San Jose and strategically intersects with U.S. 101, providing easy freeway access to both the Bay Area and the Central Valley, renowned as the "food basket of the world" ("Community Profile of Gilroy, CA" 2024). Agriculture plays a vital role in the city's identity and economy, deeply rooted in a rich history of agricultural products and processing ("City of Gilroy 2040 General Plan" 2020). Over the years, the city's agricultural economy has continued to expand with the addition of prunes, tomatoes, flowers, and onions ("Community Profile of Gilroy, CA" 2024.).

The area transitioned from a rural farming town to a regional agricultural, commercial, and industrial center due to demand from the California Gold Rush and expansion in the late 19th century (Adema 2009, Escamilla 1997). During the construction of the transcontinental railroad, Chinese workers were hired for cheap labor to work in the grain, tobacco, fruit, and seed industries. The number of Chinese laborers grew, leading to the establishment of a Chinatown that was later destroyed by fire and caused Chinese people to create Chinatowns in San Jose and San Francisco (Adema 2009).

Japanese migrants seeking work arrived as tenant farmers and replaced the population of Chinese migrants. One Japanese farmer, Hirasaki, built a farming empire by growing garlic commercially in the 1940s, establishing the largest commercial garlic farm in the United States and marking the beginning of Gilroy's garlic identity After WWII, Japanese residents were relocated (Adema 2009, Escamilla 1997).

From the 1950s to the 1990s, Gilroy experienced a population boom driven by the expansion of the high-tech industry in San Jose, transforming the city into a bedroom community or commuter town for San Jose. During the mid-1950s, city planning documents indicated shifts in land use patterns associated with this transformation (Gilroy Calif. 1995). By the1980s and 1990s, many agricultural ranches were converted into single-family home subdivisions, alongside the development of upscale specialty markets and chain retail outlets (Adema 2009,

Escamilla 1997). To manage this growth, the city adopted Ordinance 79-82, the Residential Development Ordinance (RDO), in 1979 (Adema 2009). Later in 2000, the earliest mention of "Farmworker Housing" appeared in the *City of Gilroy Consolidated Plan of 2000* (Gilroy Calif. 1995). The RDO continues to regulate growth, including the allocation of building permits for migrant worker housing.

Today, agriculture remains a cornerstone of the economy, now primarily relying on the labor of Hispanic immigrants rather than Chinese or Japanese farmworkers. And a quick drive around town reveals abundant nurseries, tree farms, orchards, fields of various produce, and horse farms encircling the city. A telling example of Gilroy's blend of commercial and agricultural roots is the Walmart shopping center situated right next to agricultural fields. Christopher Ranch L.L.C., the country's leading fresh garlic producer, is one of the largest employers in Gilroy (Christopher 2023). The company employs 1,200 farmworkers during the summer season and maintains a year-round full-time workforce of 800 in its packaging facilities (Christopher 2023).

Due to Gilroy's agricultural history and land-use practices that prioritized single-family housing, the city currently faces challenges in balancing its growing suburban population with its agricultural and commercial food processing sector (Adema 2009). The city is divided into two distinct Gilroys: the west, with new homes and golf courses in gated communities and strip malls catering to affluent residents, and the older downtown area with Victorian homes, 1920s bungalows, and poorly maintained low-income apartment complexes. From my last visit to Gilroy in the beginning of April I noticed that efforts to revitalize downtown have resulted in the establishment of new breweries that mainly only attract the affluent suburban crowd.

Gilroy's cconomy, the garlic festival, and farmworkers

Gilroy has earned its fame as the "Garlic Capital of the World," hosting a yearly Garlic Festival that attracts over 100,000 visitors to the small city of 58,000 residents ("Community Profile of Gilroy, CA" 2024). As part of Santa Clara County, the agricultural production value reached \$358,862,000 in 2022 (Alvarado et al., 2022). Gilroy's Christopher Ranch is the sole producer of garlic and accounts for \$2,692,000 of that value, utilizing 392 acres of land for garlic cultivation (Alvarado et al., 2022). Garlic must be picked by hand during the summer months,

usually beginning in May or June and concluding in August or September, when temperatures in Gilroy typically reach highs of around 80 degrees Fahrenheit every day ("Field to Fork – Christopher Ranch" 2023, "Weather averages Gilroy, California" 2023). Additionally, mushrooms are another significant crop harvested by farmworkers in Gilroy. Considered the second most valuable agricultural produce in the county, mushrooms contribute substantially to Gilroy's agricultural economy, valued at \$86,654,000. Mushroom harvesting is a meticulous process, typically harvesting one mushroom by hand at a time (Alvarado et al., 2022). Much of Gilroy's agricultural success can be attributed to the labor of farmworkers, who are predominantly Latino or Hispanic. This demographic makeup is reflected in the city's population, where 58.3% identify as Hispanic or Latino (U.S. Census Bureau 2022).

Given its proximity to Silicon Valley, Gilroy's housing market reflects exorbitant prices. The average sale price of a home in 2023 is \$995k, nearly a million dollars ("Gilroy Housing Market" 2023). Simultaneously, the average rent for a one-bedroom apartment is \$1,943 per month ("Average Rent Prices in Gilroy, CA" 2023). This contrasts sharply with the considerably low wages earned by farmworkers in the United States. In 2022, the average earnings of all farmworkers amounted to \$16.62 per hour (Costa 2023). Such high housing costs alone could pose a challenge in balancing the needs for food and shelter.

Environmental justice in city planning

This research is based on the growing literature on the intersection and integration of environmental justice into general plans and land use planning (Arnold 2007, Baptista et al. 2023, Brinkley and Wagner 2022). Each municipality maintains a comprehensive general plan, designed as a strategic framework to realize the community's long-term vision. General plans serve as critical instruments, offering systematic guidance to jurisdictions in formulating and refining their overarching strategies for urban development and growth. ("General Plan Information" 2023). At the forefront of addressing environmental justice challenges, local planning and zoning officials rely on land use planning and zoning. Although not the sole contributors to environmental issues, these tools often hinder efforts to address justice concerns. However, they remain crucial for effecting positive changes, prompting initiatives by some states and local governments to employ them in addressing these issues (Johnson and Svara 2011). This

research also explores the intersection between environmental justice, and food justice, and more specifically investigates how these elements within a general plan can contribute to improving accessibility, one of the pillars of food security, to assess their potential impact on overall food security.

Many factors result in the disproportionately negative effect on low-income communities and BIPOC communities. Given Gilroy's land-use history it is not exempt from the United States' historically discriminatory land use, transportation, and housing policies. These policies have disproportionately exposed communities to environmental hazards and restricted access to resources such as affordable housing, nutritious foods, and open spaces (Rothstein 2017). Zoning laws are one of the most universal legal tools used to shape the character and built environment of municipalities and discriminatory practices lead to a much greater impact than other policy practices (Maantay 2002). Historically, city planning has been used to perpetuate inequality, but equitable justice-oriented planning has the potential to reduce these disparities (Johnson and Svara 2011).

What is SB 1000?

California cities are now required to plan for justice in their general plans. In September 2016, Governor Jerry Brown signed into law SB 1000: The Planning for Healthy Communities Act and it eventually took effect on January 1st, 2018 (Zuñiga and Méndez 2023). This Senate bill mandates that cities must identify "disadvantaged communities" with CalEnviroScreen 4.0 and local knowledge to integrate environmental justice into their General Plan city document (Zuñiga and Méndez 2023). As defined by the California Environmental Protection Agency, a disadvantaged community is characterized by low income, high unemployment, low home ownership, high rent burden, sensitive populations, or low levels of educational attainment. ("CalEnviroScreen Public Comment Letters"). California policies have directly employed the term "disadvantaged communities" since the 1990s. This research recognizes that although there has been public pushback against the term "disadvantaged communities" due to its negative connotations and limited consideration of racial factors, it remains widely used in policies (Haaland and Ortiz 2022). Despite efforts to replace the term, it persists in policy discussions and documents. However, it may not fully encompass the complexities of communities facing

environmental injustices. The goal of SB 1000 is to reduce unique or compounded health risks in disadvantaged communities by improving and increasing food access, safe and sanitary homes, improving air quality, and reducing pollution, among other factors. SB1000 represents a potential avenue for addressing the enduring legacies of environmental racism and, ideally, fostering improvements in this regard (Charisma 2024).

RESEARCH FRAMEWORK

The intersection between environmental justice, food justice, and food security

Environmental justice and food justice are separate social movements, but they are deeply intertwined through their center on equity and the overall improvement of human well-being (Horst 2017, Schlosberg 2007). The Gilroy 2040 General Plan states that environmental justice ensures that individuals from all racial, cultural, and income backgrounds are treated equitably in the creation, adoption, and enforcement of environmental laws, regulations, and policies. Conversely, food justice is primarily concerned with food sovereignty and access (Heynen et al. 2012). Thus, food justice is embedded within the overall environmental justice movement. Environmental justice can not exist without food justice and vice versa. Emphasizing that issues in the food systems are environmentally based issues but not always (Brinkley and Wagner 2022). Thus, in addressing food justice through city planning, environmental justice is also being upheld. A helpful reprsentation of this idea can be found in Figure 1.



Figure 1. Intersection of Environmental Justice, Food Justice, and Food Security

Food security vs food sovereignty

Food security has been viewed through a multitude of lenses. For example, in the 20th century, it was viewed as an underproduction of food in which the solution was to advance technology to grow more food (Chappell 2018, Pinstrup-Andersen 2009). There is what is known as the Five A's framework that incorporates years of changes and general understandings of food security (Rocha 2007 and Chappell 2018). The Five A's are availability, access, adequacy, acceptability, and agency (Rocha 2007, Chappell 2018, "Centre for Studies in Food Security" 2016). There are many critiques of the definition of the term "food security" because it fails to make political claims or challenge the power structures that control the global food system and local food system for that matter (Minkoff-Zern 2014, Jarosz 2014, Clapp 2014). Academics argue that the term "food sovereignty" challenges deep inequalities. However, I agree that food sovereignty addresses structural inequalities present in environmental injustices; I choose to focus this research under the framework of food (in)security and, more specifically, the "accessibility" pillar of food security because this pillar is specifically stated to be addressed in SB 1000. The act is a tool for implementing food security into community goals.

Food accessibility in policy

The access pillar is defined as a person's physical and economic ability to acquire food and this is the pillar of focus for this research (Rocha 2007, Chappell 2018, "Centre for Studies in Food Security" 2016). Food accessibility is seen as a part of environmental justice because food access policies prioritize access to healthy and affordable foods for the justice and health of BIPOC communities (Blackwell 2016). Examples of this could be opening new grocery stores in different areas of town, farmers' markets in underserved areas, and healthy food in corner stores. Additionally, there are nutrition-focused policies that work to decrease concentrations of unhealthy foods in certain areas or provide community education programs on healthy eating (Blackwell 2016, Cabannes and Marocchino 2018). Gilroy's general plan has policies that focus on both the physical and economic ability to acquire food. Policies that are concerned with physical ability include transportation and zoning of grocery stores, while economic ability focuses on ways of increasing SNAP acceptance, as well as creating more job

opportunities("General Plan Information" 2023). Policy decisions significantly influence the actions of key stakeholders in agriculture, shaping economic performance and progress toward agricultural, nutritional, and food security goals, underscoring the critical role of SB 1000 in addressing the issues central to this research (Haggblade et al. 2019).

METHODS

Study site and population characteristics

Study population

The study population consisted of adult Gilroy residents of Hispanic origin. According to the U.S. Census Bureau, 58.8% of the city's population is Hispanic or Latino (U.S Census Bureau 2023). In the United States, individuals are considered to be of Hispanic or Latino origin if they are from Mexico, Cuba, Puerto Rico, South or Central America, or another Spanish-speaking culture, regardless of race (Humes et al. 2011). Although farmworkers are not exclusively of Hispanic origin, the National Agricultural Labor Survey reports that 78% of farmworkers identify as part of a Hispanic origin group: 60% as Mexican, 10% as Mexican-American, and 8% as Chicano, Puerto Rican, or other Hispanic (Gold et al. 2022). Additionally, foreign-born workers often relate more closely to a specific national origin rather than the broader labels of Hispanic or Latino (Wirth et al. 2007; Gold et al. 2022). By distributing the survey to the general Hispanic population in Gilroy, I could more easily gather survey responses, which sometimes included farmworkers, who could be identified with a specific question in the survey. This approach provided a safety net when directly targeting farmworkers was challenging. Additionally, this demographic choice facilitated data collection on two groups that have historically faced a high risk of food insecurity (Wirth et al. 2007).

Study site

The selection of Gilroy as the study site was due to its rich agricultural history and unique location at the crossroads between the Bay Area, the Central Coast, and the Central Valley offer

distinct insights into food insecurity, particularly among farmworkers. Despite the city's evolving economic landscape from Silicon Valley, agriculture remains a significant sector in Gilroy. Key agricultural industries, such as Olam, Christopher Ranch, Syngenta, International Paper, and Monterey Gourmet Foods, continued to thrive in the area, providing a unique context for my research ("2040 General Plan | Gilroy, CA - Official Website" 2020).

More specifically, I concentrated my study in the Equity and Engagement District (EED) that is in the General Plan (Figure 2). Document creators identified this district for the purpose of their environmental justice policies. The EED was created from local knowledge and the CalEnviroScreen 3.0, which uses 20 different indicators that provide health, environmental, and socioeconomic measures (CalEnviroScreen 2023).

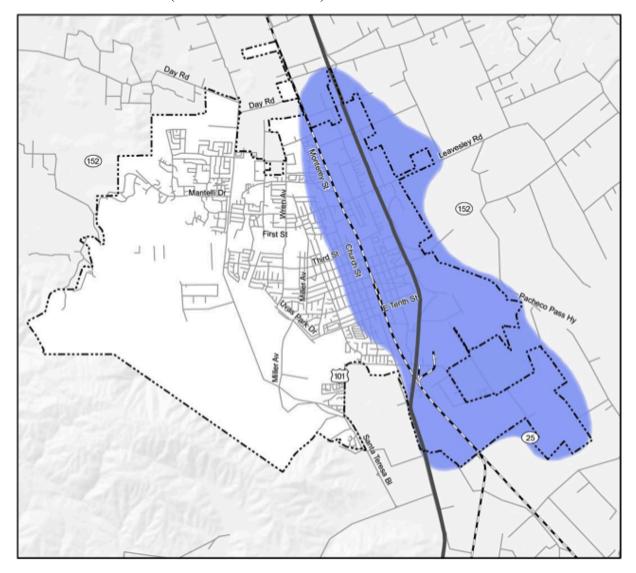


Figure 2. Equity and Engagement District in Gilroy, CA. Source: City of Gilroy: 2040 General Plan

Survey design and data collection

Survey structure

The survey, distributed only in a Spanish version, was designed with three main sections. The first section contained the six-question USDA Food Security assessment, all of which were multiple-choice questions. A full list of these questions can be found in Appendix A.

The second section included 27 questions created to address the 5 A's of the food security framework (availability, accessibility, adequacy, acceptability, and agency) as much as possible. There were four questions connected to availability, eight questions connected to access since SB 1000 focuses on this, five questions to adequacy, 3 to acceptability, and 2 to the agency. Additionally, I created five questions to collect information on how current SB 1000 environmental justice policies address farmworker needs. These questions used a mix of multiple choice, ranking, and Likert scale formats. A complete list of these questions can be found in Appendix B.

The third section consisted of demographic questions. I asked respondents for their national origin, gender, age, years of education, documentation status, income, and renter/owner status. In this survey section, I also asked participants if they were currently farmworkers or had been in the last year. Each demographic question was completely optional, and the respondents could skip it. I designed the survey to take 8 to 10 minutes to complete. At the end of the survey, I asked participants if they wanted to enter a raffle to win one of five \$25 Visa Gift Cards.

Survey design

As mentioned before, I used the USDA-developed 6-item standardized survey tool to assess the prevalence of food insecurity among farmworkers; the USDA offers three survey options for measuring food insecurity; the most notable difference is the length of each survey. The 18-item household survey is the most comprehensive version and provides detailed insights into a household's situation, including the food security of the children in that household. However, the length imposes a high response burden. The 10-item survey reduces respondent

burden but omits questions about children's food security due to sensitivity concerns. The 6-item survey is the shortest and least burdensome but provides the least holistic view of a person's food insecurity.

I selected the 6-item version because it does not include questions about children's food security because this kind of sensitive information increases the likelihood of participants skipping questions. The USDA provides a coding rubric for survey responses, classifying individuals into one of three categories: high or marginal food security, low food security, or very low food security. Depending on their responses, they got a 0 or a 1 for each question, resulting in a final raw score of 0-6. A raw score of 0-1 corresponds to high or marginal food security, a raw score of 2-4 corresponds to low food security, and a raw score of 5-6 corresponds to very low food security. A visual representation of this coding rubric can be found in Appendix A.

I was interested in showing the contrast between farmworkers' food security status and that of Santa Clara County's general Hispanic population and the general population of Gilroy and Santa Clara County. Gilroy and Santa Clara's general population's food security status is publicly available online through the UCLA Center for Health Policy Research (CHRP) database. Each year, the CHRP collects data on several public health issues by distributing the California Health Interview Survey (CHIS), which utilizes the six-item USDA food security. The data collection methodology of the CHRP was another factor in my choice to measure food security with the six-item USDA survey. Consistency between my data collection and the CHRP in the data collection method necessitated using the six-item version.

The food security status of the Hispanic population in Santa Clara County was not publicly available through the CHRP, so I submitted a data set request form to Feeding America's annual research project, Map the Meal Gap. Feeding America's research is done annually and provides food insecurity estimates for racial and ethnic groups ("Feeding America: Map the Meal Gap," 2022). A week later, I got the data sent to my email and used it for my results.

Throughout January and Februrary with the guidance of Dr. Lucy Diekmann, a professional food security and food systems researcher, I developed the second section of the survey to identify factors contributing to food insecurity in Gilroy. Dr. Diekmann provided feedback on a list of 30 potential questions, helping me finalize the survey.

Data collection

Using Qualtrics XM, I created the survey and employed convenience sampling. In the months of March and April I approached individuals outside of Arteaga's, a popular Mexican grocery store, and other locations frequented by farmworkers such as 3 local laundromats and San Ysidro Park, located in the EED. To encourage participation, I offered a \$10 gift card only to the people I approached through the convenience sampling. Many people declined due to fears about survey anonymity and potential deportation, despite my assurances. To expand outreach, I used snowball sampling by asking my mother, a former farmworker, to introduce me to two farmworker friends willing to participate and then they gave me contacts for other farmworkers. The farmworkers I contacted agreed to participate in the survey if I visited their homes, read the questions aloud to them and filled out the survey for them. I conducted 8 surveys using this approach. I also contacted the director of Nueva Vida (translates to "New Life), a community organization in Gilroy that promotes community and activism among Hispanic residents, and asked them to distribute my survey to any farmworkers they personally knew.

To analyze the survey responses, I used the Qualtrics embedded features to find descriptive statistics and I also went through my field notes and organized it into emergent themes as well as experiences that I thought should be shared.

Informal farmworker home interviews

Reading the surveys aloud in farmworkers' homes enabled in-depth discussions about each question, giving me a more nuanced understanding of specific issues. However, the farmworkers were cautious about maintaining their anonymity due to immigration concerns and fear that their employer or the city government might find out about their concerns, complaints, or experiences. As a result, they declined to be audio recorded. All farmworkers also did not want their experiences noted in writing at the time of filling out the survey. I understand that the survey coupled with the note-taking probably felt too invasive and overwhelming since it is all sensitive information and building trust amongst marginalized communities is imperative in this type of research. Nevertheless, they allowed me to write about what I learned after I left their homes. As soon as I left their homes, I wrote down every detail I could remember in my notebook, totaling 12 pages of detailed field notes from the conversations and observations during the farmworker home visits.

SB 1000 data collection

SB 1000 document analysis

I tagged and coded the 231-page City of Gilroy 2040 General Plan to assess SB 1000's role in achieving farmworker justice and identify potential gaps and areas for improvement. I did this simultaneously throughout my survey creation and interview question creation to ensure my conversations addressed the gaps that I would find in the document. Another reason I did this was to create survey questions about some environmental justice policy solutions on which the document emphasized their energy.

Beyond the policy: semi-structured interviews and participant observation collection

To gain a better understanding of the role and nuances of SB 1000 in increasing food access and promoting environmental justice for farmworkers, I conducted a total of three semi-structured interviews. Two interviews were with policy researchers from the Berkeley Food Institute who have been studying SB 1000 implementation in Gilroy for the past year and a half. These interviews lasted an hour each and aimed to assess the opportunities, challenges, and limitations of SB 1000's inclusion in Gilroy's 2040 General Plan. The third interview was with the vice president of a major farm and produce packaging employer in Gilroy. This interview aimed to further understand the context of the farmworker population in Gilroy as well as explore the relationship between farmworkers and major agricultural employers.

I conducted the interviews with the policy researchers via Zoom. The interview with the vice president was conducted over the phone. I used the same list of questions for the policy researchers and a separate list of questions for the vice president. To ensure full engagement, I obtained permission to record each interview and utilized the real-time transcription feature on my Google Pixel phone. A full list of these interview questions can be found in Appendix C.

I downloaded the rough transcript from my phone to my laptop. I double-checked the transcript, listened to each recording again, and manually corrected each transcription. I

uploaded these audio transcripts onto Taguette, a qualitative data analysis (QDA) computer software, to code the material for emergent themes (Rampin et al. 2021).

I attended a community meeting in Gilroy on March 21st, held in the cafeteria of Gilroy High School. Hosted by the Berkeley Food Institute and policy researchers studying SB 1000, the event was called 'Gilroy's Food Justice Vision: Making the City's Equity Goals a Reality.' It focused on the implementation of SB 1000 in the city and ways to expand access to healthy, fresh foods. Over a hundred people attended the meeting. I went around to 12 different tables, intently listened to the conversations, and took 10 pages of notes in my field notebook on the round-table discussions. The presenters provided the following questions each table should answer in their discussions.

- 1. Were you aware of this law and/or elements in Gilroy's General Plan?
- 2. Does the element capture your community's needs?
- 3. Has your community been engaged at all in the planning process or any other activities that address EJ?
- 4. What are you still curious about after the presentation of what other questions do you have? What feels like a good next step for you?
- 5. Are there any other areas outside the Equity Engagement District (EED) zone the city should be paying more attention to?

RESULTS

Ultimately I collected 67 survey responses. Forty-eight of the responses came from individuals of Hispanic origin, and 19 were from Hispanic farmworkers. Of the 67 surveys, 38 were completed in its entirety. The survey took participants at least 10 minutes to complete instead of the 8 minutes it was designed to take.

I conducted a total of 3 semi-structured interviews, each providing valuable insights. Two one-hour interviews were with SB 1000 policy researchers, who shared their expertise on the subject. The third interview, lasting 45 minutes, was with the vice president of Christopher Ranch L.L.C., offering a unique perspective from an agricultural stakeholder in Gilroy. These interviews were instrumental in enriching my understanding of the agricultural landscape.

Survey Section I: measuring and comparing levels of food insecurity

Food insecurity among Hispanic population

The overall prevalence of food insecurity among Hispanic survey respondents was 79% (Figure 3). Only 21% of survey respondents reported experiencing high or marginal food security, 35% reported experiencing very low food security, and 44% reported experiencing low food security.

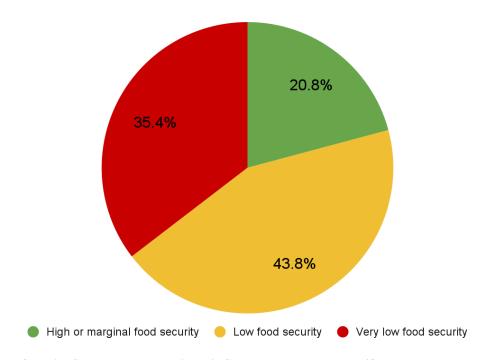


Figure 3. Food Security Status among all Hispanic Survey Respondents (n=48).

Food insecurity among farmworkers

Of the 19 Hispanic farmworker responses, one did not complete three of the six food security assessment questions, so I could not include that survey in the food insecurity assessment for farmworkers. The other 18 surveys had all 6 USDA Food Security questions answered, which allowed me to make this assessment. The overall prevalence of food insecurity among farmworkers participating in the assessment was 100% (Figure 4). 0% of respondents reported experiencing high or marginal food insecurity 61% reported experiencing very low food security, and 39% reported experiencing low food security.

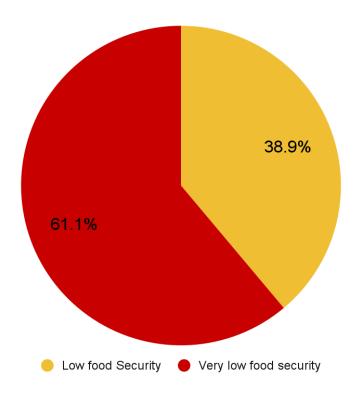


Figure 4. Food Security Status among all Hispanic Farmworker Survey Respondents (n=18).

Comparing food insecurity rates

After assessing the levels of food insecurity among Hispanic individuals and Hispanic farmworkers, I found that farmworkers had significantly higher levels of food insecurity than their counterparts. Farmworkers also had the highest food insecurity rate among all other general populations (Table 1). Compared to the food insecurity rate among the Hispanic or Latino population of Gilroy, the Hispanic population of Santa Clara, and finally, the general population of Santa Clara.

Table 1. Comparing Food Insecurity among Hispanic farmworker survey respondents, Gilroy's Hispanic population, Gilroy's general population, and Santa Clara's general population. Data from the 2020 California Health Interview Survey and 2021 Feeding America

Location	Population Group	Food Insecure Percentage (%)
Gilroy, CA	Hispanic Farmworkers	100%

	Hispanic Population	12%
	General Population	10.1%
Santa Clara County	General Population	4.1%

Survey Section II: food insecurity connections

The section covered aspects of food security based on the 5 A's, which were then connected to things such as housing, transportation, farmers markets, and gardening. This was interconnected with the key environmental justice policies and themes that were found in the General Plan after tagging and coding the document.

Availability

Availability is concerned with the supply of food. I had two multiple-choice questions and two true or false statements regarding this topic in my survey. Notable results emerged from one true or false statement, with 28 participants marked false to the statement, "The stores where I live do not sell a lot of fruits and vegetables." This shows people did think that grocery stores or other places where they got their groceries had a good supply and selection of fruits and vegetables.

Adequacy

Six survey questions were related to adequacy which covers food safety, nutritional quality, and the environmental sustainability of production. Two questions revealed the most notable results. When asked how satisfied farmworkers were with the quality of food, I found that 36% of respondents were really satisfied, 48% were somewhat satisfied, and 16% were not satisfied.

The following question was open ended and asked individuals to elaborate on the reasoning for that rating. Satisfied survey respondents said they were happy with the quality because there was always a supply, and other family members helped buy groceries. Somewhat

satisfied respondents noted that the reasons for this ranged from taste, how the food is grown, to nutrition. Many mentioned wanting to buy nutritious and/or organic food, but that it was too expensive. Other respondents wrote that they wished their food was grown with fewer chemicals, and some said that they believed the way fruits and vegetables were grown made it less tasty. Unsatisfied people mentioned their reasoning was because the food they bought always seemed like it was about to expire and that they only had money to buy from the produce section at the 99-cent store, a continued sentiment that money was not enough. The home visits revealed issues not captured in the survey, including reports of poor-quality food from food pantries. Many noted during pantry visits that the produce was of low quality and almost nearly expired (Table 2).

Access

The largest portion of survey questions in the second section of my survey were related to food access since SB 1000 focuses on improving this with land-use policies. Questions focused on both the physical and economic access to food. The physical access questions connected to transportation topics, When asked where they bought their food, 77% of respondents said they primarily shopped at supermarkets, specifically Walmart and Cardenas. Both grocery stores are located in the EED, and Cardenas is specifically a Hispanic grocery store. Regarding reliable transportation to access food, 54% of respondents said they often had access, 30% said sometimes, and 8% said never. Among farmworkers, 33% reported frequent access to reliable transportation. Of all the respondents 60% said they used their own car, 25% used ride sharing apps or got rides from friends and family, and only 8% used public transportation and specified that they used the bus. Two respondents marked that walking to grocery stores was their primary way of transportation. One respondent specified it took them 40 minutes and another specified it took them an hour.

Regarding economic access to food; respondents were asked how often they could afford to buy the food they wanted. 53% said they could sometimes buy enough food of the type they wanted, only 8% said always, 18% said frequently, 15% said rarely, and 8% said never. On that note, only 9 participants said they used EBT to pay for food, 3 of those being farmworkers. Additionally, 26 participants marked they never used EBT.

Additionally farmworkers were asked to share their hourly wage if they were comfortable. Wages ranged from \$14.50 to \$19.75 an hour. The average answer was \$16.65 an hour (n=10). Two farmworkers shared their pay in weekly format, one farmworker stated their weekly pay came out to \$500 and another said \$640.

From the document tagging I found that the city had 3 separate policies related to the creation of farmers markets and farm stands and the acceptance of EBT as a means to increase physical and economic access to food. From the survey I found that 2 participants frequently used farmer's markets, 15 sometimes used, 11 used them very little, and 11 never used them. From the home visits I also got additional feedback that farmworkers did not feel culturally connected to the idea of a farmer's market, because when they did attend they noticed mostly white people were in attendance and they were located in the more affluent parts of town (Table 2). Additionally, 6 participants strongly disagreed with making farmer's markets a priority for the city. In contrast, 5 disagreed, 9 were neutral, 7 agreed, and 8 strongly agreed.

Farmworkers in theory have access to food since they harvest fields of fruits and vegetables but when they were asked if their employer allowed them to bring home any produce. Two of the farmworkers said they were allowed to bring home food and 6 farmworkers marked that they were not allowed to bring food home.

Acceptability

Acceptability is the connection between food and culture. There were three questions in my survey that connected to subtopics in acceptability. These questions overlapped with the open ended questions about quality of food in stores and pantries.

In open discussions at farmworkers' homes, I gained insight into the cultural aspects of food security. People emphasized the cultural connection between farmer's markets and their preferred types of food. Farmworkers noted that the farmer's markets they have visited are not located near their homes (Table 2). A few also expressed a desire for *mercados*, which are similar to farmer's markets but farmworkers expressed that they foster community and cultural bonds among Hispanic people. They also expressed that *mercados* often feature Hispanic music, prepared fruit, and aguas frescas which they wished to see at Farmers markets.

Agency

Agency is about people's ability to affect the food system. My document analysis of the city's General Plan revealed that it was comprehensive regarding environmental justice food policies. Tagging and coding the document showed that policies addressed food access, nutritional outcomes, local food production, agricultural land protection, and equity. However, edible landscapes or growing food in community gardens were never mentioned. When asked if farmworkers would be interested in growing their own food if they had access to community gardens or low cost land for growing food, 13 or 68% of farmworkers said they would be really interested. Only 3 farmworkers said they would be somewhat interested, and 0 farmworkers said they would not be interested.

The last question of the survey asked all survey respondents what level of power farmworkers held in the ability to influence policies. 44% of respondents said that farmworkers hold significant power to influence, 8% said farmworkers had some power, 14% said very little power, 22% said they held no power, and 11% preferred not to answer.

Table 2. Key themes from farmworker informal home visits conversations. From fieldnotes and translated to English.

Theme	Subtheme	Examples
Housing	Many farmworkers have stayed in the same plate because they can't afford the higher rent prices if the	
	Housing Costs	A farmworker family said they couldn't afford rent without two full-time incomes. One works at Christopher Ranch, and the other at a nursery, with one biweekly check each going to rent and the others for bills and food.
	Affordable Housing Development	People felt it was unfair that new housing is often built on the west side, while the east side sees little development.
Food Pantries	Accessibility	Several people said they try to visit food pantries, but the hours conflict with their work schedules.
	Adequacy	Several people said food at pantries is often nearly spoiled, so they only take canned and dried goods.

	Stigma	Several people felt uncomfortable using pantries, believing they work hard and should be self-sufficient	
ment fa		After working at Christopher Ranch for 10 years, one farmworker needed shoulder surgery. They believe their chronic shoulder pain is due to repetitive garlic-picking tasks and garlic manufacturing tasks.	
	Chronic Pain	One farmworker expressed that they are trying to find a different job due to their chronic back pain from bending over so many times to pick up heavy equipment or produce, but that finding new jobs is difficult because they don't speak English.	
	Dissatisfaction	One farmworker said that after working at Christopher Ranch for over 15 years, they earn the same wage as new hires, \$17 per hour, with pay increases only tied to minimum wage changes. They believe their loyalty should be rewarded with a raise.	
Farmer's markets	Cultural connection	Many farmworkers felt farmers' markets weren't with them in mind.	
		Farmworkers said they might go to farmers' markets if they accepted EBT and focused more on produce than artisanal goods.	
	Lack of awareness	Most farmworkers didn't know where or when farmers' markets happen.	
	Lack of awareness	Some farmworkers were unfamiliar with the concept of farmers' markets.	
Racism	Marginalized	Many farmworkers felt "forgotten" by the city.	
officials racism. Redlining Many farmworkers felt the city was pl		Many farmworkers accused city government officials of racism.	
		Many farmworkers felt the city was physically divided and they were excluded from decision making.	
	Marginalized	Many farmworkers believed nothing would change for them because the city prioritized building more things for white, affluent neighborhoods. One example was the construction of two new Starbucks on one street in the last two years instead of creating more affordable housing.	

Survey section III: demographic results

Demographic information was collected and it was compared to the California Findings from the National Agricultural Workers Survey (NAWS). 100% of respondents were Hispanic, and 37% were Hispanic farmworkers. 64% of respondents identified as male, and 36% as female (Table 3). 82% of farmworkers reported being born in Mexico while the remaining farmworkers left that question blank. Additionally, 2 of the farmworkers marked that they were holders of the H-2A Temporary Agricultural Worker visas. When asked if farmworkers own or rent their homes, 14 farmworkers, or 73%, rented, 4 of them, or 21%, owned, and 1 of them did neither and lived with family or friends. Of the 14 renters, 9, or 64%, rented apartments, 5, or 35%, rented houses, and 4, or 28%, owned houses.

Table 3. Comparison of demographic characteristics (N=19).

	Gilroy Farmworker Food Security Survey (2024)	CA NAWS (2019-2020)
Gender	64% Male 36% Female	66% Male 34%
Age	39	39
Years in U.S	19	21
Years of education	47% 6th grade or less	35% 6th grade or less
Country of birth	Mexico: 82%	Mexico: 63%
Documentation Status	41% Undocumented	75% Undocumented
Household Income		
Less than \$10,000	No data	10%
\$10,000 to \$19,999	26%	28%
\$20,000 to \$29,999	20%	30%
\$30,000 and above	28%	30%

Semi-structured interviews and participant observation

Access, Agency, & Preserving Agricultural Land

As mentioned before, my document review revealed one big policy gap. No policy mentioned growing food in any capacity. From my interview, this became a big topic of conversation when discussing the weaknesses of Gilroy's policies. Additionally, in my participant observation at the SB 1000 community event, multiple people shared that they wished they could grow their food. Still, even living in apartment complexes with balconies, management has strict rules for putting anything on the balcony, even small plants. The following quote showcases why land-use policies should made specific policies about setting land aside to grow food.

Often vacant land might be owned by the city but there might be restrictions even though it's technically public. You can't just start growing on it (Charisma 2024).

Furthermore, I also explored specific ways in which the city could represent this in the policy. From my interview I found that policy in General Plans do have the power to make growing food for their residents easier.

Subsidize water connections because that's often very expensive, part of growing food (Charisma 2024).

From my document analysis I found that there were two policies about preserving agricultural land that can't be sold for development. From my interview I found the need for this policy to be implemented and upheld. With my interview with a higher up from Christopher Ranch they started the reason agricultural jobs were at risk.

I would say the overall expansion of the silicon valley area kind of drove costs up to the point to where farmers really can't grow in this area. You are far better off selling your land and developing housing or commercial space, you know (Christopher 2023).

Lastly, SB 1000 has several limitations, but one significant limitation is that no one is enforcing it. There is no standard or protocol to uphold justice. My interviews revealed that the policies that affect the people who need environmental justice are the ones that have to hold the

cities accountable for implementing them. The following quote highlights this notion. Furthermore, the document never uses the word farmworkers. Under their affordable housing policies, they mention low-income residents but not farmworkers in any capacity.

DISCUSSION

In light of the extremely high levels of food insecurity identified among Hispanic agricultural workers in Gilroy, including H-2A temporary agricultural workers. This study sheds light on the potential of SB 1000 to create targeted policy interventions to enhance food security in the region through land-use policies that protect agricultural land from commercial development, designate land to develop affordable housing for farmworkers and designate land for farmworkers and other low-income families to grow their food forming these policies through the lens of food justice. By examining the barriers to food security and exploring opportunities for policy interventions, this discussion section aims to elucidate how policymakers can leverage SB 1000 to increase food security for agricultural workers in Gilroy, California. Through a comprehensive analysis of the key findings, this discussion offers insights into how SB 1000 can address the specific needs and challenges farmworkers face in accessing nutritious and culturally appropriate food.

Extremely high levels of food insecurity

This study identified significant levels of food insecurity among Hispanic agricultural workers in Gilroy. These findings underscore systemic challenges in accessing adequate nutrition and emphasize the urgent need for policy interventions to tackle this pressing issue. Without adequate support and interventions, the health and well-being of these workers remain at risk, perpetuating cycles of food insecurity and poverty. Notably, approximately 78% of all survey respondents reported experiencing food insecurity, with alarmingly elevated rates observed among farmworkers. 100% of the farmworkers in this study experienced food insecurity, whether it was low or very low food security. This finding partially confirmed my hypothesis, as I had predicted 50-80% of farmworkers would be food insecure. Similar observations have been documented in various studies.

Given the lack of a national dataset on food insecurity among agricultural workers, I draw comparisons from multiple studies in the surrounding regions. For instance, an older study from 2007 conducted in Fresno County, located 3.5 hours away from Gilroy, revealed an overall prevalence of food insecurity among farmworkers at 45% (Wirth et al. 2007). More recently, in the Salinas Valley, just 40 minutes from Gilroy, food insecurity rates among farmworkers were found to be 37% (Mora et al.2022). Additionally, a study in Mendota, California, which is 1.5 hours away from Gilroy, reported a 45% prevalence of food insecurity for farmworkers (39% without hunger and 6% with hunger) (Matias et al. 2020). These studies range over 15 years and show a slight improvement in food security, further showing this issue's pressing importance. It's worth noting that the Salinas Valley, Fresno County, and Mendota have larger populations of farmworkers and higher agricultural production than Gilroy, which may explain why these studies were conducted there and are more agriculture-focused than Gilroy. Given that Gilroy's agricultural workers face high levels of food insecurity, addressing this issue in the region is crucial, as farmworkers, particularly in areas with smaller farmworker populations, are often an overlooked group suffering from food insecurity.

Barriers to Food Security and Farmworkers' Perceptions

To effectively address the high levels of food insecurity among farmworkers, policymakers must understand the barriers to food security for this population. By doing so, they can structure local policies more effectively to target areas where local government intervention can be most impactful. Food insecurity among farmworkers can stem from various factors, categorized within the food security framework as availability, accessibility, adequacy, acceptability, and agency. In this study, the primary cause identified for food insecurity among Hispanic farmworkers in Gilroy was accessibility, indicating that farmworkers struggle most with physical and economic access to food. Respondents reported hourly wages as low as \$15.50, which is below the \$16/hr minimum wage in California that became effective in January of this year (Enforcement and California 2024.). These were similar to findings from the National Agricultural Workers Survey (NAWS) conducted from 2019-2020, which reported an average wage of \$13.59 per hour, which was also lower than the state requirement at the time (Gold et al. 2022). With all this in consideration it is important to focus on farmworker wages,

because it shows what they actually earn, rather than estimating potential full-time, year-round earnings, as most farmworkers work seasonally and struggle finding work in off seasons (Martin and Costa 2017). It remains insufficient to ensure food security because the living wage for a single person without any dependents in Santa Clara County is \$32.99 per hour (Glasmeier 2024). While local policy cannot directly influence wages, policymakers can facilitate access to more affordable food options.

Furthermore, the lack of food was not a significant factor contributing to food insecurity, so the availability pillar of food security is not a concern. The concern mainly lies in the access pillar. My survey found that over 50% of farmworkers didn't have frequently have access to reliable transportation, and only 8% took the bus. In my home interviews, farmworkers said it was hard to catch the bus because it did not come frequently, so getting groceries would take a lot of their time. Limited transportation options and inadequate public transportation made it challenging for farmworkers to access food, emphasizing the importance of creating walkable cities and improving transportation routes to enhance food accessibility (Lopez 2012). While most respondents obtained their food from large shopping centers, economic constraints posed a barrier to accessing these centers. This corroborates one specific farmworker food access study that details an abundance of food but a lack of availability to people who need it most (Smith and Cuesta 2020). Additionally, sometimes there was an abundance of food just not enough of the type they wanted, which farmworkers expressed more of cultural connection to food could be shown in farmer markets. Similar results were found in a study that also interviewed food insecure farmworkers (McClain et al. 2023).

Lastly, while I did not evaluate housing in my survey or had a question related to the cost of housing, all farmworkers during the house visits mentioned how most of their money went to rent. This is a significant limitation of the analysis, and I should have included more questions regarding rent in my survey. On this note, affordable housing is another environmental justice aspect that can be controlled through SB 1000. The creation of affordable housing would highly impact food security because farmworkers would not have to trade off between food and paying rent as often as they already do.

Food Justice Opportunities in SB 1000 for Increased Food Security

There are various strategies commonly employed to address different facets of food insecurity among agricultural workers. One effective approach involves establishing culturally sensitive food pantries, recognizing that food security encompasses not only access to sufficient food but also the acceptability and agency to choose culturally appropriate options (Cueva et al. 2020). Another promising initiative is the implementation of mobile food pantries, which bring nutritious food directly to workers in the fields at the end of their shifts, addressing the significant barrier of transportation ("Farmworkers Mobile Pantry," 2020).

In Gilroy, the enactment of SB 1000 presents an alternative avenue for tackling food insecurity by prioritizing food justice at the local level. While SB 1000 does not directly target the structural causes within the food system that perpetuate insecurity, such as the marginalization of agricultural labor, these issues are multifaceted and contingent on socio-historical contexts (Brown and Getz 2011). Moreover, my research reveals that agricultural wages and working conditions also contribute to food insecurity, with state intervention in labor relations, immigration policy, and the availability of immigrant workers further complicating the landscape (Brown and Getz 2011). But, my document analysis revealed that community gardens were a large oversight in the General Plan and interviews with policy makers recommended two main ways it could be addressed: designating land for community gardens and subsidizing those water connections. Community gardens are especially good avenues to increase food security because it provides great levels of agency, cultural acceptability, and farmworkers already have a large working knowledge of growing food (Diekmann et al. 2020, MinkoffZern 2014).

Nevertheless, local governments, particularly in agricultural hubs like Gilroy, can leverage SB 1000 to enhance food access for marginalized populations. My study suggests that city planning initiatives aimed at improving transportation infrastructure, incentivizing farmers' markets to to culturally relevant food, creating affordable housing for farmworkers, and making land available to grow food can offer alternative solutions to address issues of affordability, access, and agency. City planning with food justice with agricultural communities that can be invisible or left out of the policy conversations can lead to independence from emergency food resources like food pantries.

Limitations

Limitations to this study primarily include the small sample size of survey respondents due to time and budget constraints. Additionally, Santa Clara County lacks a census of the Latino migrant and seasonal farmworker population in cities such as Gilroy, making random sampling impossible. Farmworkers are challenging to reach due to their long working hours, spanning from 4 am to 6 pm, and some reside in on-site farm housing.

Participation in the survey was voluntary, and it involved sensitive questions about food insecurity, which may have deterred some individuals due to potential negative emotions or stigma. These factors could have introduced unintended biases in the results. Moreover, Gilroy has faced drought conditions and agricultural production disruptions during the study year, exacerbated by the pandemic. Data collection occurred during the off-peak harvest season, typically from June to September in Gilroy, potentially increasing food insecurity by limiting farm employment opportunities.

Additionally, I learned from a conversation with the vice president of Christopher Ranch that root rot affected some garlic lands, prompting the relocation of thousands of acres of garlic production to the Central Valley. Due to unique socio-economic, cultural, and agricultural dynamics, these findings may not be directly applicable to agricultural worker populations in other regions and especially not to the entire state of California.

Future Directions

Future research could examine the effectiveness of community-based initiatives and policy interventions in mitigating food insecurity among farmworkers. This could involve evaluating the impact of programs aimed at improving transportation access, increasing wages, and expanding access to culturally appropriate and affordable food options. Longitudinal studies tracking changes in food security status over time could provide valuable insights into the long-term effectiveness of such interventions, especially when addressing how and if city General Plans are being upheld and implemented. Additionally, there is a need for greater collaboration between researchers, policymakers, and community organizations to develop comprehensive strategies for addressing food insecurity in agricultural communities. By engaging in participatory research approaches and involving farmworkers in the design and

implementation of interventions, we can ensure that solutions are grounded in the lived experiences and priorities of those most affected.

Broader Implications

When federal and state policies continuously fail to address root and systematic issues perpetuating food insecurity, especially among farmworkers, there is a need for local policies to step in and address structural issues within their jurisdictions (Coffman 2022, Kulwiec 2020, (Berkey 2017). Farmworkers in Gilroy have been apart of the community sice the creation of the city, yet their needs have not been met since the 1980 ("Garlic Workers' Strike Ends" 1980). This study aimed to provide valuable insights into addressing food insecurity among agricultural workers, particularly in Gilroy, CA, hoping that lessons learned can be applied in other cities with agricultural worker communities. By identifying accessibility as a critical barrier, it underscores the importance of targeted interventions to improve transportation and economic access to food. The implementation of SB 1000 emerges as a promising approach to enhancing food access and equity at the local level. Despite limitations in sample size and regional specificity, the findings underscore the urgent need to address food insecurity and offer hope for future efforts to promote food justice and security. Ultimately, prioritizing food security and equity can pave the way for a more just and sustainable food system.

ACKNOWLEDGMENTS

A huge thank you to Patina Mendez, Lucky Diekmann, and Miguel Ochoa for their mentorship and support throughout the thesis process. They provided me with immense support, including emotional support when the process felt rough. A huge thank you to my mom who helped me find the initial farmworkers to survey and it snowballed from there. I want to thank my boyfriend, Samuel de Groot, for listening to me talk about my thesis ideas and affirming that I was doing a good job. He is the light in my life and I only hope he felt the same amount of support when he was doing his thesis. Finally, thank you to Mina Rossman and Jenny Tseng, they were my rock throughout the thesis class. I also want to thank all the farmworkers who

opened their homes to me and answered all my questions about their situations. I also want to thank them for the wonderful meals they provided me when I came to their homes.

REFERENCES

- Adema, P. 2009. Garlic capital of the world: Gilroy, garlic, and the making of a festive foodscape. University Press of Mississippi, Jackson.
- Arnold, C. A. 2007. Fair and Healthy Land Use: Environmental Justice and Planning. Planning Advisory Service Report: III, V, VI, VII, 1–29, 31–51, 53–89, 91–99, 101–135, 137–141, 143–145, 147–159.
- Average Rent Prices in Gilroy, CA. 2023. https://www.apartments.com/rent-market-trends/gilroy-ca/.
- Baptista, A. I., S. Jesudason, M. Greenberg, and A. Perovich. 2023. Landscape Assessment of the U.S. Environmental Justice Movement: Transformative Strategies for Climate Justice. Environmental Justice 16:111–117.
- Berkey, R. E. 2017. Environmental justice and farm labor. Routledge, Taylor & Francis Group, earthscan from Routledge, London; New York.
- Blackwell, A. 2016, May 12. Best Practices for Creating a Sustainable and Equitable Food System in the United States.
- Bonta, R. 2019, August 30. Environmental Justice in Local Land Use Planning. https://oag.ca.gov/environment/sb1000.
- Brown, S., and C. Getz. 2011. Farmworker Food Insecurity and the Production of Hunger in California. Pages 121–146 Cultivating Food Justice: Race, Class, and Sustainability. The MIT Press.
- Brinkley, C., and J. Wagner. 2022. Who Is Planning for Environmental Justice—and How? Journal of the American Planning Association 0:1–14.
- Cabannes, Y., and C. Marocchino. 2018. Integrating Food into Urban Planning / Edited by Yves Cabannes and Cecilia Marocchino. UCL Press, London.
- CalEnviroScreen Public Comment Letters | Public Health Alliance of Southern California. (2018).
- Centre for Studies in Food Security. 2016. https://www.torontomu.ca/foodsecurity/.
- Chappell, M. J. 2018. Beginning to End Hunger: Food and the Environment in Belo Horizonte, Brazil, and Beyond. University of California Press.

- Charisma, A. 2024, April 1. Interview with BFI SB 1000 Policy Researcher.
- Christopher, K. 2023, February. Interview with Christopher Ranch L.L.C Vice President.
- City of Gilroy 2040 General Plan. 2020, November 2. https://www.cityofgilroy.org/274/2040-General-Plan.
- Clapp, J. 2014. Food Security and Food Sovereignty: Getting Past the Binary. Dialogues in Human Geography 4:206–211.
- Community Profile of Gilroy, CA. (2024). https://www.cityofgilroy.org/355/About-Gilroy.
- Coffman, D. J. 2022. The Excluded Workers: The NLRA, Farm Laborers, and a Lineage of Exploitation Notes. Drake Journal of Agricultural Law 27:85–110.
- Costa, D. 2023, October 5. The Farmworker Wage Gap. https://www.epi.org/blog/the-farmworker-wage-gap-farmworkers-earned-40-less-than-comparable-nonagricultural-workers-in-2022/.
- Cueva, K., L. Ventura, D. Carroll, J. Richards, K. Speakman, N. Neault, and A. Barlow. 2020. A Qualitative Evaluation of a Community Based, Culturally Relevant Intervention to Promote Healthy Food Access in American Indian Communities. Journal of Community Health 45:458–464.
- Deviney, J. 2022. From Farm to Fork: How Agricultural Products Reach Your Plate Crop Report 2022. https://ag.sccgov.org/2020-2022-crop-reports.
- Diekmann, L. O., L. C. Gray, and G. A. Baker. 2020. Growing 'Good Food': Urban Gardens, Culturally Acceptable Produce, and Food Security. Renewable Agriculture and Food Systems 35:169–181.
- Enforcement, D. of L. S., and S. of California. (2024). Minimum Wage. https://www.dir.ca.gov/dlse/minimum_wage.htm.
- Escamilla, P. B. 1997. Gilroy, California: A Short History. Gilroy Historical Museum.
- Fabricant, R. Lindseyf. 1980, August 6. Garlic Town Savors The Smell of success: Festival Unaffected by Strike. The New York Times:43, 48.
- FAO, I. 2021. The State of Food Security and Nutrition in the World 2021: Transforming Food Systems for Food Security, Improved Nutrition, and Affordable Healthy Diets for All. FAO, Rome, Italy.

- FAO, I. 2023. The State of Food Security and Nutrition in the World 2023: Urbanization, Agrifood Systems Transformation, and Healthy Diets across the Rural–Urban Continuum. FAO, IFAD, UNICEF, WFP, WHO, Rome, Italy.
- Feeding America: Map the Meal Gap. 2022, March. . Non Profit Research Team.
- Field to Fork Christopher Ranch. (2024). https://christopherranch.com/field-to-fork/.
- Garlic Workers' Strike Ends. 1980, August 10. . The New York Times:7.
- Glasmeier, A. K. 2024. Living Wage Calculator Living Wage Calculation for Santa Clara County, California. Massachusetts Institute of Technology. https://livingwage.mit.edu/counties/06085.
- General Plan Information. 2023. https://opr.ca.gov/planning/general-plan/.
- Gilroy Calif., editor. 1995, July 1. City of Gilroy Consolidated Plan and Action Plan 1995-2000. City of Gilroy.
- Gilroy Housing Market: House Prices & Trends. 2023, November. https://www.redfin.com/city/7521/CA/Gilroy/housing-market.
- Gold, A., W. Fung, S. Gabbard, and D. Carroll. 2022. Findings from the National Agricultural Workers Survey (NAWS) 2019–2020: A Demographic and Employment Profile of United States Farmworkers. U.S. Department of Labor, Employment and Training Administration.
- Haaland, O., and P. Ortiz. 2022, July. Disadvantaged Communities Nomenclature Within the State of California: Findings and Conclusions. Department of Water Resources, State of California.
- Haggblade, S., S. C. Babu, D. Resnick, and S. L. Hendriks. 2019. The Policymaking Process: Introducing the Kaleidoscope Model for Food Security Policy Analysis. Food Security Policy, Evaluation, and Impact Assessment. Routledge.
- Heynen, N., H. E. Kurtz, and A. Trauger. 2012. Food Justice, Hunger, and the City. Geography Compass 6:304–311.
- Horst, M., N. McClintock, and L. Hoey. 2017. The Intersection of Planning, Urban Agriculture, and Food Justice: A Review of the Literature. Journal of the American Planning Association 83:277–295.
- Horst, M. 2017. Food Justice and Municipal Government in the USA. Planning Theory & Practice 18:51–70.

- Howitt, R., D. MacEwan, and J. Lund. 2015, August 17. Economic Analysis of the 2015 Drought for California Agriculture. ERA Economics UC Agricultural Issues Center.
- Humes, K. R., N. A. Jones, and R. R. Ramirez. 2011. Overview of Race and Hispanic Origin: 2010. U.S. Census Bureau.
- Jarosz, L. 2014. Comparing Food Security and Food Sovereignty Discourses. Dialogues in Human Geography 4:168–181.
- Johnson, N. J., and J. H. Svara. 2011. Environmental Justice and Land Use Planning. In Justice for All. Routledge.
- Keough, G., S. Clark, and B. Hill. 2022. California Agricultural Statistics Review. California Government Document, California Department of Food & Agriculture.
- Kulwiec, A. 2020. Proposal: Protecting U.S. Agricultural Workers Utilizing Existing Legal Structures and Augments to the U.S. Farm Bill. Kentucky Journal of Equine, Agriculture, & Natural Resources Law 13:79–108.
- Lopez, A. 2007. An Impoverished, Endangered, and Overworked People in the Land of Plenty. In The Farmworkers' Journey. University of California Press.
- Lopez, R. 2012. The built environment and public health. 1. ed. San Francisco, Calif. . Jossey-Bass/Wiley.
- Maantay, J. 2002. Zoning Law, Health, and Environmental Justice: What's the Connection Symposium Articles Part II: Health, Law, and Everyday Life. Journal of Law, Medicine and Ethics 30:572–593.
- Martin, P. 2020. US Farm Labor. In The Prosperity Paradox: Fewer and More Vulnerable Farm Workers. Oxford University Press.
- Martin, P., and D. Costa. 2017, March 21. Farmworker wages in California: Large gap between full-time equivalent and actual earnings. https://www.epi.org/blog/farmworker-wages-in-california-large-gap-between-full-time-equivalent-and-actual-earnings/.
- Matias, S., M. Marois, and M. Schenker. 2020. Prevalence and Correlates of Food Insecurity in Latino Farm Worker Households in California's Central Valley. Current Developments in Nutrition 4:237.
- McClain, A. C., C. M. Johnson, C. DiRado-Owens, and K. L. Dickin. 2023. How do Latina/o Parents Interpret and Respond to the US Household Food Security Survey Module? A Qualitative Cognitive Interviewing Study. Journal of the Academy of Nutrition and Dietetics 123:S25–S45.

- Minkoff-Zern, L.-A. 2014. Hunger amidst Plenty: Farmworker Food Insecurity and Coping Strategies in California. Local Environment 19:204–219.
- Mora, A. M., J. A. Lewnard, S. Rauch, K. Kogut, N. Jewell, M. Cuevas, and B. Eskenazi. 2022. Impact of COVID-19 Pandemic on California Farmworkers' Mental Health and Food Security. Journal of Agromedicine 27:303–314.
- Munger, A. L., T. D. S. Lloyd, K. E. Speirs, K. C. Riera, and S. K. Grutzmacher. 2015. More Than Just Not Enough: Experiences of Food Insecurity for Latino Immigrants. Journal of Immigrant and Minority Health 17:1548–1556.
- Nunes, R. 2017. Rethinking Justice in City-Regional Food Systems Planning. Built Environment 43:447–459.
- Pinstrup-Andersen, P. 2009. Food Security: Definition and Measurement. Food Security 1:5–7.
- Potochnick, S., K. M. Perreira, J. I. Bravin, S. F. Castañeda, M. L. Daviglus, L. C. Gallo, and C. R. Isasi. 2019. Food Insecurity Among Hispanic/Latino Youth: Who Is at Risk and What Are the Health Correlates? Journal of Adolescent Health 64:631–639.
- Rabbit, M. P., L. J. Hales, M. P. Burke, and A. Coleman-Jensen. 2023. Household Food Security in the United States in 2022. U.S. Department of Agriculture, Economic Research Service.
- Rampin, R et al. 2021. Taguette Version 0.10.1. Zenodo, France.
- Rocha, C. 2007. Food Insecurity as Market Failure: A Contribution from Economics. Journal of Hunger & Environmental Nutrition 1:5–22.
- Rothstein, R. 2017. The Color of Law: A Forgotten History of How Our Government Segregated America. First edition. Liveright Publishing Corporation, a division of W.W. Norton & Company.
- Schlosberg, D. 2007a. 1 Defining Environmental Justice. In Defining Environmental Justice: Theories, Movements, and Nature. Oxford University Press.
- Schlosberg, D. 2007b. 3 Defining Environmental Justice in the USA. In Defining Environmental Justice: Theories, Movements, and Nature. Oxford University Press.
- Schlosberg, D. 2007c. 4 Environmental Justice and Global Movements. In Defining Environmental Justice: Theories, Movements, and Nature. Oxford University Press.
- Smith, J., and G. Cuesta. 2020. Hunger in the Fields: Food Insecurity and Food Access Among Farmworker Families in Migrant and Seasonal Head Start: Journal of Latinos & Education. Journal of Latinos & Education 19:246–257.

- U.S. Census Bureau QuickFacts: Gilroy City, California. 2022, July 1. https://www.census.gov/quickfacts/fact/table/gilroycitycalifornia/PST045222.
- U.S. Census Bureau. 2023, July. Population Estimates. Government Data. Weather averages Gilroy, California. https://www.usclimatedata.com/climate/gilroy/california/united-states/usca0420.
- Zahniser, S., and K. Kassel. 2024, March 28. What Is Agriculture's Share of the Overall U.S. Economy? Value Added by Industry.
- Zuñiga, M. E., and M. Méndez. 2023. The Emergence of Environmental Justice in General Plans: Lessons From California's Senate Bill 1000. Urban Affairs Review:10780874231175841.

APPENDIX A: Section I Survey Questions

Survey Section: I: Measuring and comparing levels of food insecurity questions

- 1. "The food that (I/we) bought just didn't last, and (I/we) didn't have money to get more." Was that often, sometimes, or never true for (you/your household) in the last 12 months?"
- 2. "(I/we) couldn't afford to eat balanced meals." Was that often, sometimes, or never true for (you/your household) in the last 12 months?
- 3. In the last 12 months, since last (name of current month), did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn't enough money for food?
- 4. [IF YES ABOVE, ASK] How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
- 5. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?
- 6. In the last 12 months, were you every hungry but didn't eat because there wasn't enough money for food?

Source: U.S. Household Food Security Survey Module: Six-Item Short Form Economic Research Service, USDA

Table 1. Coding responses to 6 USDA questions.

Question	Response	Code
1,2	"Often" "Sometimes"	Affirmative (yes)
3,5,6	"Yes"	Affirmative (yes)
4	"Almost every month" "Some months but not every month"	Affirmative (yes)

Source: U.S. Household Food Security Survey Module: Six-Item Short Form Economic Research Service, USDA

Table 2. Assessing Households' Food Security Status.

Raw Score	Food Security Status	
0-1	High or marginal food security	
2-4	Low food security	
4-6	Very low food security	

^{*}The sum of affirmative responses to the six questions in the module is the household's raw score on the scale.

Source: U.S. Household Food Security Survey Module: Six-Item Short Form Economic Research Service, USDA

APPENDIX B: Section II Survey Questions

Survey Section II: Connections to Food Insecurity

Table 3. Spanish Survey Section II Questions.

Food Security Pillar	Subtopic	Question(s)/Statement(s)
Availability	Fuentes de alimentos	¿Cuánto usas la siguiente? Mercados de agricultores, alimentos de emergencia, CalFresh
	Mercados de agricultores	Hacer una prioridad establecer uno o más mercados de agricultores en Gilroy y permitir que los vendedores acepten pagos a través de estampillas de alimentos (EBT) a la comunidad.
	Acceso a alimentos saludables	Es dificil conseguir comida saludable por donde vivo.
	Acceso a alimentos saludables	Las tiendas por donde vivo no venden mucha fruta y verdura.
Access	Lugar de compra	¿En dónde compra ud. la mayoría de su comida?
	Capacidad económica	¿Con qué frecuencia consideras verdadera la siguiente afirmación: "Puedo permitirme comprar suficiente comida del tipo que deseo comer."
	Transporte	¿Con qué frecuencia tienes acceso a transporte confiable para comprar alimentos nutritivos?
	Medio de transporte	¿Cómo va para alla generalmente?
	Distancia a las fuentes de comida	¿Cuánto tiempo camina - ida y vuelta? Especifique en minutos
	Asequibilidad de las verduras frescas	No compro mucha verdura porque es muy cara.
	Asequibilidad de las verduras frescas	No compro mucha fruta porque es muy cara.
	Acceso físico	Se me hace dificil ir a la tienda.

Adequacy	Prioridades de alimentos locales	Comprar alimentos cultivados localmente (dentro de 150 millas de donde vivo) es una prioridad para mí.
	Conocimientos de preparación de alimentos	No sé muy bien preparar comidas saludables.
	Conservación de tierras agrícolas	Para mí es prioritario apoyar la conservación de las tierras agrícolas en esta región.
	Calidad de productos frescos	La fruta y verdura donde más compro la comida es de baja calidad.
	Conveniencia de la preparación de alimentos	No tengo suficiente tiempo para preparar comidas en casa en estos dias.
Acceptability	Satisfacción con la calidad de los alimentos	En general, ¿qué tan satisfecho/a está con la calidad de la comida que ha(n) comido ud./su familia en los últimos 30 días?
	Preferencia por las verduras	No me gusta la verdura tanto.
	Razones de satisfacción o insatisfacción	¿Porqué está o no está muy satisfecho/a con la calidad de la comida que ha(n) comido en los últimos 30 días?
Agency	Cultivo personal	Si tuviera la oportunidad, ¿qué tan interesado/a estaría en acceso a un terrenito - gratis o de bajo costo - para poner una huerta o para ampliar la huerta que ya tiene?
	Programas de asistencia	¿Usted o su familia utilizan alguno de los siguientes? Marca si o no. Calfresh, CalWORKs, food banks, WIC, Head Start

Table 4. English Survey II Questions for readers.

Food Security Pillar	Subtopic	Question(s)/Statement(s)
Availability	Food sources	How often do you use the following? Farmers markets, emergency food, CalFresh
	Farmers markets	It is a priority to establish one or more farmers' markets in Gilroy and allow vendors to accept

		payments through food stamps (EBT) to the community.
	Access to healthy foods	It's hard to get healthy food where I live.
	Access to healthy foods	The stores where I live don't sell much fruit and vegetables.
Access	Grocery Stores	Where do you buy most of your food?
	Economic capacity	How often do you find the following statement true: "I can afford to buy enough food of the type I want to eat."
	Transportation	How often do you have access to reliable transportation to buy nutritious foods?
	Mode of transportation	How do you usually get there?
	Distance to food sources	How long is your walk roundtrip? Specify in minutes
	Economic access	I don't buy a lot of vegetables because they are very expensive.
	Economic access	I don't buy a lot of fruit because it is very expensive.
	Physical access	It's hard for me to go to the store.
Adequacy	Local Food	Buying locally grown food (within 150 miles of where I live) is a priority for me.
	Food preparation knowledge	I don't know how to prepare healthy meals very well.
	Agricultural land conservation	For me, it is a priority to support the conservation of agricultural lands in this region.
	Quality of fresh products	The fruit and vegetables where I buy most food are of low quality.
	Convenience of food preparation	I don't have enough time to prepare meals at home these days.
Acceptability	Satisfaction with food quality	In general, how satisfied are you with the quality of the food you/your family has eaten in the last 30 days?

	Preference for vegetables	I don't like vegetables that much.
	Reasons for satisfaction or dissatisfaction	Why are you or are you not very satisfied with the quality of the food you have eaten in the last 30 days?
Agency	Gardening	If you had the opportunity, how interested would you be in accessing a piece of land - free or low-cost - to start a garden or to expand the garden you already have?
	Assistance programs	Do you or your family use any of the following? Mark yes or no. Calfresh, CalWORKs, food banks, WIC, Headstart

APPENDIX C: Interview Questions

Interview Questions for SB 1000 Researchers

- 1. In your opinion, does SB 1000 have the ability to improve *food access* for farmworker communities? Why or why not?
 - a. Do you believe SB 1000 holds significant potential for farmworker communities?
- 2. How can land use planning advance *food security* in farmworker communities?
- 3. How can land use planning advance *food justice* in farmworker communities?
- 4. What specific *provisions or measures* does SB 1000 introduce to address food insecurity in farmworker communities?
- 5. What other measures are not yet implemented but could effectively address *food insecurity?*
- 6. In your opinion, what are the *key strengths* of SB 1000 in addressing food insecurity in farmworker communities?
- 7. In your opinion, what are the *key weaknesses or limitations* of SB 1000 in addressing food insecurity in farmworker communities?
- 8. Looking ahead, what opportunities or areas for improvement do you envision for SB1000 or similar policies to further address food insecurity in farmworker communities?
- 9. What are some *potential barriers or challenges* that SB 1000 may face in effectively addressing food insecurity within farmworker communities, and how do you suggest overcoming them?
- 10. In your opinion, what are the *most critical factors contributing* to food insecurity within farmworker communities, and how can SB 1000 effectively address them?
- 11. How do you think the *unique needs and challenges* of farmworker communities should be taken into account when implementing policies like SB 1000?

Interview Questions for Christopher Ranch L.L.C

- How many farmworkers does Christopher Ranch employ during harvesting season? (Informational)
- 2. Could you provide insight into the range of crops typically harvested by your farmworkers in Gilroy? In the region? In California? (Informational)

- 3. Can you share any data or statistics on the economic impact of Christopher Ranch on the local Gilroy economy, particularly regarding employment, revenue generation, or economic development? (Informational)
- 4. How does Christopher Ranch procure its workforce, and what measures does it take to ensure fair labor practices and worker welfare? (Informational)
- 5. How would you describe Christopher Ranch's relationship with farmworkers? Are there areas that Christopher Ranch is looking to improve?
- 6. How do you ensure fair wages and compensation for your workers?
- 7. What is Christopher Ranch's or your perspective on the issue of farmworker food insecurity in our community? From your vantage point, what do you believe are the significant factors contributing to this issue?
- 8. Have you implemented any specific strategies or policies to address food insecurity among farmworkers? Alternatively, are there any farm policies in place that specifically address the needs of farmworkers?
- 9. Could you elaborate on the nature and extent of your collaboration with St. Joseph's to address food insecurity, especially among farmworkers?
- 10. I am also very interested to hear more about Head Start if there is time.
- 11. What local policies or regulations, if there are any, do you know of that are in place to address food insecurity among farmworkers in our area? (I am not very familiar with the local policy. Policy could be local government-based or on the farm)
- 12. How do these policies aim to support and improve the food security of farmworkers? (Only relevant if there are any policies).
- 13. How do local policymakers collaborate with farms regarding farmworkers' needs? Are there any ongoing discussions or efforts to revise or strengthen existing policies related to farmworker issues not just food insecurity?