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The social soil: Positionality and expertise the Salinas Valley's agri-food system

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By

K. Aysha Peterson

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The Dissertation of Aysha Peterson is approved:

_____
Professor Flora Lu, chair

_____
Professor Weixin Cheng

_____
Professor Madeleine Fairbairn

_____
Professor Nestor Silva

_____
Peter Biehl
Vice Provost and Dean of Graduate Studies

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ABSTRACT:

THE SOCIAL SOIL: POSITIONALITY AND EXPERTISE IN THE SALINAS VALLEY'S AGRI-FOOD SYSTEM

K. Aysha Peterson

Every soil scientist knows that soils vary enormously from one site to another. Soils differ in texture, structure, density, color, organic matter content, water holding capacity, acidity, and more; all of these characteristics shape and are shaped by the human and non-human activities that take place within and around the soil. In this sense, soil is a social being, existing and changing in intimate relationship with a multitude of biotic and abiotic processes.

In California's Salinas Valley, an industrialized agricultural region of international economic importance, soil connects people amidst massive socio-environmental inequality. While the fertility of the soil is exploited for the benefit of predominantly white land- and agribusiness-owners, leaching of fertilizers into regional groundwater supplies has poisoned the drinking water of rural, working-class communities of color who labor in the surrounding fields. And although soil scientists have important tools that can support improved nutrient management on farms, activists caution that soil science knowledge must be accessible and useful to the people who are most in need of socio-environmental change. In this context, my dissertation explores the kinds of expertise that differently positioned people bring to the problem of regional soil management and groundwater contamination, with a

focus on three types of actors: academic researchers, agricultural extensionists, and small-scale farmers. Findings highlight the social dimensions of both soil management soil science, and contribute to scholarship on environmental politics in agricultural landscapes.

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INTRODUCTION

1. Encountering socio-ecological inequalities in the Salinas Valley

The heart of this dissertation began in the spring of 2018, when I participated in the core field methods course in my Environmental Studies Ph.D. program. In the recently revamped version of this course, our department decided to focus our inquiry on groundwater contamination, which was and is an urgent issue in California's Central Coast region. One of our first activities was to drive together to the Salinas Valley and meet with three different stakeholders to talk about ongoing water-related issues. One of these stakeholders was Horacio Amezquita, the general manager of the San Jerardo Housing Cooperative.

Horacio was introduced to us as the manager of a farmworker housing cooperative and encouraged to tell the story of San Jerardo's struggles to access clean water amidst contamination of groundwater resources. He told a story that I remember as both terrible and unsurprising: that low-income Latinx farmworker communities were being poisoned by industrial agricultural runoff into groundwater and subsequent contamination of household water supplies, and that these communities struggled to access government aid. Our assignment as a class was then to conduct a 10-week research project related to what we had learned from Horacio and the two other stakeholders. I teamed up with two other graduate students who were interested in working with Horacio and San Jerardo to assist in their struggle for clean water access.

At this point, I was somewhat familiar with the problematic nature of "damage-centered" research.[1] I and my peer researchers knew intuitively that we wanted to emphasize the agency of the farmworker community in their quest for clean water access. We organized ourselves to follow up with Horacio and to document the ways that San Jerardo navigated the legal system to receive the necessary assistance. It remains debatable whether our findings were useful for Horacio and the San Jerardo community, debateable whether we were sufficiently careful with their time, energy, and stories. For his part, Horacio repeatedly referenced how his past relationships with students from UC Santa Cruz had provided essential medical and legal legitimacy to his claims of environmental injustice. I suspected that he invested time and energy with our class in the hope that our relationships would similarly come to be mutually beneficial.

At the close of our short 10-week course, I was hesitant to turn away from San Jerardo's struggle and back towards my original dissertation research topic related to soil ecology in an undecided location. I felt it was an enormous privilege to be able to turn away from a struggle as fundamental as one for clean water access within our segregated region – to go home to my room in the predominantly-white city of Santa Cruz, with its filtered city water, and to have my pick of problems to investigate for my Ph.D. I experienced many emotions in response to the idea (which was both mine

[1] Tuck's (2009) critique of "damage-centered" research argues that research designed to document peoples' pain and suffering – especially in Indigenous communities and low-income communities of color – is predicated on a flawed theory of change that obscures the agency of these communities and does not result in meaningful material change.

and others') that I would not continue to engage with Horacio after he generously and hopefully invested in a relationship with me and the other students. More than anything, I was confused about how to choose between the people and problems to which I had been exposed and the research topics that I had originally planned to pursue in this Ph.D. program.

In the five years following my participation in that field methods course, I have been exposed to many critical perspectives on social science research that have validated and deepened my initial questions about how to best engage with the important issues to which I was exposed during that course. These critical perspectives have shown me that research involves ethical and political decisions – whether made consciously or unconsciously. My decision about whether to continue working with Horacio and related community members was the first of many ethical and political decisions that I have had to make throughout the course of my research. Rather than allow this understanding of research ethics and politics to be a footnote within my dissertation, I have sought to substantively engage with this issue with the conviction that ethical and political commitments can be a generative starting point for producing knowledge.

2. Positionality and expertise

Feminist scholars have long critiqued notions of objectivity within dominant scientific practice (Bleier, 1984; Fausto-Sterling, 2008; Harding, 1991; Keller, 1995; Longino, 1990), arguing instead that science is deeply shaped by the lived

experiences and political and ethical commitments of the scientists. As an extension of these critiques, the concept of positionality asserts that all knowledges – scientific or otherwise – are partial and situated (Haraway, 1988) and that people make meaning from their locations within the larger socio-environmental formation (Alcoff, 1988). Conversely, people who are differently positioned within socio-environmental hierarchies do not only have different life experiences – we also have different knowledges and forms of expertise.

Furthermore, as environmental studies scholars have shown, these positions from which knowledge is produced are pervasively – but unevenly – polluted in our late-capitalist, settler colonial present. Pollution here refers not only to the movement of unruly compounds like nitrates that move across farm boundaries to contaminate drinking water supplies, but also to broader notions of environmental and bodily impurity. Environmental justice scholars and political ecologists have long challenged notions of environmental and bodily purity embedded in the mainstream environmental movement, emphasizing that bodily purity is an inherently raced concept (e.g., Kosek, 2004; Nash, 2008; Sze, 2006) and arguing that the "environment" is not a "pristine wilderness" but rather encompasses the diverse places where we "live, work, and play" (e.g., Bullard, 1993, 2008; Checker, 2005; Cole & Foster, 2001; Cronon, 1996; United Church of Christ Commission for Racial Justice, 1987). In the contemporary context of the so-called Anthropocene where we live amidst pervasive-yet-uneven toxicity, the places from which our knowledge and politics emerge are inherently impure places. For example, the University of

California is actively committing environmental violence against many different communities, from leading an international consortium of universities and scientific organizations to build an enormous telescope on lands that are sacred to Hawaiians (Salazar, 2014), to contributing to the regional housing crisis (Sleeper, 2022). As a researcher at UC Santa Cruz and as a student paying tuition, I am situated within this institution and implicated in the processes that are harming Indigenous lands and peoples and unhousing many in the local community. Beyond the UC, social scientists broadly have often been critiqued for committing various forms of violence against Indigenous communities and communities of color – often unintentionally (e.g., Simpson, 2007; Smith, 2021; Tuck, 2009; Tuck & Yang, 2014). In this regard, being a researcher at a US institution means that I am intimately entangled with oppressive structures and am poised to reproduce inequalities through my research practices, despite my best intentions.

In conjunction with this understanding of the situated nature of the knowledge production process and of the ways in which researchers can reproduce inequalities, my dissertation is informed by feminist methodologies that locate activism at the center of their research programs (e.g., DeVault, 1996; Harding, 1987; Reinharz & Davidman, 1992). These approaches challenge the presumed distance within the social sciences between the researcher and the researched and suggest that a researcher's political commitments can be a generative starting point for developing understanding. Such critical approaches to research and activism must embrace the conditions of being intimately entangled with oppressive structures while also

remaining attentive to the ways that these structures (re)produce violence and inequality (e.g., Liboiron et al., 2018). Following Murphy (2017), such non-innocent approaches accept "that one cannot simply get out, that this hurtful and deadly entanglement forms part of contemporary existence in this moment, in the ongoing aftermath" (2017, p. 500).

My experience in the core field methods course highlighted the importance of critical and feminist approaches to research, where researchers understand that we/they are inextricably tied up in oppressive structures yet have opportunities to attend to the ways in which they themselves contribute to (re)production of inequality. While course leaders and participants sought to leverage university resources to support the San Jerardo community in their quest for clean water access, we also grappled with the structures within which we were working, where we were limited to a 10-week course period and expected to return to other topics of study following course completion. This left all of us poised to practice very extractive research relations, in which we would have engaged with Horacio and the farmworker community for our own benefit and then left them to deal with their ongoing water crisis. I was fortunate to have flexibility in my Ph.D. program and ultimately chose to continue working with Horacio and the other community members that I met through the course. Horacio quickly made the connection between my academic training in soil science and opportunities to support farmer education about nutrient management which, he hoped, would help to mitigate nitrate losses to groundwater. With his support, I got connected with local farmers and

organizations working towards protection of land, water, and air in the Salinas Valley's agricultural landscapes, and have since become an integral part of this community.

In this dissertation, I explore the kinds of expertise that differently positioned people bring to the problem of agricultural nitrate pollution and groundwater contamination in California's Salinas Valley, with a focus on three types of actors: academic researchers, agricultural extensionists, and small-scale farmers. In Chapter 1, I analyze my own work as a researcher, exploring the ways in which I am poised to reproduce various socio-environmental inequalities and discovering how critical reflection on this process offers opportunities to challenge the oppressive structures within which I live and work. In Chapter 2, I turn my attention towards agricultural extensionists. Both academic researchers and agricultural extensionists are often assumed to be "experts" in environmental problem-solving, and my analysis contributes to important critiques of such assumptions. Small-scale farmers, on the other hand, are rarely considered to be experts in environmental problem-solving, especially with regard to an issue like groundwater contamination which, by some accounts, is a matter of large-scale action. In Chapter 3, my analysis emphasizes the expertise of small-scale farmers in relation to the problem of groundwater contamination, which, I argue, is an unconventional yet useful approach to considering environmental expertise.

3. Dissertation overview

This dissertation consists of three substantive chapters, each of which functions as its own independent essay. Such a nontraditional dissertation structure reflects my non-academic professional goals and the practicality of publishing journal articles rather than a book. Yet the three chapters are similar in that they each explore how different actors in the regional agri-food system know and act from specific places, and how they leverage their unique expertise and capacities to challenge structural inequalities. As mentioned above, I examine three types of actors: academic researchers, agricultural extensionists, and small-scale farmers.

Together, these three essays explore how various actors within the Salinas Valley's agri-food system are both implicated in structures that produce regional inequalities and are creatively challenging these structures. While the second and third chapters discuss this work in the context of agricultural extension and small-scale farming, the first chapter does so reflexively, considering how my own research relationships can and have extended beyond the confines of the field methods course or other Ph.D. activities.

4. Chapter summaries

Chapter 1 focuses on the researcher (myself) as someone who knows and acts from a specific place within the academic system and broader regional landscape, who attempts to understand and challenge regional inequalities while also poised to reproduce many of those inequalities. I critically examine my work with the regional community of Spanish-speaking, small-scale farm owner-operators in California's

Central Coast, most of whom are Indigenous or mestizo Mexican immigrants or are Mexican American. Given that I began working with this community as a cultural outsider, I am wary of being in wrong relationship with these farmers. To guide my analysis, I leverage the feminist concept of reflexivity, which is closely related to the concept of positionality and involves paying attention to the situatedness of one's own knowledge production processes. After introducing and exploring the role of reflexivity in the pursuit of food systems change, I then engage cempasúchil/gende ke phool (marigold flower) as a companion in developing a practice of reflexivity. The cultural practices related to cempasúchil/gende ke phool discussed in this chapter demonstrate relationships that simultaneously reflect cross-cultural difference and connection, as well as shared aspirations and desires. I examine important encounters that I had with the flower from 2019 to 2022: analyzing how these encounters made me aware of my own positioning within regional socio-ecological power structures, and how this awareness led me to critical relationships with small-scale farmers and related actors. My conclusion explores how the concept and practice of reflexivity can support those working towards food systems transformation.

In Chapter 2, I focus on agricultural extensionists as actors who are similarly implicated in various toxic structures yet also – sometimes – seek to challenge these structures. I begin with the understanding that agricultural extension has long been the subject of scholarly critiques for its hierarchical approach to knowledge transfer and its complicity in promoting agricultural intensification and farm sector consolidation. Here, however, I suggest that there are already-existing examples of

different kinds of agricultural extension practices, ones that challenge the capitalist – understood here as synonymous with racial capitalist (Robinson, 2020) – paradigm that dominates in California's agricultural landscapes and elsewhere. I discuss one such example, providing a case study of one extensionist's efforts to support Spanish-speaking, small-scale, Latinx farmers in California's Central Coast. Drawing from feminist political economic theory, I argue that extension is a site of heterogeneity where dominant power asymmetries are both maintained and transformed. My case highlights efforts to transform such power asymmetries and illustrates the labor that some extensionists mobilize to support small-scale Latinx farmers and other farmers of color in the context of US agri-capitalism. I highlight four ways in which one extensionist's labor disrupts dominant extension practices, including: (1) filling gaps in state programs with invisible labor; (2) building mutual trust through social relationships beyond work; (3) blurring distinctions between extension work and farm work; and (4) broadening definitions of "farmers" beyond business ownership and land tenure. In doing so, I advocate for a critical understanding of heterogeneity among extension practices, as extensionists both contribute to and challenge racial-economic inequalities in the agri-food system. With this approach, I aim to identify and better understand how contestations of dominant power arrangements do and can occur in extension contexts in the hopes of supporting these efforts.

Finally, in Chapter 3, I consider how farmers too are both implicated in and critical of toxic socio-ecological structures. I explore the complex problem of agricultural nitrate pollution and subsequent groundwater contamination in

California's Salinas Valley, where farm business owners are legally responsible for on-farm nutrient management and are benefiting from "free" fertilizer in the irrigation water. My study centers on the same community of small-scale Latinx farm owner-operators, whose positions as working-class immigrants of color make them not only beneficiaries of poor on-farm nitrate management but also vulnerable to the health-related impacts of nitrate-contaminated drinking water. In this context, I explore how farmers navigate regulatory burden as farm business owners while also formulating environmental responsibilities necessary for supporting the environmental health of their working-class communities of color. This approach is designed to highlight theories and practices of environmental responsibility that are critical both of industrial activities and of dominant state-led regulatory efforts. I find that farmers' framings of environmental responsibility diverge from state-led efforts in terms of: (1) pollutants of concern; (2) ways of knowing; (3) scales of action. I then argue that farmers' approaches illustrate a unique form of environmentalism rooted in the lived experiences of people who are both farm business owner-operators and agricultural workers. While dominant efforts to mitigate nitrate pollution overly simplify who is responsible for pollution and who can and does contribute to water quality protection, the small-scale Latinx farming community inherently complicates dominant framings of "polluters" and "victims." Ultimately, these farmers demonstrate ways of theorizing and practicing extra-legal environmental responsibilities that are critical of both industry and state, and which are accountable to the complex ways in which

their communities contribute to, benefit from, and are harmed by agricultural pollution.

CHAPTER 1:

Cempasúchil/gende ke phool:

Cultivating feminist reflexivity amidst food system inequalities

1. Introduction

Orange flowers dot the periphery of my vision – at field edges, at the sides of the road. I have the distinct sense that they are everywhere. Although I am surrounded by low industrial fields of leafy green vegetables, the bursts of orange overwhelm my sight such that everything else – the low straight rows of lettuce and brown earth, the big sky, the distant agricultural machinery and people cutting and boxing produce – fade into a hazy backdrop.

It is October in Salinas, California, and "se vende cempasúchil" signs are pinned to telephone polls and vendor stalls at street corners. Through my work in the local agricultural industry[2] and specifically as a farmer assistance provider working with Spanish-speaking farm owner-operators, I have grown accustomed to working and living alongside people, usually Mexican immigrants, who cultivate and use the flowers to remember and practice their traditions surrounding the annual Día de los Muertos celebrations. One autumn, while working with my friend Eva who planted

[2] Salinas, California is located in the heart of the industrial agricultural landscape of the Salinas Valley. Sometimes known as "The Salad Bowl of the World," the Salinas Valley is home to massive vegetable and berry production, with nearly $8 billion in direct economic output annually (Monterey County 2022).

cempasúchil at the edge of her farm field, I caught the flower's scent and began to consider its other names.

As the child of a Hindu Punjabi immigrant mother and a white father (with Swedish and mixed Western European ancestry, but with a few generations of ancestors in U.S.-occupied lands), South Asian language and customs are often at the periphery of my experience. I grew up speaking English in majority-white neighborhoods and schools. Realizations of otherness come to me in sudden bursts – such as when my name is mispronounced, or when I catch a whiff of the flower that I associate with my aunt and uncle's wedding and with the Diwali celebrations of my childhood. In autumn, we used to gather with our Hindu Indian friends at one of our houses, light candles and decorate the sidewalk, put out the same orange flowers and eat lentil soup and chicken curry with my favorite onion-stuffed bread and yogurt. There, *cempasúchil* was often called *gende*, or *gende ke phool.*

In this chapter, I use my multiple relationships with *cempasúchil/gende ke phool* as a guide to critically examine my work with a community of Spanish-speaking, small-scale farm owner-operators in California's Central Coast, most of whom are Indigenous or mestizo Mexican immigrants or are Mexican American. These are people who, generally speaking, are experiencing a form of socioeconomic mobility: transitioning or having transitioned from working for large agribusinesses to running their own small-scale farm businesses. I am now employed by a local government agency, primarily to assist these farmers with their irrigation and nutrient management practices, yet have engaged with this community of farmers in multiple

different ways over the past few years. I am not of Mexican nationality, am not a native Spanish speaker, and do not come from an agricultural working-class background, yet I attempt to collaborate with this community. Given that I began working with this community as a cultural outsider and as a person with relative socio-ecological privilege, I am wary of the ways in which my relationships with these farmers might reproduce regional inequalities. I find that cempasúchil/gende ke phool is a particularly provocative companion[3] in my analysis of these relationships: the flower is both familiar and foreign, and also cherished by many of the farmers I work with. Thinking about relationships through these flowers, their names, helps me to reckon with the differences between me and my interlocutors while illuminating cross-cultural similarities and possibilities for connection.

Nonprofits, government agencies, and academics alike tend to celebrate similar communities of farm owner-operators as indicators of racial and economic justice. Those celebrations overlook the structural limitations of socioeconomic mobility and entrepreneurialism as a form of justice in the food system (e.g., Alkon, 2014). My relationships with individual farmers and with this farming community exist within complex socio-ecological hierarchies and a highly segregated agricultural landscape. As an academically trained agricultural scientist and government employee, I am deeply implicated in epistemological hierarchies that distance the

[3] I am inspired by Haraway's (2003) concept of companion species in reference to the co-constitutive existence of humans and non-human beings. Here, I use this concept to consider the relationships between humans and cempasúchil/gende ke phool – *Tagetes erecta* as well as the many other orange flowers that are sometimes referred to by these names and with which South Asian and Mexican peoples have intimate, long-lasting, and diverse relationships.

researcher from the researched and the scientist/expert from the farmer. As an activist and local government employee, I am committed to supporting the sustainability of small-scale farms run by working-class Mexicans and Mexican Americans. I am also aware of tendencies to reproduce epistemological hierarchies through well-intentioned efforts to "bring good food to others" (Guthman, 2008a). Concern with power hierarchies, with the extent to which I might reproduce them, these shape my evolving relationships with farmers.

Yet there is something else present in my relationships with farmers. When we share meals at field edges and talk about *cempasúchil/gende ke phool*, the interstitial spaces[4] of our formal engagements become sites of critical dialogue about regional inequality and about the movements and migrations that bring us all to this place. In this chapter I aim to explore how careful attention to my positionality has helped me and community members to collaboratively question and disrupt regional hierarchies. Thinking with friends and with flowers, thinking about my positionality, has helped me rethink my relationships with farmers, and has helped us develop relationships that are accountable to our different positions within the regional food system.

The feminist concept of reflexivity is closely related to the concept of positionality and involves paying attention to the situatedness of one's own knowledge production processes. In the following pages, after introducing and

[4] Galt et al. (2014) use the term "interstitial spaces" to refer to "those spaces between more commonly acknowledged and observed uses and categories" (2014, p. 134).

exploring the role of reflexivity in the pursuit of food systems change, I then engage cempasúchil/gende ke phool as a companion in developing an analysis and practice of reflexivity in my work generating and sharing agricultural knowledge.

The cultural practices related to cempasúchil/gende ke phool discussed in this chapter demonstrate relationships that simultaneously reflect cross-cultural difference and connection, as well as shared aspirations and desires. I examine important encounters that I had with the flower from 2019 to 2022: analyzing how these encounters made me aware of my own positioning within regional socio-ecological power structures, and how this awareness led me to critical relationships with various farmers and related actors. My conclusion explores how the concept and practice of reflexivity can support those working towards food systems transformation.

2. Feminist reflexivity in the food system

In this chapter, the work that I describe with farmers is often framed in terms of either agricultural extension ("extension") or food justice work. In the U.S., extension most notably refers to the Cooperative Extension Service, which forms part of the land-grant university system and is tasked with "providing non-formal education and learning activities to farmers, ranchers, communities, youth, and families throughout the nation" (USDA NIFA, 2023). It was originally established in 1914 to extend scientific insights developed at agricultural universities to rural communities across the U.S. As such, extension is subject to many critiques about production and reproduction of hierarchical relationships in the food system,

particularly with regard to prioritizing knowledges produced at scientific institutions and disregarding other knowledges (Chambers, 2014; Leeuwis, 2013). Extension can also refer to a set of practices utilized more broadly by public, private, non-profit, and volunteer organizations to extend information and resources to various publics. Throughout this chapter, I use the term broadly to encompass my work with farmers in both formal and informal contexts, where I attempt to assist them in growing food, caring for land/water, and maintaining their farm businesses. Although knowledge hierarchies may not be so explicit in these contexts, critiques of such hierarchies remain relevant.

While food justice work can overlap with extension activities in many ways, the concept of food justice draws from activist roots. Food justice primarily refers to a social movement that developed alongside the environmental justice movement (Gottlieb, 2009; Gottlieb & Fisher, 1996). As such, it has its origins in the civil rights movement and has been particularly focused on challenging food inequalities along multiple axes of social difference, including race, class, citizenship, gender, sexuality, ability, and more (Alkon & Agyeman, 2011; Gottlieb & Joshi, 2010). Although much food justice scholarship seeks to document the work being done by low-income communities of color to challenge food system inequalities, there are important critiques of ways in which people of relative social privilege contribute to these efforts through community work and through scholarly research. Importantly, Guthman (2008a) argues that white-led efforts to support food justice often involve "the intention to do good on behalf of others" and have "the markings of colonial

projects, in that [they seek] to improve the other while eliding the historical developments that produced these material and cultural distinctions in the first place" (2008a, p. 436). While Guthman's argument specifically critiques white-led food justice efforts, I find that such critiques are also relevant to work led by people of color with various kinds of socio-ecological privilege, including myself. What is particularly troubling about food justice initiatives that strive to "bring good food to others" (Guthman, 2008a) is that they inherently uphold a certain distance between those considered to be capable of providing assistance and those considered to be in need of assistance. Accordingly, such well-intentioned activities remain poised to reproduce epistemological and ecological hierarchies even while seeking to help meet community members' basic needs and to care for land/water.

To examine and address the ways in which (my own) extension and food justice efforts might reproduce epistemological hierarchies, I utilize conceptual and methodological tools from feminist science studies. Feminist science studies is, in part, concerned with the ways in which women are excluded from and marginalized within the sciences and within scientific research. This is more than a matter of bodies within scientific institutions; it is also a question of whose and what kinds of knowledges matter in making sense of the world. Although this body of scholarship often critiques the dominance of scientific knowledges, it is relevant beyond scientific institutions, especially in extension and food justice settings where knowledge produced at scientific institutions is circulated and promoted by various private and public organizations.

Feminist critiques of dominant scientific practices offer important insights into the ways in which knowledge hierarchies are produced and reproduced across many different contexts. Feminist scholars within and outside of scientific disciplines have long drawn on the understanding that all knowledge is socially constructed (e.g., Hawkesworth, 1989) to critique dominant notions of "objectivity" in scientific practice (Bleier, 1984; Fausto-Sterling, 2008; Harding, 1991; Keller, 1995; Longino, 1990). Influential among these discussions is Haraway's (1988) critique of the "god trick" in scientific inquiry with which the scientist makes claims to universal truths without recognizing that these claims are the result of a particular way of knowing. Haraway describes this trick as the "conquering gaze from nowhere… that mythically inscribes all the marked bodies, that makes the unmarked category claim the power to see and not be seen, to represent while escaping representation" (1988, p. 581). In this sense, Haraway and other similarly inclined scholars illustrate how dominant notions of objectivity in science fail to consider how the (white, man) researcher themself brings a range of lived experiences to the research process, and how those experiences shape the way that knowledge is produced.

As an alternative to dominant notions of objectivity in scientific inquiry, feminist science scholars have argued for an understanding of all knowledge as partial and situated in the lived experiences of the knower (Haraway, 1988). This understanding has allowed for development of multiple feminist methodological tools, including the concepts of positionality and reflexivity. Importantly, the concept of positionality asserts that that people make meaning from their locations within the

larger social formation. Earlier feminist scholarship tended to essentialize a person's standpoint such that, for example, all women would have a fixed and static view. The concept of positionality resists such essentializing tendencies by asserting that people make meaning from their social locations but that these positions are not inherently defined by a particular set of attributes; rather, they are characterized by the external and shifting context where that person is situated (Alcoff, 1988). In this sense, for example, the category of "woman" emerges from historical experiences and is not limited to essentializing notions of womanness. With this understanding, my knowledge about my regional food system and relevant political action is only ever partial knowledge and is tied to my positioning within regional socio-ecological hierarchies. Such understandings challenge notions of "expert" knowledge in extension settings and gesture towards some of the limitations of my own ability to envision and enact food justice.

While positionality refers to situatedness of one's knowledge production practices within socio-ecological hierarchies, the feminist practice of cultivating awareness of such situatedness is commonly discussed with the concept of reflexivity. Reflexivity, as a feminist methodological practice, is an alternative to the god trick and has broadly to do with situating the self as researcher in relation to the researched. Although "research" often refers to knowledge production practices that take place at scientific research institutions, I use the term here in a feminist sense to broadly refer to knowledge production and sharing practices. In all settings where knowledge is produced and shared, reflexivity is "self-critical sympathetic

introspection and the self-conscious *analytical* scrutiny of the self as researcher" (England, 1994, p. 82, emphasis original). Accordingly, the practice and theorization of reflexivity is closely related to an analysis of the researcher's positionality. Reflexivity is commonly understood as a methodological challenge that seeks to grapple with researcher positionality by exploring the ways in which the research is structured by the researcher, the researched, and the research contexts, and which posits that the research and the researched will be transformed by the research process (England, 1994). Importantly, Chiseri-Strater (1996) emphasizes reflexivity as a relational practice by distinguishing between reflexivity and reflection, suggesting that "to be reflective does not demand an 'other,' while to be reflexive demands both an other and some self-conscious awareness of the process of self-scrutiny" (1996, p. 130, as quoted by Pillow, 2003).

The most common use of reflexivity as a methodological tool is certainly as a "self-reflexive exercise which deconstructs the researcher's positionality… done in retrospect and more often than not focus[ing] on fieldwork" (Nencel, 2014, p. 76). This kind of approach is met with several important critiques. First, it exemplifies what (Rose, 1997) has called "transparent reflexivity" in which scholars attempt to have a full understanding of themselves as researchers. Ironically, these approaches fail to address one of the core arguments for reflexive practice, which is that all knowledge is partial and situated. With this understanding, the practice of reflexivity is necessarily a situated practice, one in which the researcher can only ever have partial knowledge of their own positioning within socio-ecological structures.

Furthermore, (Pillow, 2003) takes issue with the ways in which reflexivity has "become associated with or used as a measure of legitimacy and validity in qualitative research" (2003, p. 179), as if by situating oneself, the researcher can be aware of and reveal how they have influenced the research process – ultimately yielding more "accurate" or "valid" research. Again, such approaches run counter to the original arguments for reflexive practice, as they implicitly suggest the ultimate knowability of both researcher and the researched. Pillow has advocated instead for "a reflexivity of discomfort" in which reflexivity might be used "not as a tool of methodological power but a methodological tool interruptive of practices of gathering data as 'truths'" (Pillow, 2003, p. 192).

Common uses of reflexivity are also critiqued by a variety of scholars for being overly focused on the researcher at the expense of the researched, especially when reflexive practices take the form of a "confession" that "yields a catharsis of self-awareness for the researcher" (Pillow, 2003, p. 181) with little meaningful political action. Tuck and Yang (2014b) describe this as "the reflexive caveat, the hand-wringing, the flash of positional confession before proceeding as usual" (2014, p. 814, as quoted by D'Arcangelis, 2018). Accordingly, feminist scholars continually insist on the importance of directly connecting reflexive practices with political action (Kobayashi, 2003, 2009; Nagar, 2002). What counts as meaningful political action is, of course, debated extensively. Feminist framings of activism that challenge the distinction between activism and everyday life suggest that reflexive practices can allow practitioners to develop and mobilize understanding of how to challenge

oppressive hierarchies rather than reproduce them (Maxey, 1999). Such approaches will naturally vary greatly depending on the practitioner and the context.

In the remainder of this essay, I argue that efforts to support sustainability of small-scale farms run by working-class people of color – and similar initiatives under the banners of "extension" and/or "food justice" – are amplified by practices of reflexivity. Notably, Alkon (2011) also argues for feminist reflexivity as a methodological practice in food and environmental justice research. Yet Alkon's analysis of their own work in farmers' markets largely focuses on the role of reflexivity in representation of formal scientific research, in that reflexive analysis reminds readers that research is always constituted by non-objective processes of data collection and analysis. While this understanding is certainly important, such approaches can tend to emphasize reflexivity as a tool for producing more "accurate" or "valid" formal scientific research by allowing readers to understand the situated nature of the research process (Pillow, 2003). My argument differs from Alkon's in that I do not aim to perform reflexive analysis here to enhance the representation of my research, but rather to discuss how reflexive practices have informed my unfolding political practices. In doing so, I engage with the concept of reflexivity beyond its more common usage as an element of formal scientific methodology, considering "research" in a feminist sense to broadly refer to knowledge production and sharing practices. In this regard, I am concerned with reflexivity as a relational process by which we become aware of ourselves as situated in socio-ecological structures. Ultimately, I argue that practices of reflexivity can illuminate some of the

underlying capacities and limitations of individual and organizational support for farmers, supporting politicized responses to food system inequalities.

In the following section, I draw from these discussions to examine how my practices of reflexivity developed, and how they have contributed to my work in my regional food system. I aim to contribute an example of how reflexivity might be used not to produce more "accurate" or "valid" knowledge (Pillow, 2003), but as part of a feminist response to oppressive hierarchies in the food system.

3. Encountering cempasúchil/gende ke phool

When I moved to the so-called Central Coast of California for graduate school, I knew I was interested in ethical responses to inequality in the food system, yet I did not yet know what my data collection activities would look like or how my analysis would unfold. I was also rather uncommitted to an academic career path and felt invested in developing personal and professional relationships with diverse actors working in regional agricultural contexts.

Early in my PhD program, I met Horacio Amezquita, a prominent regional water justice activist. I shared my training in soil science. He made the connection between soil science education and reduced fertilizer runoff and introduced me to a non-profit organization called the Agriculture and Land-Based Training Association (ALBA) where he suggested I get involved in a beginning farmer training program. ALBA's mission is to "create opportunities for low-income field laborers through land-based training in organic farm management, helping them advance their careers

or pursue the dream of farm ownership" (ALBA, 2023). Their programs are primarily offered in Spanish, directed at regional agricultural workers who are primarily Mexican immigrants and Mexican Americans. ALBA is in part what is known in the agricultural industry as a "farm incubator," where various entrepreneurs begin their farm businesses in a somewhat collectivized space. In ALBA's case, farmers share subsidized land and equipment in Salinas, CA, and receive support from a team of non-profit employees and their collaborators. Horacio explained the connection between water quality, soil science, and beginning farmer education to me, which helped me understand ALBA as a site of environmental and food justice struggle, helping me formulate an object of study for my PhD research.

As I began to engage with farmers at ALBA, my research took the form of ethnography, relying primarily on data collected through participant observation. Yet these methods emerged as secondary to my principal interest in building relationships. In this sense, research was one of multiple ways in which I understood my relationships with farmers and other community members. As I learned more about feminist critiques of scientific research extension – particularly those concerning the distance between researcher and researched and between expert and farmer – I struggled to be accountable to these critiques while continuing to find ways of engaging with farmers to support the practical, day-to-day work of surviving in a highly industrialized agricultural landscape. I developed multiple overlapping and imperfect modalities through which I sought to be in relationship with the community of ALBA incubator and alumni farmers, some of which I discuss below in more

depth. Throughout this process, I discovered cempasúchil/gende ke phool as a companion in the literal and metaphorical "field" that could hold me accountable to socio-ecological hierarchies within which I worked.

3.1 Botanical history

The word cempasúchil derives from the Nahuatl "cempohualxichitl" meaning "twenty flowers," likely indicating the numerous petals on the flowers. Cempasúchil typically refers to *Tagetes erecta* and occasionally to other flowers in the genus *Tagetes*. According to Kathy Keeler, botanical scientist and author of the blog, "A Wandering Botanist," *Tagetes* species are native to the Americas but were transported by Europeans to various parts of Africa, Europe, and Asia beginning in the 1500s. Keeler writes that these flowers "were not wildflowers when they were brought to Europe (by 1520)," (Keeler, 2023b) as Aztec and other peoples throughout the Americas had been cultivating them for centuries.

This history might suggest that South Asian cultural practices related to this flower originated in the 1500s or later. However, in attempting to research how *Tagetes erecta* became integral to South Asian cultural practices, I found that a large amount of confusion exists around the history of its use given that the same common names are often used to refer to different, similarly-colored flowers.

In English, cempasúchil is known as "marigold." While the term marigold refers botanically to about 55 species in the genus Tagetes, it is also used more widely. Keeler explains,

> "…the name marigold was already in use in England when these plants arrived. The plant the English usually called a marigold was a yellow or orange flower from southeastern Europe, scientific name *Calendula officinalis* (sunflower family, Asteraceae)" (Keeler, 2023a).

Accordingly, the English-language history of marigold is difficult to interpret as the term is sometimes used to refer to Calendula officinalis, which is native to southern Europe and the eastern Mediterranean area but has been widely cultivated for centuries. In a Twitter post, Savitri Mumukshu argues that similar confusion occurred with the Sanskrit word Jhaṇḍū (झण्डू), which today typically refers to *Tagetes erecta* yet is found in texts that would have predated the arrival of *Tagetes erecta* in India. It is therefore likely that South Asian customs involving marigold/Jhaṇḍū engaged with *Calendula officinalis* prior to the arrival of *Tagetes erecta,* which at some point replaced *Calendula* as the preferred flower for cultivation and use (Mumukshu, 2023).

This complex botanical history and geography lends itself to a nuanced understanding of cross-cultural differences and similarities. Although my Mexican-origin interlocutors often insist that the flower is native to Mexico, they are often intrigued to learn about relevant cultural practices in India and are regularly compelled to discuss parallel histories of colonialism and migration.

3.2 Encounter #1: At Día de los Muertos *celebrations*

In preliminary engagements with ALBA staff, farmers, and their fields throughout 2019, I found cempasúchil/gende ke phool popping up at the edges of

these fields. A “se vende cempasúchil,” sign was posted at the ALBA entrance during October 2019. Yet these flowers were peripheral to the dominant discussions taking place among ALBA staff and farmers and their collaborating organizations, which instead focused heavily on issues of land access and marketing of produce. I myself considered the cempasúchil/gende ke phool only sparingly in my early field notes.

My first direct encounter with these flowers occurred inside ALBA’s classroom space, where the organization holds occasional workshops and regular classes as part of their year-long Farmer Education Course. After a meeting with staff in early November to recap a recent workshop, I entered the classroom to get drinking water and found an altar for Día de los Muertos constructed along the far wall of the classroom. With the orange flowers, photographs of loved ones, candles and cherished objects laid out on the altar, I felt acutely self-conscious about being an outsider in a space created by and for people who inhabit a vastly different place in the socio-ecological hierarchies of California’s Salinas Valley. I had not smelled the cempasúchil and remembered its other names. I could not convince myself of a particularly compelling contribution I could make to that space, other than my free time and a basic understanding of soil science. In other words, I began to grapple with the experience of being an outsider to this community.

My field notes from that time reflect a growing anxiety about my positionality and my relationship with the community of ALBA farmers. I write, “My car is too nice, it always makes me feel uncomfortable driving through those fields in a swanky clean Volvo” (field notes, September 23, 2019). My discomfort about racial and class

difference, my general outsider-ness as a scholar/educator entering an unfamiliar community, is reflected in my field notes. I criticized ALBA as an organization and similar well-intentioned white or white-aligned people (like myself), our liberal aims to support farmworker entrepreneurialism. Following a soil health workshop that I helped host and organize, I write,

> "[One extensionist] really emphasized the need to talk through the review questions person by person, which I could tell made this more of a quiz for farmers than an open discussion. He says this approach was out of concern that not everyone will speak if he does not work this way, although I don't think the appropriate response is to grill people individually and put them on the spot […] I interpret this to mean that [the extensionist] is accustomed to focusing on farmers as vessels for knowledge to be poured into, rather than as people like themselves who have deep knowledge related to land and to the industry" (field notes, October 14, 2019).

Now, I would argue that my critical analysis of the extensionist in this situation was part of my own grappling with my positionality as a well-intentioned outsider and community worker. A couple years of formal and informal engagements with this farming community helped get me employed as an extensionist at a local government agency, after all.

The kind of analysis that is critical of farmer assistance providers' widespread reproduction of epistemological hierarchies has been useful in understanding and discussing with interlocutors how (neo)liberal multiculturalism functions through the ALBA context, as well as for reflecting on my own complicity. However, it has not always helped me to engage or understand how to engage with farmers going through the ALBA programs in a better way. That is, in recognizing the structural limitations of the institutions that I and other farmer assistance providers are a part of, I found

myself questioning whether I should continue to engage with these institutions and their employees. In encountering cempasúchil in the ALBA classroom and recognizing myself as a relative outsider, I found myself questioning whether I should be engaging with this community of farmers at all.

Encountering cempasúchil in the ALBA classroom and temporarily forgetting my relationship with gende ke phool as one that connects me and my family to specific places left me increasingly concerned with what Tuck and McKenzie (2015) refer to as "the 'where' of inquiry." This feminist geographic practice of locating the researcher, in my case, necessitated awareness of my positionality in the racially and economically differentiated landscape of California's Central Coast. I regularly commuted from the predominantly white, wealthy community of Santa Cruz, location of the University of California campus I attend, to the predominantly Latinx, agricultural working-class community of Salinas. I was being trained to study and understand social and environmental difference within the settler colonial and capitalist context of a land grant university. A growing practice of reflexivity allowed me to recognize relationships which — with the dispassion of a scientist and educator — I had considered to be peripheral to the ALBA context.

Following the encounter with cempasúchil/gende ke phool in the Dia de los Muertos altar, my field notes gradually began to reflect the broadening of my study "site." Just as people from rural parts of central Mexico migrate to work in the Salinas Valley agricultural industry, I noted, my family had participated in various migrations: my mother and other Indian hi-tech workers migrating to the US and

often assimilating; my mother, father, and other hi-tech workers migrating to Boston, MA to work in the hi-tech industry; me and other people from across the US migrating to California away from our families of origin in search of progressive ideals. I can now see, too, that these same migrations that allowed me to encounter cempasúchil/gende ke phool in the Día de los Muertos altar at ALBA also allowed me to fail to remember the rich cultural practices connecting my family with the flower. My mother's assimilation into a predominantly white community in Boston led her, and then me, away from cultural practices related to gende ke phool, and my movement away from her led me even further away from these practices. In reconnecting with the flower, I have had to consider my relationships with distant people and places that extend through time and space.

I began to extend my analysis through time and space, and my field notes began to include diverse people who have influenced the way that I understand my positionality in relation to the soil science education work I was involved in at ALBA. One of these such people is my auntie Anjali,[5] who lives in California's San Francisco Bay Area and with whom I share a passion for cultivating food crops.

Anjali entered my ethnographic dataset in the summer of 2019, when she called me to tell me about her idea to purchase twenty acres of agricultural land in California's Central Coast. It was a financial decision, as she and her husband hoped that purchasing agricultural land would be a stable investment. Anjali lives in the Bay Area's Silicon Valley, where she arrived in the 80's to work in the tech industry. She

[5] All names are pseudonyms.

and my mom met in India while attending a small engineering college. As two of the few women in a college dominated by men, they developed a close bond which they have maintained despite immigrating to different parts of the US. Accordingly, when I arrived in California for graduate school, Anjali was quick to invite me into her kitchen and into her plans for transforming her yard into a highly productive garden. Given our shared interest in cultivating food crops and my background in agriculture, Anjali asked if I could help her in some way to manage the farm that she planned to purchase. I scoffed at the idea of managing a farm while completing my PhD program and instead shared information with Anjali about ALBA's farm incubator program, about the many competent farmers struggling to access farmland upon graduating from ALBA.

A few months later, this relationship with Anjali – which I had initially considered to be peripheral to the ALBA context – became a topic of conversation in the ALBA classroom. I had been speaking with an ALBA staff person, Nadia, when a farmer named Gloria entered the room. I write,

> "When Gloria was in the room, Nadia mentioned that Anjali is my auntie [tía]. Gloria was excited to hear this and I felt the whole relationship shift – suddenly I can be placed and identified within social networks. Even though I am associated with someone rich (a landowner), I am grounded in that particular place (Anjali's farm as well as ALBA and the region more broadly). Apparently, Gloria is renting land at Anjali's property along with four other ALBA farmers. Nadia liked talking about this and began to relate my Indian ancestry to her own experiences growing up in Colombia, like the chaos of driving in the city and all of the excitement of being in the streets" (field notes, December 11, 2019).

I recall that following the conversation with Gloria, I really did feel as though a veil lifted. Understanding my positionality helped ALBA farmers and staff see me as a

relationally grounded person rather than as an objective university student/scholar/educator. Encountering cempasúchil in the Día de los Muertos altar had given voice to what became important research questions: "who are you, who are your people; what are your celebrations, your flowers?" Read in this light, those orange flowers became an invitation to share more of myself.

Expanding my sphere of analysis to consider my relationship with Anjali (and, by extension, with land access) allowed my relationships with farmers to develop new facets. Of course, these evolving relationships did not erase differences between us. In many cases, those relationships prevented me from ignoring those differences, as various farmers sought me out to ask whether Anjali would be willing to rent to them. When talking or texting with my mom and Anjali, we have conversations about wealth inequality, private property, and what it means for them to be Punjabi immigrant women and landowners. We rarely come to any conclusions, but we have tried out some ideas. For example, with the onset of the COVID-19 pandemic in March 2020, Anjali began conversations with Gloria and the other ALBA alumni farmers leasing land from her about developing a direct-marketing platform to sell their produce directly to her network of friends and acquaintances in the Bay Area. The ensuing collaborative process has been sometimes inspiring and sometimes frustrating to witness, as their group has attempted to navigate dramatic differences in financial and social capital.

Ultimately, I find that encountering cempasúchil/gende ke phool in the Dia de los Muertos altar led me to develop a practice of reflexivity by helping me to reflect

on my situatedness within the layered and multi-scalar socio-ecological structures that shape the regional agricultural landscape. This practice forced me to expand my sphere of analysis when working with ALBA farmers to include awareness of my positionality vis-à-vis Anjali and land tenure. In doing so, it also allowed my work with farmers to evolve to include connecting farmers with land for rent and with direct marketing opportunities. Accordingly, my growing practice of reflexivity allowed me to develop small-but-meaningful, material responses to structural inequalities in the regional food system.

3.3 Encounter #2: At the field's edge

The next time I encountered cempasúchil/gende ke phool in the ALBA context was the following year, in summer 2020. By that time, I developed a relationship with an ALBA farmer which was quickly becoming the focus of my academic "field work" and participant observation activities.

With the onset of the COVD-19 pandemic in March 2020, a friend connected me with a farmer named Eva so that I could help her apply for pandemic-relief grant funding. The pandemic made applications for grant funding particularly important for the economic viability of ALBA farms given the low market prices, as well as the additional need for childcare, as farmers were forced to either bring their children to work or to work less in order to stay at home with their children. Eva, a single mother of four in her first year of crop production at the ALBA incubator, completed a grant application with me over the phone. That first conversation with her brought me to

tears – I was moved by both the content of our shared words and by the feeling of connecting with someone across what I perceived to be a great distance.

This conversation occurred at a time in my study when I had recently read Eve Tuck's (2009) open letter to communities entitled "Suspending Damage," words which sat heavy with me as I assisted in writing Eva's grant proposal.[6] I knew that need-based grant funding works through a politics of recognition that demands metaphorical bloodshed. We wrote in her application all of the identity markers that I believed would demonstrate need to the grantors. I was unsurprised when the funding organization emailed us to say that they were sending her a check. In the following months and years of our friendship, I have realized the lasting impact that this grant application process has had on our relationship dynamic as she has insisted on buying food for me at every possible opportunity, as if she is perpetually indebted to me.

Following our initial conversation over the phone, I began to work with Eva at her farm. Once a week I would spend an afternoon with her to help weed and harvest and would often leave with a box full of produce for my kitchen. I initially thought of this exchange as a kind of work-trade relationship, yet our dynamic quickly transformed into friendship, particularly with the arrival of cempasúchil/gende ke phool that summer.

[6] Tuck's (2009) widely influential essay, "Suspending Damage," argues against "damage-centered" research that seeks to document pain experienced by Indigenous peoples and other people of color. Tuck argues that such research is premised on a flawed theory of change that reinforces pathologizing notions of damage while failing to make meaningful material change for these individuals and communities.

It was late July and we had just finished harvesting green beans when Eva's only daughter, Solana, met up with us at the field edge. Laughing, Solana recounted to us a story about how her pet guinea pig had escaped on the farm and how she had had to chase the guinea pig up and down the rows of broccoli. And then she and Eva showed me a patch of orange flowers that Solana had planted at the field edge, which we all knelt down to sniff. It was then when I registered the full relevance of these flowers to my life, and I shared – to Solana's amusement – stories about my aunt and uncle's traditional-style wedding in New Delhi. Solana stopped me mid-explanation. "Do they have a lot of *conejos de la India* there?" she asked in mix of English and Spanish. I had no idea what she was talking about – I had never seen or heard about rabbits [*conejos*] in India. They explained that this was another term for guinea pigs, a term that became an entry into one of many questions that Eva and Solana asked about my relationship with India.

Making the connection between cempasúchil and gende ke phool opened up an ongoing conversation about differences and similarities between Mexican and Indian cultures. Soon we cooked my mother's *daal* recipe with a side of *agua de Jamaica*, debating whose chiles were spicier. These conversations and activities dissolved our work-trade arrangement, allowing me to share more authentically about my family, my childhood, and my tastes. I learned that I could be honest, that she would also be, while critically examining together some important differences between our lived experiences. Eva's and Solana's questions have held me accountable to the privileges that I hold, especially class privilege. They have also

compelled me to ask difficult questions about my relationship with academic knowledge production and associated academic capital, such as whether I would transform precious conversations into data in pursuit of a Ph.D.

Again, encountering cempasúchil/gende ke phool allowed me to develop a practice of reflexivity, particularly as Eva and Solana worked with me to compare Mexican and Indian relationships with the flower and with regional agricultural landscapes. Together, we considered how Mexican and Indian people are positioned differently in regional socio-ecological hierarchies, and how we both long for the people and places evoked by the scent of cempasúchil/gende ke phool. Like the conversations I have with Anjali and my mother, Eva and I do not often come to conclusions about what to do about the differences between us and inequalities that they illuminate, but we think together about the possibilities. She has a vision of developing a local market selling fresh organic produce to agricultural workers, who typically cannot afford to buy organic produce. We entertain possibilities of creating a housing cooperative with space to garden and raise goats. These critical conversations and collaborative dreams form the basis for potential actions – actions that are both big and small. In the following section, I discuss a particularly significant action that Eva and I took together as an ethical and political response to regional food system inequalities.

3.4 Encounter #3: In alternative economic practices

Once I smelled cempasúchil on Eva's farm and discovered the significance of the flower within my own family, I began to notice the orange flowers more and more throughout the 2020 growing season: popping up at field margins and in individual stands next to tool sheds, planted next to pollinator species like Alyssum or near herbs like rosemary or mint, which were grown in small quantities – clearly for household consumption rather than for sale. But I knew of one farmer, Alfredo, who grew cempasúchil for sale. Alfredo farmed the plot of land immediately at the entrance to the ALBA incubator, where visitors were greeted by his one long row of orange flowers growing in front of carrots, beets, celery, kale, and other summer vegetables. Although I only knew him by reputation, I knew the flowers were for sale because he posted handwritten signs along with his phone number, both immediately next to his farm and on a telephone pole near the ALBA incubator property along a well-trafficked road.

I had not considered informal sales of flowers, fruits, and vegetables at ALBA much before meeting Alfredo. Of course, there are roadside vendors dotting the streets throughout this intensive agricultural region, many of whom sell informally out of produce trucks during the day and head home in the evenings. At ALBA, however, farmers are typically working with a limited crew – mainly themselves and their family members – and do not have the capacity to sell at roadside produce stands.

Most ALBA farmers sell wholesale to Brenner Farm,[7] a regional produce aggregator and distributor whose main facility is located a half-hour drive away. Although Brenner is the most popular customer among these farmers, they are also heavily criticized. As I got to know the community of ALBA farmers better, various people would complain that they had not been paid for three months – Brenner's regular turnaround time for payouts. Farmers also told stories about truckloads of produce being rejected by Brenner for being too small in quantity or too low in quality – for example, with a high number of aphids found in heads of broccoli. Brenner is likely accustomed to working with larger-scale growers with more secure land tenure, who are able to plan harvests and deliveries with Brenner staff to make the buyer's job easier. The ALBA farmers, on the other hand, are both limited in their ability to coordinate with Brenner staff and have few other marketing options.

Everything I had been learning from cempasúchil/gende ke phool – how to understand my positioning within the community, how to be attuned to regional inequalities, how to share more openly and honestly with other community members, how to be transformed by my relationships with farmers, even uncomfortable ones – would soon be put into action to address these marketing challenges.

Late in the summer of 2020, I arrived at Eva's farm for a regular day of field work together. Her broccoli crop was deep green and had been cared for to market perfection: the florets were full and weighty, with the deep color indicating high levels of nutrient uptake. I anticipated a long and celebratory day of harvesting;

[7] Pseudonym

however, as I approached Eva, the look on her face suggested otherwise. She explained quickly: Brenner Farm did not want to buy any of the broccoli. “They want *broccolini*, not broccoli,” she told me, her voice straining with frustration.

This situation was unfortunately unsurprising. It had happened before and had happened to many other ALBA farmers we knew. It was devastatingly common to see fields of perfect produce rotting in the field, and to receive late night calls asking whether you know anyone who wants to buy a certain crop. We discussed all of this, trying to find a way to salvage the broccoli itself, as well as the money and labor poured into it. Having just passed Alfredo’s cempasúchil on the way to Eva’s farm, I thought of informal sales. I thought to ask my professors and fellow students if they would buy some broccoli, or at least accept some at no cost.

I harvested a few boxes to give away as gifts, but Eva decided that she would not invest labor into a harvest without a confident buyer. The majority of the broccoli rotted in the field. Yet Alfredo’s marketing of cempasúchil got us thinking creatively about how to avoid similar situations in the future. A couple of weeks later, Eva suggested that I start a business of “vender cajas” (“selling boxes”) of produce to my contacts in the predominantly white city of Santa Cruz, where the university I attend is located. She used the term “selling boxes” as a general reference to the informal marketing strategies that some other ALBA farmers used to sell boxes of mixed produce directly to customers. These strategies included the direct-marketing efforts developed by Gloria and Anjali to sell directly to Anjali’s contacts in the Bay Area.

Eva's suggestion helped me to better understand how reflexivity could translate into actions rooted in awareness of my positionality. I write,

> "I thought this was a really nice way for her to understand my positionality. It brings me back to this question of how to understand class privilege in this context, and citizenship privilege, language, and everything else, and also how to understand a certain kind of responsibility during the pandemic. People like Gloria can't sell at farmer's markets because customers don't want to go out to the markets, and customers want [boxes of produce delivered to their homes], so that's why Anjali's whole model is kind of cool... Eva has suggested this a couple times and it seems to be a really tangible way for me to be creative, to take a risk, to try to actually help – because of course, me doing field work is not unhelpful, but I'm really not offering all that I have to offer when I weed or harvest vegetables, since I'm really not that good at it compared to Eva" (field notes, August 18, 2020).

My reflection illustrates a deepening understanding of what it means to engage with this community of farmers. Up until Eva's suggestion that I start a business, my contributions to this community's struggles against regional inequalities took the forms of field labor, friendship, critical dialogue, and occasionally sharing cultural insights about how farmers might attract wealthier customers. Yet her suggestion showed me that positionality – including my proximity to and relationships with consumers in the Santa Cruz area – could help her to build a farm business that relied on relationships rather than on supplemental grant funding.

Scholars of food justice often debate the transformative potential of market-based approaches to supporting marginalized communities, whether for the purpose of food consumption or distribution (e.g., Alkon, 2014; Guthman, 2008b). Food justice scholars' engagements with feminist political economic theory often advocate a nuanced analysis of initiatives that appear fundamentally neoliberal, suggesting that these approaches can provide meaningful support for marginalized communities "in

the meantime" (Cloke et al., 2017; see also E. Harris, 2009) while more radical strategies for food sovereignty and mutual aid are in formation. I took these analyses to heart and was particularly inspired by the legacy of community supported agriculture (CSA) initiatives, which in the US can be traced back to Booker T. Whatley's efforts to sustain Black farms and farmers in Alabama in the 1960s and 1970s using the concept of "Clientele Membership Clubs." In this model, customers pay for a farm membership at the beginning of the growing season, allowing farmers to anticipate demand, develop an appropriate crop plan, and have a secure market, while customers receive regularly scheduled boxes of mixed produce (Whatley & DeVault, 1987).

There are many CSAs that make creative use of market-based mechanisms to facilitate caring relationships between land, food, producers, and consumers. For example, Leah Penniman explains the CSA model at Soul Fire Farm, located on the traditional lands of the Stockbridge-Munsee Band of the Mohican Nation. Penniman describes,

> "We're trying to demonstrate a model of an economically sustainable farm, so community members pay more – whatever they can afford for their share – to subsidize the shares of those who can't afford. We call it 'feed your neighbor,' we call it 'solidarity shares,' we call it 'Netflix for vegetables,' whatever you want to call it – the end result is that people are getting food that they otherwise would not be able to get" (Penniman, 2018).

Eva and I attempted to bring these CSA legacies together with our own unique capacities, with the initial idea to leverage her production skills and my access to wealthy, well-intentioned consumers. Naturally, we agreed that this approach would evolve based on our ongoing experience, with the eventual possibility of establishing

a variety of "solidarity shares" so that we could share fresh organic produce with local agricultural workers who typically cannot afford it.

While Alfredo's informal cempasúchil sales showed me the importance of selling to personal contacts in ALBA farmers' marketing strategies, the connection between cempasúchil and gende ke phool initiated a cascade of events that led me to leverage my own personal contacts to develop marketing strategies with Eva. Over the course of the following year, I worked with Eva to establish a legal produce distribution business, create a website, market CSA shares, coordinate with customers, harvest vegetables every week, pack boxes and load them into my car, deliver boxes to two different sites in Santa Cruz, and send reminder emails to customers about pick-up logistics along with recipes for preparing that week's assortment of vegetables. Our approach hinged upon Eva and my assessment of how we could leverage my access to middle- and upper-class consumers to develop an alternative to marketing to wholesale distributors.

In this example, practicing reflexivity allowed Eva and I to develop understanding of each of our unique capacities in the context of regional economic inequality. She and I both recognized that my proximities to the wealthier and primarily-white population of the city of Santa Cruz offered access to CSA clients, while her deep relationships with plants, soils, and agricultural technologies in Salinas allowed her to grow diverse vegetable crops. Reflecting on our situatedness within the regional food system allowed us to develop this CSA as a response to

regional inequalities that leveraged our unique needs and capacities while recognizing our limitations as individuals.

4. Conclusions

The three encounters with cempasúchil/gende ke phool that I describe illustrate how my practice of reflexivity developed in relation with this community of farmers and how this practice has allowed me and my interlocutors to develop critical actions.

First, when I encountered cempasúchil in the Dia de los Muertos altar, I felt acutely self-conscious about being an outsider in a space created by and for people with Mexican ancestry. I had not yet made the connection between gende ke phool and my ancestral cultural practices, and instead became aware of the apparent placelessness with which I was encountering the community of ALBA incubator farmers. Through this experience, and with a desire for connection to some place and cultural practices relevant to my own ancestry, I began to recognize relationships that I had considered peripheral to the ALBA context. It was through this growing practice of reflexivity that I understood the relevance of my land-owning auntie Anjali to this community of farmers. Anjali became an important anchor point for me in this farming community as someone who – through my relationship with her – indicated my positionality to those farmers who know us. I began to understand my relative social capital as something I could contribute to farmers seeking land access as well as small farm viability in general.

Later, when I encountered cempasúchil/gende ke phool at Eva's field edge, I was vividly reminded of my position as a diasporic South Asian person. My relationships with the flower – and with South Asian cultural practices more broadly – were brought into the fold of my relationship with Eva. In my desire for connection with Eva, I was moved to share about my ancestral practices as well as to learn about hers. Out of this mutual curiosity grew a real friendship, one with the kind of trust and honesty needed to openly analyze the differences between us and explore different strategies for addressing regional inequality.

Finally, in encountering cempasúchil/gende ke phool in Alfredo's informal marketing practices, I was compelled to consider my own social networks that might be relevant to informal marketing of produce. These networks include middle- and upper-class people in the predominantly white city of Santa Cruz, including many people affiliated with the university. Similar to how my relationship with a landowner allowed me to contribute to farmers' efforts to secure land tenure, these relationships with wealthy consumers allowed me to contribute to Eva and other farmers' efforts to secure direct markets. Through farmers' and my own careful attention to my positionality, we were able to identify strategies for collaboratively addressing some of the major structural challenges experienced by this community of farmers.

As the pandemic continued to keep Eva's children out of school in early 2021, she grew increasingly concerned about their well-being during the time when she was busy with farm work. I encouraged her to let me take on the bulk of CSA responsibilities while she spent more time with her kids. While this worked well for

most activities, I was unprepared to take on her farm management responsibilities and, ultimately, she suggested that we supplement our CSA with produce from a neighboring farmer so that she could grow fewer crop varieties and reduce her workload. This turned out to be an unanticipated relief for her neighbor, Filiberto, who was able to pay his lease and continue farming because of the additional income that the CSA provided to him. However, after working this way during the summer season of 2021, Eva and I agreed to pause the CSA and to begin again only if she could find a sustainable way to grow most of the produce for the weekly boxes.

Given the relatively short lifespan of the CSA, I do not consider it a radical culmination of my relationship with Eva, but an experiment that we have both learned from and which informs our ongoing engagements in the regional food system. Eva has become a client of Kitchen Table Advisors, a non-profit organization that provides business advising to small farms and with which she continues to refine her marketing strategies with both practical and political goals. I am continuing to work with Eva, Filiberto, Gloria, and other ALBA incubator and alumni farmers through my job at the Resource Conservation District of Monterey County, through which I visit farms to provide bilingual irrigation and nutrient management assistance. Throughout this work, my relationships with farmers evolve and so does my practice of reflexivity. Given the various kinds of violence carried out against Mexican-origin people by the US government, my work as a government employee must be particularly attentive to the differences between me and the farmers I work with. It is

through such attention that I hope to continue to develop strategic ways of collaborating against regional structures of oppression and associated inequalities.

My research shows that attending to positionality through a feminist practice of reflexivity can change research, extension, and food justice work by offering critical understanding of one's positioning within socio-ecological hierarchies and evolving role in maintaining and challenging these hierarchies. Ultimately, I find that reflexivity has enabled me to develop relationships with farmers in which we can recognize, discuss, and challenge some of the inequalities in our regional food system. My approach to reflexivity builds on Rose's (1997) critique of common uses of reflexivity in which scholars attempt to have a full understanding of themselves as researchers, as all knowledge production practices – including attempts to understand one's positionality – are necessarily situated practices. In my analysis, I have sought to understand reflexive practice as ongoing and evolving. As such, my interpretation is not aimed at yielding more "accurate" or "valid" research (Pillow, 2003), but at supporting political practices rooted in a better understanding of one's own capacities and limitations. This approach is aligned with efforts to connect reflexivity with meaningful political action (e.g., Kobayashi, 2003, 2009; Nagar, 2002). In sharing this analysis, I offer an example of how feminist reflexivity can be leveraged to develop situated politicized responses to food system inequalities, in the hopes that others will find this approach useful in their own political work.

CHAPTER 2:

Between maintenance and transformation:

Reading for difference in agricultural extension

(Co-authored by Madeleine Fairbairn and Flora Lu)

1. Introduction

It was midday on a sunny February day as I (Aysha) drove out of Salinas, California into the hills just south of the city. As I arrived at the farm, I realized just how strong the wind was – probably too strong, I thought. Diana,[8] my coworker at a local government agency, had invited me on a farm visit where they[9] planned to assist a farmer in evaluating the efficiency of the farmer's sprinkler system. Although I had never done this before, I understood that it was not a good idea to irrigate with sprinklers in strong wind, and that an evaluation would be logistically difficult and would leave us soaking wet and cold. However, when I met with Diana, they said they wanted to proceed with the evaluation. Scheduling this farm visit had been incredibly difficult, they explained, as the farmer, Manuel, was juggling multiple responsibilities: caring for their children, growing crops on a separate parcel located on the other side of town, and working an additional job to bring in extra income. Although Manuel had contacted Diana several weeks prior to ask for irrigation support and they had attempted multiple previous visits, Manuel had had to cancel

[8] All names provided are pseudonyms. Diana will likely still be recognizable to people that know them; however, they commented on earlier drafts of this paper and have approved the final draft.
[9] Throughout this chapter, we use they/them/their as default pronouns.

them all due to their hectic schedule. Diana was therefore determined to go through with the sprinkler system evaluation come what may, and had spent the morning coordinating with collaborating agricultural extension personnel and gathering all the necessary equipment.

Half an hour after our arrival, however, Manuel had not yet shown up, nor did they answer their phone. After over an hour of waiting, Diana finally received an apologetic phone call from Manuel explaining that an unexpected need to provide childcare arose, and they would need to reschedule. To me, Diana's reaction was surprisingly mild given the amount of effort they had put into planning this visit. Diana asked Manuel if we could simply proceed with the evaluation, as we were already at the farm and had all the necessary equipment. Though Manuel consented, the effort was ultimately futile. Manuel shared their lease with other small-scale farmers because the parcel would have been too large and expensive for them to farm on their own, and one of these neighboring farmers was using the irrigation system that day. We were unable to irrigate at the same time, and ultimately resolved to reschedule once again.

This mundane event – the inability to meet up with a farmer and complete a straightforward irrigation system evaluation – is par for the course in Diana's world. As an agricultural extensionist who primarily works with a community of Spanish-speaking, small-scale, Latinx immigrant farmers in a highly industrialized agricultural landscape, Diana regularly collaborates with people who navigate busy schedules and multiple challenges at the intersections of race, class, and citizenship. Diana, too,

must practice flexibility and creativity in order to support these farmers' small-scale alternatives to the large-scale industrial farming operations that dominate California's Central Coast region.

This chapter considers the labor that it takes to do agricultural extension differently – to work with small-scale farmers of color rather than white, US-born people who run capital intensive farm businesses – and the kinds of ethical commitments that this work requires. What does it take to support farmers who do not have time to meet with the extensionists with whom they hope to work? Those farmers who are ineligible for state funding programs designed to incentivize ecological farming practices? Those for whom the bureaucratic nature of the US agricultural industry makes farm business ownership largely inaccessible?

Agricultural extension has long been the subject of scholarly critiques for its hierarchical approach to knowledge transfer and its complicity in promoting agricultural intensification and farm sector consolidation. Here, however, we suggest that there are already-existing examples of different kinds of agricultural extension practices, ones that challenge the capitalist – understood here as synonymous with racial capitalist (Robinson, 2020) – paradigm that dominates in California's agricultural landscapes and elsewhere. We discuss one such example, providing a case study of Diana's efforts to support Spanish-speaking, small-scale, Latinx farmers in California. Drawing from feminist political economic theory, we argue that extension is a site of heterogeneity where dominant power asymmetries are both maintained and transformed. Diana's efforts to transform such power asymmetries

illustrate the labor that some extensionists mobilize to support small-scale Latinx farmers and other farmers of color in the context of US agri-capitalism. We highlight four ways in which Diana's labor disrupts extension norms, including: (1) filling gaps in state programs with invisible labor; (2) building mutual trust through social relationships beyond work; (3) blurring distinctions between extension work and farm work; and (4) broadening definitions of "farmers" beyond business ownership and land tenure. In doing so, we advocate for a critical understanding of heterogeneity among extension practices, as extensionists both contribute to and challenge racial-economic inequalities in the agri-food system. With this approach, we hope to identify and better understand how contestations of dominant power arrangements can and do occur in extension contexts in the hopes of supporting these efforts.

2. Reading for difference within agricultural extension

Within the US context, the term agricultural extension typically refers to the public Cooperative Extension Service, formed in 1914 to extend agricultural research produced at land-grant universities to rural communities. Yet the term is used around the world to refer to a variety of public, private, NGO, and volunteer efforts to provide informational and material assistance to a range of people growing food and caring for land and water. In this paper, we use a relatively narrow understanding of the term to focus on public extension activities in US contexts – including but not limited to the Cooperative Extension Service – with the understanding that many critiques of the Cooperative Extension Service are also relevant to government-led

extension settings at large. In US contexts, public extension has been critiqued for contributing to corporate consolidation within agricultural industries (Hightower, 1973), reinforcing hierarchies between expert and local knowledges (Kloppenburg Jr, 1991), contributing to racial and gender injustice (Domosh, 2015), and being complicit in US imperialism and settler colonialism (Wang, 2020). Among extensionists, there have been long-standing and widespread efforts to problematize the concept of "expert" knowledge and to make extension work more participatory and inclusive (e.g., Chambers, 2014; Chambers & Thrupp, 1994). In what follows, we focus particularly on critiques that consider how extension reinforces political economic power asymmetries because of its deep relevance to the highly capitalist formation of California agriculture.

2.1 Public agricultural extension: Maintaining or transforming the status quo?

Sociologists of agriculture have long critiqued government-backed research and extension programs for their roles in furthering the industrialization of agriculture and, with it, the marginalization of small farmers and farmworkers within US agriculture (Hightower, 1973). These critiques demonstrate how, as the US public research and extension system expanded over the course of the 20th century, it came to revolve around a "productivist ideology" in which it was assumed that the constant pursuit of increased productivity via adoption of new technologies was broadly beneficial to all parties (Buttel, 2005, p. 277). In reality, however, this ideological orientation was established by a coalition of elite actors, including land-grant

administrators, federal agricultural agencies, agribusinesses, and farm commodity groups representing large growers (Buttel, 2005), and the agricultural intensification it helped fuel was not equally beneficial for all. For instance, the mechanization research which produced mechanical harvesters for the benefit of large-scale, capital-intensive growers, also replaced the labor of low-income, predominantly Latinx farmworkers (Baur & Iles, 2023). Ever increasing yields, meanwhile, placed farmers on a "technology treadmill," in which falling crop prices force them to continuously adopt new yield-increasing technologies and inputs, which in turn drives up production costs to levels that become difficult to manage without the benefit of economies of scale (Cochrane, 1979). Under this dominant model, extensionists are charged with communicating promising new technologies to farmers in the hopes that they are adopted and eventually become widely diffused, an approach that privileges the generally wealthier and more educated farmers who are more likely to be the much celebrated "early adopters" (Stephenson, 2003). Schooled in this relatively top-down approach to knowledge transfer, extensionists have not always been capable of appreciating the value of Indigenous epistemologies (Collins & Mueller, 2016) or of farmers' local knowledge and practices (Kloppenburg Jr, 1991). This mission has been to push farmers to modernize rather than to meet them where they are and solve the problems they want to solve.

Important to our consideration of political economic critiques of extension is the understanding that capitalism is racial capitalism – that constructions of race and class are intertwined, and that economic inequality in the agri-food system is racial-

economic inequality (Robinson, 2020). This understanding suggests that the critiques discussed above, while typically focusing primarily on class constructions and relations in agri-food contexts, are deeply related to processes of racial formation and subordination. Although they rarely use the language of racial capitalism, many scholars have critiqued extension initiatives for their discriminatory practices and epistemic violence against various groups of people, especially based on racial difference. For example, extension scholarship has explored how anti-Black racism is reproduced through extension initiatives and how Black farmers and extensionists have challenged related processes (e.g., Crosby, 1983; C. V. Harris, 2008a, 2008b; Reid, 2003, 2007; Whayne, 1998). Scholars have also shown how extension activities have reproduced racialized colonial violence by seeking to assimilate Indigenous peoples into US culture, while Indigenous peoples have sought to leverage extension programs to maintain their own cultures (Firkus, 2010). We understand these forms of oppression and resistance in the context of US racial capitalism, whereby extensionists' contributions to corporate consolidation and marginalization of small farmers and farmworkers is largely synonymous with marginalization of people of color.

In considering how extensionists contribute to racial-economic hierarchies in California's agri-food system, Henke (2008) theorizes extension as the "repair" work needed not only to solve problems facing the agricultural industry, but also to mediate relations of power within the industry. Importantly, they distinguish between two types of repair strategies: maintenance and transformation. This distinction is

ultimately between the kind of political work that seeks to maintain dominant power relations and the kind that seeks to transform these relations. Unsurprisingly, Henke (2008) and Guthman (2019) both find that University of California Cooperative Extension (UCCE) initiatives often function to maintain dominant power relations in California's agricultural industry. For example, Henke illustrates how farm advisors are positioned alongside farm business owners and are therefore invested in supporting their business interests, rather than in protecting land/water, supporting labor interests, or otherwise promoting transformative socio-environmental change. Henke also discusses possibilities for repair that are invested in transformation of California's agricultural industry, citing activists' calls for improving farm working conditions and breaking up larger farms into smaller ones (2008, p. 68). For Henke and Guthman, however, this kind of work appears largely beyond the scope of extensionists' contributions. Though their analyses echo a variety of the critiques of extension mentioned above, we find Henke's notion of repair particularly useful because it illustrates how extension typically does maintenance work while also articulating possibilities for transformative work. This opening to radical alternatives offers opportunities to connect critiques of extension with multi- and trans-disciplinary interests in identifying and creating alternatives to dominant (agri-)capitalist power relations.

2.2 Diverse economies: Documenting alternatives to agri-capitalism

Within the large body of political economic scholarship on identifying and creating alternatives to dominant power relations, one of the most influential theoretical approaches is the "diverse economies" approach developed by feminist scholar J.K. Gibson-Graham. Gibson-Graham (1997) builds on Resnick and Wolff's (1989) anti-essentialist analysis of Marxian political economy to critique the all-encompassing framing of capitalism which they argue has become too much the focus of structural analyses. Central to their argument is the concept of performativity, with which they assert that such structural analyses can perform dominance and serve to further marginalize the many non-capitalist practices already in existence. They subsequently develop the diverse economies research program, which is concerned not with documenting capitalist processes but with exploring a "politics of possibility in the here and now" (Gibson-Graham, 2006, p. xxvi). By documenting diverse economic practices and thereby performing the economy differently, Gibson-Graham asserts that academics can contribute to the legitimization and materialization of non-capitalist practices (Gibson-Graham, 2008). Such practices are not inconsequential; rather, feminist analyses have long demonstrated the economic importance of non-market transactions like gift giving, gleaning, hunting, and gathering, as well as unpaid labor like family care and volunteering (Waring, 1988). To support the diverse economies project, Gibson-Graham develops the methodological practice of "reading for difference" which attends to non-capitalist practices to illuminate diverse possibilities. Important to our analysis is their assertion that the practice of reading for

difference "opens up the performance of dominance to research and questioning" (2008, p. 624). They write:

> "Diversity exists not only in the domain of non-capitalist activity. As much of mainstream economic geography illustrates, capitalist enterprise is itself a site of difference than can be performatively enhanced or suppressed through research. Reading for difference in the realm of capitalist business can even produce insight into the potential contributions of private corporations to building other possible worlds" (Gibson-Graham, 2008, pp. 624–625).

Following this logic, extension activities might be critically examined not only for their maintenance of dominant economic arrangements, but also for their embodiment of alternative economic practices. In relation to extension literatures, this type of analysis suggests that "transformative" extension (Henke, 2008) is indeed possible and that elements of it may already exist within mainstream institutions.

The diverse economies approach has been widely influential and has sparked many debates about economic alternatives. Scholars have pointed out, for instance, that "alternative" is not synonymous with "good," and that non-market, non-capitalist activities can still be highly exploitative (e.g., slavery, feudal relations) (e.g., Amin et al., 2003; Jonas, 2010; Samers, 2005; Schreven et al., 2008). In response to such critiques, Gibson-Graham (2008, p. 630) clarifies that "we are not interested in performing difference per se, nor are we necessarily interested only in the growth of 'alternative' economic activities. Our political and strategic concern is to build community economies." The use of the term 'community' has itself been the source of considerable debate, as inequality can persist in community despite the positive ideals commonly associated with the term. Moreover, the term often refers implicitly to local issues while neglecting global processes and can homogenize or oversimplify

local heterogeneity (Gritzas & Kavoulakos, 2016). Gibson-Graham addresses these concerns by proposing an anti-essentialist notion of community and explores various ethical concerns around which community economies might be built (Community Economies Collective, 2023; Gibson-Graham et al., 2013). Given that the diverse economies approach does not prescribe a set of ethical commitments for alternative economic practices, the challenge for scholars taking up this approach is to continue exploring and identifying diverse ethical possibilities.

There has been considerable interest among agri-food scholars in Gibson-Graham's diverse economies approach, especially within the sub-area of agri-food scholarship that considers alternatives to highly industrialized forms of agricultural production (Gritzas & Kavoulakos, 2016; Rosol, 2020; Sarmiento, 2017). Given that what makes an agri-food system "alternative" has long and often been debated (e.g., Watts et al., 2005; Whatmore et al., 2003), agri-food scholars' engagements with the diverse economies approach allows them to expand and refine their considerations of alterity. Scholars have explicitly leveraged the diverse economies approach to document a range of existing alternative economic practices in agri-food systems, examining topics such as the 100 Mile Diet (E. Harris, 2009), buying groups and food cooperatives (Little et al., 2010), community supported agriculture (CSA) initiatives in the US (Jarosz, 2011) and Australia (Cameron, 2015), autonomous food spaces (Wilson, 2013), food banks in the UK (Cloke et al., 2017), food sharing in Berlin (Morrow, 2019), unpaid work in urban agriculture (Drake, 2019), and home gardening in Czechia (Sovová et al., 2021). This paper aims to contribute to this

literature, which has yet to consider agricultural extension as a site of alternative economic practice.

Just as we read political economic critiques of extension with the understanding that capitalism is racial capitalism, we read the diverse economies approach with a similar understanding that alternative economic practices are inherently raced (Bledsoe et al., 2022). For example, Bledsoe et al. (2022) argue that scholarship focused on Black-led food and farming initiatives shows how Black communities often practice cooperative economics as survival strategies amidst racial-economic oppression. In this sense, the economic practices of racialized communities can be understood as always already alternative to the dominant agri-capitalist paradigm, or at least partially so. This understanding is particularly powerful in the context of the wide range of scholarship documenting the efforts of communities of color to grow and share food in US contexts (e.g., Alkon & Agyeman, 2011; Garth & Reese, 2020; McCutcheon, 2019; Ramírez, 2015; Reese, 2019; White, 2011, 2018), as these efforts might also be understood as alternative economic practices. In this paper, we extend this logic to suggest that extensionists' efforts to support small-scale farmers of color are at least partially alternative to agri-capitalist practices.

In the remainder of this chapter, we contribute to the diverse economies project by reading for difference among public extension activities in the US, documenting a case of one extensionist's alternative economic practices throughout their work with a community of Spanish-speaking, small-scale, Latinx farmers in

California. Our findings highlight four of these practices, including: (1) filling gaps in state programs with invisible labor; (2) building mutual trust through social relationships beyond work; (3) blurring distinctions between extension work and farm work; and (4) broadening definitions of "farmers" beyond business ownership and land tenure. In our discussion, we return to Henke's (2008) notion of repair, exploring how extensionists are involved in both maintaining and transforming dominant power relations. Ultimately, we advocate for a critical understanding of heterogeneity among extension practices, whereby attention to extensionists' diverse economic practices can highlight opportunities for challenging racial-economic inequalities in agri-food systems.

3. Methodology and methods

Drawing from ethnographic data collected by Aysha from 2019-2023, we develop a single case study (Yin, 2009) to examine the efforts of one extensionist (Diana Walsh) to support farmers in California's Central Coast region. This work is part of a larger research project focused on the struggles and successes of a prominent community of Spanish-speaking, small-scale, Latinx farmers in this region and the extensionists who work with them, including Diana. As part of this larger research project, Aysha conducted 48 months of ethnographic research (February 2019 – January 2023) with farmers and extensionists, conducting participant observation

(Bernard, 2017) and writing extensive field notes (Emerson et al., 2011).[10] To develop the case study presented in this paper, we used a quasi-inductive qualitative approach to data analysis by selecting all field notes where Diana was present or mentioned and coding for emergent themes (Saldaña, 2021). We then used the methodological practice of reading for difference (Gibson-Graham, 2008) to interpret findings.

Ethnographic data collection activities began with a focus on the community of Spanish-speaking, small-scale, Latinx farm owner-operators in California's Central Coast,[11] whose regional prominence is largely due to the presence of the Agriculture and Land-Based Training Association (ALBA) in Salinas, CA.[12] ALBA is a 501(c)3 non-profit organization with a mission to "create opportunities for low-income field

[10] The approach to ethnography utilized in this paper is informed by feminist methodologies that locate activism at the center of their research programs (e.g., DeVault, 1996; Harding, 1987; Reinharz & Davidman, 1992). These approaches challenge the presumed distance within the social sciences between the researcher and the researched and suggest that a researcher's political commitments can be a generative starting point for developing understanding. Such approaches align with a wider range of critical ethnographers that have called for an explicitly political approach to research, variously using terms like "engaged," "activist," or "militant" ethnography to emphasize the researcher's closeness with and ethical commitments to the research subjects and subject matter (e.g., Graeber, 2009; Hale, 2008; Juris, 2007; Lyon-Callo, 2004; Sanford & Angel-Ajani, 2006; Scheper-Hughes, 1995; Speed, 2006). TallBear (2014), for instance, critiques the concept of "reciprocity" in research relations which, although typically used to emphasize good relations, can continue to uphold a problematic distance between the researcher and the researched. Accordingly, ethnographic methods discussed here have involved deep engagement with the community of people who might be considered "research subjects" – farmers and extensionists in California's Central Coast – to the extent that Aysha has been employed as a public extensionist since August 2021. As such, they have become an inextricable part of this community. We make no attempt towards scientific "objectivity" in the normative sense; instead, we research and write with care for the subject (Schuurman & Pratt, 2002).

[11] Aysha discusses their introduction to ALBA and evolving relationship with ALBA-affiliated farmers and extensionists in more depth in Chapter 1 of this dissertation.

[12] According to the California Certified Organic Farmers (CCOF) certification entity, 80-90% of all Spanish-preference organic farmers in the northern Central Coast region started at ALBA, and most small-scale farmers in this region are organic-certified in order to be competitive in the marketplace (personal communication, ALBA staff).

laborers through land-based training in organic farm management, helping them advance their careers or pursue the dream of farm ownership" (ALBA, 2023). ALBA offers two primary programs for beginning farmers: the Farmer Education Course, an experiential job training program; and the Organic Farm Incubator, which leases subsidized land and equipment to 36-40 graduates of the educational course annually. Almost all of the farmers who participate in these programs are either immigrants from Mexico or are US-born people with Mexican ancestry. According to ALBA staff, most participants have spent years or decades working in the regional agricultural industry on field crews, in packing houses, or otherwise as laborers on large-scale, industrial agricultural operations. While in the incubator program, these farm business owners and operators receive support from a team of non-profit employees and their collaborators, including staff from a variety of public and other non-profit organizations who conduct work under the umbrella of "agricultural extension." Diana Walsh is one such extensionist. Many of these extensionists, including Diana, continue to support farmers as they go on to steward agricultural lands outside of the ALBA incubator.

Following an initial introduction to ALBA, Aysha began conducting participant observation in this setting by working alongside the community of ALBA farmers and associated extensionists in a variety of capacities. From February 2019 – August 2021, their work involved collaborating with ALBA staff as a graduate student researcher on a grant-funded project to qualitatively document organic farming practices, supporting farmers' applications for COVID-19 pandemic-relief

funding, participating in work-trades with farmers in exchange for produce, and working with a group of farmers to start a small-scale produce distribution business. It was through these efforts that Aysha met Diana Walsh, a soil scientist employed by a local Resource Conservation District (RCD), a non-regulatory unit of local government that supports land managers with voluntary conservation of soil, water, and wildlife. Farmers regularly expressed their appreciation for Diana's thoughtful and intimate approach to extension. In August of 2021, Aysha began working alongside Diana at the RCD as a paid employee for 24 hrs/week to support their efforts to assist ALBA farmers with on-farm conservation practices.

Given our concern with alternative economic practices in the context of racial capitalism, it is important to note that the extensionist that we center in this paper – Diana – is a white woman. This is a risky approach, as it risks performing white dominance within efforts to challenge racial-economic hierarchies and thereby limiting the transformative capacity of such efforts. Yet we center this white woman with the understanding that extensionists – especially those who are white – very commonly contribute to maintaining power asymmetries in agri-food systems (e.g., Henke, 2008), including maintaining racial-economic hierarchies. Our aim here is not to praise this extensionist for their efforts to support farmers of color, but to note how Diana's alternative practices highlight the general failure of the state to support these farmers and to ask how such alternative practices might be strengthened and encouraged to proliferate.

4. A case study of alternative extension practices

Small-scale Latinx farmers in California's Central Coast region navigate enormous structural barriers to creating and sustaining economically and ecologically viable farms. We find that Diana's efforts to collaborate with these farmers require strategic navigation of the professional contexts within which extensionists work and which often reproduce racial-economic inequalities. We identified four alternative economic practices that Diana uses in this strategic process in order to help farmers access the material assistance that they need to sustain their farms. Diana's work highlights the enormous efforts, ways of doing work-arounds and working together, that are needed to circumvent the structural violence experienced by small-scale Latinx farmers in this landscape. Accordingly, our findings illustrate both ways in which extension is structured to maintain racial-economic inequalities in agri-food systems as well as practices that some extensionists use to support farmers' contestations of these inequalities. Findings are discussed here in first-person prose to reflect portions of Aysha's field notes.

4.1 Practice 1: Filling gaps in state programs with invisible labor

Perhaps the most obvious way in which Diana strategically navigates professional extension contexts to support small-scale Latinx farmers is by noticing the failure of state programs to serve these farmers and by attempting to improve these programs. State-led efforts to support US-based farmers of color include various funding opportunities that seek to support conservation practices by addressing access

to land and capital. These efforts will always be limited in their capacity to support farmers given the racial capitalist formation of the United States; however, small-scale Latinx farmers in our region do sometimes take advantage of these efforts to successfully run their farm businesses. Many of the public agencies and non-profit organizations in the region that are attempting to support these farmers focus on connecting them with funding programs. Yet farmers encounter many challenges when attempting to participate in these programs. In such situations, Diana often works as an intermediary.

For example, sometimes, Spanish-speaking farm owner-operators in our area enter into contracts with the Natural Resources Conservation Services (NRCS) through their Environmental Quality Incentives Program (EQIP) to receive payment for implementation of various conservation practices on their farms. NRCS is an agency of the US Department of Agriculture (USDA) that assists land managers with conservation practices. The concept behind the EQIP program is to provide financial assistance for certain practices according to specific guidelines for each practice. NRCS typically has very detailed requirements for each practice, and the farmer is only able to receive reimbursement for the practice that they have implemented once NRCS staff confirm that these requirements have been met. These requirements, however, are not available in written form in Spanish. Spanish-speaking farmers must therefore rely on careful communication and follow-up with NRCS staff in order to understand and meet the requirements.

In one rather unfortunate case, a farmer named Magdalena had a contract with NRCS to install a high tunnel (an unheated, plastic-covered hoop house designed to extend the growing season) on their farm, among other practices. Magdalena contacted a vendor to purchase plastic for the high tunnel and the vendor had recommended a specific kind of plastic. This vendor was familiar with NRCS practice standards and, to their understanding, the recommended plastic was made to NRCS standards. Later, after Magdalena had purchased and installed the plastic based on the vendor's recommendation, local NRCS staff checked Magdalena's materials purchases and found that the plastic did not, in fact, meet the requirements for the EQIP practice. NRCS staff followed up about this issue with Diana, who has a close relationship with Magdalena, with the concern that their instructions were getting "lost in translation" due to the participating NRCS staff member's limited knowledge of Spanish language.

This failure of state services was poised to have potentially dire consequences for Magdalena, as the miscommunication would, at minimum result in delayed reimbursement – or worse, Diana feared, NRCS might not be able to reimburse the farmer at all. Diana saw this shortcoming of state programs and chose to act, stressing to NRCS personnel that this was not a "loss of translation" but rather a failure of process and "lack of translation." In doing so, they used their position of authority to condemn the inadequacy of the status quo and advocate for more fully serving Spanish-speaking farmers. Diana's follow-up response to this situation involved conducting multiple farm visits and phone calls with Magdalena and attending several

meetings with NRCS staff to facilitate better communication between parties. To Diana, this is simply the kind of close work that is required to support farmers whose first language is not English and for whom the bureaucratic processes of public agricultural service providers are quite unfamiliar and inaccessible.

The kind of extra gap-filling work that Diana performs in this and similar contexts is not part of their official job description; rather, it is something that Diana does just because they recognize the need. Given that Diana's employment primarily relies on grant funding from state or federal governments, their work is largely defined by grant agreements with deliverables consisting of quantitative measurements of farmers served and farming practices implemented. Extra efforts to ensure that farmers are receiving the material assistance they need to maintain viable farm businesses are not made explicit in Diana's job description. These efforts illustrate what some feminist scholars have described as "invisible labor" which refers to "activities that occur within the context of paid employment that workers perform in response to requirements (either implicit or explicit) from employers and that are crucial for workers to generate income, to obtain or retain their jobs, and to further their careers, yet are often overlooked, ignored, and/or devalued by employers, consumers, workers, and ultimately the legal system itself" (Crain et al., 2016, p. 6). This kind of labor is inherently raced and gendered and is related to feminist scholars' broader interest in the hidden, unvalued, and undervalued labor conducted by women and people of color that is at the root of social reproduction. In the context of Diana's work, this invisible labor is not only necessary for them to do

their job effectively but also for them to do their job in a way that is qualitatively meaningful. That is, this labor provides qualitative depth to the quantitative output required in her position, ensuring that small-scale Latinx farmers are actually receiving material assistance from the state rather than simply doing lip service to grant deliverables.

Another example of Diana's efforts to make up for the inadequacies of state programs can be found in the ways that they attempt to connect farmers with the Farm Service Agency (FSA), an agency of the USDA, despite the major cultural differences between FSA and the regional community of small-scale Latinx farmers. To be eligible for financial assistance from the federal government, farmers must first work with FSA to establish the legitimacy of their farm businesses and ascertain their eligibility. Although this can be an important avenue for accessing support, it is a notoriously intimidating bureaucratic hoop for this demographic of farmers, as Latinx immigrant farmers often do not qualify for government assistance and have many reasons to distrust the US government. Diana again fills this service gap with extensive invisible labor: they repeatedly clarify, with both farmers and FSA staff, that citizenship is not a requirement of FSA eligibility; they regularly distribute information about FSA programs along with FSA contact information; and when Latinx farmers are still too intimidated to reach out on their own, Diana reassures them and often makes direct introductions to her personal contacts among FSA staff.

In emergency situations, Diana redoubles her efforts to help farmers access FSA services. In early 2023, major precipitation events and massive flooding

destroyed the farms and livelihoods of many small-scale Latinx farmers in the region. This was both devastating and unsurprising, as these are some of the lowest-income farmers in our region and are typically farming on the most marginal agricultural lands, with steep slopes prone to erosion or with low-lying fields prone to flooding. As farmers began frantically contacting them for emergency assistance, Diana and other local extensionists directed farmers towards the FSA, which is the organization that receives federal funding for natural disaster relief and distributes it to farmers. Emergency funding opportunities had not yet been formally announced by FSA; however, Diana and other extensionists hoped that FSA staff would be able to field phone calls from farmers and begin developing a list of farmers to contact once funding became available. Yet FSA staff were constrained by the organization's bureaucratic process and were not able to begin meeting with farmers without a formally established funding source. Diana and other local extensionists' responded to farmers' panic and need for assistance by organizing an impromptu meeting at the USDA Service Center in Salinas, CA, where both the local RCD (Diana's employer) and FSA have their offices. Although no FSA staff were able to join the meeting, Diana used the space to share her understanding of FSA programs with farmers and to help them complete basic forms which would speed up the FSA eligibility process once emergency funds became available. Following the meeting, Diana personally shared these forms and farmers' contact information with FSA staff. Again, in a situation in which farmers were being failed by state services, Diana expended extra

effort and demonstrated flexibility and creativity in to help connect farmers with the necessary resources.

While connecting farmers with state programs may appear to be a very basic component of regional agricultural extension work, Diana's efforts illustrate that facilitating such connections requires an immense amount of time and energy for these farmers to experience any real benefit. Their work demonstrates an element of non-capitalist, alternative economic practice that involves performing the invisible labor necessary to ensure materially beneficial outcomes of extension activities, particularly for farmers who fall outside the dominant demographic of farmers served by state programs (that is, English-speaking, US-born white men running relatively large-scale farming operations). Diana's work goes above and beyond simply checking the boxes of her job requirements, which are largely defined by grant deliverables rather than by material changes in the work and lives of farmers. Rather, Diana takes notice when state programs fall short of serving the people that they ought to be serving and attempts to make up for these shortcomings.

4.2 Practice 2: Building mutual trust through social relationships beyond work

In addition to performing the invisible labor necessary to ensuring the beneficial outcomes of extension activities, Diana also engages in social relationships with farmers beyond the workplace. Although outside of a work context, these relationships nonetheless inform the quality of Diana's professional relationships with farmers. In particular, these social relationships are essential to building mutual trust

with farmers, which is a necessary part of extension work, especially when collaborating with small-scale farmers of color.

Prior to beginning professional work with Diana, I worked with farmers at the ALBA incubator in multiple capacities and learned from them about the different extensionists in their worlds. When farmers spoke with me about Diana, one farmer described them as, “la de buen corazón” (“the one with the good heart”), and several others added other terms of endearment. Throughout my work with Diana, I found that their willingness to soften the division between professional and personal life has allowed them to develop close connections and often friendships with farmers. Such activities have earned lasting respect from many farmers who appreciate the fullness with which Diana enters into relationship with them.

One prominent example of Diana’s commitment to extra-professional relationships with farmers has been their support for one farmer’s modified Community Supported Agriculture (CSA) project. The farmer, Yuriela, runs a berry and mixed vegetable farm on about 10 acres in northern Monterey County. In 2020, Yuriela began working together with another farmer as well as with a small, volunteer-run non-profit organization to develop a modified CSA initiative. In this approach, the non-profit organization manages an online marketplace where the two farmers list their available produce and customers place weekly orders. The farmers then fill the orders each week by packing produce into boxes and delivering the boxes to customer pick-up sites throughout the region. When Diana learned of this project through professional work with Yuriela, they discovered that all of the customer pick-

up sites were to be located in the San Francisco Bay Area, with some sites located over 2 hours driving distance away from the farms. In response to this discovery, Diana proposed the idea to host a pick-up site at their own house in a nearby city only 20 minutes away, at least until enough interest was generated that they could hand the host job off to a neighbor. They also reached out to friends and other people in their community and posted in online forums to spread the word about the initiative. To cap it off, Diana also joined the CSA as a customer.

Although Diana's work to expand the CSA may appear to be a conflict of interest, as it was supporting just one of the many farmers that they worked with, Diana saw this work as beneficial for themself and their community as well as for the farmer. Another CSA delivering to their neighborhood had been shut down, and a farmer's market had been attempted without lasting success. Accordingly, Diana's effort illustrates unique alignment between their own needs and those of the farmers. Yet Diana also describes the impact that it had on their professional work, as their involvement in Yuriela's project as a pick-up site host allowed them to have insight into the CSA-related concerns of consumers living and working outside of the farming community. Such insight has guided their consideration of the various farm management and marketing strategies available to farmers and partially informs their ongoing extension work.

In addition to providing extra-professional support for Yuriela's CSA project, Diana also engages in more quotidian social relationships such as lingering before or after a field visit to share a meal or to discuss pursuits that extend well beyond the

scope of agricultural activities. My first explicit discussion with Diana about these social activities occurred in October, 2021, on a day when Diana and I planned to meet at ALBA to discuss winter conservation practices with a few of the farmers there.

I went to the ALBA incubator before Diana, agreeing to begin discussions with farmers while Diana finished sending some emails. I arrived in the late morning at one farmer's parcel, parked my car, and began to unload some supplies. Just as I arrived, Luisa, the neighboring farmer, waved to me and yelled, "Vente a comer!" I called back that I could not justify eating yet, as I had not yet done any work, but they insisted. I work with Luisa regularly and often suspect that they wait for me to show up just so they have an excuse to break for lunch. I accepted their invitation and met up with them and their brother at the edge of their farm field under a row of trees, where the two of them had arranged some seats and a simple meal of rice and boiled eggs with salsa. Luisa started up their portable propane stove and heated up some tortillas as well.

We were midway through our food when Luisa pointed out Diana's truck rolling slowly up the road on the opposite side of the field. I was a bit embarrassed to be caught snacking when I had told Diana that I would get a head start on discussions with farmers before they arrived, and so was relieved to see a big smile on Diana's face as they walked over to where we sat. Luisa invited them to eat as well, and Diana happily accepted.

When Diana arrived, I had just asked after one of Luisa's children, and Luisa had been telling me about how much their child was enjoying folklorico dance classes and how they wished that there were classes available for adults. Diana now chimed in that they participated in a Danza Azteca group that met weekly on Tuesdays and suggested that Luisa attend the classes with them. Luisa began to gush about how much they wanted to attend, but said that they were also terrified. With their brother's help, Luisa explained their fear by sharing a story from their childhood in Oaxaca, Mexico.

Luisa told us that, when they were growing up in a small, rural town in Oaxaca, their parents did not permit them to dance in public because they were a girl. Yet they wanted to, intensely. For Carnaval each year, they would attend town gatherings where many people – all men – wore extravagant costumes with masks that hid their faces. These costume-wearers would dance for hours, and for years Luisa watched and wished that they could participate. When Luisa told their parents about this desire, however, their mother told them that they could not participate in the dancing because they were a girl. Luisa explained to us how, naturally, they and their friends – also girls – had rebelliously dressed up in costume with masks and had danced alongside the men, thinking that no one would know who they were. Yet somehow Luisa's mother had found out about this and had punished them severely. To this day, they still feel too traumatized by that experience to dance in the way that they want to dance. To dance Danza Azteca in public, Luisa said, is one of their

biggest goals in life because it is a practice of freeing themself from the psychological limitations they experience.

Following a rich conversation about dance, culture, freedom, and the lived experience of being a woman, Diana convinced Luisa and I to attend the local Danza Azteca group's meeting the following Tuesday. When we eventually parted ways to return to our respective work activities, I clarified with Diana that this type of meal and conversation with Luisa and their brother should not be considered part of my work week, and that I should plan to work later that day to make up for lost time. Diana smiled and shook their head. "That's always the question, isn't it?" they said.

Diana went on to discuss how my predecessor, a Central American man who – according to them – was well-loved by this community of farmers, used to spend hours "building relationships" with farmers. To Diana, this approach was also, of course, a large part of the reason that farmers liked them so much. During our lunch, Luisa themself said that they were glad we accepted their invitation to eat together because, when we decline, they get the sense that we do not want to "convivir" ("live together") with them. Farmers sometimes confide in us their reservations about other extensionists who seem to be interested only in working together and not in spending leisure time together. In response to my concern about how to delineate my working hours, Diana did eventually confirm that we could not be paid for this time; they also insisted that, in their experience, spending leisure time together is an important part of doing their job well, despite the lack of monetary compensation.

Over the course of my work with them, I have observed how Diana often accepts invitations to dine with farmers or attend evening gatherings outside of a work context, blurring their personal and professional worlds. I myself received an invitation to one farmer's Dia de los Muertos celebration in 2022, which was clearly unrelated to my work activities but which Diana encouraged me to attend. Diana does not bill our workplace for these activities, yet naturally these are essential to building mutual trust with farmers, which is important for their job.

Diana's cultivation of social relationships beyond professional contexts illustrates their willingness to blur distinctions between personal and professional life. This approach can be understood as an alternative economic practice as it engages relationships beyond those strictly necessary for Diana to maintain their job. Yet it is also fundamental to Diana's professional work, as these social relationships carry over into professional contexts where farmers are excited to work with Diana and are willing to reach out to them when in need of assistance. In this sense, building mutual trust through social relationships beyond work allows Diana to better collaborate with small-scale Latinx farmers in the region.

4.3 Practice 3: Blurring distinctions between extension work and farm work

Limited social and financial capital often mean that small-scale Latinx farmers in our region are forced onto the more marginal croplands that are notoriously difficult to farm. Many farmers that we work with find themselves on steeply-sloped hills, in floodplains, on poor quality soil, or with poor irrigation water quality. In

these situations, ecological farming practices that can maintain or improve the agroecosystem are particularly important for farm viability as well as for the local non-human community; however, farmers often do not have the capacity to implement these practices themselves. Although it is uncommon for extensionists to engage directly in on-farm work, Diana themself sometimes helps to implement such practices when they have the capacity. Their work demonstrates a practice of challenging the dominant organization of labor in this agri-capitalist landscape, where extension work and farm work are typically distinct and performed by different people.

For example, in late fall and early winter, Diana gives particular assistance to farmers growing strawberries in the hilly areas of northern Monterey County to prepare for impending rains. In California's Central Coast, commercial strawberries are typically planted in late fall and grown in black plastic with bare furrows in between each strawberry bed. At scale, the effect is particularly ugly and ecologically devastating: driving through northern Monterey County, hillsides appear covered in black plastic with just a hint of vegetative life appearing as strawberry plants sprouting out of holes in the plastic covering. This poses major erosion control problems in the winter, as the plastic creates huge impermeable areas and forces winter rainfall into narrow furrows between strawberry beds. On hillsides, such erosion can be especially dangerous and economically disastrous.

At 8:05 AM on a sunny morning in October 2021, I pulled off the road onto dusty farmland. I was late, but the farmer, Ana, was nowhere to be seen. Ana's new

strawberry beds were made and forming long, straight lines perpendicular to a fairly steep slope. Diana was already testing out a set of mechanical seeders at the edge of this field, which we had planned to loan to Ana so that they could plant mustard in the furrows between their strawberry beds. The concept behind this practice comes from a local USDA Agricultural Research Service (ARS) researcher who has developed a technique of using mustard plantings in between strawberry beds to provide erosion control during the winter rains (Brennan & Smith, 2018). Like other "cover crop" practices designed to protect soil against erosion, the living roots help both to hold soil in place and to increase water infiltration into the soil via improved soil structure.

I walked over to Diana without haste, wondering where Ana might be. I figured that Diana and I would introduce Ana to the mechanical seeders, discuss this particular conservation agriculture practice, and leave them with enough seed to cover these few acres. Diana surprised me: "Good morning! Ana isn't coming, [they have] to make a delivery. We can just do the planting ourselves and I will follow up with [them] on the phone afterwards."

Over the next few hours, Diana and I wrestled with the mechanical seeders, trudged through the clayey soil, and planted a couple acres of cover crop seed. I was quite surprised to be doing such hands-on work. I had never heard of extensionists or similarly positioned people actually working in the fields alongside farmers, never mind *instead* of the farmers. Indeed, I have heard many farmers criticize extensionists because, as one farmer put it, "no saben como trabajar" ("they don't know how to work"), suggesting that real agricultural work involves physical labor on farms. Yet

Diana insists on a form of extension that involves entering farms and implementing conservation practices ourselves, sometimes even without the farmer's presence (if they have the farmer's permission). This is relatively unique for extensionists in our region, as it would be impractical for one or two people to provide such hands-on technical assistance for the dominant community of large-scale industrial agricultural operations. Yet Diana believes that this is often what is necessary for the practice to actually be implemented among small-scale Latinx farmers given their busy schedules and limited crew and supplies.

Throughout the late months of 2021 and 2022, Diana led a mustard cover crop planting program in which our team conducted outreach each year in early fall and attempted to plant mustard seed on as many Latinx-run small-scale farms as possible. They used grant funding to buy the mustard seed, borrowed the planting equipment, planted the cover crop, and conducted regular follow-ups with farmers to discuss the intention of the practice and to hear their observations about its efficacy on their farms.

Another example of Diana contributing on-farm labor is their approach to soil sampling. They recommend annual soil sampling for farmers in our area so that they can use analyses to inform their nutrient applications and other management practices. This involves walking an agricultural field in a zigzag pattern and using a soil probe to collect 15-20 soil cores per sample area, then placing a composite sample in a plastic bag, filling out a simple form as provided by the laboratory of choice, and delivering or mailing the sample and form to the laboratory. Annual soil

sampling is also now required by the local organic certifier, so Diana's long-standing recommendation and associated trainings have the added benefit of having prepared farmers for this new requirement. Regardless of a farmer's willingness and capacity to conduct soil sampling on their own, it would generally be necessary for Diana to be involved in interpreting soil test results, as they are provided in English and often contain scientific jargon. Yet, in response to farmers' repeated requests for sampling assistance, Diana has taken to conducting soil sampling themself. Although it is ideal for farmers to be present for the sampling event so that they can learn more about the sampling process, Diana is often willing to take soil samples and deliver them to the laboratory herself in urgent situations. Such situations include times when a farmer is considering leasing a new parcel or is late in complying with the organic certifier's soil sampling requirement, and when the farmer is otherwise occupied with their busy work schedule. Follow up always involves distribution of a soil sampling equipment to farmers – including a soil probe and often DIY kits for testing soil nitrate levels – as well as extended discussions about evaluation methods and test interpretation.

Diana's approach demonstrates an effort to break down the expert-farmer dichotomy that distinguishes extensionists' knowledges and actions from farmers' knowledges and actions, and which has been the focus of many critiques of extension (e.g., Chambers, 2014; Chambers & Thrupp, 1994; Kloppenburg Jr, 1991; Marcus, 1985). While these critiques typically argue against this dichotomy by asserting that farmers' knowledges should be considered expert in their own right, Diana illustrates the potential for extensionists to break this dichotomy down in the opposite direction

as well: by doing the on-farm work typically associated with the farmer. We interpret Diana's approach as a challenge to the dominant organization of labor in the agri-capitalist landscape, where extension and farm labor activities are distinct.

4.4 Practice 4: Broadening definitions of "farmers" beyond business ownership and land tenure

Given the high cost of regional agricultural land, the highly competitive agricultural industry, and the bureaucratic nature of farming in the US, Latinx farmers – especially those interested in farming at a relatively small-scale – are often unable to own land, secure long-term land tenure, or even establish farm businesses. Furthermore, although ALBA is a resource for regional Spanish-speaking, small-scale farmers, ALBA typically does not have capacity to provide much assistance for farmers who fall outside the categories of current ALBA program participants and alumni. When such farmers contact ALBA staff, they are sometimes referred to Diana or to other extensionists in our area. In these situations, we are often amazed to hear about the creative strategies that resource-constrained farmers use to grow food and care for land in the midst of such a highly competitive and expensive agricultural region. Diana often meets these strategies with similar creativity to support farmers regardless of the unconventional nature of their situation.

In spring of 2022, I accompanied Diana on a relatively unusual farm visit to San Lucas, CA, to visit a farmer who had been referred to us by ALBA staff. The Salinas Valley was a familiar array of neatly organized green and brown geometric

shapes tessellating out from the highway towards the mountains to both the northeast and southwest. I sat in the passenger seat of Diana's truck, observing the typical scenes of this industrial agricultural landscape as we drove. It was quite a haul to get there; although we try to collaborate with small-scale Latinx farmers throughout the area, we rarely go this far south. This is partially because farms in the southern part of the county are larger, leaving few options for leasing small-acreage parcels. It is also partially because small-scale Latinx farmers in the region often prefer mixed vegetable and berry production, which is more common in the northern part of the county while the southern part of the county is better suited to wine grape production. It was odd, then, that ALBA staff had recently connected Diana with a farmer named Miguel who, though a phone conversation, indicated that they would be starting a farm close to San Lucas.

As we drove, I asked Diana about the farmer we were going to visit. They shook their head and smiled the exasperated smile that I have found to be characteristic of them during our visits with farmers who are in more challenging economic or ecological contexts. Diana explained that, when they and Miguel had talked on the phone, Miguel had explained that they would be trucking water to their farm for vegetable production and wanted some advice regarding the feasibility of this operation. Diana paused in the retelling for dramatic effect. "Trucking?" I clarified. This seemed to both of us to be an absurd proposition. Given the Mediterranean climate and seasonal drought, commercial vegetable production in our

area requires a large amount of water for irrigation on the order of 50,000 gallons per acre per week during the growing season.

Miguel suggested that we meet at their house in a nearby city and follow them to the farm site as there would be no cell phone service at the site. This again was odd, as there is cell phone service throughout much of the valley floor. We exited the highway and met Miguel at their house in a residential neighborhood, then followed their truck back onto the highway. Although they exited towards farming operations, their car did not stop; rather, they kept driving out towards the hills on the east side of the valley, following a winding road surrounded by blossoming elderberries and native grasses. We were soon out of sight of the industrial agricultural operations. As we drove away from the valley floor, Diana's expression of surprise gradually grew more pronounced and we exchanged confused looks until, finally, Miguel turned off the road onto an overgrown dirt pathway. The pathway led into a clearing surrounded by small hills covered in trees and bushes – land without existing infrastructure that was clearly previously uncultivated.

We spoke with Miguel, and although I knew Diana was surprised by the idea that this site would be considered for a commercial farming operation, they did not let their surprise show. Given that I was new to this job, I simply followed their lead. They first discussed the problems of soil fertility and water access with the farmer. Miguel was serious about cultivating 5 acres of mixed vegetables for sale, and although they realized that the rocky soil and lack of water infrastructure posed challenges, they had a plan for addressing both issues. First, Miguel hoped to till and

add compost to the soil. Diana pragmatically suggested that we take soil samples to better understand the kinds of fertility-related challenges they would be facing, and we would send these to the laboratory and interpret the results for them at no cost. Together, we used shovels to dig into the hard earth and collected composite samples. Next, Miguel explained their plan for accessing water. Back down the winding road, they said, the landowner had arranged a place where they could fill up small tanks of water at no additional cost and transport them via truck back to the farm site. After asking more questions and expressing some skepticism, Diana suggested that we take a look at the water source so that we could take a water sample to test for irrigation quality and evaluate feasibility of transporting the water.

We got back in our cars and caravanned down the road into the town of San Lucas, about 15-20 minutes away. On the far side of town we encountered a chained gate, which Miguel opened. Inside, a variety of cows, goats, sheep, and a few dogs roamed in partially-fenced areas. We did not see other humans but, behind the other animals, found the spigot which Miguel hoped to use for water for their farm. In the car, Diana's incredulous expression was now mingled with considerable concern. The distance between the water source and the proposed farm site would likely be an enormous barrier to developing a farm. Yet Diana did not dismiss the situation as impossible, nor were they dishonest with Miguel. They took time to go through the calculations with Miguel, estimating how many tanks of water they would need on the proposed farm property, how many tanks they would need to fill and transport, how many trips back and forth to the water source this would require, how much

diesel fuel they would need to use for transportation purposes, and how much all of this would cost. Once Diana determined and illustrated that it would be reasonable for someone to have a full-time job simply transporting water to the farm, they and Miguel discussed the possibility of planting less acreage or growing drought-tolerant crops to reduce water needs.

Although the operation proposed by Miguel was relatively unusual to me and Diana, it was not difficult for us to empathize with Miguel. On the drive back to our office, we discussed how low-income people in our region must think creatively about land access and farm development. The hilly areas on each side of the valley offer space for dreaming, and Miguel is certainly not the only small-scale Latinx farmer in our networks to consider near-impossible schemes for accessing land and water in this expensive area. Yet, as with much of California, the reality of accessing water for irrigation is quite a complex and expensive undertaking (e.g., Arax, 2019; Pisani, 2021; Reisner, 1993; Worster, 1992). The rocky soil at Miguel's proposed farm site posed additional challenges. Still, Diana demonstrates how extensionists can support this kind of creativity by thinking alongside farmers about how they might develop alternatives to the dominant industrial agricultural paradigm. This kind of work can easily be considered within the scope of extension positions, yet requires creativity on the part of the extensionist to take such alternative farming efforts seriously.

The kind of creativity that Diana demonstrates with Miguel is particularly potent for extensionists as it offers opportunities to expand the definition of who is

served by agricultural extension programs. State programs offering financial and technical assistance often require farmers to own legal businesses in order to quality for assistance, and some conservation incentives programs – like NRCS' EQIP and the California Department of Food and Agriculture's (CDFA's) Healthy Soils Program – require farmers to have a certain amount of land tenure security before providing payments. Yet neither business ownership nor land tenure status are of concern to Diana. Various agri-food scholars have similarly emphasized the importance of discursive framings of "farmers" that move beyond capitalist relationships with land and food. For example, in their historical documentation of southern rural resistance and Black farmers' participation in the food system, Monica White uses the term "farmers" to refer to "all those who worked the land, regardless of their landownership status" (White, 2018, p. 4) or, for that matter, farm ownership status. White's analysis includes sharecroppers, tenant farmers, and landowners as well as those who were enslaved in rural places and subsistence farmers, such as women gardeners. Broad use of the term "farmer" to include myriad relationships with land, food, and capital helps to extend farm research and extension beyond land or farm business ownership and towards multiple forms of agency within the food system. This conceptual re-framing can allow extensionists to support a more diverse array of people, especially those with less access to capital.

Diana's support for a range of people growing food and caring for land is particularly apparent in their recent effort to develop an extension program serving urban "farmers," broadly defined. Beginning in 2019, Diana took the lead of an active

initiative to develop a volunteer-run urban garden establishment and maintenance program in their hometown of Seaside, CA. Since then, they have worked with a variety of organizational partners and neighborhood families to establish and maintain urban gardens in Seaside public parks. With Diana's leadership, 20+ individual volunteers have regularly participated in garden workdays every Saturday since April 2020, collectively managing gardens in 8 different public parks and a total of nearly one acre of urban space. Many of the participants are otherwise involved in food-producing urban gardens and have expressed interest in receiving support or additional/ancillary food production garden initiatives in public spaces in Seaside. While Diana's involvement in this effort has taken place outside of the context of their professional role as an extensionist, they see opportunities for their professional work to shift towards assisting these farmers and is currently seeking out funding to support this work. This work would broaden their professional work, de-emphasizing farm owner-operators and supporting a wider variety of people growing food.

Diana's approach to extension demonstrates a willingness to support farmers regardless of their business-ownership and land-tenure status. Their approach differs notably from the criteria of state programs that understand "farmers" as "farm business owners," typically with landownership status or long-term land tenure. Accordingly, we understand Diana's approach as one that challenges dominant agri-capitalist framings of who is or should be the target audience of extension activities. Their approach also involves creativity as they attempt to support farmers' dreams, even if it means believing in the seemingly impossible (i.e., unprofitable).

5. Between maintenance and transformation: Extension as "a site of decision"

In reading for difference among Diana's extension practices, we return to Henke's (2008) understanding of extensionists' efforts to maintain versus transform dominant power relations in the agri-food system. In their study of University of California Cooperative Extension (UCCE) farm advisors, Henke finds that UCCE "has often served to preserve and maintain the power structure of the local social and material ecology" due to its "mandate to improve the productivity of agricultural communities" (2008, p. 16). In doing so, Henke theorizes extension as a mechanism of "repair" whereby political economic power is maintained for the benefit of large-scale agribusinesses. This understanding is consistent with many political economic critiques of extension, which highlight the ways in which extension often facilitates corporate consolidation and accumulation of wealth for a few at the expense of many (e.g., Hightower, 1973). Yet Henke's analysis is particularly relevant to efforts to identify and create alternatives to dominant power relations because it distinguishes between two types of repair strategies: maintenance and transformation. While maintenance can be understood as a strategy for keeping dominant power asymmetries intact, transformation is a more radical approach that challenges these power asymmetries. Although they find that extensionists largely perform maintenance repair, Henke also articulates possibilities for transformative repair that are invested in challenging the political economic power of California's agricultural industry. This opening towards radical alternatives is promising for those interested in

diverse economies, as it suggests that alternative forms of agricultural extension are possible, and that they have the potential to challenge dominant power relations in the agri-food system.

Combining Henke's (2008) theorization of extension with Gibson-Graham's (2008) diverse economies approach, we find that Diana's extension practices highlight diverse possibilities for extension as maintenance *and* transformative repair. On the one hand, Diana's strategic navigation of professional extension contexts illuminates the political economic structures of extension organizations such that they are structured to reproduce racial-economic inequalities. While filling gaps in state programs with invisible labor, Diana's work demonstrates how these state programs are largely unable to effectively connect small-scale Latinx farmers with the material assistance they need to establish and run their farms. Diana's efforts to build mutual trust through social relationships beyond work contexts highlight the failure of extension organizations to fund the relationship-building work necessary to cultivating effective professional relationships between farmers and extensionists. Additionally, Diana's on-farm labor illustrates how professional boundaries typically established between extension work and farm work can limit extensionists' abilities to carry out the labor that is needed to actualize implementation of on-farm conservation practices. Finally, Diana's strategic understanding of "farmers" beyond narrowly defined relationships with land and capital show how more limited framings of who is and isn't a farmer (e.g., those definitions mobilized by the US Department of Agriculture) can limit support for a wide range of people growing food and caring

for land and water. Accordingly, our findings gesture towards multiple ways in which extension initiatives maintain power asymmetries in the agri-food system due to their limited abilities to provide material assistance to small-scale Latinx farmers. On the other hand, our findings also clearly highlight the heterogeneity of extension initiatives, as individual extensionists like Diana make a range of efforts to collaborate with small-scale Latinx farmers despite the fact that their professional contexts are not structured for them to do so.

Important to our analysis is Gibson-Graham's understanding of the economy as "a site of decision, of ethical praxis, instead of as the ultimate reality/container/constraint" (2006, p. 88). We find that Diana's professional work is a "site of decision" where they attempt to conduct transformative rather than maintenance work by contributing to Latinx farmers' efforts to create and sustain small-scale farms. Accordingly, Diana's work highlights a moral economy (Scott, 1977; Thompson, 1971) of extension, whereby moral, ethical, and political commitments shape extensionists' activities and decision making despite the structural limitations of extension organizations. This framing is consistent with Gibson-Graham et al.'s (2013) consideration of how to "take back work" from the realm of exclusively capitalist activity, as our findings suggest that agricultural extension might be considered beyond explicit professional commitments. Like all professional activities, extension work is a site where ethical commitments must be negotiated and where there is the possibility for activities and relationships to exist beyond what is strictly necessary for the job. In Diana's work, their social

relationships with farmers outside of work contexts clearly show a commitment to more-than-capitalist relationality. Furthermore, their efforts to make up for the shortcomings of state programs, their willingness to perform on-farm labor when farmers are unable or unavailable to do so, and their support for farmers regardless of their business ownership or land tenure status are not necessary for their continued employment. For example, Diana does not need to so thoroughly ensure that Spanish-speaking, small-scale, Latinx farmers benefit from state programs; it would be perfectly acceptable professionally for Diana to simply distribute information about state programs and leave farmers to follow up with program staff on their own. Their labor demonstrates a commitment to supporting this community of farmers that goes beyond their own need for continued employment. This kind of ethical approach to challenging racial-economic inequality is indeed possible within extension contexts, although it is certainly not prioritized or adequately rewarded by the public extension system.

Although extension can be considered a site of decision for all practitioners regardless of their situated locations in regional socio-ecological hierarchies, it is important to consider the role that extensionists' racial, gender, and other positionings play in their ethical commitments to challenging racial-economic inequalities in the agri-food system. In Diana's case, on the one hand, much of the transformative repair work that they do is work that is inherently feminized – work that goes unrecognized, unvalued, or undervalued when women perform it because of essentialized notions of women as inherently caring and nurturing. This is particularly true in the context of

the invisible labor (Crain et al., 2016) that Diana performs as they care considerably about the material outcomes of extension work for small-scale Latinx farmers in the region. In this sense, it is important to emphasize that Diana's work should not simply be praised for challenging racial-economic oppression in the agri-food system; rather, it should be valued, as well as understood as highlighting the need for structural change within extension organizations. On the other hand, as a white woman, it is important for Diana and similarly positioned extensionists to reflexively examine their own racial privilege and the ways in which they approach work with farmers of color. There are many examples where white-led efforts to challenge racial-economic inequalities in agri-food systems are fraught with "the intention to do good on behalf of others" and have "the markings of colonial projects, in that [they seek] to improve the other while eliding the historical developments that produced these material and cultural distinctions in the first place" (Guthman, 2008a, p. 436). Relatedly, feminist scholars have critiqued empathy in solidarity encounters for reinforcing power asymmetries, as empathy is usually only given by relatively privileged people to those with less power or resources and perceived to be in need of help (e.g., Hemmings, 2012). In this regard, extensionists' efforts to challenge racial-economic inequalities should be carefully examined for the ways in which they may reproduce hierarchies through these same efforts. While this kind of close examination is beyond the scope of this paper, we encourage other extension scholars and practitioners to more deeply consider these dynamics, and will continue to do so in our ongoing work.

6. Conclusion

In this chapter, we have sought to respond to critiques of agricultural extension that focus on extension's complicity in promoting agri-capitalism in the interest of identifying alternative, more ethical approaches to extension. To do so, we have drawn on Henke's (2008) understanding of extensionists' potential to maintain as well as transform dominant relations of power within agri-food systems. Additionally, we leverage feminist political economic theory and, in particular, the diverse economies approach developed by J.K. Gibson-Graham and their collaborators. Using the methodological practice of reading for difference (Gibson-Graham, 2008), we provided a case of one extensionist's alternative economic practices throughout their work in California's agricultural landscapes. Our findings highlight four such practices that this extensionist uses in their extension work, including: (1) filling gaps in state programs with invisible labor; (2) building mutual trust through social relationships beyond work; (3) blurring distinctions between extension work and farm work; and (4) broadening definitions of "farmers" beyond business ownership and land tenure. We considered not only how these practices gesture to the political economic limitations of extension work while illustrating possibilities for extensionists to challenge racial-economic hierarchies in agri-food systems. Such attention to economic heterogeneity suggests that extensionists' work can be both a response to job requirements and a site of decision where ethical practices might exist beyond strictly professional commitments. We hope that, in

develop this critical understanding of economic heterogeneity among extension practices, we have provided some conceptual groundwork for extension scholars and practitioners to contribute to transformation of dominant agri-capitalist power relations.

CHAPTER 3:

Beyond "polluters" and "victims":

(Re)framing environmental responsibilities amidst agricultural nitrate pollution

1. Introduction

It was mid-August and I was already sweating in the morning sun. Filiberto[13] and I worked together to harvest a portion of his chard crop, cutting the stems and bunching them with rubber bands before tossing them into a cardboard box. We talked while we worked, which made the heat more bearable. He asked why I was ending my business, which for the past year had involved aggregating produce and transporting and selling boxes of mixed vegetables directly to people in my neighborhood. I told him that I was starting work at the local Resource Conservation District (RCD), which would pay better, and which left little time for the business. "I know the RCD," he said, "they help farmers with soil health and with getting crops the nutrients that they need." I agreed, and asked if he had ever worked with the RCD staff. "A little," said Filiberto, "but not much. My soil and crops are already very healthy. I don't even add fertilizer, and the crops are fine every year."

This comment from Filiberto startled me and left me puzzled for several weeks. Having studied agricultural sciences in both my undergraduate and graduate degree programs, I was baffled by the idea that a farmer did not use fertilizer and yet was able to grow chard as beautiful as the chard that I purchased from Filiberto and

[13] All names provided are pseudonyms.

helped him to harvest. I thought that, perhaps, he had understood the term "fertilizer" ("fertilizante" – we spoke in Spanish) to mean synthetic fertilizer, and he preferred to use organic fertilizers – like compost and manure – instead. My confusion parted a few weeks later when one of my new coworkers explained that nutrient management on Filiberto's farm involves a twist that is unique to this region, and which allows many farmers to grow crops without applying fertilizer.

At the time of our conversation, Filiberto was running a 5-acre, diversified vegetable farm in Salinas, California, in the heart of the industrial agricultural landscape of the Salinas Valley. Sometimes known as "The Salad Bowl of the World," the Salinas Valley is home to massive vegetable and berry production, with nearly $8 billion in direct economic output annually (Monterey County Agricultural Commissioner, 2020). Following decades of heavy reliance on nitrogen-containing fertilizers and nitrogen-containing soil amendments like compost, nitrogen in the form of nitrate has leached through the soil profile and resulted in widespread contamination of the regional groundwater supply. During seasonal drought in this Mediterranean climate, the region is nearly completely reliant on groundwater for all water uses, including for irrigation. As such, farmers apply nitrate-contaminated groundwater to their crops with every irrigation, which supports crop growth. Depending on the concentration of nitrate in their irrigation water, many farmers do not need to apply additional nitrogen-containing fertilizers.

Like other farm owners in the Salinas Valley, Filiberto benefitted financially from decades of nitrate leaching from regional industrial agricultural operations. His

use of nitrate in irrigation water as a no-cost form of fertilizer exemplifies what (Ofrias, 2017) has termed the "incentive to contaminate," in which nitrate pollution can be understood as both internal to the workings of agri-capitalism and explicitly advantageous to farm business owners that take advantage of nitrate contamination of irrigation water.

Yet Filiberto is not only a beneficiary of nitrate pollution. He is a small-scale, working-class, Mexican immigrant farmer that lives on the outskirts of a nearby town, where houses are not connected to municipal water supplies. Although his house has a well, his family does not use it, as it is contaminated with nitrates and other toxins that have presumably leached into the water supply from surrounding agricultural operations (Harter et al., 2012). Although nitrate is a naturally occurring form of nitrogen and is, in fact, necessary for plant and animal life, high levels of nitrate in drinking water can be toxic. Consumption of nitrate in drinking water can affect the ability of one's blood to carry oxygen and can result in methemoglobinemia or "blue baby syndrome," which is particularly harmful to infants and young children. High nitrate levels in drinking water have also been linked to a variety of other health concerns, including some cancers (Ward et al., 2005). Exposure to nitrate as a drinking water contaminant is horrifyingly common among the many working-class Mexican immigrants like Filiberto who live and work in this industrial agricultural landscape (Greater Monterey County Regional Water Management Group, 2017), and whose positions within regional socio-ecological hierarchies leave them disproportionately exposed to agricultural toxicity.

At this juncture of farm business ownership and exposure to industrial agricultural toxicity, Filiberto and other similarly positioned farmers in the Salinas Valley highlight one way of being both beneficiaries of capitalist-driven environmental degradation and vulnerable to associated environmental health hazards. These farmers have a complex relationship both with the agricultural industry and with state-led efforts to regulate industrial agricultural activities, as they are deeply invested in both ensuring viability of their farm businesses and protecting drinking water quality in working-class communities of color. Centering these farmers in the study of nitrate pollution highlights nuanced forms of environmental responsibility that diverge from simplistic understandings of perpetration and victimhood central to dominant state-led environmental protection efforts.

In this chapter, I center Filiberto and other similarly positioned farmers in the study of agricultural nitrate pollution to explore to theories and practices of environmental responsibility that are critical both of industrial activities and of dominant state-led regulatory efforts. Specifically, I discuss how small-scale Latinx farmers in the Salinas Valley navigate regulatory burden as farm business owners while also formulating environmental responsibilities necessary for supporting environmental health of their working-class communities of color. I find that farmers' framings of environmental responsibility diverge from state-led efforts in terms of: (1) pollutants of concern; (2) ways of knowing; (3) scales of action. I argue that farmers' approaches illustrate a unique form of environmentalism rooted in the lived experiences of people who are both farm business owner-operators and agricultural

workers. While dominant efforts to mitigate nitrate pollution overly simplify who is responsible for pollution and who can and does contribute to water quality protection, the small-scale Latinx farming community inherently complicates dominant framings of "polluters" and "victims." Ultimately, these farmers demonstrate ways of theorizing and practicing extra-legal environmental responsibilities that are critical of both industry and state, and which are accountable to the complex ways in which their communities contribute to, benefit from, and are harmed by agricultural pollution.

2. Literature and theoretical framing

In considering how small-scale Latinx farmers theorize and practice environmental responsibilities amidst agricultural nitrate pollution, I draw on conversations among environmental justice scholars and their interlocutors. First, I consider how nitrate contaminated waters in the Salinas Valley are produced by toxic socio-ecological structures, drawing on literatures that theorize pollution as internal to capitalism and examine the racial capitalist formation of the US. Second, I build on critiques of purity in environmental politics to complicate simplistic notions of perpetration and victimhood and to consider how environmental responsibilities must be theorized and practiced from within these toxic structures.

2.1 Toxic structures

In considering the structural dimensions of nitrate pollution, I first look to scholarship about the relationship between pollution and capitalism and about the racial capitalist formation of the US. Environmental justice scholars have long documented the disproportionate impacts of industrial pollution on low-income communities of color (e.g, Bullard, 1993, 2008; Checker, 2005; Cole & Foster, 2001; United Church of Christ Commission for Racial Justice, 1987). While much of mainstream environmental economics would consider such industrial pollution to be an "externality," Marxist-oriented environmental critiques have often argued that pollution is, in fact, internal to the workings of capitalism (e.g., Benton, 1989; O'Connor, 1998). Environmental justice scholars have more recently sought to integrate these radical critiques of environmental degradation with their long-standing interest in environmental inequalities along axes of social difference, exploring how co-production of race, class, and environment are internal to the workings of capitalism (e.g., Pellow, 2016, 2017; Pulido, 2016, 2017; Pulido & De Lara, 2018). For example, drawing on Robinson's (2020) understanding of racial capitalism and related work at the intersection of geography and ethnic studies, Pulido (2016) argues that poisoning of the water in Flint, Michigan is part of the everyday functioning of racial capitalism. Given that, in Robinson's and others' understanding, "capitalism *is* racial capitalism" (Melamed, 2015, p. 77), Pulido's analysis illustrates how environmental justice scholarship might more deeply theorize environmental racism as a key organizing feature of capitalism. Such understandings of industrial pollution as internal to capitalism are also relevant to understanding pollution as internal to

other structures of oppression, such as settler colonialism, as industrial pollution is premised on land relations that involve "use" of land for settler wealth accumulation (Liboiron, 2021).

Regarding the relationship between pollution and capitalism, Pulido (2016) uses the term "poisoning" of the Flint water supply rather than "contamination" to suggest a "deliberate and evil act" (2016, p. 22). This framing moves beyond an understanding of pollution as an unfortunate-but-inevitable element of capitalism to consider the productive work of pollution itself. Others have discussed this productive work in depth, exploring how pollution and other environmental hazards "produce 'invisible opportunities' for capital accumulation and other consolidations of power" (Ofrias, 2017, p. 16). In the Salinas Valley, this "incentive to contaminate" (Ofrias, 2017) is made clear by the ways in which decades of nitrate leaching to groundwater have resulted in "free" fertilizer for agricultural operations in the form of nitrate-rich irrigation water. In this context, farm businesses are subsidized by (their own) historic and widespread agricultural nitrate pollution.

Furthermore, an understanding of pollution as internal to racial capitalism has implications for theories of change and associated political strategies. Although environmental justice scholarship has long focused on legal forms of responsibility as mechanisms for facilitating socio-ecological change, scholars have more recently sought to problematize the state and move away from state-centric theories of change (e.g., Gilio-Whitaker, 2019; Kojola & Pellow, 2021; Kurtz, 2009; Pulido, 2017; Pulido et al., 2016; Whyte, 2017, 2018). These approaches maintain that the US

government plays a key role in (re)producing uneven forms of environmental violence through the different but interrelated structures of racial capitalism (Robinson, 2020; see also Kelley, 2017 and Melamed, 2015, among others) and settler colonialism (e.g., Whyte, 2017, 2018), which ultimately target poor and working-class communities of color. In this regard, it is important to be critical not only of the role of industry in producing environmental health hazards, but also of the role of the state in facilitating such violence.

Given these critical understandings of industry and the state, drawing out the connection between nitrate pollution and structures of socio-ecological inequality is a matter of locating toxicity beyond the scale of individual pollutants. This point has been made by scholars working at the intersections of environmental justice studies and science studies, many of whom argue against toxicity as an inherent quality of a chemical or substance. This literature takes issue with the scale at which toxicity is dominantly understood and addressed, critiquing the emphasis on molecular framings of toxicity and the damage that these molecules do at the cellular level (e.g., Calvillo, 2018; Liboiron et al., 2018; Murphy, 2008, 2017). The habit of discussing nitrate (NO_3^-) and other potentially toxic chemicals in their molecular form suggests that toxicity is associated with the compounds themselves. In doing so, it obscures the embeddedness of nitrates and other compounds within the larger structures – including capitalism – that produce unevenly toxic landscapes. As an alternative, relevant scholarship has sought to draw attention to the ways in which toxicity is produced through larger social, political, and economic systems. While multi-scalar

analysis of toxicity has often been central to environmental justice scholarship (Sze, 2016), more recent efforts to avoid characterizing compounds as intrinsically toxic can also support a more relational approach to environmental justice. For example, in Zoe Todd's (2017) study of the Husky Energy Inc. oil spill in July of 2016 and resulting contamination of nearby waters, the author challenges understandings of oil as inherently toxic. Todd explains, "…these oily materials are not, in and of themselves, violent or dangerous. Rather, the ways that they are weaponized through petro-capitalist extraction and production turn them into settler-colonial-industrial-capitalist contaminants and pollutants" (p107). Todd's understanding of the weaponization of oil locates toxicity at the scale of violent socio-ecological structures, supporting a deeper understanding of the kinds of political action necessary for challenging oil spills and other forms of pollution.

While agricultural nitrate pollution is typically discussed at the molecular scale (nitrate: NO_3^-) and should therefore be subject to critiques of molecular framings of toxicity, the material characteristics of nitrate inherently lend themselves to a multi-scalar analysis of nitrate pollution. Unlike other environmental toxins, nitrate is commonly found among humans even in the absence of industrial processes and is often not considered toxic at all. Nitrate is the main form of nitrogen taken up by plants even in the absence of synthetic fertilizers and is necessary for plant and animal life. Although it can be synthesized by industrial manufacturers, nitrate is present in organic fertilizers (such as compost and manure) and is not necessarily less prone to leaching when applied in these forms (Dahan et al., 2014). Accordingly, it is

a relatively unique compound with which to study environmental toxicity, as most relevant studies focus either on compounds manufactured through industrial processes (like PCBs or DDT) or on naturally occurring compounds that are acutely toxic to human bodies (like arsenic) (Liboiron et al., 2018). Given that the presence of some nitrate is necessary for the growing of food plants, regulatory bans that have proven successful for preventing use of and exposure to pesticides and other toxic compounds in industrial agricultural contexts are not plausible mitigation strategies for nitrate pollution. Furthermore, nitrate losses from farms are notoriously difficult for farmers to manage. Although it is often applied to crops as fertilizer (synthetic or organic) alongside phosphorus, potassium, and other nutrients, nitrate is especially mobile and prone to leaching. Nitrogen in fertilizer rapidly transforms into nitrate and dissolves in soil water, where it is easily translocated to groundwater. Regulatory efforts to mitigate nitrate pollution often advocate watershed-scale coordination of agricultural practices and promote use of "best management practices" on farms, such as minimizing fertilizer and irrigation applications, maintaining plant cover to reduce erosion, and building soil organic matter to increase water and nutrient retention (Muramoto et al., 2000). These regulatory efforts, however, do not typically consider nitrate pollution as a core feature of capitalism, nor are they capable of tending to the ways in which state-centered environmental protection efforts are inherently structured to reproduce violence against poor and working-class communities of color. In this chapter, I bring a more critical perspective to bear on the problem of

nitrate pollution, locating the racial capitalist formation of the agricultural industry and of the US as key drivers of pollution.

2.2 Impure politics

In considering the ways in which some farmers are responsible for on-farm nutrient management, are benefiting from "free" fertilizer in irrigation water, and are also potentially exposed to nitrate in drinking water, I build on critiques of purity in environmental politics. Following Douglas' (2002) discussion of how dominant notions of pollution are shaped by larger social, political, and cultural systems, a wide range of studies have critiqued raced, gendered, and queered notions of environmental and bodily (im)purity (e.g., Chen, 2012; D. Haraway, 2013; D. J. Haraway, 1989).Environmental justice scholars and political ecologists have long challenged notions of environmental purity embedded in the mainstream environmental movement, emphasizing how the "environment" is not a "pristine wilderness" but rather encompasses the diverse places where we "live, work, and play" (e.g., Cronon, 1996).These discussions often emphasize the relationship between notions of bodily and environmental purity (e.g., Kosek, 2004; Nash, 2008; Sze, 2006); for example, Kosek (2004) demonstrates how notions of racial purity and fears of bodily pollution have been central to white-led wilderness preservation efforts in US contexts.

Critiques of environmental and bodily purity have important implications for the ways in which environmental politics are formulated and understood. Feminist

scholarship has long sought to theorize the ways in which the subject of knowledge is always located somewhere (D. Haraway, 1988) and how politics emerge from this situated place (Alcoff, 1988). In the contemporary context of the so-called Anthropocene where we live amidst pervasive-yet-uneven toxicity, these situated places from which our knowledge and politics emerge are inherently impure places. Notably, Haraway's (1985, 2013) discussions of hybridity draw together the ontological hybridity of body/environment/toxin and the epistemological hybridity involved in knowing from an impure, hybrid place. Related approaches advocate an understanding of environmental politics as emergent from compromised positions within the toxic socio-ecological structures within which we all are currently-yet-differentially situated (Shotwell, 2016). With these understandings, a range of environmental scholarship has sought to explore political strategies that embrace complex subject positionings,[14] develop demands that move beyond environmental and bodily purity, and remain critical of toxic socio-ecological structures (e.g., Liboiron et al., 2018; Murphy, 2017; Shotwell, 2016; Tsing et al., 2017).

Critiques of purity in environmental politics complicate simplistic notions of perpetration of victimhood in environmental movements as well as in state-centered efforts to protect environmental quality. Although writing outside of environmental

[14] Such approaches to politics are particularly compelling to me as a mixed-race person with one white (Swedish and mixed western European) and one Brown (west Punjabi) parent. As a white/Brown mixed-rate person in the settler US, I encounter environmental justice scholarship and activism from an uncomfortable place, where I do not easily identify with victims of environmental racism nor with the perpetrators. In this sense, my interest in rejecting purity politics is deeply personal, as it offers ways of formulating environmental politics from my own mixed position.

studies, Rothberg's (2019) notion of "the implicated subject" is particularly relevant to this line of inquiry, as the implicated subject is one who "is neither a victim nor a perpetrator, but rather a participant in histories and social formations that generate the positions of victim and perpetrator, and yet in which most people do not occupy such clear-cut roles" (2019, p. 1). Drawing on Holocaust studies scholarship and other theories of traumatic violence, Rothberg argues for a move away from what they identify as "the victim/perpetrator imaginary" (2019, p. 7) that animates most studies of violence – and which, in my study context, can be identified as the victim/polluter imaginary. They argue that while the categories of "victim" and "perpetrator" remain useful, especially in legal contexts, the realm of implication exists beyond such neat categories and holds insight into the more diffuse ways in which forms of violence and inequality are produced and reproduced. Rothberg's nuanced distinction between the concepts of "complicity" and "implication" is particularly relevant to environmental justice scholarship, as it differentiates between legal and extra-legal forms of responsibility. They suggest that while the term "complicit" implies legal accountability and "operates in proximity to notions of criminal guilt," (2019, p. 13), "implication" refers to non-innocent participation in the broader processes of producing and reproducing forms of violence and inequality. In this regard, the concept of implication offers opportunities to move beyond state-centric forms of environmental responsibility and towards diverse other ways of theorizing and practicing environmental responsibility.

The farmer discussed in the introduction to this chapter, Filiberto, is part of a community of Spanish-speaking, small-scale, Latinx immigrant farm business owners that, in a general sense, are simultaneously responsible for on-farm nutrient management, benefiting from "free" fertilizer in irrigation water, and exposed to nitrates in drinking water. Understandings of environmental politics that reject notions of environmental or bodily purity are particularly relevant to these farmers, who are implicated in the toxic structures of racial capitalism as US-based farm business owners and yet are vulnerable to pervasive-yet-uneven agricultural toxicity as working-class immigrants of color. Farmers' theories and practices of environmental responsibility emerge from an impure, hybrid place, where they are invested in the agricultural industry yet must be critical of both the industry and the state.

In this chapter, I draw on critiques of purity in environmental politics to consider how environmental responsibilities can and must be theorized and practiced from impure/hybrid positions, where subjects are critical of agri-capitalism and other toxic socio-ecological structures yet are also implicated in these structures. These approaches inherently challenge neat categories of "polluters" and "victims" that characterize dominant framings of environmental responsibility. Although I specifically consider the work of small-scale Latinx farmers in the context of agricultural nitrate pollution, this approach is widely relevant given that most of us who are interested in challenging toxic structures are also (unevenly) embedded within those structures.

3. Methodology

To consider how environmental responsibilities can and must be theorized and practiced from impure, hybrid positions, I develop a single case study (Yin, 2009) of a Spanish-speaking, small-scale, Latinx immigrant farming community in California's Salinas Valley. In particular, I examine farmers' framings of environmental responsibility in the context of agricultural nitrate pollution and explore how those framings differ from dominant, state-centered framings. Although nitrate pollution could easily be studied by centering water justice activists, water quality governance initiatives, or large-scale industrial farming operations, I choose to center this community of farmers because their relationships with nitrate pollution are more obviously complex. These farmers' positionings within regional socio-ecological hierarchies challenge neat distinctions between "polluters" and "victims" and draw attention, instead, to the realm of implication and more nuanced framings of environmental responsibility.

This case study is supported by 48 months of ethnographic research (February 2019 – January 2023) with this farming community (described in detail below). During this time, I conducted participant observation (Bernard, 2017) throughout all engagements with this community farmers and produced extensive field notes (Emerson et al., 2011). I then utilized an inductive qualitative approach to data analysis by coding for emergent themes (Saldaña, 2021).

Spanning 48 months, my ethnographic data collection activities focused on working with the community of Spanish-speaking, small-scale (typically <20 acres), Latinx farm owner-operators in California's Central Coast,[15] whose regional prominence is largely due to the presence of the Agriculture and Land-Based Training Association (ALBA) in Salinas, CA.[16] ALBA is a 501(c)3 non-profit organization with a mission to "create opportunities for low-income field laborers through land-based training in organic farm management, helping them advance their careers or pursue the dream of farm ownership" (ALBA, 2023). ALBA offers two primary programs for beginning farmers: the Farmer Education Course, an experiential job training program (PEPA); and the Organic Farm Incubator, which leases subsidized land and equipment to 36-40 graduates of the educational course annually. Almost all of the farmers who participate in these programs are either immigrants from Mexico or are US-born people with Mexican ancestry. According to ALBA staff, most participants have spent years or decades working in the regional agricultural industry on field crews, in packing houses, or otherwise as laborers on large-scale, industrial agricultural operations. Following participation in the incubator program, many farmers go on to steward agricultural lands in other parts of the region. Although these farmers are a heterogeneous group, I emphasize their similar positionings as Spanish-speaking, small-scale, Latinx immigrant farm business owners for the

[15] Aysha discusses their introduction to ALBA and evolving relationship with ALBA-affiliated farmers and extensionists in more depth elsewhere (Peterson 2023).
[16] According to the California Certified Organic Farmers (CCOF) certification entity, 80-90% of all Spanish-preference organic farmers in the northern Central Coast region started at ALBA, and most small-scale farmers in this region are organic-certified in order to be competitive in the marketplace (personal communication, ALBA staff).

purpose of highlighting their complex relationships with nitrates and with associated environmental responsibilities.

Following an initial introduction to ALBA, I began conducting participant observation (Bernard, 2017) in this setting by working alongside the community of ALBA farmers in a variety of capacities. From February 2019 – August 2021, my work involved collaborating with ALBA staff as a graduate student researcher on a grant-funded project to qualitatively document organic farming practices, supporting farmers' applications for COVID-19 pandemic-relief funding, participating in work-trades with farmers in exchange for produce, and working with a group of farmers to start a small-scale produce distribution business. Through these efforts, I met staff from a local Resource Conservation District (RCD) who work closely with small-scale Latinx farmers to provide on-farm conservation assistance, such as supporting soil health and water use efficiency. In August of 2021, I began working at this RCD to assist small-scale Latinx farmers with on-farm conservation practices. In addition, I also attended over 15 water quality governance meetings to better understand dominant efforts to organize against agricultural nitrate pollution. Throughout all these spaces and roles, I wrote extensive field notes (Emerson et al., 2011), and then utilized an inductive qualitative approach to data analysis by coding for emergent themes (Saldaña, 2021).

4. Findings

Findings show how small-scale Latinx farmers theorize and practice environmental responsibility amidst agricultural nitrate pollution, and how these efforts diverge from those of dominant, state-led initiatives. Here, I first provide background information about state-led initiatives to protect against agricultural nitrate pollution and subsequent groundwater contamination in the Salinas Valley and broader Central Coast region of California. I then explore divergences between state-led efforts and those of small-scale Latinx farmers in three contexts: (1) pollutants of concern; (2) ways of knowing; (3) scales of action. Each of these contexts highlights how farmers are critical of industrial pollution and of the regulatory apparatus yet are also invested in finding ways of maintaining their farm businesses.

4.1 Water quality governance in California's Central Coast

When I moved to the Central Coast of California in 2017, nitrate pollution had already become a major concern among regional activists and there had been several decades of efforts to protest and regulate agricultural nutrient runoff. In response to the environmental activism of the 1960s, California passed the Porter-Cologne Water Quality Control Act in 1969, which sought to regulate both point source and nonpoint source discharges to surface water, groundwater, and wetlands. This Act predated the federal Clean Water Act, which was passed in 1972 and from which discharge from irrigated agriculture was exempt. California's State Water Board did little to explicitly address nonpoint source pollution until 1987, when the federal Clean Water Act was amended and required states to create a plan to control nonpoint sources. In

1988, the State Water Board identified agricultural discharges as significant sources of nonpoint source pollution and developed the Nonpoint Source Pollution Management Program, which has since been updated to form the basis of state regulation of nonpoint source water quality degradation.

Water quality in California is currently governed by nine Regional Water Quality Control Boards, one of which governs the Central Coast region where the Salinas Valley is located. In 2004, the Regional Board adopted the state's first "Ag Order," which presented an effort to control nonpoint source pollution specifically from irrigated agriculture. Renewed in 2013 and again in 2017, this program emphasizes reporting of nitrogen and pesticide applications but, until recently, it did not provide effluent limits. This meant that the Ag Order effectively had no capacity to enforce water quality protections. Following a series of lawsuits brought on by a coalition of environmental justice, conservation, and fishing organizations, the Regional Board began to develop a fourth version of the Ag Order which would set effluent limits for nitrate and pesticides. This new Ag Order, "4.0," was anticipated in 2020.

Amidst Ag Order 4.0 anticipation, those concerned with water quality protection in the Central Coast region were also tracking new developments in state governance of groundwater resources. According to the California Water Library, the Central Coast region is the most groundwater-dependent region of the state, with 80% of agricultural, municipal, and domestic water use reliant on groundwater supplies (California Water Library, 2023). Accordingly, water governance in this region is

nearly synonymous with governance of groundwater resources. In 2014, the state of California passed groundbreaking legislation in the form of a three-bill package known as the Sustainable Groundwater Management Act (SGMA; AB 1739, SB 1168, and SB 1319), which comprised California's first set of comprehensive groundwater regulations (Leahy, 2015). SGMA initially mandated formation of basin-level Groundwater Sustainability Agencies (GSAs) in 127 high- and medium-priority groundwater basins by June 30, 2017, including the Salinas Valley basin. These GSAs were then required to develop and submit Groundwater Sustainability Plans (GSPs) by January 2020 or 2022 (depending on the basin's priority level) to California's Department of Water Resources. Ongoing efforts to develop the Salinas Valley Basin GSA and manage multiple aspects of groundwater sustainability – including water quality – overlapped with efforts to formulate Ag Order 4.0, which would apply to the Salinas Valley area yet have a larger geographic focus.

I began attending water quality governance meetings during this time of anticipated Ag Order renewal and initial GSA activities and quickly felt water justice activists' excitement about new opportunities to regulate discharge from agricultural operations. Yet amidst this excitement, I was concerned about how new regulations would affect the region's small-scale Latinx farmers who, I worried, might struggle to comply. I wondered to what extent the regulatory apparatus could account for the complex interests and experiences of small-scale farmers of color, who were simultaneously contributing to nitrate pollution, caring for land/water, and vulnerable to exposure to nitrate-contaminated drinking water. To better understand this issue, I

began participating in related conversations in a number of ways, including by supporting meetings at ALBA focused on regulatory compliance.

4.2 Divergent pollutants of concern

Although water quality regulations in the Central Coast emphasize the importance of mitigating nitrate as well as pesticide pollution, many small-scale Latinx farmers are primarily concerned about pesticides, which they understand as most immediately toxic to themselves and their communities. This primary concern with pesticides diverges from regulatory emphasis on nitrate as a pollutant of concern.

For example, in September 2019, I helped to organize and host a workshop on Ag Order regulations at ALBA's Rural Development Center in Salinas, CA. The Ag Order workshop took place in the classroom at ALBA, where the walls are covered in photos of ALBA incubator farmers working on their farms and where many desks and chairs face a podium, a whiteboard, and a projection screen. There, we invited a Spanish-speaking staff member of the Regional Board to give a presentation. In addition to providing a regulatory overview, the Regional Board staff member's presentation highlighted the connections between agricultural nitrate leaching and rural community health and argued for the protection of drinking water quality vis-à-vis improved nutrient management on farms. Farmers' subsequent questions to the Regional Board staff member illustrated their preoccupation with pollution of and exposure to pesticides rather than nitrates.

One farmer's question had to do with the regulatory tier system. Under the previous iteration of the Ag Order, the Regional Board had categorized farmers into three tiers, with the highest tier responsible for providing the most detailed reports about nitrogen applied to their farms, while the lowest tier was required to provide very little information. The farmer asked: "What matters more for determining a farmer's tier – the class of pesticides that the farmer uses, or the size of the farm?" His question led to passionate conversation among workshop attendees about how farmers who do not use toxic pesticides should not be required to complete such in-depth reporting, or to report to the Regional Board at all. Several farmers emphasized that they did not use pesticides on their farms and that this should be understood as an effort to protect water quality. One farmer talked about how he had seen large-scale agricultural companies dumping their excess pesticides into nearby surface waters, while another showed a video he had recently taken of a helicopter spraying a field with pesticides while farmworkers were working in that same field. The last farmer who spoke asked the question that everyone seemed to be thinking: "Why do we have to pay and do reporting when the big companies using pesticides are polluting, and we are the ones dying?"

Farmers' concerns about pollution of and exposure to pesticides echoed an earlier conversation I had with a local water justice activist, who explained that patients in medical clinics were much more concerned about pesticides than nitrates. These concerns highlight the anti-pesticide consciousness of agricultural workers and other people who live and work in the Salinas Valley, which has been a site of anti-

pesticide activism for decades. In the 1970s, the Salinas Valley was the site of major farmworker demonstrations led by Cesar Chavez, Dolores Huerta, Larry Itliong, and other leaders of the United Farm Workers union against pesticide exposure and other occupational health hazards. Today, similar organizing work is carried out by organizations like Safe Ag Safe Schools, which challenges occupational health hazards as well as the ways in which agricultural toxicity pervades schools, homes, and other off-farm spaces (Safe Ag Safe Schools, 2023). Given this legacy, it is no surprise that small-scale Latinx farmers' responses to the Regional Board staff member's presentation involved urgent concern about responsibility for pesticide pollution.

In May of 2021, a farmer named Maria talked with me about her concern with fighting pesticides and other agricultural pollutants. At the time, Maria and her son were farming on 1.5 acres of farmland within ALBA's incubator. Maria had been participating in the ALBA incubator for 4 years. She had previously worked for a large agricultural company tending and harvesting lettuce and had also worked in the local restaurant industry. As we talked about nitrate contamination of water in our region, she told me about the water at her home in a rural part of the county. Maria explained,

> "We have a well, but we don't use it. The water is contaminated with pesticides, perhaps with nitrates too. The nitrate is not so bad, it is not such a strong chemical. But there are other poisons in the water."

Maria's sentiment that nitrate contamination of household water is "not so bad" echoes many conversations I had with this community of farmers. Farmers' concerns

indicate the acute toxicity of pesticides and the widespread understanding of occupational health hazards among agricultural workers in the Salinas Valley. In this sense, their concerns illustrate a critical understanding of pollution rooted in farmers' lived experiences of exposure to toxicity in the workplace.

In our conversation, Maria also made connections between exposure to agricultural toxicity and the types of practices that she herself uses on her farm to mitigate pesticide exposure and pollution. These connections demonstrate how farmers' leverage their newfound forms of agency within the agricultural landscape as farm business owners to challenge agricultural toxicity. Maria explained,

> "This is a clean kind of agriculture, because we don't use pesticides and we rely on natural processes. Over there (points to neighboring large-scale industrialized farm), it is pure poison. For example, when I worked in conventional agriculture, afterwards, I would know it because I would begin to itch. It was the chemicals and nothing more. And this would be passed on to my children, because sometimes I would arrive home itching a lot, and I would wash my clothes and sometimes wash my children's pants with mine. Then they too would be itchy… But here on my farm it is very different, because nature herself fights off the insects. For example, I plant hedges ("setos"), and these flowers attract the beneficial insects. And then, for example, if I plant lettuce, I don't have to apply pesticides. It's better to plant these flowers called Alyssum. Alyssum flowers, they attract the beneficial insects, which eat the insects that like to eat lettuce."

Maria's farming practices illustrate an effort to farm without pesticides and with non-toxic pest management strategies, such as use of Alyssum flowers to attract insect predators of lettuce pests. Her approach highlights how pesticide-free farming practices are a strategy for taking care of herself and her loved ones in a landscape where she has direct experience with exposure to acute agricultural toxicity in the workplace.

In my research and professional work from 2019-2023, I have learned that concern about pesticides is not only common among small-scale Latinx farmers but informs many of their on-farm practices. Almost all farmers in the ALBA networks are organic-certified, and although this helps them to market their produce, many farmers say that their interest in organic agriculture is mainly due to desire to be away from toxic pesticides and to protect their families. Indeed, even though there are many pesticides that are certified organic, many farmers refuse to use any store-bought pesticides at all and simply farm without, with the dual aim of avoiding toxicity and saving money.

Ultimately, I find that farmers' primarily concern about and efforts to fight pesticide pollution and exposure diverge from regulators' concerns with both nitrates and pesticides. Farmers' concerns emphasize the enormous violence committed by industrial activities against working-class Latinx communities vis-à-vis pesticide pollution, as well as the failure of the regulatory apparatus to adequately address this important issue. At the same time, farmers' concerns demonstrate how they leverage their status as farm business owners to take the issue of pesticide pollution into their own hands, avoiding pesticide use on their own farms and practicing more ecologically based pest management strategies.

4.3 Divergent ways of knowing

While small-scale Latinx farmers in the region readily discussed their concerns about and efforts to mitigate pesticide pollution, their concerns about and

efforts to mitigate nitrate pollution often proved more difficult to talk about. Dominant regulatory efforts to understand and protect against nitrate pollution often rely on highly technical and managerial knowledges and discourses, which are largely inaccessible to small-scale Latinx farmers. Farmers' ways of knowing nitrate pollution diverge from dominant framings by mobilizing more relational, sensory knowledges.

At the time when research was conducted, regulatory requirements associated with mitigating nitrate pollution required farmers to conduct monitoring and recordkeeping for the purpose of submitting annual reports to the Regional Water Quality Control Board. These reports included information about the total amount of nitrogen applied and removed. While most farmers in the region struggle to meet these requirements, regulatory compliance is particularly challenging for farmers for whom English is not a first language and who have had limited formal education, and for those small-scale farmers who do not have administrative teams dedicated to regulatory compliance. Completing these reports is even more difficult for farmers whose agricultural practices differ significantly from the industrialized operations that rely largely on synthetic fertilizers for nitrogen applications. As mentioned above, many of the small-scale Latinx farmers in this region are certified organic and, as such, their nutrient management practices rely on use of organic soil amendments, such as application of compost. While nitrogen applied via synthetic fertilizers is very easy to account for, as nitrogen content is written on the label, nitrogen applied via organic soil amendments can be more difficult to account for and can require farmers

to conduct and interpret quantitative soil tests. Furthermore, small-scale Latinx farmers in this region often grow a diverse range of vegetable and berry crops on small acreage, such that reporting nitrogen applications and removals for each individual crop requires extensive recordkeeping. Given the complexity of reporting for small-scale, diversified, organic farming systems, regulatory compliance for small-scale Latinx farmers in this region requires some basic training in soil science as well as detailed data collection and management. Unfortunately, many of these farmers find these approaches to be inaccessible.

In June of 2021, I spoke with a farmer named Eva about nitrate pollution and about strategies for improving on-farm nutrient management. At the time, Eva was in her second year of farming at ALBA's incubator. She was also working concurrently for a large-scale farming company harvesting parsley and had been working for that company for years before starting her own farm business. In addition to these two jobs, Eva is also the primary caregiver for four young children. On the topic of nitrate pollution, she said,

> "I think that we are contaminating the environment due to a lack of knowledge. For example, I say that I want my kales to be nice and green, so I am going to apply a lot of water and fertilizer. Meanwhile, they say that the water here in this area carries 13 pounds of nitrogen for every inch of water and we don't need to be adding much fertilizer. So if I keep applying more fertilizer, or if I apply too much water, what am I doing? Contaminating the water even more, because of my lack of knowledge… I think one solution to this is education. I think there is already a lot of information about how to care for the land – I've seen some of it. The problem is that… I come from my other job to work here on my farm, and then I go to my house. Do you think I have time to go to yet another training? And I know that the training is going to help me a lot, but my business is not producing enough money for me to have time to invest myself in more studying."

Eva's concern with knowledge about nutrient management highlights how mitigating nitrate pollution requires education, as many farmers do not explicitly know that there is already nitrate in the water. Her narrative illustrates a major difference between nitrate and other kinds of agricultural pollutants: while mitigation of pesticide and plastic pollution can be achieved simply by refusing to use them, nitrates cannot simply be banned from on-farm settings. Accordingly, mitigating nitrate pollution requires a farmer to carefully monitor their relationships with nitrates, rather than a simpler strategy of avoidance. Eva also illustrates how learning more about nitrate management is a matter of educational access, particularly for someone navigating multiple oppressions at the intersections of race, class, citizenship, and gender.

In addition to Eva's concern about the amount of time it takes to learn about nitrate pollution and on-farm management strategies, her understanding of education access addresses the highly technical nature of the information shared with her by regional agricultural extension organizations. She explained,

> "It would help me a lot if the information that I need wasn't so prohibitive. I have gone to trainings with the agricultural commissioner, I remember one time I went and they spoke with information that was very – I could understand what they were saying, but it was very technical, like very very very very technical. I don't know, it's like they'll say something very technical, like this is what happens with the plant roots, and these are things that I should know, but it is a lot of information and I feel like I cannot absorb it all."

Eva's concern with the highly technical nature of the information shared with her points toward the politics of knowledge involved in efforts to mitigate nitrate pollution. Her critique of the technicality of the agricultural commissioner's trainings highlights the inherent complexity of the nitrogen cycle, which many soil scientists

spend entire careers exploring in depth. It also illustrates the ways in which institutionalization of scientific language and concepts limit farmers' ability to engage with relevant information and limit understandings of the kinds of knowledges relevant to mitigating nitrate pollution. The dominant habit of discussing nitrates at the molecular scale suggests that on-farm nitrate management requires some understanding of chemistry. Given that such knowledge is fairly inaccessible, such framings of nitrate pollution also limit whose knowledge can count in developing solutions and obscure small-scale Latinx farmers' efforts to mitigate nitrate pollution.

Following her critique of the inaccessibility of information provided by the agricultural commissioner, Eva suggested an alternative approach to knowing and discussing nitrates:

> "Mr. Rhee [another farmer] told me that sometimes when we want information, the plants themselves are telling us when they like and dislike. So something that I can do without using so much theory is to observe them and adjust to what they are asking for, and make as many changes as I can this way."

Here, Eva suggests that one an alternative to relying on highly technical and molecular framings of nitrate management involves listening directly to her crops. For example, observing crop leaf color is a common agronomic technique for ascertaining plant nutrition, as variations in leaf color can indicate various nutrient deficiencies. Yet Eva formulates this strategy of direct listening as an alternative to highly technical understandings of nitrate pollution and on-farm mitigation strategies. In doing so, she articulates a strategy for mitigating nitrate pollution that is rooted in

her lived experience as someone who is keenly astute to the environment around her and structurally denied access to formal scientific institutions and knowledges.

Eva's direct listening strategy sheds light on the relative absence of nitrate pollution discourse among small-scale Latinx farmers. While I found that farmers did not often discuss nitrate itself, their approaches to nutrient management on their farms suggest that many are listening directly to the crops and responding accordingly. For example, in the introduction to this chapter, I note my surprise when Filiberto told me that he did not use fertilizer – synthetic or otherwise. In my ongoing professional work and ethnographic research with small-scale Latinx farmers, I find that many farmers do not use fertilizer, nor do they use other nutrient management practices commonly advocated by agronomic scientists, such as regular soil nutrient testing or tracking of nutrient applications. As one farmer put it, "Why would I apply fertilizer? It's expensive, and the crops grow beautifully without it."

Farmers' approaches diverge from the data-intensive ways of knowing and mitigating nitrate pollution that are now central to regulatory efforts, and speak to how relational and sensory approaches to farming resonate more than highly technical ones. As Eva illustrates, farmers are critical of the ways of knowing advocated by regulatory efforts yet find their own ways of knowing about nitrate management that support the wellbeing of their businesses and of their environments.

4.4 Divergent scales of action

Despite farmers' direct listening strategies, their efforts to protect against nitrate contamination of groundwater are inherently limited by the small scales of their farms – individually and collectively – within this highly industrialized agricultural landscape. Indeed, scale is an important and obvious dimension of protecting against nitrate contamination of groundwater, as groundwater is a quintessential common pool resource. Dominant state-led efforts to protect water quality often focus on the responsibilities of large-scale farming operations, as the material impacts of these operations are typically greater. Although it is appropriate to hold these operations accountable for their actions, such framings of responsibility can obscure radical ways in which small-scale farmers can and do contribute to water quality protection efforts. As an alternative to dominant framings of environmental responsibility that emphasize farm scale as a measure of material impact, small-scale Latinx farmers find ways of contributing to radical structural change within the contexts of their small farms.

California's Sustainable Groundwater Management Act (SGMA), passed in 2014, comprises California's first set of comprehensive groundwater regulations (Leahy, 2015). Proponents of the legislation have praised SGMA's unique emphasis on localized governance, as it requires formation of basin-level Groundwater Sustainability Agencies (GSA) to govern and manage groundwater. However, scholars and activists have critiqued these local governance agencies for failing to consider the ways in which small-scale farmers of color can and do contribute to groundwater management. For example, (Atume & Voss-Gonzalez, 2022) highlight

marginalization of "underrepresented" farmers in the SGMA implementation processes. Authors consider "underrepresented" farmers by drawing together multiple definitions of small-scale farming with consideration of race, ethnicity, gender, citizenship, and other axes of social difference. Their study demonstrates multiple ways in which small-scale Latinx farmers and other small-scale farmers of color are marginalized by dominant efforts to govern and manage water supplies, as basin-wide efforts to protect groundwater inherently prioritize the needs and actions of large-scale farmers. I have found that similar critiques apply within the Salinas Valley, where the local GSA primarily engages with large-scale farmers.

Throughout my conversations with small-scale Latinx farmers about nitrate pollution, many farmers expressed frustration about the scalar limitations of their farming practices and their limited capacity to effect significant material changes in environmental quality. For example, one farmer noted,

> "Everywhere we go, we are surrounded by conventional [large-scale] agriculture. Basically all of them add pesticides and [synthetic] fertilizers. It all goes directly to our homes, directly to us. We are in the middle of conventional agriculture. And sometimes, sometimes I feel that it really does harm us. Sometimes they are working and a big cloud of pesticides comes that falls directly on us. Basically all of the air is contaminated, all that is around us is contaminated with what we use on farms. Although I do my best here [on my farm] to do things well, the greater part of agriculture is conventional. So they absorb all of my efforts and the contamination continues to affect us, because we all share the air and the water."

This farmer's comment that the large-scale agricultural companies "absorb all of my efforts" indicates an understanding of how farm scale matters when it comes to improving water (and air) quality. It also suggests frustration with this arrangement, where farmers experience a limited sense of agency with regard to making

meaningful material change for themselves, their communities, and the land/water/air. Despite scalar limitations, I find that such frustration is also typically accompanied by desire for change, which itself carries radical transformative potential.

Important to my understanding of Rosa's desire to return to Jalisco is her desire for something other than the industrial agricultural landscape of the Salinas Valley. Also important are the perspectives of other small-scale Latinx farmers on Rosa's approach to farming. For example, one farmer who was preparing to leave the ALBA incubator and was looking for farmland told me,

> "There is a farmer that lives very close to here, here on the corner close to the entrance [to ALBA's incubator]. She is farming on 5 acres and she also has her house there, with fruit trees. We [I and my partner] are looking for something similar. But we want to be in the mountains, where life is calmer and healthier."

Here, this farmer is referring to Rosa. Like Rosa, this farmer's desire to have a house and farm in the same location is a desire for something other than the regional agri-capitalist landscape where farms and houses are largely kept separate (but connected by the workers and the pollutants that move across the boundaries of farms and houses). Rosa did eventually return to Jalisco, and a different farmer said to me, "Sometimes I just want to do what *Doña* Rosa did and just go back to Oaxaca and have my *milpa* there." Although this desire is expressed somewhat frequently, most small-scale Latinx farmers are not able to simply move back to their places of birth or to a less toxic place. Many farmers have immigrated to the Salinas area to work and to send money home to their families in Mexico and other Latin American countries and would not have enough money or work to live if they were to return to those

places. Other farmers have moved their entire families with them to the US and do not have homes to return to. Given that most farmers are committed to living in the Salinas area for the near future, desires for alternatives to the industrial agricultural matrix manifest in efforts to imagine and actualize alternatives without forfeiting the Salinas Valley as an unlivable toxic place.

Some efforts to imagine and actualize alternatives to toxic socio-ecological structures of the Salinas Valley take physical form within the context of on-farm practices. For example, some farmers grow and harvest medicines in small portions of their farmers, which they use to heal from exposure to agricultural toxins. One farmer, Lorena, is particularly well-respected within the community of ALBA farmers because of her extensive knowledge of medicinal plants and herbal remedies. When I met with her in February of 2022, she was growing about an acre of strawberries in weed-free, plastic-covered rows, but had a bed at the end of the strawberries that appeared covered in weeds. Lorena had not yet decided what to plant in this row; in the meantime, she explained, she had been harvesting dandelion and nettle – both of which had been growing there without her having planted them – for medicine to heal from cancer and other illnesses. When I asked her whether she would consider seeding and cultivating these medicines, she explained that she didn't need to plant them because they could be found throughout the field in weedy patches. Her approach to growing and harvesting medicines highlights one way in which farmers do and can challenge the structure of agri-capitalism through practices of self- and community-sufficiency and survival rather than for wealth accumulation.

Similar examples abound, as farmers often harvest portions of their crops for home consumption rather than for sale. While such practices remain limited in terms of the scale of their material impact, they also constitute important efforts to build noncapitalist relations and challenge the toxic structures that produce nitrate pollution.

Other efforts to imagine and actualize alternatives to toxic socio-ecological structures of the Salinas Valley take the form of critical conversations among farmers, family members, and other community members. Many of these conversations happen in the fields and at field edges, where people (myself included) work and spend time together. Additionally, some women farmers are part of a peer-to-peer support program called Mujeres en Acción ("Women in Action") where they discuss and strategize around their experiences living and working amidst agricultural toxicity and within toxic socio-ecological structures more broadly (see Mujeres en Acción, 2023). Farmers who attend these meetings tell me that, while many women discuss their experiences with multiple forms of violence – including exposure to agricultural toxins – they "somehow" spend most of their meetings laughing together. They also explain that friendships formed in the context of Mujeres en Acción have allowed them to share childcare responsibilities and to cultivate more joy in their lives. In this sense, as these women farmers think critically together about agricultural toxicity and broader toxic structures, they also form relationships that are critical to enacting socio-ecological change. Again, while these practices are limited in terms of the scale of their material impact on water quality, they also constitute important

efforts to build noncapitalist relations and challenge the toxic structures that produce nitrate pollution.

Ultimately, I find that farmers' desires for alternatives to nitrate pollution and to broader toxic structures demonstrate a commitment to imagining and enacting alternatives to agri-capitalist relations. Farmers are fundamentally critical of the scale at which the dominant industrial agricultural operations are polluting the land/water/air. While they do not explicitly critique the regulatory apparatus for their emphasis on working with large-scale farmers, their scales of action against pollution diverge from regulatory scales of action. Dominant framings of scale emphasize the ways in a farmer directly impacts water quality and fail to register the ways in which small-scale Latinx farmers are challenging the toxic socio-ecological structures at the root of nitrate pollution. In this regard, farmers' framings of scale illustrate ways of moving beyond regulatory mechanisms to theorize and practice environmental responsibility at scales that are relevant to working-class communities of color.

5. Beyond "polluters" and "victims"

Small-scale Latinx farmers involved in this study complicate categories of "polluters" and "victims" by theorizing and practicing environmental responsibilities that are both critical of and implicated in agri-capitalism and other toxic socio-ecological structures. Their framings of environmental responsibility illustrate a unique form of environmentalism rooted in the lived experiences of people who are both farm business owner-operators and agricultural workers. These forms of

environmentalism are similar to what environmental justice scholars have termed "working-class environmentalism" (e.g., Barca, 2012) where workers are invested in industry for employment yet are critical of the impact of industrial activities on environmental health. The farmers involved in this study also leverage unique forms of agency that they experience in the agricultural industry as farm business owner-operators. Their primary concern about pesticide use and pollution reflects the long-standing concern about occupational health hazards held by farmworkers in this industrialized agricultural region as well as their ability to limit exposure to occupational health hazards as principal decision-makers on their farms. Meanwhile, farmers' way of knowing about nitrate management are sensory and relational, illustrating environmental knowledges that are accessible to working class farm business owners who are structurally denied access to formal scientific training, yet which are necessary to running viable farms. Furthermore, farmers' scales of action against nitrate pollution demonstrate creative ways of leveraging their agency within the landscape as farm business owners while also contending with the scalar limitations of their agency within the agricultural industry as small-scale farmers. All of these approaches highlight how small-scale Latinx farmers are invested in farm business viability while also maintaining a critical perspective on industrial agricultural activities.

In addition to critiquing and being implicated in the agricultural industry, the farmers involved in this study demonstrate ways of being critical of state-centered efforts to regulate nitrate pollution. Importantly, divergent framings of responsibility

between farmers and state-led initiatives show how dominant efforts to mitigate nitrate pollution overly simplify who is responsibility for pollution and who can and does contribute to water quality protection. State-led efforts to mitigate agricultural nitrate pollution require all farm business owners to comply with regulations without meaningfully accounting for diversity within the category of farm business owners. In this sense, state-led efforts consider all farm business owners to be polluters. While most farming operations are likely contributing to nitrate pollution to some extent, small-scale Latinx farmers complicate this understanding because they are operating at a relatively small scale – and so have relatively little material impact – and are also highly marginalized within the agricultural industry, such that their concerns and ways of knowing are not prioritized in regulatory efforts. In this regard, these farmers illustrate the importance of an intersectional approach to understanding environmental inequality and responsibility, which holds that multiple systems of oppression interact and shape one another (Crenshaw, 1989, 1990). Farmers involved in this study demonstrate how race, class, and citizenship intersect to produce different kinds of farm business owners – from those working-class immigrants of color who run small-scale farms to the predominantly white, wealthy, US-born people who own massive agricultural companies. As such, the small-scale Latinx farming community inherently challenges flattened notions of farm business owners as "polluters" by depicting a range of experiences.

On the one hand, complicating the category of "polluters" offers opportunities for state-led environmental protection efforts to better attend to diversity among farm

business owners. On the other hand, it is important to consider ways in which state-centered theories of environmental change are fundamentally limited in their abilities to support working-class communities of color. As discusser earlier, state-centered notions of environmental responsibility are inherently limited in their capacities to support poor and working-class communities of color due to the racial capitalist and settler colonial formation of the US (e.g., Gilio-Whitaker, 2019; Kojola & Pellow, 2021; Kurtz, 2009; Pulido, 2017; Pulido et al., 2016; Whyte, 2017, 2018). In this regard, my aim in centering small-scale Latinx farmers and in complicating dominant framings of "polluters" and "victims" is to highlight how these farmers theorize and practice extra-legal environmental responsibilities that are accountable to the complex ways in which they and their communities contribute to, benefit from, and are harmed by agricultural pollution. Findings illustrate multiple ways in which farmers practice environmental responsibilities that go beyond regulatory compliance. For example, along with their concern about pesticides, farmers utilize practices on their farms that minimize their exposure to pesticides as well as the exposure of family and friends who visit and work on the farm. Similarly, they don't just theorize relational and sensory ways of knowing about nitrates, but mobilize these ways of knowing to protect water quality and enhance the viability of their farm businesses. Finally, their scales of action are designed to radically challenge the toxic structures of the agricultural industry, deeply challenging regional environmental inequalities. In this sense, farmers' framings of environmental responsibility conceptualize and enact strategies that can better support working-class communities of color. These

strategies reflect the needs and capacities of people who are critical of and implicated in agri-capitalist processes.

6. Conclusion

In this chapter, I have sought to center small-scale Latinx farmers in the study of agricultural nitrate pollution to consider how environmental responsibilities can be theorized and practiced from impure/hybrid positions, where subjects are implicated in and critical of industrial activities and state-led regulatory efforts. I examined how these farmers frame environmental responsibility in the context of nitrate pollution in California's Salinas Valley and explored how those framings differ from dominant, state-centered framings. Findings illustrate various ways in which small-scale Latinx farmers theorize and practice environmental responsibility and show how these framings diverge from state-centered efforts to mitigate nitrate pollution in terms of: (1) pollutants of concern; (2) ways of knowing; (3) scales of action. In the discussion, I argued that farmers' approaches illustrate a unique form of environmentalism, one which inherently complicates dominant framings of "polluters" and "victims." Instead, farmers demonstrate ways of theorizing and practicing extra-legal environmental responsibilities that are accountable to the complex ways in which they are their communities contribute to, benefit from, and are harmed by agricultural pollution.

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