

ABSTRACT

Dissertation Title: INVESTIGATING REGIONAL FOOD HUBS AS TOOLS FOR DEVELOPMENT AND CHANGE: A MULTI-SCALE AND MIXED METHODS APPROACH

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The revitalization of rural, agricultural communities in the United States represents a constant challenge. Persistently high levels of rural poverty stem in part from agricultural industrialization, the subsequent loss of family farms, and dwindling rural economies. Theoretically integrating economic viability, social justice, and environmental sustainability back into agriculture and food, alternative food networks (AFNs) represent opportunities for rural communities to redress social, economic, and environmental declines accompanying agricultural industrialization in the twentieth and twenty-first centuries. As organizations that aggregate, market, and distribute locally and regionally sourced food within wholesale, retail, and institutional markets, regional food hubs (RFHs) represent the most recent AFN type, but also the one most associated with advancing rural revitalization and agricultural change. An overall lack of empirical investigation, however, along with limited conceptualizations of development constrains current understandings as to how – or even if – RFHs contribute to rural development in the ways that are increasingly espoused in the literature and policy.

With a focus on RFHs as rapidly expanding yet largely untested AFNs, this dissertation follows a mixed methods and multi-scale approach. Blending quantitative analyses at national and regional scales with qualitative case study data, this dissertation explores development-related potential and processes for RFHs in a variety of places and then empirically evaluates rural development outcomes in a theoretically ideal setting. Findings indicate that RFHs generally do not locate where outcomes are most likely to reflect rural development expectations, though to spatially varying degrees. When a RFH does locate in such a place, outcomes are primarily though not always positive, and overall suggest that RFHs can help to fill social, economic, and ecological gaps and needs. Results reveal that women farmers play integral roles in shaping and extending RFHs' development impacts. Yet, persistent poverty and geographically concentrated disadvantages limit transformative capacities. Reigning in rural development claims, this dissertation concludes that although RFHs are unlikely to redress broad conditions of rural decline, they may prime rural, agricultural communities in ways that extend both the efficacy and reach of policies and interventions to follow.

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AND CHANGE: A MULTI-SCALE AND MIXED METHODS APPROACH

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Chapter 1: Introduction

1.1 Motivation of the study

The persistent problems of rural poverty and inequality in the United States represent the starting point for this research. Poverty in the United States is highest as well as most persistent through time in rural, remote regions (Beale & Gibbs, 2006; Joliffe, 2004). For decades, rural poverty rates have surpassed urban rates (Albrecht et al., 2000; Jensen & Jensen, 2008; Kusmin, 2013), with most recent estimates maintaining gaps at 18.1% and 15.1%, respectively (US Census Bureau, 2014). Although fewer people live in rural regions, the rural poor are more likely to be trapped in continuous cycles of uneven development. More than in urban centers, economic insecurities compound with physical isolation, worse public services and fewer educational and economic opportunities (Brown & Swanson, 2003), and poorer health and access to goods, including fresh and affordable food (Schafft et al., 2009; Smith & Morton, 2009).¹ Vulnerabilities are especially great for racial minorities in rural regions, such as Native Americans, who consistently rank lowest in well-being (Glasmeier, 2006; Lichter & Johnson, 2007).

The decay of rural communities has been linked to programs and policies that encouraged agricultural industrialization, consolidation, and globalization in the twentieth century and ultimately lead to the accelerated disappearance of family farms (Lobao, 1990; Lobao & Meyer, 2001). Burdened by increasing debts and costs of production as well as decreasing economic returns (Van der Ploeg et al., 2000), the loss of family–

¹ The majority of food deserts are rural (Morton & Blanchard, 2007), such that approximately 20% of Rural America is classified as such (Treuhart & Karpyn, 2010). Rural rates of food insecurity (15.4%) surpass those in highly urbanized areas (14.1%) and in suburban areas of the US (10.4%) (USDA, 2015a). In addition to having less access to supermarkets and large groceries (Kaufman, 1999), rural residents are also more likely than urban ones to perceive their surroundings as food scarce (Garasky et al., 2004).

operated farms to industrialized operations dismantled the agricultural labor force and spurred rapid out-migration (Kirschenmann et al., 2008; Lyson & Welsh, 2005), diminished businesses and services and reduced environmental stewardship (Robinson, 2008), severed social ties and increased inequality (Crowley & Roscigno, 2004; Lobao, 1990), and lessened democratic participation to eventually give way to the overall destabilization of Rural America (Goldschmidt, 1978). Following such trends, “rural” is no longer synonymous with agriculture in the United States. The number of farms today is historically low, and less than 2% of Americans are currently involved in agricultural production (USDA, 2012). Yet, given the sector’s vital roles in wealth creation and trade, human health and culture, and resource management and conservation, agriculture remains a central theme in rural development discourses.

The rise of alternative food networks (AFNs) over the last several decades, including farmers’ markets and Community Supported Agriculture (CSA), has signaled a direct response to the failings of industrialized agriculture (Ravenscroft et al., 2013; Wiskerke, 2009), and presented new opportunities for rural communities to facilitate development and change (Marsden, 2010; Renting et al., 2003; Trauger, 2009; Watts et al., 2005). Through AFNs, the production, consumption, and distribution of food ideally inspires social justice, improves ecological health, and prioritizes community needs while simultaneously enhancing economic gains. Recent estimates suggest that in 2015 alone, farms participating in AFNs accrued \$8.7 billion in revenue (USDA, 2016). Women farmers, a historically disadvantaged group in agriculture (Trauger, 2001, 2004), have been especially instrumental in furthering AFNs (DeLind & Ferguson, 1999; Sachs, 1996; Trauger et al., 2010). Indeed, the abilities of women farmers to initiate and expand

community change through alternative forms of agriculture is increasingly seen as key to the survival of family farms and the revival of rural communities (Bock, 2004; Eikeland, 1999; O'Hara, 1994; Rickson et al., 2006; Sumner, 2005; Sumner & Llewelyn, 2011).

Regional food hubs (RFHs) represent the most recent type of AFN, as well as the one most associated with expanding rural development outcomes for producers, consumers, and communities over the last five years (Barham, 2012; Cleveland et al., 2014; Hardesty et al., 2014; Matson et al., 2013, 2014; Mount, 2012; Schmidt et al., 2011). Policymakers, practitioners, and funders have actively embraced and financed RFHs – defined as organizations that aggregate, store, market, and distribute locally and regionally sourced food from multiple producers to multiple consumers (Barham, 2011) – as key components of rural revitalization and agricultural development (USDA, 2014). Significant gaps, however, exist in what is known about RFHs (Blay–Palmer et al., 2013; Fischer et al., 2015; Matson & Thayer, 2013), especially with regard to the capacities of such organizations to stem the loss of family farms and stabilize rural communities in decline. Fischer et al. (2013) do indicate that women farmers disproportionately engage with RFHs, providing some support for theorizations of community change. Yet, with limited empirical investigations into RFHs to date, such notions remain largely untested and subject to debate. What research has been conducted for RFHs has offered little in the way of rural development insights, and has often been contradictory in outcomes, narrow in scope, lacking in input from local members of the community, especially from consumers, without respect to the conditions of location, or applied outside of rural, high poverty contexts where abilities to engage with development–related claims are highest.

1.2 Purpose of the study

This study examines and evaluates rural development outcomes for RFHs and the corresponding potential for such AFNs to ameliorate rural poverty and lessen uneven development in the United States. Given the persistent nature of rural poverty and the scarcity of resources to address rural declines, funding, promoting, and implementing untried and possibly misrepresented solutions risks imposing interventions that are ineffective, lowering public confidence in abilities to implement change, and ultimately limiting opportunities to revitalize Rural America. Empirically testing RFH's rural development capacities, this study builds off of existing bodies of knowledge for food systems, rural poverty reduction, and gendered agriculture, while also informing policies and practices that aim to revitalize rural communities and drive agricultural change in alternative and multidimensional ways.

1.3 Research design and questions

1.3.1 Design of the study

This study illustrates a mixed methods approach that is built around three main research questions (as depicted in Figure 1). In mixed methods research, the “investigator collects and analyzes data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study” (Tashakkori & Creswell, 2007, p. 4). Integrating qualitative and quantitative data throughout, this study captures the complexity of development potential and change processes (Creswell, 2007; Tashakkori & Teddlie, 2003, 2010), and ultimately contributes a more comprehensive analysis of RFH outcomes and trends, including how study results align with development-oriented claims in theory and policy.

Using a sequential mixed methods design, this study consists of two distinct yet interactive phases: quantitative and qualitative. Following Yin (2009), quantitative data and methods incorporated in phase one precede the qualitative case study approach taken in phase two, with qualitative data and methods given priority in the research.

Quantitative results generated at broader scales provide a generalized portrayal of RFHs as a nationally occurring phenomenon, identifying associations between place-based, theoretically-informed variables and RFH distributions, and descriptively mapping ideal rural development scenarios for RFHs. Statistical analyses and quantitative findings also facilitate the purposeful selection of the case study site – pointing to places with the greatest need and where RFHs’ rural development potential could be most appropriately tested – and the design of qualitative data collection instruments in phase two.

Qualitative data and methods at finer scales then help to contextualize and provide in-depth explanations for statistical and spatial results observed in phase one. In addition to shedding light on how RFH outcomes unfold in a localized setting with high rural development potential, qualitative research unmask hidden dynamics and addresses questions left unanswered in phase one, such as why certain variables and not others are significantly associated with RFH locations despite theoretical expectations. Quantitative and qualitative insights finally integrate to produce comprehensive conclusions and widely applicable, data-driven recommendations.

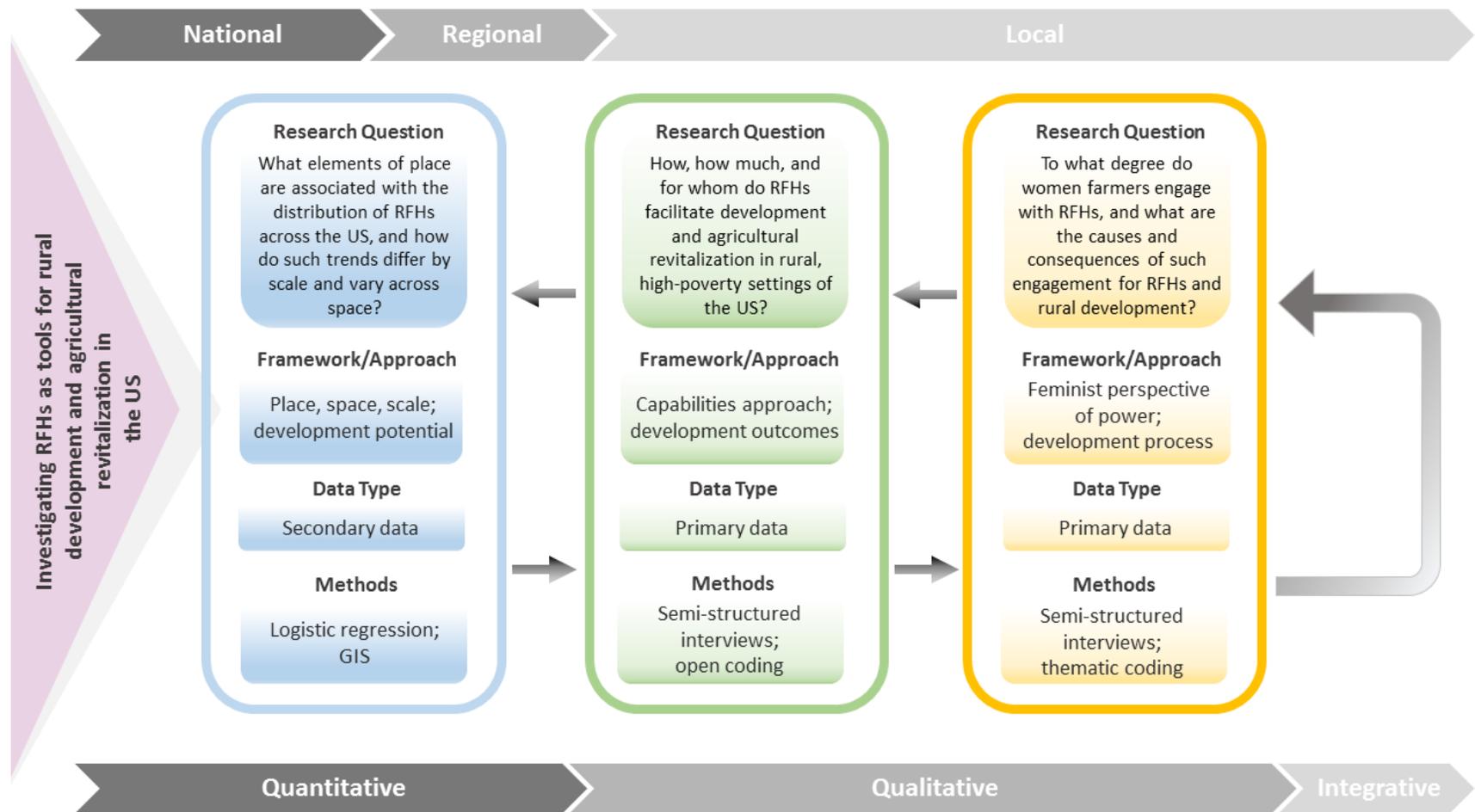


Figure 1.1 Overview of the mixed methods and multi-scale study design.

1.3.2 Research questions

Question (1): What elements of place are associated with the distribution of RFHs across the United States, and how do such trends differ by scale and vary across space?

Question 1 underscores the need to establish national and regional baselines for RFHs and sets the stage for the remainder of the study in a statistically and spatially informed way. With Question 1, the study begins by asking what insights into the rural development potential of RFHs can be gained by examining distributions across space and aligning locations with the conditions of place. In other words, this question explores the extent to which RFHs as supposed tools for rural development locate in rural, underdeveloped places (i.e. counties) where both the need and potential for change are greatest. This question then asks how such geographic alignments or misalignments speak to the overall potential of RFHs to alleviate rural poverty and revitalize agriculture.

Question (2): How, how much, and for whom do RFHs facilitate development and agricultural revitalization in rural, high-poverty settings of the United States?

Question 2 scales down the analysis from the national and regional levels described in Question 1 to a multi-county case study, marking the transition from phase one to phase two of the study.² Providing a space to elaborate upon and engage with topics identified at national and regional scales, Question 2 investigates the nature and

² A full description of the qualitative case study site can be found in Chapters 3 and 4.

extent of development outcomes – both monetary and non-monetary – following the establishment of a RFH theoretically ideal setting of the United States: western Montana. In addition to displaying high levels of rural development potential as determined by Question 1, western Montana was selected for case-based research using the following criteria: (1) contains a RFH in operation for at least 10 years; (2) exhibits above average rates of poverty; (3) contains a designated food desert; (4) comprises a high proportion of women farmers; and (5) is classified as nonmetropolitan. Altogether, Question 2 validates, refutes, and expands upon the universalized set of social, economic, and environmental claims surrounding RFHs as supposed rural development tools. In doing so, this question also uncovers factors that both facilitate and impede RFH outcomes.

Question (3): To what degree do women farmers engage with RFHs, and what are the causes and consequences of such engagement for RFHs and rural development?

Representing an extension of Question 2 and building off of past work in the RFH literature, Question 3 explores within the bounds of the case study the causes and consequences of the disproportionate link identified between women farmers and RFHs. Given that women farmers are often demonstrated agents of community and agricultural change, Question 3 examines the development processes that underlie RFHs, asking if and how women farmers initiate or expand development capacities in rural, high-poverty settings. At the same time, Question 3 investigates how or if RFHs influence the

experiences of women farmers as historically disadvantaged agricultural minorities, and whether such influence expands the development role of RFHs beyond stated claims.

1.4 Significance of the study

Research aimed at improving upon rural well-being is beneficial not only to those living in rural communities in decline, but to the nation as a whole. Rural regions across the United States play a vital role in sustaining land, water, and other primary resources; maintaining energy needs and production of primary goods; and supporting recreational and ecosystem services (Brown & Schafft, 2011; Ratner & Markley, 2014). State and federal governments have historically contributed little in the way of rural poverty reduction (Falk & Lobao, 2003; Jensen et al., 2003), and instead largely tailored research and policy toward urban development renewal. At the same time, local county and city governments have regularly been unable to mitigate rural and agricultural declines given limited levels of control and access to resources and revenue streams (Sharp and Parisi, 2003). Compared to the latter half of the 20th century, federal agencies today do take a more active role in rural development, with tens of billions of dollars now spent on such efforts annually (Kilkenny, 2010). Even so, empirical investigations targeting rural regions continue to lag and rural poverty continues to persist (Lichter & Parisi, 2008).

With a particular focus on RFHs as widely-promoted yet poorly understood AFNs, this study answers longstanding calls in the literature to overcome political, practical, and theoretical oversights surrounding rural development and better understand how or if AFNs mitigate rural poverty and inequality (Goodman, 2004; Sonnino & Marsden, 2006). Meeting this need, the study contributes to the use of local and regional food systems as rural development tools such that rural stakeholders may benefit from

more effective and contextualized development interventions and from active involvement in scientific research, including study design, data collection, and validation of results. Scholars may benefit from primary data contributions, refined theorizations, and methodological innovations to emerge from the study. Policy and decision makers may also benefit from the tested policy initiatives, grounded expectations, and empirically-guided spending priorities to come out of the study. And finally, practitioners may benefit from expanded understandings of both the possibilities and the limitations surrounding RFHs and the degree to which place and space shape outcomes.

Emphasizing the link between RFHs and women farmers, this study additionally engages with repeated calls to more fully represent women's contributions in community change and bring greater attention to gendered dynamics in agriculture (Hall & Mogyorody, 2007; O'Hara, 1994; Rickson et al., 2006; Sumner, 2005). Women farmers are still denied fair access to land, capital, and training and subject to patriarchal constraints (Brandth, 2002; Heggem, 2014; Sachs, 1996; Trauger, 2001; Whatmore, 1991), and a lack of attention to such issues is thought to hinder opportunities to understand and improve upon processes of rural and agricultural advancement (Bock, 2006; McMahon, 2005; O'Hara, 1994; Shortall, 2006; Sumner & Llewelyn, 2011; Trauger, 2004). Taking up this topic, rural stakeholders may benefit from increased recognition of gendered contributions and mitigation of gendered inequities given that women farmers are, for example, more concerned than male farmers with feeding their communities (McMahon, 2002; Krug, 2003). Scholars may benefit from the application of innovative theoretical frameworks and the empiric representation of minorities. Policy and decision makers may benefit from a heightened awareness of the developmental roles

of local actors and improved legislative and financial solutions for supporting agency and regenerative action in rural communities. And practitioners may lastly benefit from greater knowledge of the factors that impede as well as facilitate RFHs' goals.

Helping to fill identified gaps in the literature and redress the general lack of attention to rural poverty issues, the need to undertake this study was further influenced by the continued failings of conventional development paradigms. Opponents of conventional development paradigms that promote sectoral and social upheavals such as agricultural industrialization argue that privileging strategies that promote economic growth at the expense of social and environmental sustainability not only fails to increase wealth in rural communities, but in some cases perpetuates or worsens existing poverty (Glasmeier, 2002; Glasmeier & Farrigan, 2007). With increasing support for the idea that communities are more likely to benefit from development interventions when social, economic, and political structures are strong and when institutions are effective (Brown & Schafft, 2011; Glasmeier & Farrigan, 2003), alternative development paradigms seek a more balanced approach to creating wealth and lessening poverty. Specifically, alternative strategies ideally prioritize quality over quantity (Lyons, 2015), highlight interconnections between social, economic, and environmental processes (Bridger and Alter, 2008), and aim for “the long-term sustainability and wellbeing of the community” (Community Development Society, 2014).

Despite conceptual and practical shifts, uncertainties remain with regard to the extent that alternative outcomes diverge from or improve upon conventional designs. For instance, it is unclear whether the potential to benefit from alternative development approaches transcends existing inequities, or whether such disparities continue to limit

the uptake of new opportunities (Schafft & Brown, 2003). Illuminating how RFHs as emerging AFNs are mobilized as tools for change, study results contribute to conventional vs. alternative debates within rural development scholarship and practice. Findings point to constraints of alternative approaches in rural, high poverty settings, but also highlight promising aspects that could potentially increase the success of more conventional perspectives on poverty and growth.

1.5 Organization of the study

The remainder of the study is organized into four chapters, a bibliography, and an appendix in the following manner. Chapter 2 corresponds to Question 1 of the study, and presents a county-level analysis that incorporates secondary data at national and regional scales. Chapter 2 describes the construction of a theoretical index and the cross-sectional logistic regression analysis employed to test the full spectrum of development claims surrounding RFHs from place to place and across scales. Chapter 3 corresponds with Question 2, and relies upon primary data collected throughout the qualitative case study site in western Montana. Integrating the capabilities approach as an alternative conceptual framework that is most commonly applied to developing world contexts, but which can innovatively inform causes and consequences of deep, rural poverty in industrialized nations, Chapter 3 draws from semi-structured interviews to examine development outcomes following a RFH in a rural, high poverty region of the United States.

Chapter 4 then relates to Question 3 of the study, and building off of Chapter 3, further examines primary data with a specific focus on women farmers. Applying a feminist perspective of power to the RFH literature for the first time, Chapter 4 details how and why women farmers participate in a RFH and documents the rural

development–related consequences of such engagement. Chapter 5 represents the conclusion of the study. Chapter 5 revisits research motivations, questions, and goals, and summarizes findings from the above chapters before providing recommendations for policy, practice, and future work. Appendix A displays full resolution images of the figures generated in Chapter 2. Appendix B includes the interview protocols employed in the collection of qualitative data presented in Chapters 3 and 4. Appendix C displays supplemental visualizations of the capabilities and associated functionings that are otherwise reported in table format and discussed throughout Chapter 3. Appendix D lists presentations and publications associated with each of the study’s three questions, while the bibliography finally presents all sources cited throughout the dissertation.

Chapter 2: Potential in place: A geographical exploration of regional food hubs across space

2.1 Introduction

Federal support for local and regional food initiatives in the United States has reached nearly \$1 billion since 2009 (USDA, 2016). Narratives of local and regional food initiatives – also known as alternative food networks (AFNs) – such as farmers’ markets and Community Supported Agriculture (CSA) emphasize abilities to promote sustainable food production and consumption and evoke ethical claims of financial viability, social justice and consumer health, and environmental responsibility. The recent emergence of regional food hubs (RFHs) as part of the larger AFN movement has drawn particular interest and support from policymakers, scholars, and practitioners who view RFHs as both inflating and extending the economic, social, and environmental benefits of AFNs, while also effectively overcoming transformative limitations identified for such efforts (Barham, 2011, 2012; Beckie et al., 2012; Cleveland et al., 2014; Diamond & Barham, 2011; Matson et al., 2014; Mount, 2012; Schmidt et al., 2011).

A RFH is a “a coordinating intermediary between regional producers and suppliers and customers” (Horst et al., 2011, p. 214), wherein small to mid-sized farmers and ranchers are linked to food processors, distributors, retailers, institutions, and end consumers. However, more recent definitions have shifted to reflect the heightened expectations and theorized potentials surrounding RFHs. For instance, Blay–Palmer et al. (2013) argue RFHs are better understood as “networks and intersections of grassroots, community–based organizations and individuals that work together to build increasingly

socially just, economically robust and ecologically sound food systems that connect farmers with consumers as directly as possible” (p. 524).

Mirroring the budding RFH rhetoric, the USDA now funds and promotes RFHs as integral elements of rural revitalization and agricultural development (Matson et al., 2014; USDA, 2014a). Yet, much about RFHs remains unknown or unresolved (Matson & Thayer, 2013). Broad assumptions concerning rural and agricultural development have largely gone untested for RFHs to date, with limited investigations widening gaps between what is known about such networks and what is only assumed (Fischer et al., 2015). With little attention in the literature or in recent policy paid to where RFHs are locating and why, or to the ways in which geographic, social, economic, political, and historical contexts shape the possibilities and constraints of RFHs as presumed rural development tools, a national narrative of universalized outcomes has continued largely unchecked. Yet, expectations, realities, and potential outcomes cannot be fully validated or refined for RFHs and uncertainties cannot be reduced without considering the critical component of place (Marsden, 1998; Murdoch, 2000).

This paper emphasizes the concept of place to directly engage with claims and uncertainties in the RFH literature, and to assess the degree to which theory, policy, and practice accurately portray and promote RFHs as rural revitalization tools and as means of improving upon AFNs overall.³ Specifically, I focus on place in two ways: (1) where a RFH would be best positioned to maximize rural development and agricultural revitalization claims; and (2) where a RFH is most likely to locate regardless of claims.

³ Here, I define and utilize “place” in a multidimensional manner, engaging with it as both a descriptive object and in a way that allows for geographically and analytically examining varied experiences between people, environments, and organizations (i.e. RFHs) as such patterns unfold across space (Creswell, 2015).

Introducing a comparative locational analysis to the RFH discourse, this paper diverges from national, undifferentiated narratives and instead develops contextualized understandings of RFHs, whereby current distributions are pitted against place-based conditions and corresponding levels of rural development potential. With expectations, realities, and potential for RFHs embedded into place, my aim is to not only contribute to the rural development discussions surrounding RFHs, but to also broadly inform theorizations and applications of local and regional food systems as such initiatives continue to expand in number, in policy, and in cost. Though I cannot specifically confirm or deny the above claims or speculate on RFH outcomes given the study's scale, a locational analysis can point to general RFH trends in a way that speaks to their rural development potential.

Throughout the remainder of this paper, I thus examine the extent to which RFHs locate in places where the potential to fulfill justice and development-oriented claims is greatest, and compare such places to those where a RFH is most likely. To do so, I first construct a theoretically-informed index at the county scale, highlighting places with the most and least opportunity for RFHs to fulfill development and revitalization expectations. Overlaying development potential with current RFH distributions, I next conduct a series of logistic regression models to explore with which elements of place RFHs are most and least likely to associate, and to identify the places in which RFHs are most and least likely to locate. Bringing the two analytical components together, I incorporate GIS to visualize theoretical index and model results across space. After discussing how the rhetoric associated with the rural development potential of RFHs compares with the reality of where they do and likely will locate, I discuss which of the

theoretical components of RFHs are the most and least plausible, and where, and remark on how geographical disparities speak to the validity of expectations in policy and in the literature. I conclude by calling for contextualized understandings of RFHs and AFNs broadly and finally provide place-based recommendations for policymakers, practitioners, and funders seeking to accelerate agricultural revitalization and rural development across the United States.

2.2 RFHs as rural development

Current RFH estimates total to more than 350 nationwide, with about 60% having been in operation fewer than five years (Hardy et al., 2016). RFHs are functionally and idealistically diverse (Diamond & Barham, 2011), serving wholesale markets, direct to consumer markets, or a mixture of both, and legally ranging from for-profit businesses to cooperatives to non-profit organizations. In addition to aggregating and coordinating the purchase of local and regional foods between multiple suppliers and multiple consumers, RFHs can also provide a range of other services for producers and consumers, including product marketing, processing, storage, educational and informational events, and distribution. As such, RFHs represent a new stage of the local and regional food movement, and a new opportunity to improve upon the economic viability, ecological sensitivity, and social equity outcomes often associated with AFNs and advance rural development impacts overall.

Relating to improved economic viability, RFHs are thought to provide more profitable market channels for farmers and ranchers who are too big to rely primarily on direct-to-consumer markets like farmers' markets or CSAs, yet too small to compete against large, globalized commodity producers (Stevenson & Pirog, 2008). In addition to

lowering barriers to higher-volume wholesale, retail, and institutional markets, RFHs theoretically grow farmers' incomes (Barham et al., 2012; Diamond & Barham, 2011; Hardy et al., 2016; Lev & Stevenson, 2011; Stevenson et al., 2011; Wittman et al., 2012), such as by reducing transaction costs through collective marketing and distribution, by providing processing and storage that both extend product life and add value, and by more fairly spreading wealth along supply chains. Additionally, advocates have stated RFHs help farmers overcome infrastructure and transportation limitations that curtail access to markets and constrain sales (Barham, 2012, 2013; Bloom & Hinrichs, 2011; Martinez et al., 2010; Matson et al., 2013). Beyond improving the profitability and viability of "agriculture of the middle" farmers, RFHs are also associated with creating and retaining jobs and wealth more broadly, especially in areas where firms and capital are scarce, wages are low, and outmigration is high (Barham, 2011; 2012; Barham et al., 2012; Jablonski et al., 2011; Matson et al., 2013; Stevenson et al., 2011; USDA, 2014a). Most recent estimates point to approximately 17 jobs created for every RFH in operation (Hardy et al., 2016).

Proponents further credit RFHs with enhancing social goals. LeBlanc et al. (2014), for instance, argue RFHs can enhance social ties by promoting meaningful relationships between producers and consumers. Moreover, Fischer et al.'s (2013) finding that women farmers disproportionately engage with RFHs suggests RFHs are able to benefit what Trauger (2001) classifies a historically marginalized group in agriculture. Most widely touted of RFHs' social outcomes though is the increased levels of access to locally and regionally produced food. It is expected that RFHs increase the availability and accessibility of locally and regionally sourced food as well as the spectrum of

consumers served by attaining economies of scale and providing single points of coordination and contact. In doing so, RFHs are thought to be able to reach larger, mainstream markets and price products in ways other AFN types cannot (Cleveland et al., 2014; Barham, 2012; Barham et al., 2012; Matson et al. 2013). Supposedly filling such gaps, and given the links between obesity and rural and low-income communities with limited access to healthy or fresh food (Schafft et al., 2009), RFHs are likewise seen as promising avenues for improving consumer diets and nutrition (Schmidt et al., 2011). Adding to the economic and social claims presented above, RFHs are further expected to enhance agricultural sustainability through the promotion and support of more ecologically sensitive farming practices (Barham, 2012; Barham et al., 2012; Cleveland et al., 2014).

A recent survey of missions meshes well with such claims and findings, showing RFHs most commonly aim to increase market access for farmers, prioritize healthy food access for consumers, and mitigate racial disparities in the production, distribution, and consumption of food (Hardy et al., 2016). Combining such goals with capacities to catalyze stagnant economies, RFHs are thought to provide a boost to rural communities in particular (Matson et al., 2014; USDA, 2014a). Yet, 91% of the RFHs surveyed by a study were located in or near large cities (Fischer et al., 2013). Recent work further shows that consumer resources and perceptions may challenge RFHs' potential to expand food access for low-income groups (Koch & Hamm, 2015), and that financial bottom lines, minimal profit margins, and tight competition may stymie development potential for RFHs more broadly (Connelly et al., 2011; Franklin et al., 2011).

Such findings have put the plausibility of RFHs' rural development potential into question, echoing critiques of the larger AFN movement and suggesting tensions between business-as-usual approaches and approaches favoring social and environmental goals in addition to economic ones. Critical food scholars dispute the idea that AFNs are able to improve economic, social, and environmental outcomes for people and places most in need (Brown & Getz, 2008; DuPuis et al., 2006; DuPuis & Gillon, 2009; Guthman et al., 2006; Hinrichs, 2003). Indeed, some research finds that AFNs may generate improved food access and increase wellbeing for wealthy individuals living in affluent, urban areas (Jarsoz, 2008), but do little to improve situations for rural producers and consumers challenged by poor agricultural markets, high food insecurity, and other forms of social and economic distress (Guthman, 2014), or for non-White communities (Alkon & McCullen, 2010; Guthman, 2008a, 2008b; Slocum, 2007, 2008). Rolling the full spectrum of critiques into one broad trend, AFNs may follow – rather than spur – development (Ricketts-Hein et al., 2006).

2.3 Data and methods

2.3.1 Data

Following a comprehensive review of the literature, I compiled a wide-ranging list of development-related claims surrounding RFHs. As an extended and related body of work, and given the nascent state of RFH scholarship, I also drew upon goals, claims, and critiques laid out for local and regional food initiatives generally. From a variety of publicly available secondary datasets, I identified 10 indicators associated with the key claims and critiques of RFHs and AFNs and created a dataset of 2,935 counties and

Variable	Year	Transformation	Data Source	Mean Value					
				National	Northeast	Midwest	South	West	
<i>Dependent</i>									
RFH county (<i>RFH</i>)	2014	Distilled to binary measure	USDA	–	–	–	–	–	
<i>Geographic claims</i>									
Rural county (<i>RUR</i>)	2013	–	OMB	–	–	–	–	–	
Agricultural land (acres/mi ²) (<i>AGL</i>)	2012	Normalized by land area (mi ²)	USDA	370.2	356.1	457.8	331.3	282.5	
Interstate highways (<i>HWY</i>)	2014	Distilled to binary measure	US Census	–	–	–	–	–	
<i>Producer-based claims</i>									
Farm income (\$) (<i>INC</i>)	2012	Mean of all farms	USDA	38,240	18,930	59,230	24,080	45,710	
Pesticides (kg/acre) (<i>PST</i>)	2012	Normalized by agricultural land	USGS	0.45	0.57	0.66	0.28	0.87	
Women farmers (%) (<i>WMN</i>)	2012	–	USDA	30.09	35.37	27.51	29.76	35.52	
<i>Consumer-based claims</i>									
Farmers' markets (<i>MKT</i>)	2013	Normalized per 1,000 people	USDA	0.05	0.07	0.07	0.03	0.08	
Non-Hispanic White population (%) (<i>WHT</i>)	2010	–	US Census	78.63	86.18	90.09	70.59	72.95	
Obesity (%) (<i>OBY</i>)	2010	–	CDC	30.67	27.69	30.99	32.19	25.70	
Unemployment (%) (<i>EMP</i>)	2013	–	US BLS	7.48	7.40	6.54	7.98	7.96	
Total counties			US Census	2,935	213	997	1,373	352	
RFH counties (%)	2014		USDA	8.8	28.2	6.2	6.3	14.5	
RFH adjacent counties (%)	2014	–	US Census	28.8	53.5	24.7	25.1	40.1	

Table 2.1: National and regional data descriptions for theoretical index and logistic regression indicators.

county equivalents across 44 states (as detailed in Table 2.1).⁴ I analytically divided indicators into three categories: (1) geographic; (2) producer-based; and (3) consumer-based. Last, as the dependent variable in the analysis and drawing from USDA's Food Hub Directory as it appeared at the time of this study, I added *RFH county (RFH)* as a binary measure, where a value of 1 indicates the presence of at least one RFH in a given county for the year 2014 (USDA, 2014b).^{5,6}

As the first geographic claim and given that advocates often describe RFHs as rural revitalization tools, I included *rural county (RUR)* as a binary measure representing a given county's nonmetropolitan (rural) (1) or metropolitan (urban) (0) status.⁷

Representing the second geographic claim and reflecting policy initiatives that target RFHs as integral elements of agricultural revitalization, I added *agricultural land (AGL)*. *Agricultural land (acres/mi²)* is measured as the proportion of acres devoted to agricultural production in a given county, and is normalized by county size. Testing how well RFHs are positioned to help remotely located producers overcome infrastructural

⁴ I include only 44 states to remove outliers outside of the contiguous United States (AK and HI), and to avoid issues of complete separation in the regression model for the states containing no RFHs as of 2014 (DE, ND, UT, WY).

⁵ I selected 2014 for this study primarily due to the availability of data, but also because the year coincides with USDA's formal promotion of RFHs as rural development tools, making it an appropriate time to examine how development-related claims play out across space (USDA, 2014a).

⁶ At the time of the analysis, only 19% of RFH counties contained more than one RFH. Of these counties, 68% contained no more than two RFHs as reported to USDA. With 80% of RFH counties containing only 1 RFH, and with less than 10% of all US counties containing a RFH at all, there was too small of a sample in 2014 to adequately capture variation. As such, the presence/absence conveyed by a logistic regression's binary dependent variable is a better reflection of RFH trends compared to the continuous dependent variable in a standard regression model. As RFHs continue to increase in number, prevalence would be an important factor to consider in future research.

⁷ I select the dichotomous metro/nonmetro categories rather than incorporate the 9 Rural Urban Continuum Codes (RUCC) given that the latter create instability and collinearity in the model (Cossman et al., 2008). The US Census Bureau classifies counties as nonmetro, or rural, based on combinations of open countryside, rural towns with fewer than 2,500 people, and urban areas with no more than 49,999 people.

and distributional barriers, I next incorporated *interstate highways (HWY)* as a binary measure that signifies whether a county intersects an interstate highway route (1) or not (0).⁸ Shifting to producer-based claims, I selected *farm income (INC)* to engage with the notion that RFHs increase the financial viability of small to mid-sized farms. *Farm income* is measured as the total amount of agricultural income in US dollars generated at the county-level, divided across the total number of farms for an overall county average. I then entered *pesticides (PST)* to reflect the assumption that RFHs encourage the use of more ecologically sensitive farming techniques, such as a decrease in synthetic input use. *Pesticides* (kg/acre) divides total kilograms of pesticides applied in a county by the normalized proportion of agricultural land in that county.⁹ As the last producer-based claim, I included the variable *women farmers (WMN)*, measured as the percentage of all farm operators in a given county who are women. In doing so, I explore RFHs' spatial relationship to this particular group of traditionally marginalized individuals in agriculture.

The first consumer-based claim I introduced to the dataset was *farmers' markets*.¹⁰ *Farmers' markets* represents the number of farmers' markets per one thousand

⁸ Interstate highways is entered in the model as a binary variable for two reasons: (1) continuous forms of this variable (e.g. total interstate miles or interstate miles as a proportion of all roads in a given county) were not found to be significant; and (2) discussions in the RFH literature have largely focused on transportation and infrastructure opportunities and constraints in terms of presence and absence.

⁹ Though *pesticides* may also and perhaps primarily be indicative of crop mix, a RFH in a high pesticide-use county may have greater potential to discourage the growth of input-intensive crops by providing a profitable market for crops requiring fewer inputs. As such, even if this variable does measure crop mix more than it serves as an ecological indicator, it still likely signals a RFH's potential to reduce toxic chemicals in agricultural production, however indirectly.

¹⁰ *Farmers' markets* is highly correlated with *grocery stores* at the county level ($R > 0.65$). As such, *farmers' markets* not only serves as a measure of consumer access to local foods, but also to retail food outlets generally.

people operating in a given county. The variable draws from claims that RFHs expand access to fresh food in underserved communities. In addition, *farmers' markets* is also suggestive of whether RFHs are positioned to generate new markets in areas devoid of such outlets, or whether they are instead prone to follow existing market trends. I next added *non-Hispanic White population* as a percentage of all county residents. By exploring the spatial distribution of RFHs in relation to race and ethnicity, this variable similarly builds off the idea that RFHs can better serve disadvantaged populations through their unique distributional capacities, economies of scale, and mainstream market access, and engages with critiques that AFNs generally do not cater to people of color. I also entered *obesity* as the percentage of all county residents who were medically diagnosed as such at the time of the study. Adding in *obesity*, I test as a function of location the likelihood of RFHs improving consumer diets and health as is often claimed.¹¹ Finally, inspired by assertions that RFHs help revive economically disadvantaged communities and facilitate the creation of jobs, I selected county *unemployment* rate to assess how well RFHs may deliver upon such claims.

2.3.2 Methods

With claims from the literature collected and measured, I began the analysis by constructing a county-level, theory-inspired index at the national scale. The index descriptively represents locations based on the maximal fulfillment of development-related claims for RFHs, and, drawing from the same 10 variables as those included in

¹¹ Because *obesity* consistently predicts educational attainment at the county level ($R > 0.65$), *obesity* can also inform how RFHs locate in relation to educational levels, and thus how well criticisms that local and regional food initiatives prioritize the needs of highly educated individuals apply to RFHs (Jarosz, 2008).

the logistic regression analysis presented below, provides a comparative backdrop for observed and expected RFH trends. The index is designed to normalize variable values between 0 and 1 (except for the binary measures of *rural county* and *interstate highways*).¹² Higher-ranking values translated to higher index scores, and ultimately reflected greater potential for a RFH in a given county if theoretical assumptions are taken to be true.

In cases where higher values already indicate greater need (e.g. *unemployment* rising in accordance with the need for jobs), values directly translate to a variable's index scores, such that the county with highest *unemployment* rate receives a score of 1. However, in cases where lower values indicate greater need (e.g. *farmers' markets* declining in line with food access and availability), values are scored in reverse, such that the county with the lowest *farmers' markets* value receive a score of 1. For the two binary measures in the index, counties satisfying the more theoretically ideal condition receive a score of 1 as opposed to a 0 for those that did not. Specifically, I assign 1 point to all counties classified as rural and 1 point to those not along interstate highways. I calculate final theoretical index scores by summing normalized variable totals for a given county to a maximum of 10, and such that the highest final scores equate to the highest need for development and the highest potential for RFHs to meet development expectations.¹³ I then recalculate county-level theoretical indices for each of the four

¹² The existing body of literature does not impose differential values on RFH outcomes or the plausibility of claims, so I similarly avoid weighting variables in the theoretical index. I do, however, relatively weight counties for each variable though a system of normalized rankings.

¹³ To achieve scalar continuity with predicted probabilities at the county level, I normalize final index scores for mapping purposes.

Census regions – Northeast, Midwest, South, and West – for a more contextualized analysis.

After identifying places with the most and least need for RFHs and their associated development outcomes, I next estimate a series of cross-sectional logistic regression models to identify places with the most and least likelihood of attracting a RFH. Regressing the spatial distribution of RFHs in the United States for the year 2014, I measure which of the 10 claim-driven variables were significant with regard to RFH location at a given point in time, and then which of the significant factors has the highest locational pull.¹⁴ The basic form of the models may be represented as:

$$RFH_i = \beta_0 + \beta_1RUR + \beta_2AGL + \beta_3INT + \beta_4INC + \beta_5PST + \beta_6WMN + \beta_7MKT + \beta_8WHT + \beta_9OBY + \beta_{10}EMP + STATE + \varepsilon$$

Recognizing that geographic distinctions shape regional farm economies in a way that may also affect the placement, functioning, and missions of RFHs (Pfeffer, 1983), models control for state-level fixed effects to account for institutional, political, historical, industrial, and climatological differences across place and space. For this reason, I further divide the model across the four Census regions after fitting it at the national scale.¹⁵ Based on national and regional model results, I finally generate predicted

¹⁴ It is important to note that I make no assertions as to cause and effect. Given that most RFHs have only recently been established, it is too soon to draw such connections at this broad of a scale. I am not, for instance, suggesting that a RFH locating in a county results in more pesticides if I find that the two are positively associated. Rather, since I am interested in observing whether RFHs locate in places in which they have the *potential* to act on and realize the goals that scholars, practitioners, and policymakers increasingly expect, I would instead interpret this finding as sign that RFHs are generally positioned where there is a high potential to enact environmental change.

¹⁵ The Northeast region consists of CT, ME, MA, NH, NJ, NY, PA, RI, and VT. Midwest region states include IN, IL, IA, KS, MI, MN, MO, NE, OH, SD, and WI. In the South, AL, AR, DC, FL, GA, KY, LA,

probabilities at the county level, with values for a given place increasing alongside the chances of a RFH locating there.

2.4. Results

Prior to examination of index and modeling results, I briefly consider national and regional distributions for RFHs at the time of the study. The 259 counties within the 44 states included in the national analysis represent those that contained at least one RFH as of 2014 and for which there was adequate data (9% of all study counties). Counties adjacent to a RFH county totaled to 845, or to 29% of all counties considered by the national-scale analysis.¹⁶ Regionally speaking, the Northeast contained the highest concentration of counties containing at least one RFH as of 2014 ($n=160$, or 28% of regional counties). The Northeast further displayed the largest proportion of counties adjacent to a RFH county at 114 total, or 54%. The Midwest region exhibited the lowest concentration of both RFH counties ($n=62$, or 6% of regional counties), and RFH adjacent counties ($n=246$, or 25%). RFH county concentrations in the South were nearly equal to those in the Midwest ($n=86$, or 6% of regional counties), as were the proportion of RFH adjacent counties ($n=344$, or 25%). The distribution of RFH counties across the

MD, MS, NC, OK, SC, TN, TX, VA, and WV combine into a single region. The West region comprises AZ, CA, CO, ID, MT, NV, NM, OR, and WA.

¹⁶ Given the transportation and distribution functions of RFHs and the corresponding tendencies for RFHs to operate at regional rather than highly localized scales, I consider counties bordering the counties in which RFHs are based to be within the range of services (and thus equally open to RFHs' theorized benefits). I recognize that RFHs may often operate beyond the limits of adjacent counties, but for the purposes of this study I bound any spillover effects to immediately surrounding counties.

West amounted to 51 counties, or 15% of counties in the region, falling into second place behind the Northeast. Concentrations of RFH adjacent counties in the West were also second highest of all regions ($n=141$, or 40%).

2.4.1 Theoretical index results

Theoretical index scores serve to highlight counties where, according to 2014 characteristics of place, RFHs would be best able to act upon and meet development-oriented claims in the academic and policy literatures. As such, theoretical index scores increase alongside a county's need for a RFH and its corresponding rural development potential. Table 2.2 lists results for theoretical index scores at the county level. Figures 2.1 through 2.5 visually depict normalized theoretical index scores as they appear across scales and with respect to place and space.

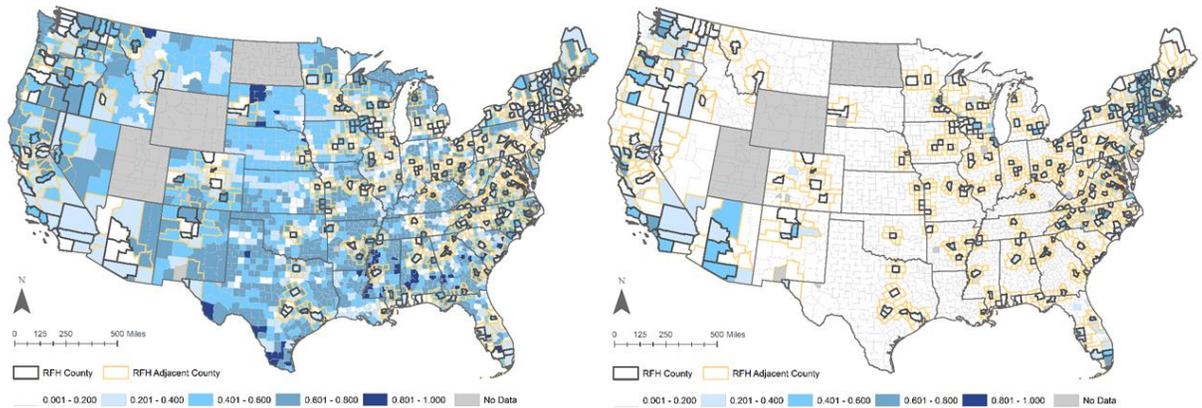


Figure 2.1: National spatial distribution of index scores and predicted probabilities. Map 2.1.1. (left) shows theoretical index scores, normalized to range from 0 to 1 in a given county. Map 2.1.2 (right) depicts predicted probabilities generated from the logistic regression model.

	Theoretical Index Score (norm.)			Predicted Probability Value		
	Min.	Mean	Max.	Min.	Mean	Max.
<i>National</i>	0	0.447	1	0.001	0.08	0.957
RFH counties	0.239	0.320	0.835	0.008	0.258	0.957
RFH adjacent counties	0.027	0.381	0.958	0.001	0.123	0.819
Non-RFH counties	0	0.459	1	0.001	0.072	0.919
<i>Northeast Region</i>	0	0.455	1	0.003	0.272	0.959
RFH counties	0	0.397	0.840	0.008	0.443	0.959
RFH adjacent counties	0.064	.471	1	0.002	0.231	0.805
Non-RFH counties	0.112	0.479	1	0.003	0.208	0.805
<i>Midwest Region</i>	0	0.428	1	0.00005	0.063	0.811
RFH counties	0.144	0.342	0.683	0.0097	0.192	0.811
RFH adjacent counties	0	0.362	0.741	0.001	0.089	0.651
Non-RFH counties	0	0.434	1	0.00005	0.055	0.651
<i>South Region</i>	0	0.476	1	0.0003	0.064	0.819
RFH counties	0.023	0.328	0.613	0.0156	0.205	0.808
RFH adjacent counties	0	0.400	0.939	0.001	0.100	0.819
Non-RFH counties	0	0.486	1	0.0003	0.054	0.82
<i>West Region</i>	0	0.507	1	0.0018	0.142	0.854
RFH counties	0.164	0.375	0.904	0.0146	0.369	0.854
RFH adjacent counties	0	0.487	0.935	0.007	0.159	0.735
Non-RFH counties	0	0.529	1	0.0018	0.105	0.735

Table 2.2: Normalized index and predicted probability results at national and regional scales.

Results show that across all 44 states included in the analysis (displayed in Figure 2.1, Map 2.1.1), no counties emerge at the time of the study whereby a RFH could theoretically accomplish all that is expected in the literature. In other words, while many places have high need for rural development potential, nowhere does the potential for rural development in a given county match the degree often postulated for RFHs. Counties in the South have the highest development potential for RFHs of any region, while Northeast counties had the lowest. Counties where RFHs would be best positioned to meet development claims specifically surface throughout the Cotton Belt and the Mississippi River Delta, and along the Lower Rio Grande Valley. Such counties also emerge in parts of the Great Plains and in heavily tribal counties of the Rockies.

Moving from the national scale to the Northeast (presented in Figure 2.2, Map 2.2.1), potential for transformative change is highest for RFHs in western Maine, northeastern New York, and along the northern Pennsylvania border. In the Midwest (shown in Figure 2.3, Map 2.3.1), rural development potential concentrated in Michigan's Upper Peninsula and in Missouri's Ozarks as well as across the Great Plains. The potential of RFHs to meet claims in the literature in the South is then highest primarily in and around the Mississippi River Delta, along the Lower Rio Grande, across the Cotton Belt, and in a select few counties of south-central Florida (displayed in Figure 2.4, Map 2.4.1). In the West (detailed in Figure 2.5, Map 2.5.1), counties with the most potential for development are predominantly inland, stretching from Idaho to Nevada, throughout in Montana as the northern extent of the Great Plains, and concentrated in parts of New

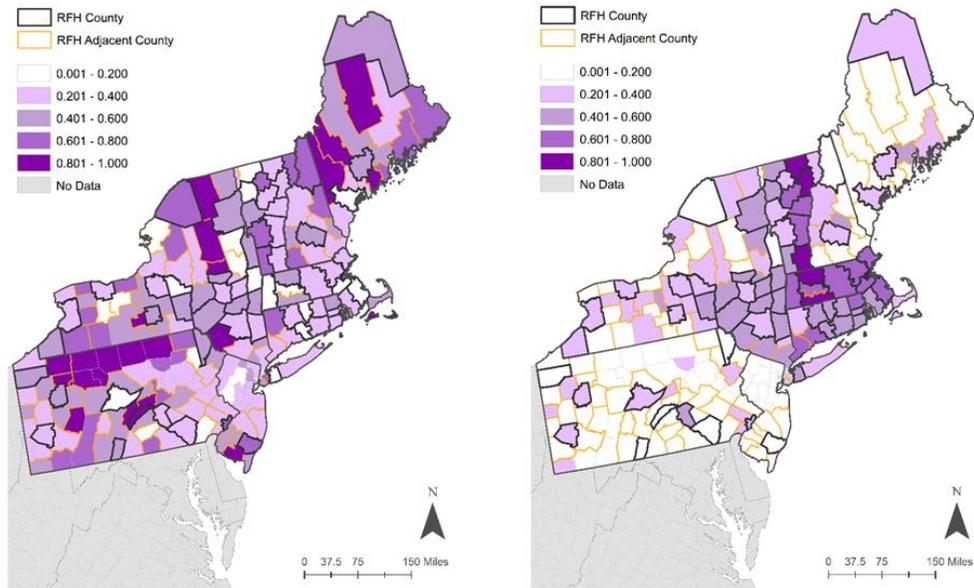


Figure 2.2: Spatial distribution of index scores and predicted probabilities in the Northeast. Map 2.2.1. (left) shows theoretical index scores, normalized to range from 0 to 1 in a given county. Map 2.2.2 (right) depicts predicted probabilities generated from the logistic regression model.

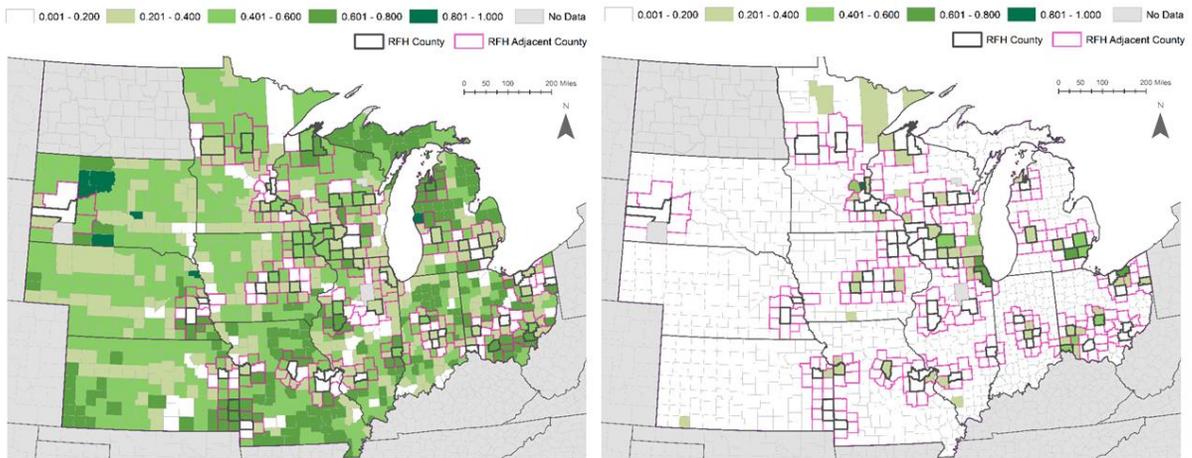


Figure 2.3: Spatial distribution of index scores and predicted probabilities in the Midwest. Map 2.3.1. (left) shows theoretical index scores, normalized to range from 0 to 1 in a given county. Map 2.3.2 (right) depicts predicted probabilities generated from the logistic regression model.

Mexico, Arizona, and southern Colorado. Additional development opportunities for RFHs do, however, also emerge for counties along the northern half of the Pacific Coast.

The theoretical index scores responsible for shaping such geographic trends are highest on average for non-RFH counties in all places and across all scales. Conversely, RFH counties score lowest in terms of rural development potential, underlying spatial patterns whereby the urbanized areas of New England and the Mid Atlantic, the coastal cities and suburbs of the Pacific Northwest, and the communities ringing Chicago, Denver, and Phoenix showed the lowest abilities for RFHs to maximize rural development. Indicative of the largest regional disparities between RFH location and rural development potential and need, score differentials between RFH and non-RFH counties are greatest in the South. The Northeast displays the smallest gaps between RFH and non-RFH county scores, suggesting a more egalitarian approach but perhaps also indicative of the overall low levels of rural development potential throughout the region. The fact that RFH counties score the lowest of all counties does not bode well for rural development expectations; however, with RFH adjacent counties scoring above RFH counties, claims that RFH are better able to integrate disadvantaged producers and consumers as a result of distribution services and wider geographic ranges are not without merit. This appears to be especially the case in the West where scoring gaps between the two are greatest, but less so in the Midwest where gaps are the smallest.

2.4.2 Logistic regression results

Table 2.3 presents findings from the logistic regression analysis, uncovering elements of place with which RFHs are most and least likely to associate. Odds ratios (OR) represent the probability that a county would contain a RFH as a function of the associated

	National		Northeast		Midwest		South		West	
	Coeff.	OR	Coeff.	OR	Coeff.	OR	Coeff.	OR	Coeff.	OR
<i>Geographic claim</i>										
Rural county	-0.32*	0.73	0.62	1.86	0.01	1.01	-0.36	0.70	-1.07*	0.34
Agricultural land	-0.09	0.92	-0.13	0.88	0.08	1.08	0.06	1.06	-0.29	0.75
Interstate highway	0.53**	1.71	1.16**	3.18	0.31	1.36	0.62*	1.85	0.11	1.12
<i>Producer-based claims</i>										
Farm income	-0.15	0.86	-0.63	0.53	-0.93**	0.40	-0.15	0.86	0.09	1.09
Pesticides	0.07	1.07	-0.32	0.73	0.61	1.85	0.02	1.02	0.26*	1.29
Women farmers	0.17*	1.19	-0.043	0.65	0.30	1.35	-0.02	0.99	0.46*	1.58
<i>Consumer-based claims</i>										
Farmers' markets	0.06	1.06	0.68*	1.98	-0.11	0.89	0.31	1.36	-0.17	0.84
Non-Hispanic White population	-0.66***	0.52	-1.25*	0.29	-1.14***	0.32	-0.74***	0.48	-0.58*	0.56
Obesity	-0.54***	0.59	0.19	1.21	-0.53*	0.59	-0.63***	0.53	-0.77**	0.46
Unemployment	-0.369**	0.69	-0.87	0.42	-0.44	0.65	-0.79**	0.45	-0.23	0.80
Intercept	-2.83***		-0.73		-1.68**		-2.76***		-3.52**	
Log likelihood	-677.99		-98.74		-190.62		-253.68		-103.17	
Chi-squared test	395.95***		51.95***		88.66***		146.41***		81.34***	
Pseudo R ²	0.23		0.21		0.19		0.22		0.28	

Table 2.3: National and regional logistic regression results for 2014 RFH distribution. State dummies in all models control for fixed effects; *p < .05; ** p < .01; *** p < .001.

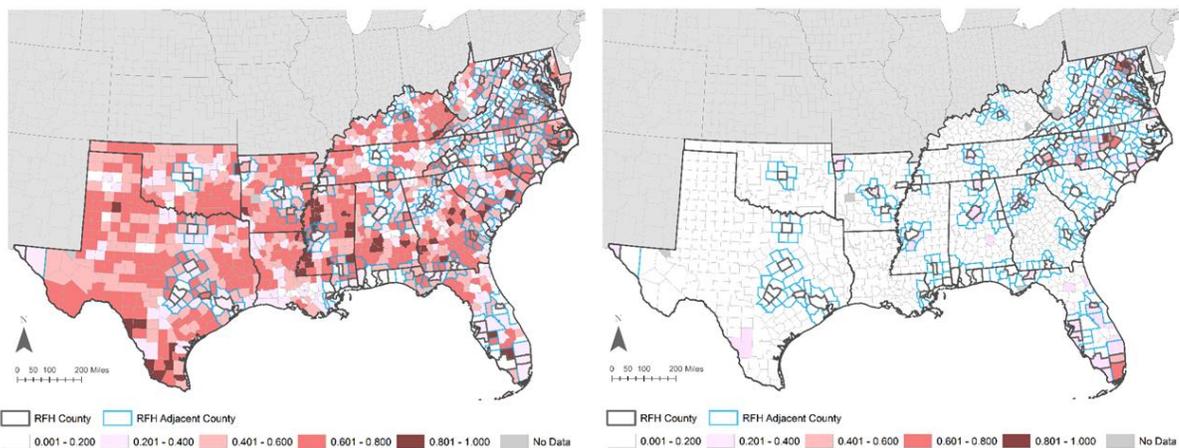


Figure 2.4: Spatial distribution of index scores and predicted probabilities in the South. Map 2.4.1. (left) shows theoretical index scores, normalized to range from 0 to 1 in a given county. Map 2.4.2 (right) depicts predicted probabilities generated from the logistic regression model.

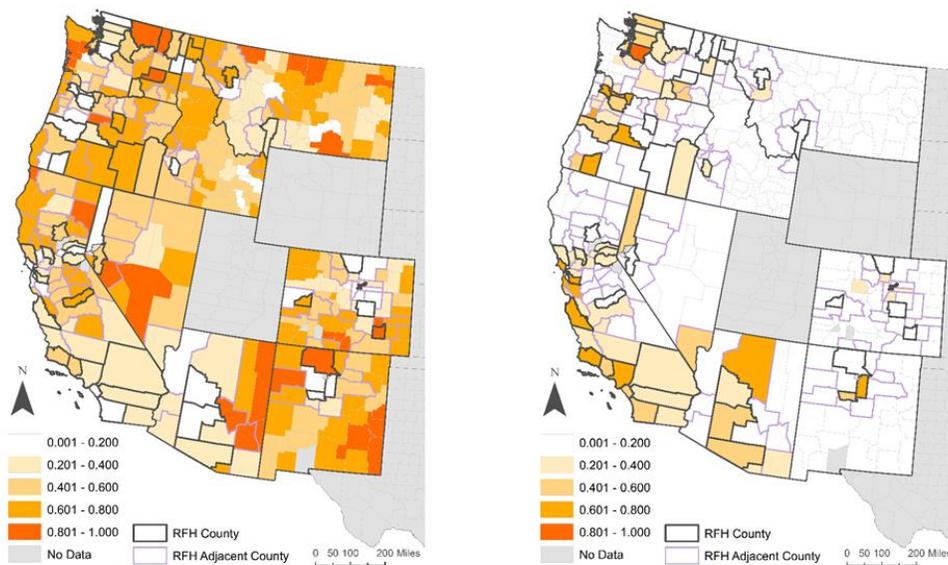


Figure 2.5: Spatial distributions of index scores and predicted probabilities in the West. Map 2.5.1. (left) shows theoretical index scores, normalized to range from 0 to 1 in a given county. Map 2.5.2 (right) depicts predicted probabilities generated from the logistic regression model.

variable. In the discussion of results, I focus on statistically significant variables and the associated odds of these characteristics of place influencing RFH location.

Nationally, model results indicate that RFHs are less likely to locate in non-metropolitan counties. Higher rates of obesity and unemployment also both decrease the probability of a RFH locating in a given county. RFHs do, however, tend to locate in areas with better infrastructural links to surrounding areas as measured by the interstate highway system. *Interstate highways* exerts the most influence on RFH location in the model, with counties that intersect an interstate highway system 71% more likely to contain a RFH than counties that do not. A higher proportion of women farmers and a more racially diverse population are also both associated with a higher probability of a county containing at least one RFH.

Regional models indicate that the place-based characteristics associated with RFH counties overlap but often differ from the national picture. In the Northeast, findings suggest that counties are similarly more likely to contain at least one RFH when intersecting interstate highway systems and when exhibiting high levels of racial diversity. Aligning with national results, *interstate highways* represents the strongest link with RFH location in the region, with RFHs 218% more likely to locate in counties positioned along interstate highways than in those that are not. Presenting a new association though, *farmers' markets* additionally emerged as positively associated with RFH location in the Northeast.

Findings for the Midwest echo national results in that RFHs in this region are less likely to locate in counties with higher rates of obesity, but more likely to locate in places with diverse populations. Indeed, RFHs in the Midwest associated most with racial

diversity than any other model variable. The likelihood of a county containing at least one RFH decreases by 68% for every one percent increase in *Non-Hispanic White population*. In addition, and diverging from national results, higher farm incomes also lowered the odds of at least one RFH locating in a Midwest county.

The Southern model is most similar to the national case in that all four significant variables also significant in the national model. However, RFHs in the South are less likely to locate in areas where they could potentially address food access and insecurity needs than in any other region or for the nation as measured by the 44 states. Although Southern RFH counties are associated with higher levels of racial diversity, counties with the highest rates of unemployment and obesity in this region are the least likely to contain a RFH. *Interstate highways* has the greatest regional association with RFH location, with counties that fall along such transportation routes 85% more likely to contain a RFH than counties that do not.

Results for the West overlap with national results in that rural counties and counties with high levels of obesity are significantly less likely to contain a RFH. Also mirroring national trends, counties in this region were more likely to contain a RFH when displaying high rates of racial diversity and proportions of women farmers. Beyond that and representing a regionally distinct finding, the likelihood of a county containing at least one RFH also increased alongside the application of pesticides. Of the significant model variables for the West, *rural county* exerts the greatest influence on RFH locations, with RFHs 66% less likely to locate in nonmetropolitan places than urban ones.

Assuming that geographic, producer, and consumer-based conditions hold nationally and in each of the four regions, county-level predicted probabilities generated

from the logistic regression models increase alongside the likelihood of a RFH locating in a given place based on conditions in 2014. Predicted probability results at the county level are shown in Table 2.2. Figures 2.1 through 2.5 display the spatial distributions of predicted probabilities, with averaged values reflecting marginal probabilities in each case. Across the nation (detailed in Figure 2.1, Map 2.1.2), high-probability counties cluster in New England, but also across the Piedmont Plateau and along the Pacific Coast into the Southwest.

Turning to the four individual regions, counties in the Northeast surpass average predicted probabilities calculated at the national scale and show the highest chances of containing a RFH (detailed in Figure 2.2, Map 2.2.2). Northeast likelihoods are highest in Massachusetts and Vermont. Midwest counties exhibit the lowest predicted probabilities on average, representing the lowest chances of a RFH locating here than in any other region (shown in Figure 2.3, Map 2.3.2). In this region, RFHs are most likely to locate in or near the counties of Chicago, Detroit, and Milwaukee. Predicted probabilities for all counties in the South nearly tie those of the Midwest, suggesting similarly low likelihoods for RFHs (depicted in Figure 2.4, Map 2.4.2). Counties around Washington, DC, in Virginia's Shenandoah Valley, along North Carolina's Piedmont Plateau, and at the southern tip of Florida have the highest chances of attracting a RFH in this region. In the West, counties display the second highest predicted probabilities, making this region the only other one to exceed national rates (presented in Figure 2.5, Map 2.5.2). RFHs here are most likely to congregate in coastal parts of southern California, around Seattle and Portland, and throughout metropolitan areas of the Southwest.

In a manner similar to results observed for theoretical index scores, predicted probabilities are consistently lowest for non–RFH counties nationally and across all regions. The largest gaps between the two county types are detected in the West, signifying that RFHs here may be more likely to cluster or adhere to a specific set of conditions rather than disperse. Likelihood differentials between RFH and non–RFH counties were smallest in the Midwest, showing that RFHs in this area are the most likely to spread across space, but also representing the generally low predictions here.

2.5 Discussion

Rural development claims surrounding RFHs implicitly assume that such networks locate in or near agriculturally dependent rural communities that struggle with issues of food access, social equity, economic development, and environmental sustainability. In addition, such claims assume that RFHs are inherently less susceptible to the challenges and exclusionary tendencies of other AFNs, and thus more capable of bringing about positive change. Yet, assuming that RFHs uniformly overcome obstacles while meeting the myriad goals promoted in the literature disregards regional and place–based variations in both the constraints and opportunities RFHs face. With such assumptions largely unchecked and with little attention paid to the “where” of RFHs, including where RFHs are initially motivated to locate and why (or why not) or where supposed outcomes are most likely to unfold and why (or why not), gaps between expectations and realities have widened and understandings have failed to solidify (Fischer et al., 2015; Matson & Thayer, 2013).

In this paper, I introduce place to the RFH discourse, contextualizing expectations and realities for RFHs and translating both into geographic representations across space

with a primary goal of exploring how well RFHs map onto what the literature and policy espouses. I show that rural development potential and RFH location do not align well, with distinct locational patterns between rural development potential and likelihood – or separations between places that need RFHs the most and places that RFHs most need to locate. At the national level, for instance, that RFHs significantly disassociated with higher rates of obesity and unemployment, as well as with rural counties and counties with limited infrastructural and distributional capacities, casts doubt on assumptions that RFHs are positioned to contribute to economic viability, food justice, and rural revitalization in ways that effectively engender development and change in places needing it the most.

Comporting with findings for AFNs broadly (Jarosz, 2008), results overall suggest a tendency for RFHs to locate in well-connected metropolitan environments with high levels of socioeconomic wellbeing, but not in places without opportunities to still reach disadvantaged producer and/or consumer groups. Indeed, nationally RFHs did associate with higher proportions of women farmers and more racially diverse populations in 2014, lending some support to notions that RFHs may serve underrepresented populations and overcome racial inequities in ways other AFNs have not (Alkon & McCullen, 2010; Guthman, 2008a, 2008b; Slocum, 2007, 2008). Regionally distinct patterns further illuminate the spatial divergence between likelihood and potential for RFHs. That RFHs in the Northeast associated with existing local food markets meshes well with regional patterns, whereby small-scale, direct-to-consumer farming revolves around densely populated, industrialized markets (Low & Vogel, 2011). And in the South, where the largest gaps are seen between potential and need, such as

significant disassociations between RFHs and high unemployment rates, trends may follow the geographical imprint of the region's slavery and sharecropping legacies and the racial segregation of opportunity.

In the Midwest and the West, though, regional characteristics appear better situated to bridge RFH likelihood with need. For instance, the tendency for RFHs in the Midwest to locate in counties containing lower-income farms and ranches bodes well for the fulfillment of producer-related development claims. Given the more dominant forms of capital-intensive, large-scale commodity agriculture operations in this part of the United States, such a connection may reflect distinct needs and hint at fulfilled promises for RFHs to support "agriculture of the middle" producers in a way that increases market accessibility, profitability, and operational sustainability. As such, as a function of place RFHs in the Midwest may be more likely than other regions to encourage economic gains in a way that is expected (Lev & Stevenson, 2011; Stevenson & Pirog, 2008). And in the West, RFHs in this region may also be aligning with claims in the literature, but in a different way. With RFHs in this particular region operating in the midst of extensive, export-driven fruit and vegetable production, RFHs may very well be creating local, supplemental market opportunities for commercial farmers in a way that directly and/or indirectly lowers pesticide use, and thus speaks to the potential of RFHs to act upon environmental sustainability claims in this region (Barham et al., 2012; Cleveland et al., 2014). Additionally, with the increasing demands of affluent, coastal consumers seeking healthy and high quality (Guthman, 2003), RFHs in the West may be disproportionately supporting women farmers – an underserved agricultural group – and in turn contributing to gender equity in a regionally unparalleled way.

The national and regional differences that emerge in the models are not necessarily striking, but they do exist and they do suggest that RFHs are more likely to accomplish certain goals in certain places rather than such outcomes being a universal guarantee. Yet, regional assessments also hint that select rural development outcomes are far from guaranteed for RFHs in any place or at any scale. In particular, findings show that RFHs' assumed propensities to overcome infrastructural limitations in isolated areas (Barham, 2012, 2013; Bloom & Hinrichs, 2011; Matson et al., 2013), to improve diets and nutrition for disadvantaged groups (Matson et al., 2014; Schmidt et al., 2011), and to revitalize rural economies and agricultural activity (USDA, 2014a) are far from guaranteed on the basis of the locational trends observed across these 44 states. With this paper, I see that the current locations and conditions into which RFHs most commonly embed are not especially promising for people and places most in need of development interventions (Brown & Getz, 2008; DuPuis & Goodman, 2005; DuPuis & Gillon, 2009; Guthman et al., 2006; Hinrichs, 2003). Such disparities, which likely stem from the preponderance of untested claims put forth in the literature and policy, may present challenges for RFHs' social, economic, and environmental missions (Koch & Hamm, 2015), and hint that RFHs follow existing patterns of development rather than help to spur new socioeconomic opportunities in less developed communities (Ricketts–Hein et al., 2006). Considering the significant locational associations that emerged, it is not enough for a RFH to simply locate in a high–potential region to exert change. Indeed, RFHs in the South were less likely than RFHs in any other place to locate where food justice and economic development needs and potential were highest.

2.5.1 Limitations

These findings are not to say that that RFHs cannot or do not still have meaningful, positive outcomes when locating in places with lower development potential. Similarly, results do not and cannot suggest that RFHs that locate in theoretically ideal settings necessarily contribute to rural development goals in expected or meaningful ways. Aggregating county-level data to national and regional scales, I can only guess how RFHs' actions will filter through a given place, and I fully recognize that a RFH in an urban, food secure county may very well exert great influence in a surrounding rural area with limited food access and low incomes. Indeed, results could suggest that affluent consumers are actively supporting and benefitting a rural supplier base and surrounding communities, despite a geographic distance between the two. And, considering the time that has elapsed since the analysis, RFHs may have since lessened locational gaps and have most likely extended their distributional reaches beyond a one-county buffer. Still, such discrepancies point to the value of testing and grounding national RFH narratives and contextualizing claims, and signal a need for policymakers, funders, and scholars to re-evaluate generalizations of RFHs as tools for rural revitalization and agricultural development. Looking to the counties I have identified as the most opportune for development may serve as a step in that direction, as does keeping in mind both the spatially varied nature of potential and the locational pressures of economic viability and competition that drive levels of likelihood (Connelly et al., 2011; Franklin et al., 2011) – regardless of a RFH's stated mission.

2.6 Conclusion

The rural development discourse surrounding RFHs as newly emerging AFNs has largely been presented as a national and universally applicable one. At the same time, the social, economic, and environmental assumptions driving such a narrative have largely gone untested, leading to the increased promotion and funding of RFHs as unproven and also non-contextualized rural revitalization and agricultural development tools. With this paper, I engage with such assumptions by embedding claims into place and highlighting the ways in which development potential diverges from what can be observed for RFHs across space.

Identifying where RFHs have the highest opportunities to maximize rural development goals and then comparing developmentally-guided trajectories with statistical likelihoods and recent RFH trends, I uncovered which development components are most and least plausible for RFHs, and where, and shed light on the spatially varied extents of RFHs' rural development potential across a variety of regions and scales. Altogether, I broadly offered a more nuanced understanding of the "where" element of RFHs that demonstrated the need to dismantle national, universalized approaches in favor of place-based ones.

Taken together, this study makes several contributions to the growing RFH and established AFN literature. Helping to close gaps between expectations and realities, I showed that RFHs were and are expected to continue to be most likely in the Northeast despite rural development and agricultural revitalization potential being highest for RFHs in the South. I further showed that even when locating in regions with higher levels of potential, RFHs do not locate in the places in which expectations could be best met. Overall, significant indicators at the county scale ran counter to ideals for several key

issues, including those relating to nutrition and food access, economic opportunities, infrastructural limitations for producers, and rural revitalization generally. I did find some evidence, however, that RFHs are capable of meeting certain justice and development-oriented goals in certain settings and at certain scales. In sum, with this paper I conclude that the transformative potential of RFHs is likely to vary across space and place, and that theorizations should be refined accordingly. Though I make no judgment as to the real outcomes of a RFH operating on the ground at this time, I suggest that broad trends are indicative of a market-over-mission approach for RFHs, with this finding likely reproducing transformative possibilities of AFNs as a whole rather than breaking from such patterns.

Revealing regional and place-based distinctions and providing policy and decision makers with better understandings of where and how RFHs can contribute to rural development goals, if at all, the study further contributes to informing more targeted, appropriate, and improved rural and agricultural policies. Different results at different geographic scales suggest different responses are appropriate for policy and practice. Without adjusting expectations and approaches for RFHs to place and avoiding universalized assumptions, RFHs' rural development capacities will likely remain misrepresented in a way that disappoints policymakers and stakeholders and ultimately discount RFHs' potential. Moreover, consistent imbalances between potential and likelihood imply a more active approach is needed on the parts of policymakers, with considerable and sustained support likely required for RFHs to locate in places with higher rural development opportunities. Planners and decision makers hoping to employ RFHs as effective engines of justice and development should thus consider committing

greater levels of support to RFHs already in theoretically ideal locations, or to offering resources and incentives to those who may consider doing so in coming years.

And, in identifying the connections between RFHs and particular elements of place, this study also identified places in particular. Overlaying likely RFH trends with the greatest potential and need, I embedded findings for RFHs into maps to not only highlight the spatially varied nature of challenges and opportunities, but to visually communicate location-specific results in a direct and useful way. Emphasizing the gaps and overlaps that exist between high need and high likelihood for RFHs (or suitability to continue business as usual), maps can help target funding as well as guide the most efficient and effective use of nonmonetary resources. In doing so, the maps might contribute to RFHs and other AFNs maximizing their potential in place. As such, I encourage practitioners, policymakers, scholars, and all others involved in rural development efforts and planning to not only employ the maps provided when considering place-based interventions for RFHs specifically or for food systems broadly, but to also request revisions or additions to the maps based on their deep knowledge of or ties to a given place.

For those interested in building upon this work, future directions could include scaling down the county-level analysis to the census block once data become available at that scale. In addition, others could consider adding to the dataset of claims or substituting certain proxy variables for others to explore how or if results change across space. Beyond quantitative examinations though, future work could also take a qualitative turn, exploring how or if RFHs as development opportunities do or do not translate into potential in place.

Chapter 3: “It’s broad but not deep”: Regional food hubs as rural development?

3.1 Introduction

Policymakers, funders, and practitioners increasingly promote regional food hubs (RFHs) as key elements of rural revitalization (Matson et al., 2013; Matson et al., 2014; USDA, 2014, 2016). RFHs are businesses or organizations that aggregate, market, and distribute locally and regionally sourced food from multiple producers to multiple consumers within wholesale, retail, and institutional markets (Barham, 2011, 2012; Barham et al., 2012). Working at the regional level, RFHs are thought to not only overcome barriers limiting the transformative potential of highly localized, direct-to-consumer markets (Beckie et al., 2012; Beckie & Connelly, 2016), but also more effectively redress destabilizing outcomes associated with agricultural industrialization and consolidation, such as disproportionate losses of family farms (Stevenson et al., 2011).

As such, RFHs now represent one of USDA’s four pillars of agriculture and rural economic development and, with access to more than \$1 billion in federal support¹⁷, have doubled in number since 2009 (USDA, 2015b). Yet, the widespread connection between RFHs and rural development is unclear. Understandings as to how – or even if – RFHs contribute to rural development are limited by an overall lack of empirical investigation into such claims, with considerable gaps apparent between theory and reality (Blay–Palmer et al., 2013; Matson & Thayer, 2013), and with insights notably absent for noneconomic impacts (O’Hara & Pirog, 2013).

¹⁷ \$1 billion represents total public funds made available to local and regional food systems since 2009, including targeted assistance for RFHs from Agricultural Marketing Service and Rural Development agencies (USDA, 2016).

At present, studies have linked RFHs to certain components of economic development, including jobs, skills, and market access (Jablonski et al., 2011), as well as estimated RFHs' total economic impact at the regional scale (Jablonski et al., 2015). Significant challenges, however, restrict both the accuracy and the usefulness of impact assessments that focus solely on economic indicators, or which rely upon insufficient data (Schmit et al., 2016). Considering the growing support for and rapid proliferation of RFHs, and given that integral aspects of rural development remain unexamined with respect to RFHs at this time, comprehensive, in-depth analyses that test rural development claims across a broad spectrum, and that use stakeholder input, are both timely and critical for better understanding RFHs and their potential impacts and for working towards solutions to stem the decline of rural communities.

In this paper, I incorporate the capability approach and its broad conceptualization of development into a case study analysis, drawing from 75 interviews conducted more than a decade after a RFH's establishment in a rural, low-income community.¹⁸ Throughout the remainder of the paper, I aim to: (1) identify development outcomes associated with a RFH at the individual and community level, especially those not easily captured by purely quantitative techniques; (2) highlight areas unchanged by a RFH as well as those negatively impacted to further engage with claims and offer spaces to improve; and (3) ultimately provide a localized though generalizable qualitative assessment that contributes empirical evidence towards a more complete and accurate

¹⁸ Though this chapter only examines one community and one corresponding RFH, case study research is a standard and robust method for examining such questions in a generalizable way (Yin, 2009). A great number of insights and contributions have been made to the AFN and RFH literatures from single case studies that then rely upon other researchers for replication and validation of case-based dynamics elsewhere. Moreover, following Desmond (2016), there is no reason to think that a RFH in this case study would operate any differently than other similarly rural, poor, food insecure, and agriculturally-dependent regions in the United States.

understanding of RFHs while shedding light on the relationship between RFHs, rural revitalization, and agricultural development.

3.2 Scaling up impacts and expectations

Consolidated and industrialized agricultural supply chains that demand low-cost food and integration into global markets are linked to decreased value capture and ownership for small and mid-sized producers (Stevenson & Pirog, 2008), diminished affordability and accessibility of food for rural and minority consumers (Smith & Morton, 2009), and declines in overall well-being in rural regions of the United States (Lobao & Meyer, 2001; Lyson & Welsh, 2005). Until recently, academics and advocates viewed the re-localization of food systems as the most promising means with which to insert economic viability, social justice, and ecological sensitivity back into the production, distribution, and consumption of food (Jarosz, 2008; Lyson & Guptil, 2004; Marsden, 2010; Renting et al., 2003; Trauger, 2009; Watts et al., 2005). However, after shedding light on the limitations accompanying highly localized systems such as farmers' markets and community supported agriculture (CSA) (e.g. market saturation and competition (Galt et al., 2015; Zezima, 2011) and politics of class, race, and gender (Guthman, 2003; Guthman et al., 2006; Slocum, 2007, 2008), and upon recognizing the need to scale-up locally and regionally sourced food to accommodate larger and more diverse producers and consumers (Diamond & Barham, 2011; Mount, 2012), RFHs increasingly draw attention as solutions for mitigating longstanding issues and fostering development in rural, peripheral communities. Yet, given their nascent status, much of what is discussed and promoted about RFHs is so far only assumed, and thus their contributions to rural development remain uncertain.

RFHs, which are categorized by the markets they serve (wholesale, direct to consumer, or a hybrid of both) and by legal structure, most commonly take the form of for-profit organizations (51%), cooperatives (31%), and non-profit entities (28%) (USDA, 2015b). Although roles and potential outcomes vary across legal structure and business model, Matson et al. (2013) charge RFHs with three development-oriented roles stemming from the aggregation, distribution, and marketing of local and regional food. Beyond heightening levels of sustainability, self-sufficiency, and security within food systems by taking a regional approach (Clancy & Ruhf, 2010; Hinrichs, 2013), RFHs are first said to create innovative economic opportunities in rural regions (Matson et al., 2014). Small-scale producers who are unable to compete in conventional, industrialized supply chains or who cannot survive on direct-to-consumer markets alone are considered to be the primary economic beneficiaries, with RFHs providing access to distribution services and infrastructure, achieving economies of scale and reducing transaction costs, forming new commercial and institutional market connections, gaining access to distant urban markets, and offering greater reliability and higher incomes (Barham, 2012; Barham et al., 2012; Bloom & Hinrichs, 2011; Lev & Stevenson, 2011; Stevenson et al., 2011; Wittman et al., 2012). As for rural communities broadly, RFHs are also thought to create and retain jobs, improve the rural labor force, and slow rural migration outflows (Barham, 2011, 2012; Barham et al., 2012; Matson et al., 2013). Given such notions, recent work has attempted to estimate RFHs' gross output and employment effects in rural regions (Jablonski et al., 2015), with Schmidt, Jablonski, & Mansury (2013) calculating a \$0.63 increase in food and agriculture sectors for every \$1 increase in RFH demands.

Second, in line with Cleveland et al.'s (2014) assertion that RFHs prioritize goals beyond financial gain, RFHs are also seen as eliminating consumer problems relating to food access, supply, and variety. Working through direct, retail, wholesale, and institutional markets, RFHs ideally help meet growing consumer demands for locally and regionally sourced foods in urban markets while also increasing access to food in disadvantaged communities or in regions with limited growing seasons (Barham, 2012; Barham et al., 2012; Schmidt et al., 2011). Evidence for such claims includes RFHs' ability to participate in the Supplemental Nutrition Assistance Program/Electronic Benefit Transfers (SNAP/EBT) and coordinate food donations while additionally engaging with conventional supply chains that serve large grocery stores and public institutions, such as schools and hospitals and transporting locally and regionally sourced food across significant distances to communities that may otherwise remain underserved (Matson et al., 2014).

Third, RFHs are supposed to further revitalize rural communities by strengthening producer–consumer relationships, either through community outreach and educational efforts for consumers, such as nutrition classes and cooking demonstrations (Barham et al., 2012), or simply through closer interactions between the two groups. This is especially thought to be true in cases where RFHs enable producers to directly serve individuals through subscriptions or online buying clubs (LeBlanc, Conner, McRae, & Darby, 2014). In addition, others have charged RFHs with a fourth mission that entails encouraging environmentally sensitive farming practices and reductions in energy use and waste as well as introducing consumers in mainstream outlets to sustainable food practices (Barham, 2012).

Economic, social, relational, and environmental commitments – or what Fischer, Pirog, & Hamm (2015) deem ‘plus activities’ – represent an important point of distinction between RFHs and conventional wholesale food distributors. Indeed, the 2015 National Food Hub Survey finds that 99% of RFHs aim to increase market access for farmers, 87% prioritize healthy food access for consumers, and 55% focus on correcting racial disparities in food (Hardy et al., 2016); however, financial bottom–lines and limited cash flow (Connelly, Markey, & Roseland, 2011; Jablonski et al., 2011), consumer perceptions and resource limitations (Koch & Hamm, 2015), and competition within the larger agro–food system often impede RFH goals. As Franklin, Newton, & McEntee (2011) note, RFHs are often unable to exert the types of impacts to which they aspire, particularly in low–income communities, given their susceptibility to larger social and economic forces beyond control. Ultimately, such impediments and gaps between what is currently known and what is only theorized about RFHs call into question and necessitate testing of the belief that RFHs and their abilities to scale–up local food systems will accelerate rural development.

3.3 Measuring development with capabilities

Impact assessments that rely solely on quantifiable results, such as jobs created or sales generated, risk masking less quantifiable though equally significant development outcomes and potentially misinterpreting an initiatives’ success or perceived value within a community (Alkire, 2002). Guiding more comprehensive analyses, the capability approach, while also incorporating traditional economic measures of efficiency and utility, expands upon conceptualizations and evaluations of development to include

tangible as well as intangible changes in opportunity, agency, freedom, justice, and well-being (Sen, 1992, 1999).

I adopt the capability approach given the wide-ranging nature of rural revitalization claims surrounding RFHs, the limited empirical support for RFHs as rural development tools to date, and the challenges presented by previous impact assessments that fail to recognize the multidimensional nature of development and connect RFHs to less calculable aspects of personal or social change. Specifically, I incorporate the capability approach's linked concepts of 'capabilities' and 'functionings,' whereby functionings as 'valuable beings and doings' indicate the extent to which one's real opportunities (i.e. capabilities) expand or contract in relation to a given policy or initiative (Sen, 1992, 1999). Functionings may, for instance, range from economic (e.g. earning an income) to noneconomic (e.g. being treated with respect); basic (e.g. being nourished) to complex (e.g. increasing political participation) (Sen, 1997); and individual (e.g. being physically able) to shared (e.g. building institutional capacity) (Ibrahim, 2006). This study documents respondents' achieved functionings and real opportunities following the establishment of a RFH. Also contributing to understandings as to how RFHs may extend agency, freedom, justice, and well-being, particularly for whom and under what conditions, I draw on the approach by considering local and regional conversion factors (Sen, 1999), or personal, social, and environmental forces such as education, location, and race that limit who is able to participate in development interventions and opportunities and thus influence who can benefit (Robeyns, 2005).

3.4 The case of the Western Montana Growers' Cooperative (WMGC)

Deep declines in western Montana's family farm sector over the latter half of the 20th century accompanied consolidation and mechanization of commodity operations, a growing proportion of agricultural exports, and a rising level of food insecurity. Major losses in small-scale agricultural livelihoods over time combined with the withdrawal of the extractive and timber industries, reliance on low-paying, seasonal service jobs, and the disruptive legacy of the region's Flathead Indian Reservation to create a socioeconomic reality one grower dubbed 'Appalachia West.'¹⁹ Underemployment, poverty, immobility, and housing shortages, along with both rural and urban food deserts (USDA, 2015c), plague western Montana, with regional increases in federal food assistance payments outpacing those of the state as a whole (USFNS, 2014).

As a major provider of employment, goods, and public services for the region, the city of Missoula stands in stark contrast to many of its surrounding communities. In recent years, with its vibrant downtown, large student population, and growing consumer base, Missoula has also encouraged resurgent family-operated farms attempting to meet growing demands for locally and regionally sourced food. However, limited population, physical distance to markets, lack of infrastructure, and inability to scale-up production and distribution challenged the region's new wave of farms. Recognizing the need to overcome such obstacles for the benefit of both producers and consumers, cooperative

¹⁹ Established in 1855, the Flathead Indian Reservation is home to and governed by the Confederated Salish and Kootenai Tribes of the Flathead Nation. As a result of the 1904 Flathead Allotment Act, which opened the Reservation to homesteaders, the Reservation's population today is predominantly white, with non-Native Americans outnumbering Native Americans at a rate of two-to-one (US Census Bureau, 2010). WMGC was originally established within the bounds of the Reservation on privately held land in Lake County, but moved in 2015 to newer and larger facilities in Missoula.

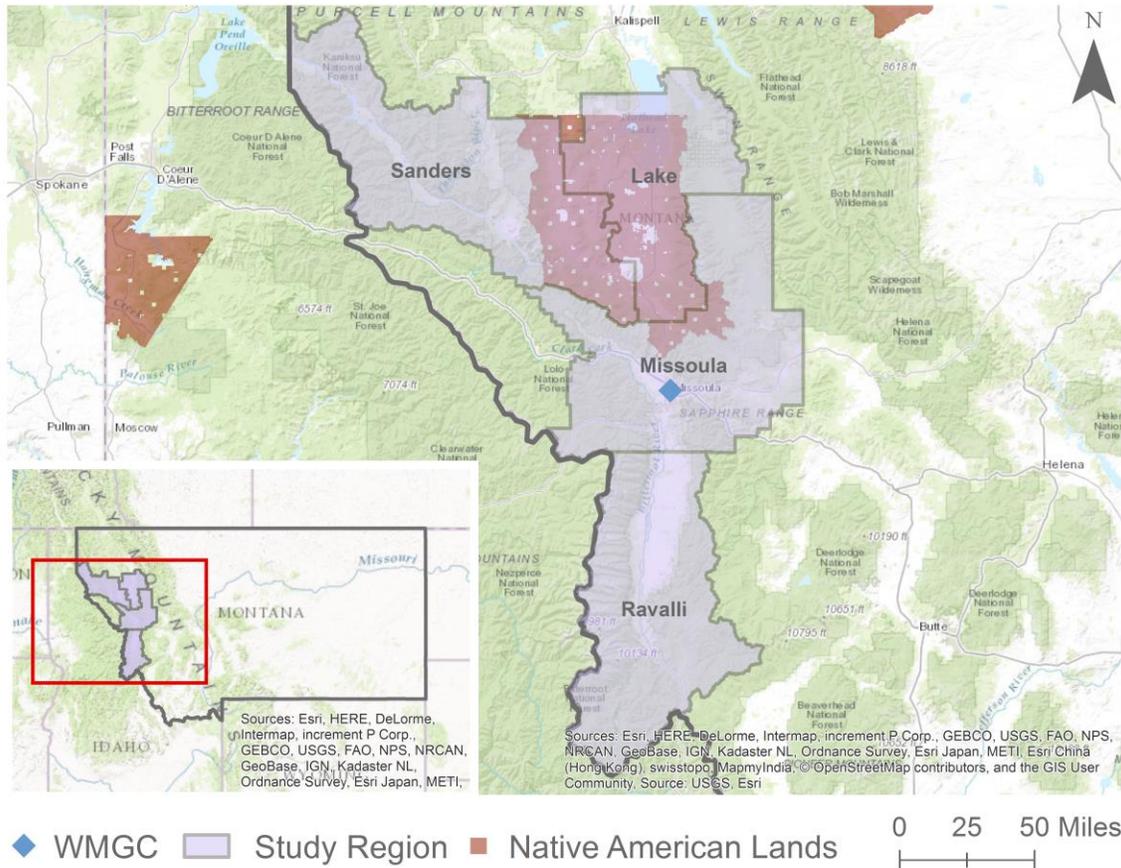


Figure 3.1: The qualitative case study site and overlapping tribal lands.

Source: Author

and community development specialists, farmers, and philanthropists came together in 2003 to establish WMGC.

WMGC’s primary mission as a RFH is to “provide communities within the western Montana region with a wide range of fresh, quality products from western Montana independently owned ranches and farms” (“Our Mission,” 2014). Now based in Missoula, WMGC partners with, and is cooperatively governed by, approximately 40 member farms throughout Missoula ($n=4$), Lake ($n=22$), Ravalli ($n=5$), and Sanders ($n=9$) Counties (see Figure 3.1). On behalf of member farms located in western Montana’s rural communities, both on and off the Reservation, WMGC’s full-time staff

and seasonal workers manage hundreds of accounts and coordinate biweekly sales using an online ordering system; design marketing campaigns and cultivate brand identity; provide equipment and facilities to store, freeze, and lightly process fruits, vegetables, dairy, and meats (i.e. slicing, dicing, vacuum-packaging); transport produce across the region and throughout the state in refrigerated trucks; and organize a CSA program.

In exchange for WMGC's ability to reach economies of scale, tap into diverse outlets, and increase efficiencies in a highly saturated marketplace, member farms relinquish a 20–25% sales margin to the RFH. Member farms must also meet annual crop commitments, employ ecologically sensitive if not organically certified farming practices, and honor WMGC's non-compete clause by surrendering individually-held accounts at locations that the RFH serves (selling at farmers' markets around the region is permitted though and commonly undertaken as a supplementary source of income). The majority of WMGC's sales, which have grown from \$10,000 in 2003 to \$2.4 million in 2015, are to natural food stores (35%), grocery stores (23%), restaurants (21%), and public institutions (10%), including county schools and hospitals. As the direct-to-consumer component of WMGC's activities since 2008, the CSA program also accounts for 10% of sales and involves weekly deliveries of regionally sourced farm products to drop-sites serving nearly 200 individuals across the region. In addition to product sales, and in recognition of the region's specific development needs, WMGC has also received funding from a variety of government sources for improving cooperation and relationship building, contributing to economic and environmental sustainability, supporting farmers from diverse backgrounds, and nourishing underserved communities.²⁰ With funding

²⁰ WMGC has received public funds from USDA grants and programs, including Specialty Crop Block, Community Food Projects, Rural Development, Farmers Market Promotional Program (FMPP), and Good

from FMPP, for instance, WMGC organized promotional events and public meetings in low-income, food desert communities, with particular focus on the Reservation.

Much of the rural revitalization objectives for which WMGC is designed, tasked, and funded, though, require the RFH to partner with a wide range of advocacy organizations.²¹ For one, Food Corps Montana played an integral role in helping WMGC establish CSA drop-points within the Reservation. The Mission Mountain Food Enterprise Center also helps WMGC by connecting the RFH to farm-to-school programs in rural, low-income settings, as does the Community Food and Agriculture Coalition, which enables WMGC to participate in USDA's Double SNAP Dollars Program and subsidize CSA shares. And, most recently, WMGC's collaboration with the North Missoula Community Development Corporation, including hosting and contributing to free community dinners, represents an opportunity to extend into disadvantaged neighborhoods within the limits of the city.

Since WMGC has been extensively involved in diverse components of rural revitalization and agricultural development for both producers and consumers for more than a decade, and since it must also navigate socioeconomic polarization, industrial disruption, and racial divides throughout western Montana's low-income and food-insecure landscape, I argue that WMGC represents an appropriate case to empirically ground a RFH's impacts and development potential. Case-based results are thus similarly

Agricultural Practices (GAP), as well as the state of Montana's Growth through Agriculture Program. Private funds have included the Cooperative Development Foundation and Wallace Center.

²¹ Though achieving development and justice oriented goals was not always described as straightforward, no key informant or study participant discussed community partnerships as a drain on WMGC. Rather partnerships were spoken of as things to improve upon and work harder towards in order to better accomplish goals, especially relating to increased food access in rural, poor areas.

appropriate for informing policies, funding decisions, and actions that existing, although largely untested, claims presently promote.²²

3.5 Data and methods

Semi-structured interviews comprise the primary source of data for this study. In an effort to incorporate growers and consumers both involved and uninvolved in WMGC, and to closely map onto WMGC's primary service area, I recruited member growers and non-member growers as well as consumers who do and do not participate in WMGC's CSA in Lake, Missoula, Ravalli, and Sanders Counties. I conducted a census of the 40 total member growers ($n=22$). For non-member growers, I purposefully targeted the Montana Sustainable Growers' Union ($n=14$). I conducted a census of group members as exemplifying small-scale, sustainable, and local agriculturists within the case study region who would similarly benefit a RFH, but who did not engage with one at the time of the study. I employed stratified random sampling for WMGC's CSA consumers ($n=19$), dividing consumers across WMGC's drop-points within the case study region and randomly sampling from within drop-point groups. I finally used a purposeful, semi-random strategy for non-CSA consumers as part of a participatory research collaboration ($n=18$), wherein local stakeholders helped guide the direction of the study.²³ The study's

²² With a focus only on WMGC and the western Montana region, the goal of this study is not to broadly generalize findings to all RFHs in all places. Rather, by empirically testing a suite of RFH-related claims in a theoretically ideal setting (rural, high-poverty, food insecure, etc.), the goal of the study was to begin conversations between scholars, decision makers, and practitioners as to the validity of heretofore untested rural development assumptions surrounding RFHs. Examining this particular case, I encourage future research to add to my study and replicate it with other RFHs in other contexts.

²³ In key informant meetings, WMGC staff expressed interest in understanding why their SNAP/EBT program was utilized so little ($n=3$ participants at the time of the study), and how uptake might be improved. Given that the majority of the Missoula Food Bank's clients receive SNAP/EBT benefits and represent the low-income, food-insecure demographic that WMGC wishes to serve, food bank staff agreed to participate in the study. Purposefully sampling within the context of the food bank and its weekly operating hours, I semi-randomly sampled every third client that walked through the door.

key informants included WMGC management, agricultural extension agents, cooperative and community development specialists, university professors, and tribal council members. Sampling continued for all groups until interview data reached saturation (Guest et al., 2006). Table 3.1 details descriptive data for groups interviewed.

	<i>WMGC Member Growers (N=22)</i>	<i>Non- Member Growers (N=14)</i>	<i>WMGC CSA Consumers (N=19)</i>	<i>Non- CSA Consumers (N=18)</i>
Age (mean)	45	48	49	46
Women (% of total)	60	50	78	56
Men (% of total)	40	50	22	44
White (% of total)	100	86	95	78
Native American (% of total)	0	14	0	11
College degree (% of total)	91	80	79	6
SNAP/EBT recipient (% of total)	–	–	0	89
Years farming (mean)	11	11	–	–
Acres farmed (mean)	21	6	–	–
Farm certified organic (% of total)	41	29	–	–
Lake cty. resident (% of total)	55	36	32	5
Missoula cty. resident (% of total)	0	0	63	95
Ravalli cty. resident (% of total)	18	57	5	0
Sanders cty. resident (% of total)	27	7	0	0

Table 3.1: Data descriptions for interview participants.

The data collection process took place over a period of 11 total weeks, with 6 weeks spent interviewing farmers in the field in 2014 and 5 weeks dedicated to consumer interviews in 2015. During this time, I sought to develop an in-depth knowledge regarding local contexts and dynamics to establish rapport with the study population and better scrutinize the information gathered (Bernard, 2002). Participant observation

supplemented interview data, including visits to area farmers' markets, farm tours, tribal meetings and pow wows, potlucks, and community dinners sponsored by local non–profits.

In interviews, which averaged 60 minutes, I asked participants involved with WMGC to consider what changes – positive, negative, or none – had followed the establishment of WMGC. Interviews with unaffiliated growers and consumers focused on reasons for not aligning with the RFH given its theoretical benefits, while key informant interviews revealed the depth and breadth of WMGC's partnerships across the region and contributed to a rich context within which to situate the RFH. Study participants in all cases selected the settings for interviews given the importance of comfort and trust in qualitative data quality (Kvale 1996). Most commonly, interviews took place in respondents' homes or on their farms. I recorded and transcribed all interviews, and validated preliminary findings by returning transcriptions to respondents and conducting follow–up interviews with key informants. Although I did prompt member growers and CSA consumers to consider any social, economic, and environmental impacts relating to WMGC, I did not frame questions within the capability approach, nor did I ask participants to value or assess specific functionings. I instead let outcomes emerge directly from the data, identifying, coding, and evaluating any number of functionings that respondents discussed (Alkire 2005, 2007), in addition to unintended consequences (Sen 1999).

As per Alkire (2002), I coded and thematically nested emergent functionings under generalizable yet irreducible capability 'dimensions,' which are also informed by findings and expectations in the RFH literature (Robeyns, 2005). I weighed functionings

and dimensions in terms the percentage of respondents who discussed such topics as well as topics' relative frequencies as outlined by Miles & Huberman (1994). Using relative frequencies, I assessed emergent functionings and broader dimensions in line with the average proportion of interviews for which they account.²⁴ In this way, I gauged not only how widespread an impact was throughout the study population, but also how deeply that impact was felt. Results for non-member growers and non-CSA consumers are not presented in terms of functionings, but rather to balance the assessment of WMGC's outcomes, explore the roles of individual choice and freedom, and examine the influence of conversion factors on the overall expansion of capabilities, and the extension of RFHs into rural development.

3.6 Results

Nineteen distinct functionings, grouped under a total of five key capability dimensions, emerged from the analysis of member growers and CSA consumers (as shown in Table 3.2). Capability dimensions contain varying numbers of functionings, with Life/Health/Security containing the most ($n=6$) and Knowledge the least ($n=1$). Below, the five dimensions are arranged in descending order of relative frequency, with rates averaged across member growers and CSA consumers.

3.6.1 Expanded capabilities for participants

3.6.1.1 Participation/agency/fulfillment

'Farming makes you happy.'
– ID7, member grower, female

²⁴ Although, there are some scholars who argue against this approach such as Quinn (2005).

Participation/agency/fulfillment is the second most impacted dimension for member growers, accounting for 24% of interviews on average but reported in some form by 100% of respondents. Activism and agency represents the bulk of this dimension (10% of interviews), followed by political participation (5%), participation of agricultural minorities (particularly women farmers) (5%), and fulfillment and inner peace (4%).

Growers first and foremost described WMGC as a valuable vehicle to address issues that farmers could not influence alone. Acting through WMGC and its regional partnerships and programs, farmers valued their ability to contribute, for example, to: improving child nutrition; diminishing knowledge gaps in diet and nutrition; increasing the availability of local food; bridging racial and socio-economic divides; and stemming the flow of food and wealth from rural or disadvantaged communities. Politically, growers valued WMGC's cooperative nature, including its inclusive and egalitarian decision-making processes, transparency, and annually elected leadership. Participants additionally detailed the political value of autonomy and financial ownership. Relating to fulfillment and inner peace, growers credited WMGC with enabling them to pursue their passion for agriculture and perform meaningful, necessary, and tangible work. Growers also connected fulfillment and satisfaction to the flexibility, lifestyle, and self-employment opportunities that, they say, WMGC heightens over farming individually without the RFH's support staff and distribution services, expanding markets, or increased sales volumes. Last, WMGC's equal treatment and support of agricultural minorities, particularly women growers, emerged as a valued component of this dimension. By helping all of its members succeed equally, regardless of gender or sex, growers connected WMGC to minority growers' enhanced abilities to financially succeed, take on

leadership roles, and have a voice and a vote. Such things, they explained, may have been harder to achieve otherwise.

'Without farms, we'll go hungry. You can't feed people with a bunch of houses.'
– ID11, CSA consumer, female

Impacts to Participation/Agency/Fulfillment were reported by 100% of CSA consumers. This dimension emerged as the most discussed dimension for consumers at 46% of interviews. Food access and affordability was the most discussed (26.3%), ahead of agency and activism (17%), and fulfillment and inner peace (2.7%). Rather than WMGC improving access to food in general since most either live or work near a grocery or a farmers market, CSA participants acknowledged WMGC's role in specifically increasing their access to and the affordability of locally or regionally grown food.²⁵ Respondents especially valued this component given Montana's short growing season and the higher prices and limited hours of operation at farmers markets, and commonly described the CSA as bringing them or their loved ones satisfaction or joy either as a direct result of the food or due the broader idea that 'it just must spread the good' (ID12, female). Relating to agency and activism, CSA consumers further valued WMGC as a springboard for change that enables them to take part in causes they support, including increasing the viability of farms, protecting rural landscapes from ex-urbanization, and expanding the reach of locally and regionally sourced food by entering new and/or larger markets.

²⁵ Given that 79% of CSA consumers interviewed reported that WMGC did not impact their ability to access or afford food in general, but did emphasize the RFH's role in allowing them to more easily participate in regional, direct-to-consumer markets, I selected Participation/agency/fulfillment over Life/health/security as the most appropriate dimension for this functioning.

	<i>WMGC Member Growers</i>		<i>WMGC CSA Consumers</i>	
	% of Interviews	Relative Frequency	% of Interviews	Relative Frequency
<i>Participation/agency/fulfillment</i>	100	24	100	46
Access and affordability	–	–	100	26.3
Activism and agency	100	10.4	95	17
Political participation	86	5	–	–
Agricultural minorities	95	4.5	–	–
Fulfillment and inner peace	82	3.7	37	2.7
<i>Work</i>	100	30	–	–
Marketing and distribution	100	10.3	–	–
Market access and expansion	100	9	–	–
Meaningful employment	86	7.5	–	–
Infrastructure	77	3.6	–	–
Planning and support	68	3.2	–	–
<i>Life/health/security</i>	95	23.6	100	29
Income	91	11.4	–	–
Environment	82	7.3	43	3.6
Children and family	50	1.7	–	–
Diet and nutrition	45	1.6	100	17.3
Physical health	–	–	84	10.7
<i>Relationships</i>	100	18	84	11
Retailers and institutions	95	6.5	–	–
Growers	100	6.3	68	7.2
Consumers	82	4.4	32	3.3
<i>Knowledge</i>	50	3.4	95	14

Table 3.2: Frequencies for capability dimensions and associated functionings.

3.6.1.2 Work

‘It makes agriculture viable and allows farmers to make a go at it.’
 – ID1, member grower, male

Work is the dimension that member growers discussed the most, with 100% of respondents describing such impacts, and with such impacts accounting for 30% of interviews, on average. As a combination of both the work WMGC does for growers as well as the work WMGC allows growers to do, Work was dominated by discussions of marketing and distribution (10%), market access and expansion (9%) and meaningful self-employment (8%). Less valued components of Work are facilities and infrastructure (4%) and planning and support (3%). Respondents valued WMGC's marketing and distribution services for removing the need to drive long distances to sell products, saving time and energy otherwise needed to secure accounts or sell at increasingly saturated and decreasingly profitable farmers markets, and helping farmers who are unfamiliar with or discouraged by such tasks. Member growers also valued WMGC for broadening the market hundreds of miles across the state as well as deepening the market closer to home. Aside from the rising sales and incomes that result from market access and expansion, respondents described scaling-up to existing commercial or institutional markets as critical in a sparsely populated state like Montana, where small towns can rarely support a single farm, let alone a burgeoning number of them, and where public institutions often present the only point of access into underserved communities.

Member growers reported the value of infrastructure in terms of WMGC's network of drop-points, fleet of refrigerated trucks, and new and improved warehouse and office facilities, which offer cold storage and better compliance with food safety regulations. Growers additionally emphasized the importance of WMGC's planning and support in areas such as yearly crop projections and growing commitments, weekly harvest estimates, crisis management, grant writing, new products and endeavors, and the

organization of regional partnerships and programs. More broadly, by enabling growers to work, respondents valued the RFH for making small-scale, regionally-focused agriculture a viable livelihood once again, and for also benefiting rural communities as a whole. By supporting new growers through its many services and its ability to scale-up the local food system, respondents saw WMGC as helping to repopulate rural communities, drive rural economic growth and on-farm employment, and increase opportunities for self-employment in the region's generally stagnant, low-wage economy.

3.6.1.3 Life/health/security

'[WMGC] supports all the farmers who are changing the Valley.'
– ID5, member grower, male

As the third most impacted dimension, Life/health/security represents 23.6% of interviews, with related changes reported by 95% of member growers. Within this dimension farmers valued WMGC's impacts to income (11% of interviews), the environment (7%), children and family (2%), and diet and nutrition (2%). Since income is fungible, however, it is not considered a functioning in and of itself, but rather a tool for other achievements or choices. For example, in cases where growers valued the ability to support their households solely or primarily through WMGC, they also spoke of lessening the need for off-farm employment or reducing the financial burden of childcare. Growers additionally connected diversified and augmented incomes from WMGC to the increased security of their farms and households and to the health of the rural communities and economies in which they are able to work and live. Outside of themselves, though, respondents valued income generated for others employed by

WMGC, including the set of seven full-time staff members, including a general manager, CSA manager, and warehouse manager, and approximately 15 seasonal workers.

With regards to environmental impacts, growers valued WMGC's bulk transportation services for reducing fuel consumption and pollution that would otherwise result from 40 farms individually delivering goods to market. Respondents also, albeit indirectly, valued WMGC's role in encouraging and supporting members who farm sustainably. For example, although WMGC does not directly control individuals' farming practices, respondents argued that the growing and increasingly reliable market WMGC provides in the region has enabled the conversion of once conventional farmland to organic cropland or pastureland as members' farms increase in both number and size. And as for diet and nutrition, growers valued being able to regularly feed their families highly nutritious, fresh food.

'We are making a big enough foot print on this planet without getting food from South America.'

– ID13, CSA consumer, female

For CSA consumers, 100% exhibited impacts within Life/health/security, making it the second most impacted dimension at a relative frequency of 29%. Three significant senses of Life/Health/Security emerged: diet and nutrition (17.3%); physical health (11%); and the environment (4%). CSA consumers primarily valued WMGC for enabling them to increase daily consumption of fruit and vegetables and for greater amounts of home-cooked meals. Respondents also emphasized WMGC's role in broadening the variety of produce they eat, and valued what they saw as high quality and healthy food. Several senior respondents credited their good health to WMGC's CSA, whereas others

told of lowering their cholesterol, reducing medications, and even reversing diabetes after joining. Regarding environment, respondents valued WMGC for supporting ecologically sensitive farming practices and for aiding in the regional shift towards agricultural diversification and away from industrialized monocultures.

3.6.1.4 Relationships

'It is one of the first things that started drawing this community together.'
– ID4, member grower, female

Relationships represents the second least impacted dimension for member growers. Though relationship-related impacts can be found in 100% of interviews, such discussions comprise 18% of discussions. Changes in relationships with retailers and institutions were most reported (7%), followed closely by relationships with other growers (6%), and by relationships with consumers (4%). Relating to retail and institutional markets, respondents cited their newfound ability to serve a variety of restaurants, natural food stores, and mainstream supermarkets along with institutions like University of Montana, public schools and hospitals, the City of Missoula, and (potentially) the tribal government as a valuable change. Growers interviewed valued this change not only for boosting sales, but also for increasing the likelihood of effecting meaningful change where retailers and institutions serve low-income or rural communities. And as for relationships with fellow growers, respondents valued WMGC for fostering both formal and informal interactions that reportedly result in heightened sharing of resources and ideas as well as social benefits, especially for farmers living in more isolated locations. Data further show WMGC impacted growers' relationships with

western Montana consumers, with farmers valuing the increased familiarity and closer community ties that stem from feeding their neighbors.

'Having a relationship with [food] and the person who grew it is a really big deal.'
– ID15, CSA consumer, female

CSA consumers discussed Relationships the least with a relative frequency of 11%, with total interview coverage of such discussions split between improved relations with farmers in the region (7%) and closer connections to fellow consumers (3%). All told, 84% of consumer respondents valued WMGC for impacting Relationships in some form. Regarding farmers, consumers heavily emphasized the importance of restoring personal connections and trust within their regional food system by getting to know the individuals who grow and harvest their food, either at WMGC-sponsored functions or through weekly newsletters. As for fellow consumers, CSA consumers valued meeting members of their community at the CSA's 23 drop-sites or community events. Reported connections with fellow consumers were not always direct, though, since some respondents highlighted and valued WMGC's ability to bridge the rural-urban divide and integrate more isolated or underserved residents through targeted deliveries, subsidies, and outreach.

3.6.1.5 Knowledge

'It is pretty eye-opening, seeing how it all works and how it can work better.'
– ID6, member grower, female

Although 50% of member growers interviewed reported that WMGC impacted their knowledge levels, Knowledge represents the least valued dimension comprising 3% of interviews. Reported impacts on knowledge are formal as well as informal. Formal gains

included training opportunities, such as those relating to the enactment of FDA’s Food Safety Modernization Act (FSMA), as well as improved understanding of crop standards and federal guidelines for pricing, preparing, and packaging produce for market. Informally, growers valued information, ideas, and advice they encounter as part of WMGC, as well as how WMGC has improved their overall understanding of local and regional food systems and the intricacies involved in operating a successful RFH.

‘It is really important for kids to know where food comes from.’
– ID14, CSA consumer, female

Knowledge was reported by 95% of CSA consumers interviewed though it represents the second least impacted dimension with a relative frequency of 14%. CSA consumers valued knowing more about who grows their food and how it is grown, and detailed the increased awareness they gained from WMGC’s weekly newsletter, which includes farmer features and recipes. Learning about unfamiliar herbs or vegetables included in their weekly boxes, such as kohlrabi, emerged as another valued aspect, as did the heightened appreciation they felt their children gained for food production.

3.6.2 Contracted capabilities for participants

‘[W]e are kind of vilified.’
– ID2, member grower, female

In response to questions regarding negative outcomes resulting from WMGC, 32% of member growers connected the RFH’s non–compete restrictions to diminished capacities. After joining, member growers are generally unable to retain individual retail accounts that might impinge upon WMGC’s sales to restaurants or stores, no matter how profitable or how long such accounts had been previously held. In this sense, joining the RFH

imposes limitations on both new farms and more established ones, with older farms more likely to lose longstanding customers and newer farms impeded from growing their businesses as quickly as they might otherwise, especially given the higher prices offered by retail markets.

Twenty–seven percent of member growers additionally reported high levels of competition within the RFH as an ongoing conflict. Competition primarily stemmed from WMGC’s hierarchy policy, which dictates what farms can grow what crops based on seniority (or favoritism, according to one). Not only did member growers describe how this policy often further disadvantages newer farms that are left with the least profitable crops, but also how it often deters people from joining the RFH at all since they may ‘feel like there is no place for them’ (ID3, member grower, female). High levels of competition with non–member growers in the region was also cited by 14% of member growers as an ongoing conflict, with particular emphasis placed on the ill will that non–members direct towards the RFH following lost customer accounts or when trying to establish a competing CSA.

A fourth and final conflict that surfaced in 14% of member grower interviews related to the RFH’s inability to move beyond price and the pressures of the market to keep expanding. Respondents worried that this issue manifests in increased levels of debt and stress as well as prices driven too low in the name of competition and productivity, but to the eventual harm of member and non–member growers alike. ‘I’m afraid of becoming an arm of the same attitude I rejected in coming here,’ commented a member grower (ID16, male). CSA consumers reported no harmful impacts.

3.6.3 Unchanged capabilities for participants

'It's broad, but not deep.'
– ID3, member grower, female

Although member growers and CSA consumers revealed significant and diverse ways in which WMGC has fostered changes in their lives or in the lives of others, either positively or negatively, 100% of both groups also discussed the fact that capabilities have remained largely unchanged for certain groups and for the western Montana population as a whole throughout WMGC's first decade of operation. For instance, though WMGC now serves a radius of more than 300 miles, and many communities in between, both member growers and CSA consumers reported that WMGC has made few in-roads into expanding the reach and affordability of regionally sourced food for disadvantaged consumers. Key informants supported this assertion, detailing how despite federal grants and programs targeting low-income and low-access households, the majority of people who benefit from WMGC, either directly or through retail or wholesale markets, are white, well-educated, and urban. Respondents further noted that although the number of people WMGC serves grows every year, the RFH's social, economic, and environmental influence is inevitably constrained by the mere fraction of the regional population with which it engages, with annual numbers paling in comparison to the broader ag-food system and even to Missoula's Costco or Wal-Mart stores.

Respondents did list multiple attempts by the RFH to serve rural or marginal communities (including establishing a CSA site at the tribal college that has since failed and subsidizing CSA shares for low-income households that are almost entirely unused),

and offered suggestions for possibly overcoming constraints in the future.²⁶ For instance, free cooking and nutrition classes were proposed to address what was seen as a lack of interest and education among consumers, with one CSA consumer explaining that ‘Walmart shoppers are generally going to be broke and they’re not yet interested in good food’ (ID10, male).

3.6.4 Non-participant perspectives of change

‘Some people like to just farm and not deal with the customers, but I like that.’
– ID8, non-member grower, male

Non-member growers generally indicated little interest in joining WMGC even though several have sold surplus produce through the RFH at some prior point. With only two (14%) interested in the possibility of joining the RFH, non-members provided multiple reasons for remaining uninvolved, including the need for higher retail as opposed to wholesale pricing. That they already had ample existing market outlets or limited production volumes, and that they were dissatisfied with WMGC’s hierarchy and non-compete policies were also given as reasons not to join, exemplifying the exercise of freedom and choice. Shifting away from the negatives, non-members additionally described an unwillingness to sacrifice direct community connections for the sake of the larger region, explaining that they enjoyed the social aspects of marketing their products and distributing goods directly to consumers rather than through intermediaries.

When prompted, 57% did feel they personally benefited from the presence of the RFH despite their detachment, such as by WMGC standardizing the procurement of

²⁶ Most, but not all, efforts in this arena have been ineffective. WMGC sponsoring community outreach events and dinners in Missoula’s low-income neighborhoods, supplying school snack programs on the Reservation, and maintaining multiple other rural drop-points, for instance, are considered achievements.

locally and regionally sourced food for many retailers and institutions. And, 79% saw WMGC as an overall positive force in the community, either in terms of drawing people to farming, benefitting schools and hospitals, or increasing the quality of food in the region; however, 14% of non-member growers interviewed disagreed and instead described the RFH as an exclusionary entity that drives prices low.

'You've got so much to do with, but only so much to work with.'
– ID9, non-CSA consumer, male

Non-CSA consumers diverged from non-member growers for several reasons. First, although 94% were previously unaware of WMGC and the broader RFH concept, and were thus equally unaware of WMGC's programs targeting low-income households, 88% showed interest in receiving fresh produce and contributing to their regional economy. Second, in contrast to non-member growers and despite WMGC's targeted assistance, 83% of non-CSA consumers defined their lack of involvement in terms of personal, social, and/or environmental conversion factors.

Reported by 72%, personal conversion factors included low-wages, underemployment or unemployment, low levels of education, and continuously decreasing amounts of federal food assistance following government cutbacks.²⁷ Some further detailed physical disabilities, illnesses, homelessness, and criminal records as personal constraints that would prevent participation in the CSA program. Social conversion factors, described by 16% of non-CSA consumers, included perceptions about class and tensions surrounding race. Respondents exposed insecurities about

²⁷ One elderly woman reported receiving only \$16 per month in SNAP/EBT benefits.

shopping at the higher-end natural and local foods stores that WMGC serves and expressed concerns about not conforming to the demographic of farmers' markets or the local and regional food movements in general.²⁸ Besides personal and social conversion factors, a further 16% reported a lack of transportation, public infrastructure, and affordable housing, especially in more remote communities, as environmental limitations to benefitting from WMGC.

3.7 Discussion

Empirical contributions from this study help to close the gaps noted by other scholars between RFH theory and reality (Blay-Palmer et al., 2013; Matson & Thayer, 2013). In a manner that comports with expectations and findings in the literature, WMGC expands market access, raises incomes, increases farm security, and creates jobs in a place where wages are low and underemployment is high (Barham, 2012; Bloom & Hinrichs, 2011; Lev & Stevenson, 2011; Stevenson & Pirog, 2008; Stevenson et al., 2011). WMGC also increases access and affordability of regionally sourced food and improves diet, nutrition, and health where food security is often low (Barham et al., 2012; Matson et al., 2014; Schmidt et al., 2011), and, where the agricultural sector is predominantly mechanized, industrialized, and commoditized. And where many family-operated farms once disappeared, WMGC supports the continuation of older and the burgeoning of newer generations of farmers, with only one of the member growers interviewed born into an agricultural family. Further confirming community-wide claims, WMGC helps

²⁸ A tribal council member indicated interest in establishing a tribally-oriented RFH to curtail high levels of food insecurity and increase interest in cultural foods amongst tribal members who may feel excluded from other such efforts, like WMGC.

repopulate dwindling regions and build organizational capacity through regional partnerships in communities where resources are scarce (Matson et al., 2013).

Such results suggest that WMGC serves as a largely positive force in western Montana and indeed achieves many of the goals for which RFHs are funded and tasked. However, by incorporating a broad conceptualization of development and including both involved and uninvolved stakeholder inputs, I show that a conclusion of this sort is incomplete and unmask relevant, new areas of impact while also examining areas left unchanged. Improvements expanding beyond traditionally measured, quantifiable realms, from agency and activism, to fulfillment and inner peace, to connectedness and support between community members, for instance, reveal significant though previously underexplored outcomes for both growers and consumers, outcomes which likely would be missed by purely economic or quantitative approaches. When framing RFHs as comprehensive, sustainable rural development tools, I thus encourage future discussions, implementations, and evaluations to expand their focus and equally include social, cultural, relational, personal, environmental outcomes, as well as all other emergent changes that local stakeholders have reason to value (Sen, 1992, 1999).

Beyond exploring new spaces of positive effect, I show that additionally integrating the full range of negative or unintended outcomes is equally integral to building understandings and refining theorizations of RFHs. For one, although results show that non-member growers commonly exercise freedom and choice in deciding to not join WMGC and in doing so remain relatively unscathed, the analysis also uncovers other non-member growers in the area who are ineligible or unable to join due to issues of price or production volumes, and who may be economically harmed and outcompeted

by the RFH's growing dominance. Conflicts and restrictions found within WMGC demonstrate another important conflict and call into question the notion that regionalized food networks are immune to political, competitive, and exclusionary obstacles thwarting highly localized systems (Beckie et al., 2012). Considering the negative outcomes identified for both member and non-member growers, a RFH may thus unexpectedly act as a destabilizing force for some in the community.

Or, a RFH could act, in some aspects, as no force at all. That the majority of WMGC's direct-to-consumer sales are to white, urban, well-educated, and well-off households despite community outreach efforts, subsidy programs for low-income households, and deliveries into rural regions presents an additional dilemma for rural development claims, albeit a not uncommon one (Franklin et al., 2011; Koch & Hamm, 2015). And last, to expand the overall proportion of individuals in a community who may benefit from a RFH, particularly in terms of financial status, decision-makers may investigate the possibility of offering incentives or subsidies to businesses and public institutions, especially schools and hospitals, that procure food regionally.

Including negative impacts, areas of no impact, and broader internal and external forces as conversion factors into discussions can not only shed light on the present extent of a RFH's outcomes and how 'plus activities' filter through local and regional contexts and distortions (Fischer et al., 2015), but can also inspire the most appropriate corrections in a given case. When non-CSA consumers in western Montana indicate enthusiasm for WMGC, for instance, but simultaneously report an inability to reach designated CSA drop-sites, planners may consider working towards improved public transportation in rural regions, or reaching isolated households by partnering with delivery services.

Another such improvement might be also made in relation to the class- and race-based insecurities non-CSA consumers elucidated. For example, RFHs could partner with other local food outlets to host regularly-occurring community events, such as free dinners, in an effort to become more welcoming and inclusive. Additionally, RFHs could integrate local programs or non-profit organizations that already serve diverse populations to better serve children in afterschool programs, veterans' groups, etc. Though the above improvements are feasible from the bottom-up, the number of non-CSA consumers who are prevented from participating by personal constraints relating to income and education speaks to the need to blend community action with top-down change for RFHs to be part of effective solutions to revitalization in rural, low-income communities.

3.7.1 Limitations

Limitations for this chapter are associated with the use of a frequencies-based analysis (Quinn, 2005) and include any trade-offs that accompany impact assessments that forgo big, quantitative data in favor of small, qualitative data. Here, I must assume that interview respondents answered all questions honestly, yet no dataset is without error and devoid of certain degrees of assumption. The case presented here is also built from one RFH in one part of the country and during one decade in time, but results as well as empirically-driven recommendations are still applicable to RFHs in other similarly low-income, rural, and food-insecure settings.

3.8 Conclusion

The need to validate rural development claims surrounding RFHs given the previously limited level of empirical investigation, the increasing amounts of federal funding allotted

to RFHs, and the prolonged declines in rural, agricultural communities represents the starting point for this research. Drawing from the capability approach as an alternative perspective of development that values and equally accounts for monetary and non-monetary change, and which allows outcomes to directly emerge from local experience and insight, I use the case of WMGC to situate and generally confirm the accuracy of rural development claims surrounding RFHs in a rural, high-poverty region of the United States, or a place with high levels of development potential. Findings signal that RFHs can indeed offer significant opportunities to address and progress beyond much of what was lost in rural communities to agricultural consolidation and industrialization in decades past, and, moreover, that it is possible for RFHs to do so without necessarily risking economic viability. At the same time, I expand beyond existing claims and suggest new spaces of relevant impact, highlight the need to incorporate into future evaluations negative outcomes as well as areas untouched, and demonstrate how personal, social, and environmental forces must be additionally accounted for to most effectively employ RFHs as revitalization and agricultural development tools in rural, low-income communities of the United States.

By comparing and validating results from this study with RFHs in other parts of the nation, future explorations may not only build upon the emergent list of developments and change presented here, but also add a diversity of racial, social, and economic perspectives and environments across space. Future work may expose additional forces that complicate outcomes, but also present a growing repository of viable solutions for RFHs and policymakers, funders, and practitioners seeking to accelerate rural revitalization, agricultural development, and community change.

Chapter 4: Women farmers, food hubs, and forces of change in rural and agricultural development

4.1 Introduction

The rise of women farmers in the United States runs counter to a history of marginalization in the male-dominated agriculture industry. Over time, masculine definitions of work along with entrenched gender roles constrained opportunities and reinforced a subordinate and at times invisible status for women in agriculture (Little & Austin, 1996; Little & Panelli, 2003; Sachs, 1983; Whatmore, 1990). Men's exclusive mastery of heavy machinery, most notably the tractor, further solidified gendered power relations (Brandth, 1995; Liepins, 2000; Saugeres, 2002), as did agricultural training, education, and networks that prioritized men's needs and limited engagement with women (Hassanein, 1997; Leckie, 1996; Pini, 2002; Shortall, 1996).

Today, with a population approaching one million, women as primary operators run 14% of farms across the country compared to only 5% three decades ago. Significant growth is particularly notable in the organic and local agriculture realms (Chiappe & Flora, 1998; Sumner & Llewelyn, 2011; Trauger, 2001), where more equitable divisions of labor (Trauger, 2004), increased valuation of traditionally feminine skills (Little, 2002), and attitudinal shifts are thought to create a more welcome and inclusive space (Ball, 2014).²⁹ For these reasons, some further support the notion that local, organic agriculture may even act as a source of agency and empowerment for disadvantaged women farmers (Farnworth & Hutchings, 2009; Trauger, 2004, 2009).

²⁹ The idea that gender relations within sustainable agriculture are inherently or automatically more equal has been countered by multiple sources (Hall & Mogyorody, 2007; Meares, 1997).

While acknowledging that women do benefit from engaging in local, organic agriculture, shifts in research emphasize the deliberate nature of this participation rather than focusing on women primarily as beneficiaries. Past work, for example, highlights how women farmers tend to avoid industrialized, global commodity chains that concentrate wealth and exploit the environment in favor of agricultural systems that encourage direct connections with consumers (Chiappe & Flora, 1988; DeLind & Ferguson, 1999; Trauger et al., 2010); nourish local communities (McMahon, 2002; Krug, 2003); preserve family farms (Hoppe & Korb, 2013); promote ecologically sensitive practices (Sachs, 2006; Trauger, 2004); and challenge capitalist politics in food (Jarosz, 2011). Such studies suggest that women disproportionately participate in local, organic forms of agriculture not because they cannot succeed elsewhere, but because they recognize potential within these spaces to create, distribute, and retain value in ways industrialized agriculture cannot (Sumner, 2005).

Highlighting choice and success in a gender-biased industry, this theoretical shift cautions against overly victimizing women to the point of masking agency, and especially in cases where women do not define themselves as victims of gendered discrimination (Brandth, 2002). More and more, women are understood as empowered actors with the ability to create and contribute to change in their communities (Bock, 2004; Bock & Shortall, 2006; O'Hara, 1994; Weber, 2007), and as wielding their own forms of power and influence despite recurrent struggles (Allen & Sachs, 2007; Shortall, 2006).

Even so, although now one of every three farmers is a woman (USDA, 2012), women in agriculture continually experience unequal access to land, capital, credit,

knowledge, and training (Sachs, 2006; Trauger, 2001; Trauger et al., 2008). Hoppe & Korb (2013) additionally show that when compared to men, women's farms are not only smaller, but also generate less revenue in sales per acre. Financial and resource inequalities compound with patriarchal inheritance practices (Heggen, 2014; Luhrs, 2016), and an absence of respect (Trauger & Sachs, 2006), to endanger recent gains by women in agriculture. Indeed, between 2007 and 2012 women as principal farm operators experienced significantly greater declines than their male counterparts (USDA, 2012).

Considering the varied, somewhat opposed theoretical framings broadly surrounding women farmers, it is initially unclear how to interpret the recent finding from Fischer et al.'s National Food Hub Survey that women engage with regional food hubs (RFHs) in a disproportionately large way (2013). RFHs are a recent type of alternative food network (AFN) that is rapidly expanding across the United States. Due to theoretical, albeit largely untested, associations with justice and development-oriented outcomes, policymakers now actively promote and invest in RFHs as rural revitalization tools (USDA, 2014).

Shedding light on the uncertain relationship between women farmers and RFHs in order to better inform processes and outcomes relating to development, I turn to a rural, low-income setting in the United States and introduce to the RFH literature a feminist perspective of power. Situating women farmers' perspectives and actions within multiple power dimensions, I reconcile women farmers as not only a historically disadvantaged and presently declining group, but also a demonstrated force of change in rural and agricultural development. I ask how and why women farmers currently engage with a RFH and investigate how, if at all, a RFH facilitates the success of women farmers in the

male-dominated industry. Ultimately, I argue that women farmers represent a previously unacknowledged source of transformative potential that both shapes and extends a RFH's rural development capacities.

4.2 Regional food hubs

A significant body of work explores the re-regionalization food systems through a lens of rural economic revitalization and improved community resilience (Marsden, 2010; Watts et al., 2005). Scaling-up from local to regional systems allows such initiatives to support and stem the loss of farms unable to compete in global commodity markets, yet too large to sell solely to direct outlets such as farmers' markets. Moreover, regional scales make it possible for food systems to incorporate a greater variety of producers and consumers and allow for the fostering of linkages between rural communities and distant urban markets (Selfa & Qazi, 2005). Intermediary distributors that manage regional supply chains have emerged as critical to such re-regionalization efforts. Studies show, for instance, that regional networks can grow rural incomes and economies by expanding infrastructure, gaining economies of scale, and capturing price premiums for producers while also better meeting institutional and consumer demands for locally and regionally produced goods (Bloom & Hinrichs, 2011; Feenstra et al., 2011; Izumi, Wright, & Hamm, 2010; Stevenson et al., 2011).

Regional food hubs (RFHs) represent one such regional intermediary that has emerged and rapidly proliferated over the last five years. According to the National Good Food Network's Food Hub Collaboration, a RFH is a "business or organization that actively manages the aggregation, distribution, and marketing of source-identified food products primarily from local and regional producers to strengthen their ability to satisfy

wholesale, retail and institutional demand” (“Food Hub Collaboration,” 2011a). By aggregating and transporting products from multiple small and mid–size farms, and often performing light processing services such as freezing and packaging, RFHs are able to sell wholesale, as in the case of grocery stores, restaurants, and schools, and at the same time serve individuals directly through Community Supported Agriculture (CSA) programs or other buying clubs. Most frequently, RFHs participate in a mixture of wholesale, retail, and direct markets, and thus are thought to broaden as well as deepen the reach and accessibility of local and regional goods.

Though RFHs operate at larger scales and often emulate conventional efficiencies, such as providing a single point of purchase for larger–volume buyers or overcoming local shortages by increasing their geographic scope, RFHs are distinct from traditional food distributors in that, in addition to exhibiting greater geographic embeddedness, they prioritize goals and outcomes associated with the sustainable agriculture and local food movements (Barham, 2011, 2012; Cleveland et al., 2014). Fischer et al. (2015) claim that to earn the title of RFH, a distributor must focus on more than just food or finances, such as education and outreach and reconnecting producers and consumers (LeBlanc et al., 2014). Legal or organizational structures shape the respective missions and potential impacts of individual RFHs (Diamond & Barham, 2012), which tend to be for–profit (51%), cooperative (31%), or non–profit (28%) in nature (USDA, 2015). The 2015 National Food Hub Survey found RFH missions reflecting this diversity, and ranging from increasing market access for minority and small–scale producers, to promoting ecologically sensitive farming practices, to improving food access for underserved groups (Hardy et al., 2016).

The potential of these scaled-up initiatives to achieve positive outcomes for both producers and consumers is thought to be greater than for other AFNs, such as farmers' markets and CSA programs, which occur at smaller scales, operate infrequently, and more easily saturate such as from a limited number of producer slots or from a geographically or economically constrained consumer population (Barham, 2012; Beckie et al., 2012; Mount, 2012). In addition to providing an average of seven full-time and five part-time jobs within communities (National Food Hub Collaboration, 2011b), RFHs ideally offer producers greater market access and more stable incomes and better expand the availability and accessibility of regionally produced food for consumers. As such, and in line with the growing popularity of food-based rural development paradigms, the U.S. Department of Agriculture promotes RFHs as viable tools for rural development (Barham et al., 2012; Matson et al., 2013; Matson et al., 2014), with investments in such local and regional food system projects topping \$1 billion since 2009.

The approximately 350 RFHs in operation represent a 300% increase in the last decade (Hardy et al., 2016), with 60% established under five years ago. Although several recent studies have sought to understand more about RFHs and their impacts (c.f. Connelly et al., 2011; Franklin et al., 2011; Schmidt et al., 2011; Stroink & Nelson, 2013), accelerated growth along with vague classifications have resulted in significant theoretical gaps between what is known about RFHs and what is, so far, only claimed (Blay-Palmer et al., 2013; Fischer et al., 2015; Matson & Thayer, 2013). Though Fischer et al. (2013) do point to the nationwide link between RFHs and women farmers in the United States, no investigations to date have further explored the dynamics underlying

this gendered relationship or the implications of RFHs' involvement with this historically disadvantaged and presently tenuous group in agriculture.

4.3 Case description

Western Montana is characterized by lush river valleys, freshwater lakes, and snow-peaked mountains. The landscape inspires an active tourism industry and has turned many visitors into permanent residents, contributing to an upsurge in rural bedroom communities, seasonal vacation homes, and overall processes of gentrification. Missoula, which represents the largest city in western Montana and home to the University of Montana, serves as the focal point for economic and cultural activity, and demand for regionally-produced foods is high. The city hosts heavily-attended farmers' markets and sports numerous locally-minded restaurants, cafes, and grocers. Missoula's vibrant downtown along with new shopping malls and housing developments that encroach on surrounding hillsides, however, stand in stark contrast to many of the communities outside of town.

The study region, which consists of four contiguous counties and nearly 10,000 square miles, is plagued by a low and sparse population, limited infrastructure and resources, and high degrees of poverty, underemployment, food insecurity, and rural out-migration. Products of the social, economic, and environmental disruptions over the last century and a half, the region has witnessed the 1855 Treaty of Hellgate, which forcibly relocated Salish, Kootenai, and other native peoples from tribal lands to the Flathead Indian Reservation; the 1904 Flathead Allotment Act, which drew thousands of white settlers to within the bounds of the resource-rich Reservation and expanded the state's massive agricultural and livestock industry; and the Great Farm Crisis of the 1980s,

which wreaked havoc on much of the area's industrialized commodity farms, livestock operations, and dairies. One in five people in the region currently live in poverty, in a state that ranks 38th of 50 in median household income (US Census Bureau, 2014). Approximately 85–90% of food produced in western Montana is exported elsewhere (Hassanein & Jacobson, 2004), and food deserts encompass communities in all four of the study region counties (USDA, 2015c).³⁰

In recent decades, however, and within this same space, diversified, small-scale production for nearby markets has begun to take hold, and participation of agricultural minorities has significantly increased. The immigrant Hmong community resettled from Laos and Vietnam, for instance, is visibly present at the Missoula Farmers' Market and is seen as integral to the re-regionalization of western Montana's food system.³¹ The same can also be said for women. Between 2002 and 2012, the number of all farms within the study region remained steady; however, women-operated farms increased 13%. Ravalli County currently contains the largest number of woman-operated farms and boasts the greatest proportion of women farmers at 40%, whereas Lake County saw the largest growth in women's operations at a rate of 29% during this period. Today, the study region is home to the largest contingent of woman-operated farms in Montana, which most commonly earn less than \$1,000 per year (USDA, 2012).

It is in this context, in one of the country's most sparsely populated states, that the Western Montana Growers Cooperative (WMGC) emerged in 2003. Three women (a

³⁰ USDA's Food Access Research Atlas designates Sanders County's Moiese Valley, Lake County's Jocko Valley, neighborhoods on the northern and eastern fringes of Missoula in Missoula County, and much of the southernmost portion of Ravalli County as food deserts.

³¹ For more information on the role of Hmong farmers within the region, please see Hassanein & Jacobson (2004).

philanthropist, a farmer, and a cooperative development specialist) spearheaded WMGC and shaped the RFH's mission to "provide communities within the ... region with a wide range of fresh, quality products from western Montana independently owned ranches and farms" ("Our Mission," 2014). More than a decade since, WMGC has grown from \$10,000 in sales to \$2.3 million, a handful of growers to a network of 40 farms, and a highly localized purveyor to one that traverses hundreds of miles.

As a RFH, WMGC aggregates regionally produced foods from member farms in order to engage with larger-volume markets in addition to direct-to-consumer markets. The bulk of WMGC's sales are to natural food stores (35%), chain grocery stores (23%), and restaurants (21%) not only across the study region, but also much of the western half of the state. WMGC's 20-week CSA program accounts for 10% of sales, in which 250 boxes are filled with seasonal produce (and optionally eggs, meats, and breads), topped off with a newsletter and recipes, and delivered by truck to 23 drop-points across the region. Sales to public institutions, including county schools, hospitals, and the University of Montana, account for the remaining 10%.

In exchange for a 25% gross margin on produce and a 20% gross margin on egg, dairy, and cheese products, WMGC offers members marketing, processing, packaging, storage, and distribution services as well as occasional trainings. WMGC is primarily financed through such margins, but also secures grants and loans from state and federal agencies and occasionally from individual members to support special projects or endeavors.³² In terms of governance, WMGC upholds a one member, one vote policy and

³² Current external funding sources include USDA's Farmers' Market Promotion Program and Specialty Crop grant, Montana Department of Agriculture's Growth through Agriculture grant, Northwest Farm Credit Services, the Wallace Foundation, and the Agriculture Development Council.

a democratically elected board of directors is responsible for major decisions, including the recent choice to relocate WMGC headquarters from Lake County to Missoula.³³ On a day-to-day basis though, a set of seven full-time managers and employees (a number that swells to 15 during peak growing season to include seasonal part-time hires) handles lesser decisions and tasks in the new 6,000 square foot facility, which houses cooler and freezer space, dry storage areas, two loading docks, two refrigerated trucks, and office space.

Member farms, all of which are owner-operated, produce a diverse array of fruits, vegetables, and proteins along with specialty crops like herbs and cut flowers. Member farms need not be certified organic, although organic-inspired practices are a priority for the RFH. As such, members often belong to the Montana Sustainable Growers Union as a local alternative to formal certification.³⁴ More than half of member farms in the study region are in Lake County ($n=22$), followed by Sanders ($n=9$), Ravalli ($n=5$), and Missoula ($n=4$) Counties. In total, 29 male farmers and 23 women farmers are listed as members at the time of the study, representing 56% and 44%, respectively. One-quarter of WMGC farms lists a woman (or women) as principal operator(s), whereas 40% jointly list a man and a woman, and one-third list only a man.

Like other RFHs, WMGC provides an alternative to traditional wholesale distributors in many ways. Besides the fact that WMGC was established as a community

³³ In January 2015, following the first round of data collection, WMGC moved from its initial site in Lake County to Missoula. Key informant interviews indicate that WMGC's rapid growth and the corresponding need for more space, increased efficiency, and a better ability comply with food safety regulations prompted the move. From conversations in the field, WMGC's move will not greatly impact member farms or CSA consumers, for the RFH will remain active all across the study region and maintain the same pick-up and drop-off points.

³⁴ Talks with management indicate that formal organic certification is becoming more of a priority, and as a result only farms selling certified organic products will be considered for future membership.

development project with support from the Lake County Community Development Corporation, and in addition to the sale and distribution of only locally or regionally sourced foods, WMGC has: maintained close relationships with local growers and involves growers in decision making and pricing; broadened connections with consumers by serving a variety of markets, including mainstream grocery stores along with individual households both on and off the Reservation; and participated in community outreach by actively advertising SNAP benefits as a payment option for the CSA and by donating produce for free community dinners hosted by a non-profit organization. Moreover, WMGC makes a concerted effort to bring food to people in rural communities. While the majority of drop-points within the study region are in relatively urban areas in and around Missoula, locations span 100 miles from north to south, and several, including a farm and a private residence, are in isolated settings with limited food access.

4.4 Data and methods

In order to explore the national connection between women farmers and RFHs, and to uncover whether women are to be understood as drivers or beneficiaries of RFH development, or both, this paper narrows the unit of analysis to the local scale and adopts both a case study and feminist approach. As such, semi-structured interviews – guided by active listening and reflexivity in an effort to balance power between researcher and research subject and to fully articulate women’s perspectives and experiences as part of an established feminist approach (DeVault & Gross, 2006; Oakley, 1981) – represent the predominant form of data in the analysis.

In this paper, I focus on interview data for 19 women farmers, 13 of whom belonged to WMGC at the time of the study.³⁵ I interviewed WMGC members as well as non-member farmers to understand what drove some women to join and not others, and to control for any biases accompanying membership. For members, I took a comprehensive sampling approach.³⁶ To recruit non-members practicing small-scale, environmentally sustainable, and direct-to-market agriculture in the study region (i.e. growers mirroring the study population), I used snowball as well as purposeful sampling strategies, and drew primarily the Montana Sustainable Growers' Union's membership rolls. Interviews averaged one-hour in length and most often took place at respondents' homes or on their farms.

Descriptive data regarding women farmers interviewed are reported in Table 4.1. Of the member women interviewed, 53% acted as the principal operator, compared to 55% for non-member women. All women interviewed as principal operators, except for one, have a man or woman as a partner who helps on the farm or who provides support through off-farm income. Although all women reportedly farm sustainably, including biodynamic techniques and without the use of hormones or other synthetic chemicals, 46% of member women's farms are certified organic, whereas only 28% of non-member women obtained formal organic certification. Member women's farms are also much larger than non-members', with an average of 21 acres and 7 acres, respectively.

³⁵ Although, I do incorporate quotes from male farmers interviewed in order to complement findings.

³⁶ I contacted all listed, but interviewing every member was not possible due to time constraints, scheduling conflicts, etc.

	Min.	Mean	Max
<i>WMGC members (n=13)</i>			
Age	27	40	63
Farm land (acres)	10	21	70
Farm income (% total)	10	74	100
Years farming	3	10	25
Years as member	2	7	11
<i>Non-members</i>			
Age	33	46	55
Farm land (acres)	2	7	20
Farm income (% total)	10	43	100
Years farming	6	14	20

Table 4.1: Descriptive data for women farmers interviewed (N=19).

As for the women themselves, members tend to be younger than non-members and have less experience farming, but the two groups are equally educated and both are predominantly white (one non-member claimed partial Ute ancestry). Non-members are also more likely to be from Montana, with two of the six born in the state, compared to only two of the 13 member women. Following the qualitative analysis component of the study, I returned interview transcripts as well as preliminary findings to participants for feedback and validation. Based on the patterns identified, I contextualized findings within a feminist conceptualization of power.

4.5 Feminist perspectives of power

Rather than overplay dualisms of masculine dominance and feminine subordination in gender research, McNay (2000) calls for studies to include “creative or productive aspects of agency in order to explain how, when faced with complexity and difference, individuals may respond in unanticipated and innovative ways which may hinder,

reinforce or catalyze social change” (p. 5). She also argues that gendered agency must be contextualized within relations of power. Feminist theorists argue that academic as well as popular perceptions of power, which associate the term with control, force, and violence, have largely excluded the views of women and thus made the term more relevant to men (Groshev, 2002; Miles, 1985). Understanding power only in terms of domination and control, or what is referred to as “power-over,” validates the concept only in its dominating, masculine form (Miller & Cummins, 1992). Following this critique and engaging with past work showing that women see power as a set of processes that can enable individuals and enhance the abilities of others (Wheeler & Chinn, 1991), feminist theorists have reconceptualized power as “the capacity to produce a change” (Miller, 1992). This feminized, enabling form of power is often known as “power-to.”³⁷

“Power-to” can additionally be split into *intrapersonal* power and *interpersonal* power. With *intrapersonal* power, one chooses the terms on which to live one’s own life. Employing *interpersonal* power involves an individual helping to enable or empower others. Since women tend to simultaneously experience “power-over” and exercise “power-to,” incorporating multiple dimensions is necessary in understanding constantly changing and increasingly complex power relations (Allen, 1999; Yoder & Kahn, 1992). This is especially the case when investigating the gendered interplay of women farmers and RFHs within the American agriculture system.

³⁷ Not all women exercise “power-to,” and not all men engage in “power-over.” Rather, these dimensions represent broad, gendered bodies of thought.

4.6 Results

4.6.1 Power and member farmers

“Power-over” rarely emerged independently amongst women farmers belonging to WMGC; however, following direct prompts, 73% of members did report experiencing at least some level of discrimination (as shown in Table 4.2). When they did acknowledge it, respondents tended to connect instances of “power-over” to male-dominated sectors of agriculture, or what several termed the “Good Old Boy Network” of commodity grain and cattle production. Recalling a past organizational meeting, one woman said, “The ranchers seemed to be men and the vegetable farmers seemed to be women, and the ranchers were all very dominating and were like, ‘Oh, what is the woman saying?’” (ID 5, woman).

Others linked “power-over” to biased perceptions regarding what a “real” farmer should look like: “This guy was like, ‘Oh, were you playing in the dirt today?’ I get that a lot! ... No, I’m not playing in the dirt. I’m working! When people see a man in public who is dirty ... and has oil on his jeans they don’t think a second thing about it” (ID 6, woman). Another remarked, “I don’t think women get taken seriously as farmers. I think there is just a bias out there; farming for a long time has been a male domain” (ID 11, woman). Apart from persistent stereotypes and exchanges with conventional agriculture, respondents also reported “power-over” with regards to banking and real estate: “When it’s just from the farm perspective it seems like it’s not happening, but when you get out there to the boys who are selling you land or giving you money ... I kind of worry about that” (ID 12, woman).

	Power-over	Power-to	
		Intrapersonal	Interpersonal
<i>WMGC members</i>			
n	8	13	12
%	73	100	92
<i>Non-members</i>			
n	1	6	5
%	17	100	83
Total	9	19	17
% Total	47	100	89

Table 4.2: Presence of power dimensions in women farmer interviews.

Still, of the 13 members interviewed, none cited “power-over” as reason for joining the RFH. In fact, 5 women denied experiencing “power-over” at all: “I’ve never thought about the men versus the women, and I guess that’s a good feeling ... I haven’t felt any differences” (ID 17, woman). Some specifically related the lack of discrimination to the large volume of women farmers in the region: “In this segment of agriculture I am in, which is a lot of females and a lot of very, very powerful females, I don’t feel treated differently at all” (ID 10, woman). Others emphasized the nature of small-scale, organic, and direct-to-market farming. “It is not something at all that crosses my mind, that I am in a field in which I shouldn’t be, [or] a field that’s traditionally not been full of women. I think that ... is definitely because of the type of agriculture I are doing” (ID 2, woman), observed one farmer. Even so, those reporting little to no “power-over” refrained from making light of gender inequities and maintained a community perspective: “It [gender discrimination] has become less of an issue, but I don’t want to say it’s not an issue

because I feel like that belittles what women have to go through, and I don't want to do that" (ID 4, woman).

The "power-to" dimension, in which power is realized as ability and autonomy, surfaced more frequently and readily in interviews than did "power-over." Whether relating to themselves or to others, "power-to" appeared in conversations with 100% of members, and represented a driving force in women's decisions to not only join the RFH but to also seek out agricultural livelihoods in the first place. "Power-to" is first seen in descriptions of women's success and in the respect they command from men and other women. For example: "It seems like the women are the moving force. On every bigger farm I can think of that's associated with [WMGC], I think of the woman that's in charge of it" (ID 5, woman). This man added, "I find that on the whole women farmers are way better than men ... more nurturing to their land. And I'm not saying this just for [WMGC], but in general it just seems that their farms are so much more productive and healthy" (ID 3, man).

Data likewise indicate that women extend individual achievements and the employment of "power-to" to leadership roles. Many respondents, for instance, reported serving on WMGC's board of directors. Those not on the board still mentioned a variety of ways they manage to actively participate in decision-making processes, either by voting or through the design and implementation of programs and partnerships: "There are women farmers on the Board and I am the ones making the decisions. The CSA is [comprised of] almost all women farmers and it's run by a female coordinator" (ID 11, woman). Another relayed, "I think women have a lot of power in [WMGC] and they are

totally willing to step up and take that leadership role and I really appreciate that” (ID 7, woman).

The establishment of WMGC is perhaps the most poignant example of women’s leadership.³⁸ “[She] had the vision and saw that it could be done. She had the energy and the ability to work with people and to get it together. And I’m not saying a man couldn’t do that, but ... there are just things women do better than men” (ID 16, man), said one male farmer while recalling the woman farmer (since deceased) who is partially credited with establishing WMGC. This ability to “get it together” is also reflected in others’ sentiments regarding the role women farmers play not only in the expansion of RFHs, but in the local food movement overall: “I don’t think there would be a local food movement without women, especially with regards to the food hub idea and...the sort of nurturing aspects of women and their propensity for cooperation and their propensity to see the bigger picture and stand against traditional capitalist models of competition and look to serving the greater population collectively... which is not to say there aren’t great men ... but I don’t feel like the movement would be very strong without women” (ID 13, woman), said one participant. Echoed by another, “I feel like I’m being a little bit sexist when I say this, but the women that I know are more organized and interested in creating organizations like food hubs ... I don’t think that is always true, but I certainly see women as larger–problem solvers” (ID 8, woman).

Narrowing the focus to intrapersonal power, or the power to live one’s life on one’s own terms, uncovers reasons why many of the women farmers interviewed were initially drawn to agriculture. A major component involved self–employment and

³⁸ I interviewed only one of the three founding women (the cooperative development specialist), although the other two are frequently mentioned in interviews as integral and inspirational.

achieving independence: “I would say the few most valuable things are working for myself and getting to spend most of my time outdoors working with nature and the seasons” (ID 11, woman). For another, “I love it because, for one, I get to eat really good food and I knew where it comes from. And ... I’d so much rather be outside on my land than having to work somewhere else” (ID 17, woman). And yet another: “It really makes me feel independent, like I can do anything” (ID 9, woman).

A second major incentive reflecting intrapersonal power was local, organic agriculture’s ability to cultivate livelihoods aligning with women farmers’ personal values and interests: “[Farming] makes you happy. It makes almost everybody happy at some level ... I love that it’s just so concrete and useful and necessary to our life here on Earth” (ID 12, woman). As for another, “I love the lifestyle of ... doing something that I believe in really strongly ... I get a lot of gratification from the results, both personally and within the community” (ID 8, woman). For others, farming coincided with their political views: “This for me is the tangible work of my belief system. I ... have a really big problem with the way our world is set up right now” (ID 6, woman). And for women with children, agriculture is seen as particularly suitable. According to this mother, “When I first started, [farming] was something I could do with my family. It was a family-oriented occupation; it wasn’t me leaving and someone else taking care of my kids” (ID 5, woman).

Interview data additionally suggests that intrapersonal power drives women farmers’ decisions to join a RFH like WMGC. For one, WMGC allows them to continue farming at the diversified, small scale they desire: “I don’t grow a big amount of anything and that is the problem [WMGC is] solving for all the little growers” (ID 12, woman).

But data indicates that WMGC also supports those wishing to expand their operations, such as this farmer: “[WMGC] really helped me grow as a farmer. Since I’ve grown as [WMGC] has grown, it’s allowed me to slowly get into the market and figure out what I’m doing” (ID 4, woman). For many, WMGC membership represents a conscious effort to free time otherwise spent marketing or transporting farm products or managing numerous customer accounts. And for women farmers located farthest from urban markets in Missoula, WMGC relieves pressure to relocate from rural communities. As told by one, “[WMGC] has made it possible for us to live here” (ID 11, woman).

Women farmers belonging to WMGC highlighted interpersonal power, in which individuals strive to enable or build capacity for others, by first mentoring new or young growers. Said this recently established farmer, “It has helped a lot around here that there are so many women farmers . . . If I were starting out somewhere that was more of a male dominated field, it would feel very different and we’d probably reach out a lot less and then maybe the advice that I got would be not as good or not as easily given” (ID 7, woman).

Interpersonal power additionally emerged in discussions of food provision: “I do enjoy providing what I know is top-quality produce to the local community” (ID 10, woman). And as far as making local food more accessible across the income spectrum: “What I are really trying not to do is sell produce to the wealthy; I want to expand our market so that anyone can afford it” (ID 2, woman). Women often connected personal aspirations to nourish their communities with the RFH, such as this one who said, “I see women being more interested in food hubs for food access reasons and the social justice side of farming . . . I think that women farmers and organic farmers and the cross-section

of the two are more interested in community change and social justice than your average male monoculturalist” (ID 7, woman).

In interviews, respondents told of attempts at community change outside of WMGC, including the establishment of school gardens and trying to raise awareness of healthy eating habits amongst their neighbors, but voiced frustration in cases where they felt unable to make a difference. For example, as to whether or not her produce only reaches affluent, urban consumers, one admitted, “I see everything that has been accomplished and I know how wonderful it is, but I also know how far I have to go ... in terms of reaching people that I haven’t reached and providing fresh food and food access” (ID 6, woman).

4.6.2 Power and non–member farmers

Similar to women belonging to WMGC, “power–over” failed to emerge as a dominant theme amongst non–member farmers. Only one of six (17%) non–members discussed “power–over” at length when she spoke of socialized inequities and limited levels of training for women in agriculture: “Beginning farmers, women farmers, whatever, we’re still in the same group and I think that’s interesting ... It seems outdated, there are so many of us now that I really aren’t at a disadvantage anymore, [but] I was raised and most of my female friends were raised to leave [machinery–oriented] type of work to dudes” (ID 18, woman). Non–members additionally never cited any form of “power–over” as motivation for potentially joining a RFH at some point in the future. Instead, they too were much more apt to speak of “power–to.”

All non–member women displayed intrapersonal power, while 83% invoked some form of interpersonal power. Non–members demonstrated intrapersonal power in much

the same ways as members, and often connected their choice to farm with an improved diet and work environment: “I love being outside and eating good food, and it saves a lot of money to grow it yourself. I could never afford to eat the way I do if I had to buy our food ... and it just feels like really good work. I need more farmers” (ID 14, woman). Much like members, non-member women also conveyed interpersonal power through high levels of interest in feeding and benefitting their local communities. “I think feeding your kids and your old and sick people is the most important thing that you can do” (ID 1, woman), said one. Expressed by another, “I can’t produce enough food to even supply Missoula, but I can maybe produce enough food for 1,000 families ... The only way I can make an impact is one bite at a time” (ID 15, woman).

4.7. “There would be no food in this town if it weren’t for women.”

Power in this paper is understood as a productive process used for transformation (Allen, 2004). Investigating the dynamics underlying the relationship between women farmers and RFHs reveals support for the idea that women farmers understand and employ power in a way that makes them a driving force in rural development and the restructuring of agriculture (Bock & Shortall, 2006; Trauger, 2010). Contrary to sources that focus on the historical and continued marginalization of women in agriculture, results indicate that women working with a RFH do not see themselves as victims in a male-dominated industry. They do acknowledge that certain inequities exist, but do not focus on them as debilitating forces or in motivating any decisions.

That respondents described only limited biases and downplayed any impacts of discrimination brings attention to local, organic agriculture and its ability to act as a vehicle for challenging facets of “power-over.” Such alternative agricultures are often

heralded as empowering spaces for women, yet it is important to once again highlight the fact that women farmers in this study, members and non-members alike, came to local, organic agriculture or joined the RFH for reasons of “power-to,” expressed as either interpersonal or intrapersonal power, or both. These women acknowledge their agency and ability to exercise it in a way that directly links their vision for personal or social change with their actions (Chiappe & Flora, 1998).

Although WMGC does benefit its individual members, woman or no, such as through increased market access, heightened social ties, food safety training, and transportation and distribution services, women farmers do not emerge as enabled or transformed by their participation in the RFH. Rather, as founders of WMGC, decision makers and voting members, program directors and mentors, and activists outside of the RFH’s boundaries, women in this case understand and employ power in such a way that they themselves surface as enabling and transforming in their lives and in their own food systems, economies, and communities broadly.

Incorporating “power-over” and “power-to,” and the complex, intertwined nature of these dimensions helps encapsulate the realities of not only the women belonging to WMGC, but also the non-member women farmers in the study. Both displayed intrapersonal as well as interpersonal forms of power, with even the act of not joining a RFH representing its own brand of “power-to.”³⁹ In terms of drawing a distinction between the two groups, I turn to an additional power dimension: “power-with.” In a feminist conceptualization of power, “power-with” is the capacity or power that stems

³⁹ When asked why they had not joined the RFH, non-members commonly admitted an unwillingness to accept lower returns in exchange for WMGC’s services. The desire to work independently and also the fact that they did not need a RFH to succeed were also frequently given as responses.

from networks or groups, and that drives achievements one could not realize acting alone (Allen 1999). In choosing to join WMGC, and using the RFH to aggregate transformative capacities and ultimately bolster the rural development outcomes of a RFH in a rural, high poverty setting, members display “power-with” in ways non-members do not. “We are all working together because I want to see [WMGC] succeed, and I want to see [WMGC] succeed because it is so good at getting food to places I can’t [on our own],” illustrated one member (ID 9, woman).

Given the ability to bring together an assortment of women (and men), blend their talents and resources and goals, and build a collective strength, a RFH has the ability to transform “power-to” into something much more (Townsend et al., 1999). When it comes to RFHs and rural development, the importance of this new model is not necessarily as a source of agency or as a catalyst for “power-to.” Rather, I suggest that the real value of RFHs lies in their ability to house and promote “power-with,” and thus achieve social, economic, and environmental change by extending agency beyond the individual. This finding implies a need to reframe discussions surrounding RFHs and their impacts, with new theorizations recognizing that although RFHs alone are not responsible for the positive community outcomes that are often attributed to them, by channeling “power-with” as an extension of “power-to,” they can in fact play pivotal roles in fostering rural well-being and facilitating meaningful change (Trauger, 2009).

Paper results highlight the importance of incorporating multiple power dimensions, particularly with regards to the understanding the role of women in agriculture and the causes and consequences of RFH development across the United States. Although women farmers cannot be placed into one universal category, the

national link between RFHs and women in agriculture has made space for a re-evaluation of gender, power, and the elements necessary for sustaining rural, agricultural communities. Thinking of power solely in terms of domination and resistance may oversell a narrative of victimization, mask women's achievements, and ultimately shadow important dynamics at play in the re-working and re-shaping of contemporary food systems. And while there is a need to counterbalance subordination rhetoric, stories that celebrate agency must also include existing power asymmetries if they are to paint a complete picture of women's lived experiences (Allen 1999).

By highlighting the efforts of women in agriculture that are often overlooked, especially in rural regions, (Alston, 2003), and by directly incorporating women's voices, perspectives, and experiences, this study helps mitigate the lack of gendered empirical investigations in rural and agricultural research (Allen & Sachs, 2007; McMahon, 2005; Pini, 2003). Beyond filling this gap, findings call for greater acknowledgement of women in all parts of the world and their roles in catalyzing and guiding transformative processes (Farnworth & Hutchings, 2009). Whether it is a case of women farmers in western Montana or pioneering businesswomen who help improve the quality of life in a declining Netherlands community (Markantoni & van Hoven, 2012), research and policy need to not only acknowledge and support women's contributions and actively address misinformed public perceptions, but also include greater numbers of women in currently male-dominated rural and agricultural development processes (Little & Jones, 2000; Shortall, 2006). Although women in this case did not report unfair treatment with regards to the RFH or other local programs and funding, and although other cases point a successful feminization of local development efforts (O'Toole & Macgarvey, 2003),

masculine perspectives and definitions of development often dominate rural initiatives and exclude women as participants (Shortall, 2008). Such bias sustains patriarchal gender relations (Little & Jones, 2000), which is particularly troubling when women may have the most to contribute of any group to issues of food, agriculture, and community (DeLind & Ferguson, 1999; Haney & Knowles, 1988; Krug, 2003).

4.7.1 Limitations

Findings from this paper are limited in that all but one included in the study are White, and all but one are educated beyond a high school level. Though such demographics mirror those of western Montana and local and organic agriculture overall, instances of power divulged in interviews will not represent all women in all places. Opportunities unfold unevenly, with class, race, and education influencing experiences and abilities, and results may be somewhat biased towards women who are more easily empowered than others or who are positioned to prioritize personal as well as community goals (Jarosz, 2011; Pilgeram & Amos, 2015). Some key informants interviewed are non-White and do represent minority perspectives; however, a full discussion of these perspectives is beyond the scope of this paper and its focus on which agents are most likely to bring about change in rural, high-poverty regions, and through what available means.

4.8. Conclusion

The rise and current decline in women farmers in the United States makes necessary an account of their experiences in a gender-biased industry, and calls for a timely investigation into the nationwide relationship between women in agriculture and newly emerging RFHs. In this paper, I highlight the ways in which women engage with a RFH

in a rural, low-income context. Results suggest that rather than a source of agency, empowerment, and inclusion, or a way to overcome “power-over”, women farmers understand RFHs as tools that facilitate the achievement of individual and community-level outcomes, and they act on this understanding by employing not only “power-to,” but also, and perhaps more importantly, “power-with.”

With their propensity to channel and aggregate “power-to” into “power-with,” RFHs can play an integral role in fostering development in rural communities, yet it is women farmers who surface as key to realizing the outcomes and goals often closely linked, and perhaps somewhat hastily credited, to RFHs. As the RFH literature grows, theorizations should encourage greater recognition of women’s actions in sustaining rural communities, and emphasize the need to include more women and feminine perspectives in rural development initiatives and governance structures. Instead of asking only how local, organic agriculture or AFNs like RFHs can empower women as disadvantaged actors, future studies should explore how the participation of women ultimately shapes – and may even heighten – the transformative potential of such initiatives. Based on these findings, coming works may help inform future federal investments and outreach, and may also address how intersections beyond gender, such as race, alters understandings of and steers outcomes relating to RFHs, power, and rural development.

Chapter 5: Conclusions

5.1 Summary of the study

The revitalization of agriculture and development of rural communities represent constant challenges in the United States – ones that higher-level governments commonly sideline in favor of urban issues, ones that lower-level governments are often unable to address, and ones that conventional development paradigms repeatedly fail to overcome. Research has found that the higher, more persistent levels of poverty found in rural regions stem, in part, from the industrialization and consolidation of agriculture. In response, the recent emergence of AFNs presumably presents opportunities to reverse declining social, economic, and environmental conditions. With a particular focus on RFHs as rapidly expanding yet largely untested rural revitalization tools, the overall purpose of this study was to empirically test rural development assumptions surrounding RFHs and contribute generalizable insights towards the abilities of AFNs to lessen poverty in Rural America.

The three research questions comprising the study – and the mixed methods approach the questions embody – were designed around gaps, contradictions, and limitations identified in the nascent RFH literature and with respect to the unproven state of policies and practices promoting RFHs. As a first attempt to test development and justice-based assumptions in a grounded, contextualized manner, Question 1 incorporated secondary data, logistic regression, and GIS to create a theoretically-informed index and reveal the stark contrasts between expectations for RFHs and the socioeconomic conditions into which RFHs are most likely to embed. Geographical disparities between where RFHs are most likely to locate and where potential for rural

development outcomes is greatest illustrate such gaps at national and regional scales, and reveal which development claims are most and least likely for RFHs to fulfill.

Question 2 brought the analysis down to the local scale and drawing from semi-structured interviews and participatory assessments documented outcomes following the establishment of a RFH in a rural, high-poverty setting. Incorporating the capabilities approach to interpret qualitative findings, Question 2 included multiple stakeholder groups and compared local results to national and regional trends to validate, refute, and expand upon the range of rural development claims espoused in the literature and in policy. Question 3 finally extended the depth and breadth of the qualitative case study and offered localized insights that further explain statistically significant indicators identified at broader scales. Emergent themes from interviews aligned with a feminist conceptualization of power to elucidate the disproportionate link observed between women farmers and RFHs. Interview data helped to expose the gendered causes and consequences of RFH-lead development in a rural, high-poverty region in a way that helps to build feminist bodies of research and enhance understandings of rural development processes in the wake of agricultural industrialization.

Altogether, this dissertation created opportunities to place rich, in-depth case descriptions into dialogue with generalized patterns such that developmental capacities, challenges, and opportunities could be better understood for RFHs specifically and for AFNs broadly. Research findings can be used to shape policies and practices dedicated to rural poverty reduction and family farm preservation and for improving upon alternative development strategies aiming to revive America's fading rural communities overall.

5.2 Key findings of the study

This dissertation found that, at the time of the study, RFHs in the United States generally do not locate where there is greatest need and potential for rural development and agricultural revitalization, though to spatially varying degrees. When a RFH does locate in a place with high rural development potential and need, outcomes appear primarily, though not always, positive and seem to help those involved regain much of what was lost to agricultural industrialization and socioeconomic destabilization. Women farmers are found to play an integral role in facilitating community and agricultural change processes for RFHs, yet persistent poverty ultimately constrains transformative capacities.

Broadening out from the specific case examined here, RFHs as a whole are likely unable to redress broad conditions of rural poverty and agricultural instability, especially with locational attributes more often than not belying such a possibility and with poverty limiting the uptake of such opportunities. Even so, RFHs in collaboration with local stakeholders, community partners, and public and private funders can successfully improve upon certain symptoms of such conditions. By strengthening social, economic, and political structures and increasing environmental stewardship in a rural, high poverty setting in ways that conventional strategies likely cannot, RFHs may over time help to weaken longstanding cycles of rural decline and potentially heighten individuals' abilities to benefit from rural development interventions into the future.

In the end, this dissertation finds that RFHs as alternative development tools do not by themselves represent comprehensive pathways for rural revitalization. This assertion may be because the effects of RFHs are substantially lagged given their

newness, and this also does not account for the long–distance distributional capacities of RFHs located outside of but still within range of underserved communities. Still, RFHs in rural places can and do contribute in preliminary albeit meaningful ways to “the long–term sustainability and wellbeing of the community” (Community Development Society, 2014). As such, when applied to appropriate contexts and with the understanding that more development–related outcomes may surface in relation to RFHs with time, this study confirms the overall appropriateness of RFHs and regional food systems broadly as one of USDA’s key pillars of rural revitalization and agricultural development.

5.2.1 Findings from Chapter 2

Chapter 2 of this dissertation, entitled “Potential in place: A geographical exploration of regional food hubs across space”, uses national and regional perspectives to broadly establish that RFHs do not locate in places with the highest need or the highest potential to maximize rural development. Through the lens of place, Chapter 2 ultimately finds that RFHs tend to associate with place–based conditions that run counter to rural development expectations, but in a regionally distinct and uneven fashion. With the expectation that RFHs rejuvenate rural economies and create jobs, overcome infrastructural and market constraints, improve health and nutrition, and revitalize agricultural activity, recent locational trends suggest that RFHs may be least likely to locate in the rural, economically depressed, malnourished, and isolated places that would benefit from such services the most. Further supporting this finding, RFHs most commonly locate in the Northeast, or the region with the lowest potential for development, despite the South

region showing the highest promise for RFHs to achieve the justice and development-oriented goals for which they are increasingly promoted, funded, and tasked.

The limits of this phase of the analysis prevent a direct investigation into any overlap between likelihood and need, or any tracking of RFH activities that may better illuminate outcomes on the ground. And, it is important to consider that the distributional capacities of RFHs may work to mitigate locational gaps between likelihood and need. Still, such locational disconnect casts doubt on RFH claims, such as employment creation in rural regions and heightened producer-consumer relations, that the transportation of local and regional food cannot accomplish alone. It is not necessarily surprising that a RFH would favor locations nearer to a larger, more concentrated, and more affluent customer base, or closer to the more extensive infrastructure and transportation networks found in metropolitan regions. What is surprising, though, is that rural development claims persist even with RFH counties across all regions and at multiple scales consistently showing the lowest rural development potential and need. Chapter 2 does point to several spatially distinct areas of promise where RFHs may be better situated to realize development missions and outcomes, such as increasing incomes for marginal producers in the Midwest. Overall though, and on the basis of spatial distributions alone, findings call into question the notion that RFHs surpass the transformative abilities of other AFNs (Beckie & Connelly, 2016). At broad scales, RFHs appear to replicate other AFNs' tendencies to prioritize urban, highly educated markets (Jarsoz, 2008), and to follow existing patterns of development as opposed to forging new ones (Ricketts-Hein et al., 2006).

Introducing to the RFH discourse concepts of space and place and embedding assumptions into localized conditions, Chapter 2's contributions include deconstructing national narratives built around RFHs and spatially engaging with increasingly apparent gaps between RFH theory and reality (Blay–Palmer et al., 2013; Fischer et al., 2015). In doing so, Chapter 2 exposes the spatially varied nature of RFHs' development potential and highlights where theorized outcomes for RFHs are the most and least plausible. All in all, this chapter argues against the perpetuation of universalized, untested assumptions that may incorrectly paint RFHs as a “one–size–fits–all” strategies and unproductively frame RFHs such that they never meet social, economic, or environmental expectations to the expected degree. In other words, promoting claims and assumptions in an untested and non-contextualized manner – for RFHs or for any development intervention – may result in undermining by overselling. In possibly setting RFHs up for failure, and potentially misallocating the scarce resources available for rural revitalization, proponents of such interventions may be unintentionally failing rural communities. In an effort to better align what is expected of RFHs with what is most likely to be realized, and to lessen the locational disconnect between likelihood and need, this chapter ultimately brings RFH discussions towards more place–based policies, theorizations, and implementations.

5.2.2 Findings from Chapter 3

With Chapter 2 showing that RFHs favor metropolitan, affluent, and well–connected places across the United States, or what could be termed the “business case,” Chapter 3, entitled “‘It’s broad but not deep’: Regional food hubs as rural development?” takes a

qualitative approach and turns to a RFH that instead favors a place with high rural development potential and is thus representative of the “social case.” Examining the outcomes associated with a RFH operating in a setting with high potential to achieve rural development outcomes (i.e. rural, high poverty, food insecure), Chapter 3 finds that RFHs contribute more, but also less, than initially thought. Drawing from extensive interview data collected from growers and consumers throughout the case study site, results corroborate many of the social, economic and environmental claims for RFHs. In particular, research findings lend support for producer–related expectations, including expanded market access, raised incomes, increased farm security, and the creation of jobs (Barham, 2012; Bloom & Hinrichs, 2011; Lev & Stevenson, 2011; Stevenson et al., 2011). Moreover, qualitative evidence confirms RFHs’ abilities to improve producer–consumer relations (LeBlanc et al., 2014), increase access to regionally sourced food, and improve consumer diets and health (Barham et al., 2012; Matson et al., 2014; Schmidt et al., 2011). Perhaps relating most of all to broad rural development and agricultural revitalization claims (Barham, 2012; Matson et al., 2014; USDA, 2014a), results further demonstrate that RFHs can indeed renew agricultural livelihoods, support new generations of small–scale, sustainable farmers, and in turn rebuild rural towns.

Showing that RFHs are able to match the broad spectrum of expectations set forth in the literature and in policy when locating in theoretically ideal places, Chapter 3 expands what is known about RFHs and rural development by incorporating the capabilities approach and introducing new, less tangible impacts to the discourse. Following Alkire (2002), findings illustrate how stakeholders value changes to elements previously underexplored for RFHs – such as those relating to agency and activism or to

fulfillment and inner peace – alongside more tangible and well-known dimensions of change like income. With expected outcomes combining with those the study introduced, results serve to confirm the validity of the USDA funding and promoting RFHs rural development and agricultural revitalization tools (USDA, 2014a).

Considering the growing support for and rapid proliferation of RFHs in addition to the levels of uncertainty that previously enveloped RFHs (Fischer et al., 2015; Matson & Thayer, 2013), Chapter 3 significantly contributes to the emerging RFH literature and policy by empirically evaluating existing rural development claims and then adding to the mix outcomes that likely would have been missed by a purely economic or quantitative approach. Beyond contributing less traditional and less quantifiable measures of change (Hicks et al., 2016), additional benefits of the qualitative approach in Chapter 3 can be seen in the identification of causal relationships and unanticipated as well as counterintuitive outcomes, for instance.

Benefits may also be observed with the chapter's ability to not only engage with RFH claims at sub-county scales for which there is not yet quantifiable data, but to do so in a multidimensional way. Chapter 3 shows that multiple dimensions should be considered in terms of tangible and intangible impacts of a RFH. In doing so, scholars and practitioners can expand what is and can be known about RFHs as well as move beyond the limitations of recent impact assessments that focus on singular, quantifiable aspects of RFH outcomes (Jablonski et al., 2015). More than that though, multiple dimensions should also be reflected in the stakeholder perspectives that research considers, with comprehensive evaluations seeking input from a diversity of participants and non-participants alike.

The multiple directions of impact a RFH can have in a rural, high poverty setting are similarly important to consider in future planning and evaluation efforts. Though increased attention has been paid in the RFH literature to challenges of including disadvantaged populations (Franklin et al., 2011; Koch & Hamm, 2015), discussions have up to now largely ignored failed or negative outcomes. Yet, negative outcomes and areas left unchanged are integral to assessing the full extent of development potential and to more deeply understand how, how much, and for whom RFHs bring about change. Showing that a RFH failed to serve the Native American population within the case study site despite the proximity of the Reservation, and detailing how a RFH struggled to reach low-income, food-insecure consumers, Chapter 3 ultimately exposed the limitations of a RFH's benefits even when locating in a rural, high-poverty setting and regardless of a mission centered around community development. Rural development outcomes for RFHs are similarly dampened with research findings highlighting the conflict and competition that can emerge within and around a RFH, such as with tensions threatening the viability of certain non-member farmers in the region.

When considering the full spectrum of positive, negative, and nonexistent impacts, this chapter produces a more accurate and realistic picture of a RFH operating in a rural, high poverty setting, or a region with high levels of rural development potential and need as defined in Chapter 2. As such, this chapter expands understandings of rural development benefits and disbenefits for AFNs broadly (Sonnino & Marsden, 2006), while also making the case that rural development potential and economic viability are not necessarily incompatible for RFHs as locational analyses at coarser scales might suggest. In sum, Chapter 3 concludes that while RFHs can offer significant opportunities

to mitigate much of what was lost in rural communities during agricultural industrialization, and while rural communities can in turn offer opportunities to RFHs themselves, such outcomes are likely to be complex on both sides and complicated further by intersections of race, income, and class.

5.2.3 Findings from Chapter 4

Chapter 4 of this dissertation, entitled “Women farmers, food hubs, and forces of change in rural and agricultural development,” sheds light on the disproportionate link identified but not investigated between RFHs and women farmers (Fischer et al., 2013).

Approaching this connection in a way that recognizes women farmers as both a historically disadvantaged group in agriculture and as demonstrated agents of community change, this chapter introduces to the RFH narrative and the AFN literature a feminist conceptualization of power and the corresponding concepts of power–over, power–to, and power–with.

Ultimately, Chapter 4 determines that RFHs advance individual levels of agency, but they are not a direct source of it in the way that scholars have portrayed other AFN types. Rather, women farmers emerge as a primary yet heretofore unacknowledged source of RFHs’ transformative capacity. This is not to say that women farmers are not a marginalized group in agriculture (Sachs, 1996; Trauger, 2001), or that they do not continue to face patriarchal constraints. Examining the dimension of power–over, results make clear that most women farmers did experience certain obstacles their male counterparts did not, including difficulties acquiring land and earning equal respect for their work. Yet, in determining that such difficulties did not motivate women farmers to participate

in a RFH, but rather that the dimension of power–to does, findings diverge from views that understand AFNs as sources of agency and empowerment for women and instead comport with those that depict farmwomen’s agency and activism as cause for participation (Allen & Sachs, 2007; Bock, 2004; Shortall, 2006). Indeed, power–to provided evidence for the reframing of this dynamic, wherein women farmers are not enabled by RFHs or mere beneficiaries, but are enablers themselves who seek to both broaden and deepen the benefits of local and regional food systems in their communities.

With results suggesting that women farmers come to RFHs as a function of power–to and not power–over, Chapter 4 shows that when it comes to RFHs and rural development, RFHs’ value for women farmers is not necessarily as a way to escape gendered inequalities, but as vehicle for collective action. In the context of power–with, RFHs’ abilities to scale–up local and regional food are not what lends them their transformative capacities. Rather, transformative capacities stem from abilities to channel and magnify women farmers’ power–to into meaningful change, with this dynamic representing a possible reason as to why women farmers have disproportionately embraced these emerging networks so quickly.

Putting all three dimensions of power together, the value of this chapter lies in establishing a clearer understanding of the drivers and outcomes underlying RFHs and rural development. While RFHs play an important role in facilitating development outcomes, findings show that women in agriculture – as a result of the ways they understand and employ power despite gendered limitations – continue to be key to not only food system regionalization, but to the revival of marginal communities and family farms. As another way in which the rural development capacities of RFHs rely on

surrounding conditions, RFHs' transformative potential is likely to contract and expand in line with the participation and power-related perspectives of this particular group. In this way, women farmers may present the means by which RFHs overcome developmental challenges of place and space discussed earlier in this dissertation and eventually fulfill the full set of claims advocated in policy and the nascent literature.

5.3 Implications of the study

5.3.1 Implications for theory

The implications of this study for theory are several. First, considering the nascent state of RFH scholarship, the study helps to address theoretical uncertainties and empirical gaps in RFH research by contributing primary, qualitative data from nearly 80 interviews. Interview data expands upon findings with regard to the weaknesses, strengths, and potential of RFHs as previously untested rural development pathways. Qualitative case study data also adds to the small albeit growing number of case studies focused on RFHs such that the particulars of time, scale, space, and place will continue to build towards a general consensus. And, though data are specific to RFHs, contributions from this study also work to fill data gaps for AFNs more broadly – especially relating to rural development capacities (Goodman, 2004; Sonnino & Marsden, 2006) – and answer calls for more attention to gendered relations in food and farming research (Farnworth & Hutchings, 2009; Allen & Sachs, 2007; McMahon, 2005). Prior to this study, RFH data and analyses that were not case-based were rare and limited to two national surveys (Fischer et al., 2013; Hardy et al., 2016). Indeed, until the release in January 2017 of the Local Food Marketing Practices Survey conducted by USDA's National Agricultural

Statistics Service, data for RFHs and AFNs were either nonexistent at sub–state levels or otherwise publicly inaccessible. While these surveys were foundational in better understanding RFH attributes and operations, the surveys did not do much in the way of increasing what was known about RFHs outcomes. The surveys did not reach beyond key informants and the surrounding conditions of place were not factored into evaluations. Moreover, except for economic impacts relating to job creation and sales volumes, little to nothing about actual social, environmental, or developmental impacts was explored in these national assessments.

Beyond providing empirical evidence from primary data, the study also improves upon data–related practices that may speak to the wider academic community. In particular, this study demonstrates the value of a participatory research approach, with stakeholders informing and guiding multiple phases of the project, including data collection, data analysis, validation of results, and the setting of overall project goals. More than being participatory in nature though, the data broadens representation of underserved groups in science. By actively recruiting Native Americans, low–income and food–insecure individuals, and women farmers into the study, the study increases the accuracy and applicability of research outputs, and accounts for perspectives that are often hidden from or on the outskirts of policy and research. For example, conducting interviews with unaffiliated consumers at a local food bank, the study was able to effectively capture social, economic, and environmental conversion factors that prevent the uptake of RFHs as development opportunities. The study also helped to explain the lack of Native American involvement in the RFH, with interviews at community gatherings and discussions with key informants revealing the invisible but firm social and

economic boundaries of the Reservation. In the end, actively involving local stakeholders better informed RFHs operating in rural, high poverty settings and raised the potential of the research to revitalize marginal, rural regions.

Additionally, implications for theory are further seen in the replicable, mixed methodology the study offers. The study's methodology contributes to a more robust, comprehensive, and multi-scalar impact assessment of RFHs' rural development capacities, with lessons learned of value to future impact evaluations both within and outside the realm of RFHs and AFNs. By blending qualitative and quantitative data and methods in a sequential way, the mixed methodology recognizes that no one method or data type is likely to provide a full picture of a process as it unfolds. Unlike the scale for the second, qualitative phase of the dissertation, for example, the scale of phase one cannot provide any information as to who is benefitting from a RFH, or how a RFH's location translates to outcomes across place. The benefits of working across a variety of scales are clear for analyses seeking to either understand the extent to which trends replicate across scale, place, and space or to explain patterns or uncover outcomes that may otherwise escape detection. Bridging a top-down approach to research with one that is guided from the bottom-up, this study demonstrates the role of qualitative data collected at the local scale in validating and explaining quantitative findings observed nationally and regionally such that causality and directionality of such trends may be better understood. More than that though, a mixed methods approach like the one taken here opens up a host of other scientific possibilities, especially for participation of local stakeholders in research. Researchers can incorporate feedback from community

members to, for instance, develop more appropriate indicators or statistical proxies to be used in locational analyses or impact assessments conducted at coarser resolutions.

Next, the study's introduction of innovative theoretical and conceptual frameworks to the RFH discourse represents improvements to theory. Incorporating the capabilities approach and feminist conceptualizations of power, the study expands what is known and what can be known about RFHs and rural development. Prior to this study, issues of political participation, agency and activism, and gendered engagement had been underexplored in relation to RFHs, with discussions in the literature often favoring more tangible outcomes such as quantity of jobs created, amount of income earned, or number of consumers served. With the capabilities approach specifically – a framework generally applied in developing world contexts – this study moves the impact assessment beyond the economic gains prioritized by more conventional development approaches and encompasses changes in opportunities and qualities of life for participants and non-participants alike. As a result, the study uncovers a wider, more nuanced spectrum of both positive and negative impacts, identifies underlying barriers that impede the uptake of development opportunities like RFHs, and provides new metrics by which to evaluate the rural development capacities of RFHs operating in similar settings around the country. In this way, findings contribute to a growing call in the sustainable development literatures to increase representation of less tangible indicators of change in research and policy. Expanding what can be scientifically measured and monitored beyond what is only easily quantifiable, and in turn broadening what can be prioritized and discussed, research can not only better capture the multidimensional nature of human wellbeing, but

also improve public understanding and guide political activities towards the most promising sustainable development trajectories (Hicks et al., 2016).

Beyond strengthening abilities to account for non-monetary dimensions of development that are difficult to measure or quantify, alternative frameworks enable the study to better examine how RFHs factor into the lived experiences of underrepresented groups within agriculture, such as women farmers. Adopting a critical feminist approach that only focused on gendered inequities may have masked significant elements of women's empowerment and their associated desires for personal and community change. Only accounting for power asymmetries instead of incorporating alternative understandings of power, the study may have ultimately misrepresented women farmers' motivations to participate in a RFH and falsely attributed the corresponding outcomes of such engagements. Instead, using a feminist conceptualization of power, the study was able to contribute to another research area that remains undertheorized and provide a more complex depiction of not only how RFHs impact communities on the ground, but how women farmers engage in local and regional food and agriculture initiatives broadly. From a thorough examination of the gendered experiences of RFHs in rural communities, findings revealed that women farmers, despite experiencing gendered obstacles, actively work through RFHs to accelerate development and change, championing many of a RFH's community outreach efforts and indeed establishing RFHs in the first place.

Finally, and combining the above contributions relating to data, methodology, and conceptual framing, the study advances food systems research through its empirical grounding and testing of the claims promulgated by RFH and AFN proponents and critics. The lack of longitudinal, in-depth examinations into RFHs and rural development

had up to now widened gaps between expectations and realities and resulted in contradictions and confusion in the literature (Fischer et al., 2015; Matson and Thayer, 2013). The limited number of place-based, contextualized assessments further slowed theorizations of RFHs' development potential and outcomes. In testing RFH claims, this study stresses the importance of place and argues that unique environments shape outcomes and should shape proponents' expectations. For instance, regional regressions revealed that RFHs in the Midwest likely have greater potential than those in the South to bring about economic gains, with the former associating with lower-income farmers in a way that is expected and the latter disassociating with areas of high unemployment in an unanticipated way. Comprehensively investigating and embedding into place the full spectrum of assumptions made for RFHs nationally and regionally, and then again in a rural, high-poverty setting specifically, this study helps clarify uncertainties and provides an alternative perspective of RFHs that is more realistic, more expansive, and more context- and scale-dependent than past portrayals.

5.3.2 Implications for practice

The study improves upon current practices relating to RFHs and AFNs in two key ways. First, indicating particular counties where RFHs would best meet the justice and development-oriented outcomes espoused in policy and in the literature – and potentially expand beyond such claims in the ways this research newly uncovered – this study contributes geographical roadmaps for practitioners considering national and regional trends and those working at the county level. Using these maps, practitioners interested in maximizing the rural development outcomes of local and regional food initiatives are

able to compare place-based likelihood and development potential before establishing a new RFH or AFN site or when evaluating an existing one. Maps can also assist in expansionary efforts for existing RFHs and AFNs that seek ways to better meet the social, economic, and environmental goals for which they are tasked and funded.

Second, identifying aspects of rural development in which RFHs have the most as well as the least potential to effect change – at national, regional, and local scales – the study offers a detailed, data-driven, and contextualized account of what RFHs are generally doing well and where individual and community outcomes are most likely to fall behind. With improved understandings of weaknesses to overcome and successes to pursue, community development and food system practitioners in a variety of settings can potentially benefit by refining their respective operations and retraining staff accordingly. For instance, in learning about the limits to participation for low-income, food-insecure consumers living in the case study site, practitioners in other rural, high poverty areas might consider establishing or reviving community partnerships or working with local government agencies to lower barriers to entry and better meet such needs while maintaining financial viability. Alternatively, considering that RFHs generally locate in metropolitan counties with interstate highway access, practitioners could re-design pick-up and delivery routes so that more isolated producers and consumers are better served.

5.3.3 Implications for policy

Insights from this study may improve upon policies and actions relating to RFHs and to development interventions and poverty alleviation more broadly. Closest to the qualitative case study site, results can contribute to the work of the Lake County

Community Development Corporation (LCCDC). As part of Montana's Certified Regional Development Corporation Program, LCCDC helped establish WMGC and continues to support regional and tribally inclusive approaches to economic development. In highlighting the strengths, weaknesses, and overall development potential of WMGC, study results can inform the way LCCDC designs and evaluates regional strategies into the future and help LCCDC prioritize the needs of the Confederated Tribes of the Salish and Kootenai in the region. Branching out though, study findings could further bolster the goals and efforts of nationally-focused organizations, including the Women, Food, and Agriculture Network's advocacy work for women farmers, the Equitable Food Initiative's focus on improving food access and nutrition assistance, and the Rural Coalition's mission supporting the enhancement of rural and agricultural opportunities.

At the federal level, study results directly speak to the promise and validity of food systems regionalization, and particularly to USDA's four pillars of rural development and agricultural revitalization. In providing empirical support for such platforms, this study lends credence to subsequent funding requests and assures lawmakers of the value of such a federal approach, so long as more attention is paid to the conditions of place. Findings can also inform best practices and spending priorities for other federal efforts as well, including the Obama Administration's \$400 million Healthy Food Financing Initiative. Perhaps most timely, though, results have the potential to meaningfully and empirically guide five years of agricultural, rural development, and nutrition-based policies in the form of the 2018 Farm Bill.

The wellbeing of Rural America and the viability of agricultural livelihoods are deeply intertwined with the Farm Bill, with this piece of legislation increasing wrapped in

uncertainty (Weisman & Nixon, 2013). Speaking to the use of local and regional food initiatives as rural and agricultural revitalization tools while also demonstrating the benefits of a multidimensional approach towards poverty and development, this study can shed light on legislative budgets, programmatic priorities, and the allocation of resources. Knowing where exactly a RFH could best meet certain rural development goals, for instance, and then where certain goals are least likely, study results can guide the most efficient use of funds. Furthermore, funded interventions could be made more effective in terms of development with the knowledge that women farmers drive much of a RFH's community change efforts and impacts.

5.4 Recommendations and future work

The insights gained from this study may extend beyond RFHs to local and regional food systems and to alternative approaches to development more broadly. Conclusions may also generally apply beyond national borders to rural, high-poverty settings in other highly industrialized nations around the world. Recommendations for improvements upon theory, policy, and practice and for future work discussed below are similarly generalizable, and point to several areas in which alternative approaches to development may increase capacities for transformation and improve likelihoods of success.

First, it is important that policies, practices, and theorizations of development adjust for place, space, and scale, and accordingly refine any universalized conceptualizations or expectations made without regard for context. Contextual approaches that consider place-specific factors and account for differing institutional, environmental, societal, historical, economic, and political strengths and needs are necessary to successfully identify and target underlying causes of poverty. For instance,

in the case of WMGC, policies and practices could better account for place-based conditions by understanding the culturally and historically specific needs of tribal members living on the Flathead Indian Reservation instead of assuming that the acceptance of SNAP and WIC benefits would satisfactorily integrate disadvantaged groups into RFH-lead development processes. Or as another example, state and county officials could have worked with WMGC to keep the RFH's headquarters in the rural regions surrounding Missoula rather than the RFH moving its facilities, jobs, and tax dollars to the city. Prioritizing the rural, high poverty places that could stand to benefit the most, local and regional policymakers could have offered location-specific grants to the RFH, or worked with the RFH to develop a partially subsidized rural consumer base, transform existing, underused facilities into adequate and affordable office space and warehousing, or actively coordinate regional coalitions of advocacy and nonprofit groups so that impacts are collectively amplified while burdens of cost, labor, and time are more widely spread.

“One-size-fits-all” policies that do not account for spatially varied conditions or adequately understand and account for the needs of place may severely limit rural development potential (Ward & Brown, 2009), or perpetuate gaps between what is expected and what is realized for a given strategy. Without understanding and planning for the conditions into which interventions are to unfold – and how such conditions may impede or further benefits of such an intervention – alternative approaches to development will likely not achieve the degree of change that is desired and which may otherwise be possible. As such, future work should continue to conduct in-depth explorations of strategies like RFHs in increasingly diverse contexts – considering

different settings, different populations, different nations – to further expand understandings of how place and space influence processes and outcomes for rural development, and how decision makers should adjust accordingly.

Second, to best determine how, how much, for whom, and under what circumstances development strategies produce change, scholars, policymakers, and practitioners should more regularly acknowledge and prioritize less tangible though equally valuable indicators of change. Through such multidimensional lenses, a wider range of areas needing improvement becomes clear, as does a broadened scope of positive effects and future potentials. Indeed, ignoring or de-valuing less easily quantifiable impacts could distort both the types of outcomes that are possible for a given development initiative and misrepresent the extents of those impacts for stakeholder groups. This is an especially appropriate course of action considering that poverty is much more than a lack of financial resources, and wealth creation much more than financial gain (Ratner & Markley, 2014). Doing so, future work will be better able to continue to develop theories, policies, and practices that maximize capacities of local and regional food systems and alternative development strategies broadly to create change and ameliorate rural poverty and uneven development.

Third, decision makers, practitioners, and scholars interested in advancing rural and agricultural revitalization should actively seek out and support women farmers in their work, or alternatively pay special attention to initiatives in which women farmers disproportionately participate. Allocating resources to such projects or enacting programs and policies that target women and the gendered challenges women farmers face may accelerate rural development outcomes and continue to improve the viability of family

farming. More than that though, interested groups should work to ensure that more women are supported as decision and policymakers given that women are currently underrepresented in such matters despite their crucial roles and demonstrated abilities.

Fourth, development actors should focus on incorporating marginal populations into the design and establishment of interventions from the beginning. Involving minority groups in the formulation of goals and in the evaluation of logistics – as opposed to adding such groups into mission statements as an afterthought or as a guarantee – is integral for strategies aiming to serve low-income individuals on food assistance or those living in remote, underserved regions, and may be especially imperative for strategies attempting to engage with tribal or immigrant communities.

Fifth and finally, development strategies should be empirically tested and validated prior to being funded or promoted by public and private agencies. Such strategies should also continue to be tested in a variety of different settings so that individual case studies can continuously build towards general understandings. Moreover, policies and practices should be specifically assessed and promoted in relation to impacts on the fundamental causes of rural and agricultural declines. Doing so ensures that desired outcomes are actually attainable in the way that is promoted and expected and in a manner that maintains public confidence in such interventions. In addition, this approach also helps alternative approaches better tackle vulnerabilities and capture potentials on the ground. In this way, theory, policy, and practice may continue to identify elements missing from development narratives and determine which parts of the story are best removed or improved.

Appendix A: Full resolution images from Chapter 2

From Chapter 2, full resolution images of the maps visualizing the spatial distribution of theoretical index scores and predicted probabilities at the county level are listed in order below.

Figure A.1 Full resolution image of Figure 2.1 presented in Chapter 2

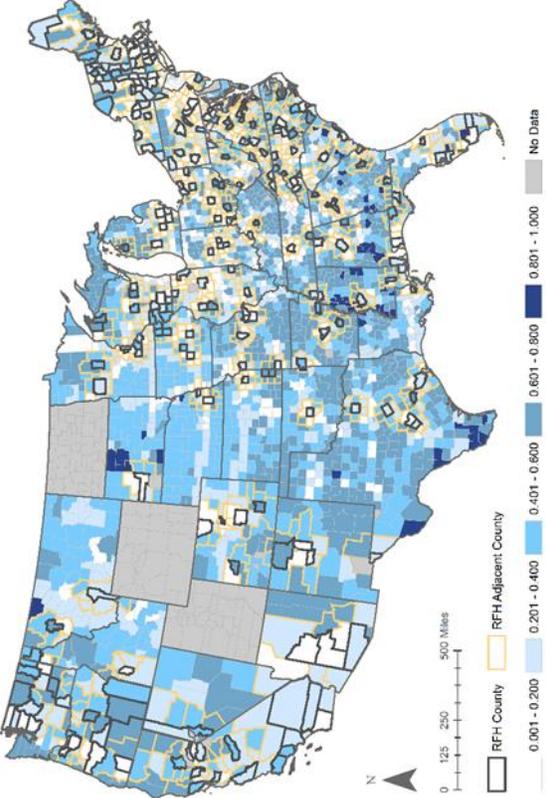
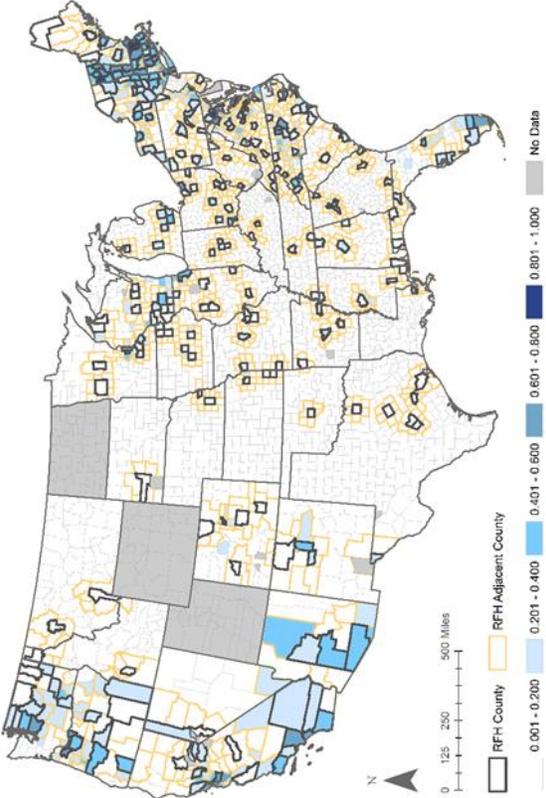


Figure A.2 Full resolution image of Figure 2.2 presented in Chapter 2

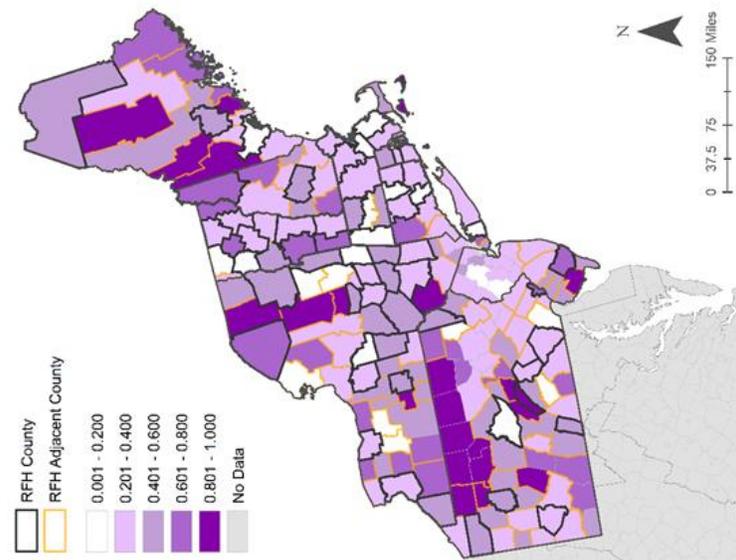
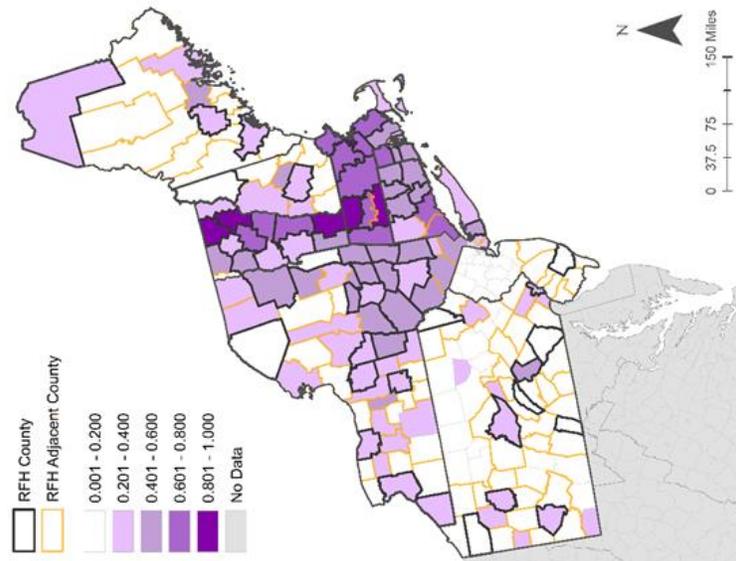


Figure A.3 Full resolution image of Figure 2.3 presented in Chapter 2

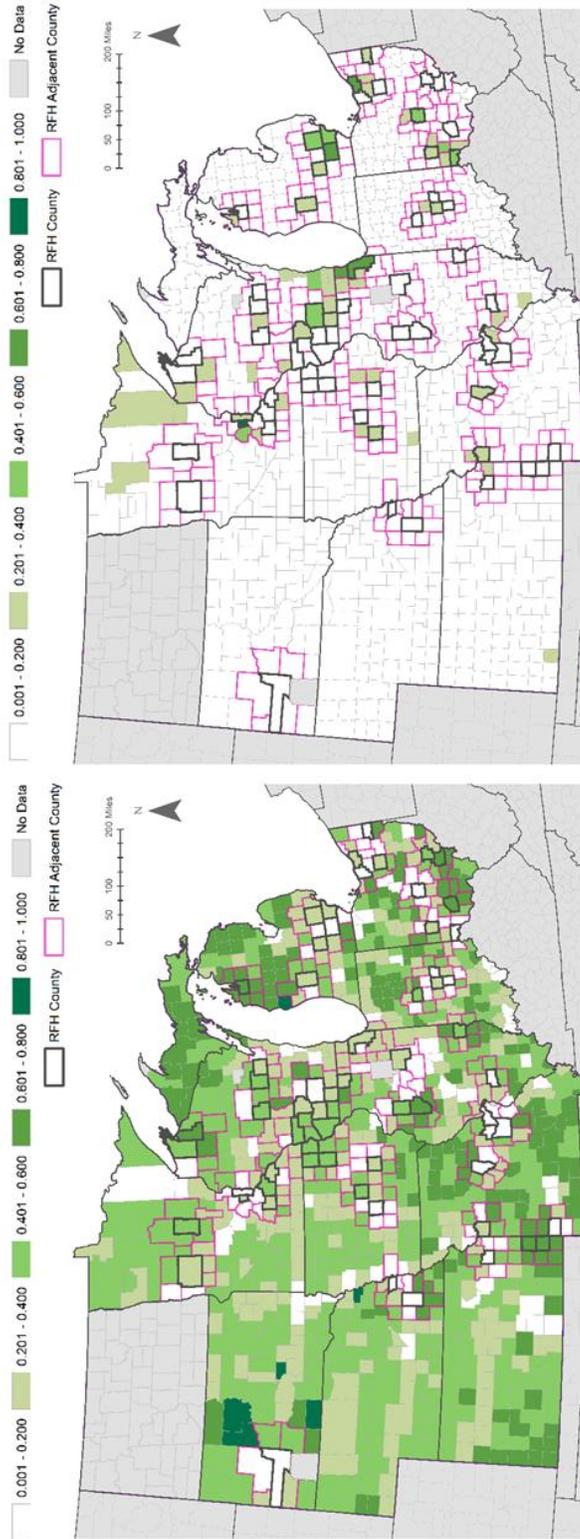


Figure A.4 Full resolution image of Figure 2.4 presented in Chapter 2

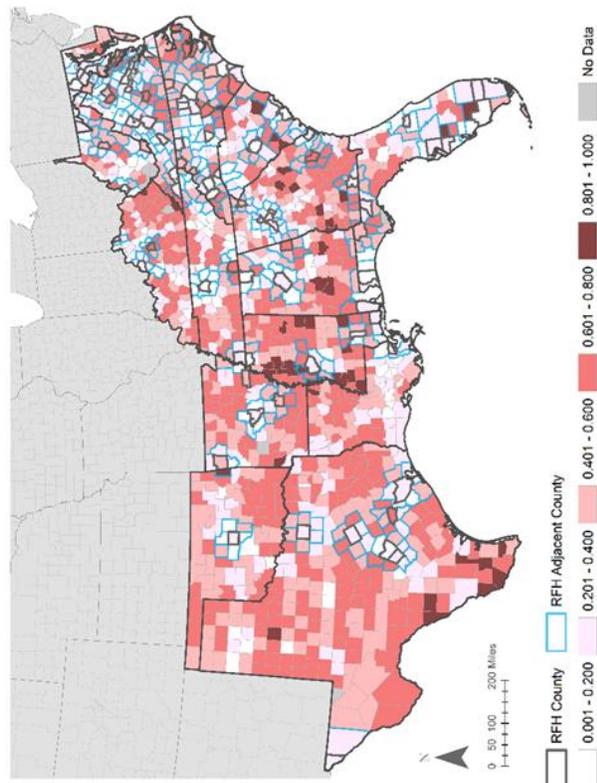
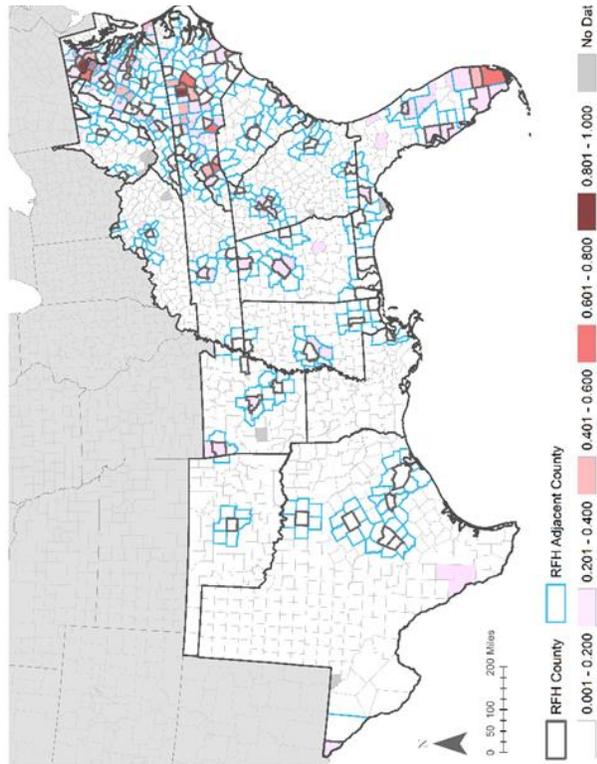
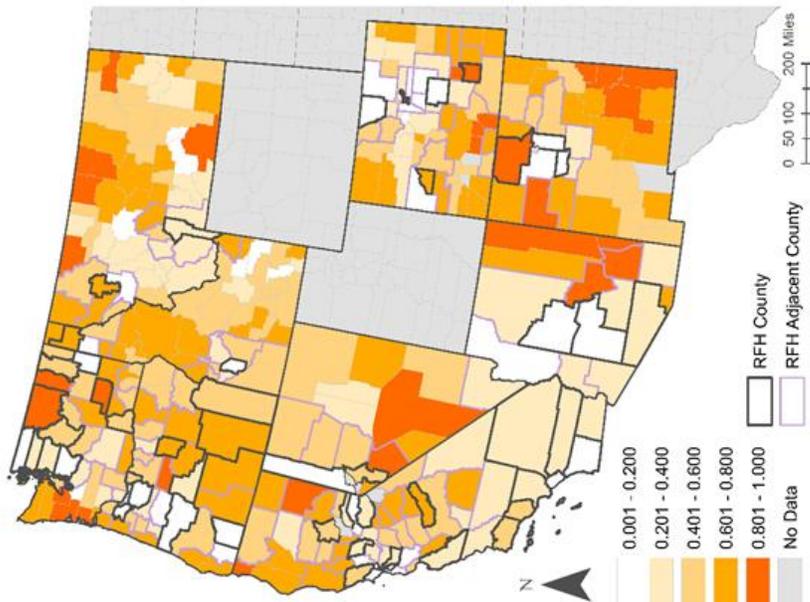
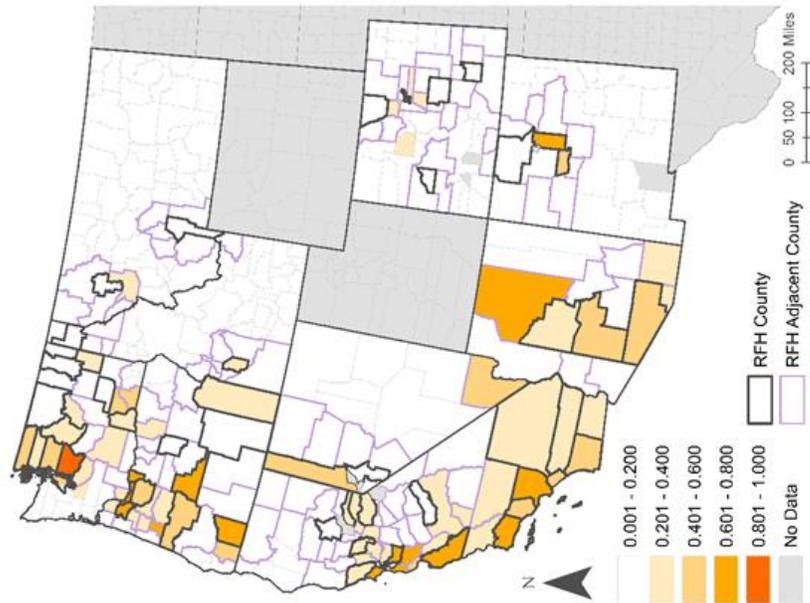


Figure A.5 Full resolution image of Figure 2.5 presented in Chapter 2



Appendix B: Interview protocols

I used two interview protocols throughout the data collection processes described in Chapters 3 and 4. The first protocol was used with growers – WMGC members and non-members – interviewed throughout the case study site in the spring of 2014. The second was then used with both CSA and non-CSA consumers during the summer of 2015. Both are reproduced below.

Alternative Food Networks as Rural Development Research Project

Nicole Motzer, Department of Geographical Sciences, University of Maryland

Interview Protocol – Growers

MODULE 1: Background

M1Q1.

Nicole:

“What can you tell me about yourself and/or your household?”

- “For how long have you lived in the region?”
- “Membership in associations?”

M1Q2.

Nicole:

“Could you tell me about your farm?”

- “Size?”
- “Mix of crops or livestock?”
- “Length of time in operation?”
- “Own or rent?”
- “Employees or volunteers?”

M1Q3.

Nicole:

“Is agriculture the main source of income for your household?”

- “If not, why?”
 - “What is the main source of income then?”
 - “Type of off-farm employment?”

M1Q4.

Nicole:

“What led you to farming/ranching?”

- “Are you the principle operator?”
 - “If not, who in your household is?”

M1Q5.

Nicole:

“In your opinion, what is the most positive thing about being a farmer? Why do you do it?”

M1Q6.

Nicole:

“On the flip side, what would you say is the biggest challenge you face as a farmer?”

MODULE 2A: Western Montana Growers Cooperative (Member)

M2AQ1.

Nicole:

“Could you tell me how you came to be involved with WMGC?”

- “How did you first hear about them?”
- “What kind of transition, if any, did you need to make in your operation to participate?”

M2AQ2.

Nicole:

“For how long have you been a member of WMGC?”

M2AQ3.

Nicole:

“What market channels do you sell through besides WMGC?”

- “How does your experience with WMGC compare to more conventional supply chains?”
 - “Is one more viable than the other for you?”

M2AQ4.

Nicole:

“What has WMGC done for you?”

M2AQ5.

Nicole:

“How has being a member of WMGC influenced the environmental impact of your agricultural operation, if at all?”

- “Have your farming methods changed since joining? Please elaborate.”

M2AQ6.

Nicole:

“Talk about any changes in the economic viability of your operation since you began working with WMGC.”

- “Have you experienced changes in market access?”
- “Overall sales?”
- “Profitability?”

M2AQ7.

Nicole:

“Could you describe any of WMGC’s educational or outreach components that you have personally benefitted from?”

- “What sort of knowledge or skills have you gained as a result of working with WMGC?”

M2AQ8.

Nicole:

“What do you value the most about working with WMGC?”

- “Are they easy to work with?”
- “Are they efficient?”
- “Are they supportive?”

M2AQ9.

Nicole:

“How would you say WMGC has changed since it was first established?”

- “Has your personal experience with WMGC also/also not changed?”

M2AQ10.

Nicole:

“What type of farmer do you think is most likely to participate in an organization like WMGC? Why is that?”

- “What might deter certain farmers from joining a food hub like WMGC?”

M2AQ11.

Nicole:

“How do you feel about WMGC’s decision to relocate to Missoula?”

- “Do you view it as a positive or negative development? Why?”

M2AQ12.

Nicole:

“Has anything changed for you as a result of WMGC moving to Missoula?”

M2AQ13.

Nicole:

“What could make your experience with WMGC better?”

- “So you wouldn’t do anything differently given the chance?”

MODULE 2B: Western Montana Growers Cooperative (Non-member)

M2BQ1.

Nicole:

“What market channels do you currently sell use to sell your agricultural products?”

- “Are they sufficient?”
- “How did you come to choose these markets?”

M2BQ2.

Nicole:

“Are you familiar with WMGC or food hubs in general?”

- “If yes, why have you not joined?”
- “If no, would you like me to explain more before I continue?”

M2BQ3.

Nicole:

“How do you suppose your agricultural operation would change if you were to join WMGC?”

M2BQ4.

Nicole:

“What factors would influence your decision to become a member of an organization like WMGC?”

M2BQ5.

Nicole:

“What type of person or farmer do you think is most likely to join an organization like WMGC? Why?”

- “What might deter certain farmers such as yourself from joining a food hub like WMGC?”

M2BQ6.

Nicole:

“Even though you are not a member of WMGC, do you think you benefit from having WMGC located nearby? Why or why not?”

- “What sort of benefits?”

M2BQ7.

Nicole:

“As a non-member, what sort of disadvantages does WMGC’s proximity present for you?”

- “Could you prove an example?”

M2BQ8.

Nicole:

“Do you see yourself farming into the future?”

MODULE 3: Gender and Agriculture

M3Q1.

Nicole:

“How would you compare male and female farm operators in your region? Is there a difference between the two?”

- “How do they differ?”
 - “Involvement in associations?”
 - “Scale of operations?”
- “What are some similarities?”

M3Q2.**Nicole:**

“In the US, the number of woman–operated farms has more than doubled since the 1980s. Could you talk about what you think is behind this trend?”

- “Have you observed this trend locally?”

M3Q3.**Nicole:**

“Despite the recent increase in women operators, they are still considered to be an underserved group in agriculture in terms of access to credit, land, etc. What do you say to that?”

- “What might some other challenges be that are specific to female operators in your area?”
- “Are there any barriers faced by men in agriculture and not women?”

M3Q4.**Nicole:**

“Past studies have found that a person’s gender can be directly tied to the type of agriculture that they practice. Talk about how, if at all, this applies to you and your operation.”

- “What influenced your decision to grow the crops/raise the livestock that you do?”

M3Q5.**Nicole:**

“What are some of the ways you think that WMGC has particularly impacted female farmers in your area?”

- “Are the any impacts unique to male farmers?”

M3Q6.**Nicole:**

“To reverse the previous question, in what ways have independent female farmers impacted WMGC?”

- “Did they contribute to its initial establishment?”
- “Significant level of involvement?”

M3Q7.**Nicole:**

“With regards to WMGC, describe the level of equality that currently exists between male and female member–growers.”

- “Are resources distributed fairly?”
- “Are challenges or opportunities the same for both?”
- “Would you say men and women offer WMGC different things?”
 - “Please explain.”

MODULE 4: AFNs as Community Development Tools

M4Q1.

“To begin, give me a sense of what your community looks like here in western Montana.”

- “How do you define your community?”
- “What are some of the things you enjoy about your community?”
- “What are the key issues that people face?”

M4Q2.

“What sorts of changes would you and your neighbors like to see?”

- “Employment opportunities?”
- “Education?”

M4Q3.

“Talk about any improvements that have occurred in your community in recent years.”

- “Social?”
- “Economic?”
- “Environmental?”

M4Q4.

“What about any negative changes you have noticed?”

- “Social?”
- “Economic?”
- “Environmental?”

M4Q5.

“How might some of those positive or negative changes be connected to the establishment of WMGC over a decade ago?”

M4Q6.

“What group of people in your community do you think has been affected the most by WMGC?”

- “Producers? Consumers? Men? Women?”
- “Is there a group that you think has not been impacted at all? Why?”

M4Q7.

“Can you list any unexpected impacts or changes brought about by WMGC in your community?”

M4Q8.

“What consumer group do you think WMGC should be serving in order to have, in your opinion, the most desirable community outcomes?”

- “Are these consumers different than or the same as those that are being served now?”

M4Q9.

“Finally, given everything that I have discussed up to this point, do you believe it’s possible for regional food hubs like WMGC to bring about positive developments in rural communities?”

- “Could you give an example to support that opinion?”
- “Is development potential context specific?”
- “Is this the kind of thing your community needs? Or should government agencies be focusing their attention elsewhere?”

Alternative Food Networks as Rural Development Research Project

Nicole Motzer, Department of Geographical Sciences, University of Maryland

Interview Protocol – Consumers

MODULE 1: Background

M1Q1.

“What can you tell me about yourself and/or your household?”

- “For how long have you lived in the region?”
- “Hobbies?”
- “Occupation?”
- “Membership in associations?”

M1Q2.

“On approximately how many of the last seven days did you prepare a meal for yourself or for others at home?”

- “What are you including in your definition of ‘preparing’ a meal? Stove top? Microwave?”

M1Q3.

“Do you live within 10 miles of a grocery store or supermarket?”

M1Q4.

“Please describe the options that currently exist for you in terms of purchasing/accessing food.”

- “Grocery stores/supermarkets?”
- “Corner stores/gas stations?”
- “Big box stores?”
- “Restaurants?”
- “Gardens?”
- “Local markets?”

M1Q5.

“Which of the options you just mentioned provides the majority of the food consumed by you and/or your household?”

M1Q6.

“What mode of transportation do you normally use in order to purchase/access food from the places you listed?”

M1Q7.

“In some rural regions of the United States, it can be very common for households or whole communities to have trouble purchasing or accessing enough food. What would you say is the biggest challenge you face related to food, particularly as someone living in a rural, lower-income region? Or do you face any challenges at all?”

- “Price?”
- “Selection?”
- “Distance?”
- “Quality?”

M1Q8.

“In your opinion, do certain social or economic groups face greater difficulties than others do when trying to access food?”

- “Minority households?”
- “Female-headed households?”
- “Why do you think that is the case?”

M1Q9.

“How important is purchasing and eating fresh food to you?”

- “Why is that?”
- “How do you define ‘fresh’ food?”

M1Q10.

“How important is purchasing and eating healthy food to you?”

- “Why is that?”
- “How do you define ‘healthy’ food?”

M1Q11.

“How important is purchasing and eating local food to you?”

- “Why is that?”
- “What do you consider to be ‘local’ food?”

M1Q12.

“And how important is purchasing and eating organic food to you?”

- “Why is that?”

M1Q13.

“Have you attended a farmers market in the last 30 days?”

- “If not, have you ever attended a farmers market?”

“If yes, how many times?”

MODULE 2A: Western Montana Growers Cooperative (CSA Member)

M2AQ1.

“Could you tell me how you came to be involved with WMGC?”

M2AQ2.

“For how long have you been a member of WMGC’s Community Supported Agriculture program?”

M2AQ3.

“How has becoming a member of WMGC impacted your ability to access what you consider to be fresh/healthy/local food?”

- “What makes you say that?”

M2AQ4.

“Since becoming a member of WMGC, how has the consumption of what you consider to be fresh/healthy/food changed for you and/or your household? Or has it changed?”

M2AQ5.

“Could you describe any of WMGC’s educational or outreach components that you have personally benefitted from?”

M2AQ6.

“What type of person do you think is most likely to join CSA programs?”

- “Why?”
- “What might deter certain people from becoming involved with them?”

M2AQ7.

“How do you feel about WMGC’s decision to relocate to a more urban context?”

- “Do you view it as a positive or negative development? Why?”

M2AQ8.

“Has anything changed for you as a result of WMGC moving to Missoula?”

M2AQ9.

“What do you value the most about being a member of WMGC’s CSA?”

- “Why is that the case?”

M2AQ10.

“As a member of the CSA, what could make your experience with WMGC better?”

- “Is there anything you dislike?”
- “So you wouldn’t do anything differently given the chance?”

MODULE 2B: Western Montana Growers Cooperative (Non-member)

M2BQ1.

“Are you familiar with the concept of regional food hubs and/or Community Supported Agriculture programs?”

- “If not, would you like me to explain more before I continue?”

M2BQ2.

“Would you ever consider becoming a member of a regional food hub like WMGC?”

- “Is anyone you know a member of such an organization?”
- “If not, why?”
- “If so, what factors would influence your decision?”
 - “Price?”
 - “Proximity?”
 - “Quality?”

M2BQ3.

“What type of person do you think is most likely to join something like a CSA program?”

- “Why?”
- “What do you think might deter certain people from becoming involved with them?”

M2BQ4.

“Even though you are not a member of WMGC, do you think you still might benefit from having an organization like WMGC located nearby?”

- “Why or why not?”
- “What sort of benefits?”

M2BQ5.

“As a non-member, what sort of disadvantages, if any, does WMGC’s proximity present for you?”

- “Price?”
- “Competition?”
- “Cultural shift?”

M2BQ6.

“Overall, how do you view the rise in the number of local agriculture organizations, like WMGC, in Montana and across the nation?”

- “Positive or negative development?”
- “No opinion?”

MODULE 3: AFNs as Community Development Tools

M3Q1.

“To begin, give me a sense of what your community looks like here in western Montana.”

- “How do you define your community?”
- “What are some of the things you enjoy about your community?”
- “What are the key issues that people face?”

M3Q2.

“What sorts of changes would you and your neighbors like to see?”

- “Employment opportunities?”
- “Education?”

M3Q3.

“Talk about any improvements that have occurred in your community in recent years.”

- “Social?”
- “Economic?”
- “Environmental?”

M3Q4.

“What about any negative changes you have noticed?”

- “Social?”
- “Economic?”
- “Environmental?”

M3Q5.

“How might some of those positive or negative changes be connected to the establishment of WMGC over a decade ago?”

M3Q6.

“What group of people in your community do you think has been affected the most by WMGC?”

- “Producers? Consumers? Men? Women?”
- “Is there a group that you think has not been impacted at all? Why?”

M3Q7.

“Can you list any unexpected impacts or changes brought about by WMGC in your community?”

M3Q8.

“What consumer group do you think WMGC should be serving in order to have, in your opinion, the most desirable community outcomes?”

- “Are these consumers different than or the same as those that are being served now?”

M3Q9.

“Finally, given everything that I have discussed up to this point, do you believe it’s possible for regional food hubs like WMGC to bring about positive developments in rural communities?”

- “Could you give an example to support that opinion?”
- “Is development potential context specific?”
 - “Is this the kind of thing your community needs? Or should
 - government agencies be focusing their attention elsewhere?”

Appendix C: Supplemental data visualizations from Chapter 3

From Chapter 3, visualizations of functionings and capabilities to emerge from respondent interviews are displayed below as a supplement to discussions in the main text and to data reported in table format.

Figure C.1 Supplemental visualization depicting relative frequencies for member farmers' emergent functionings reported in Chapter 3.

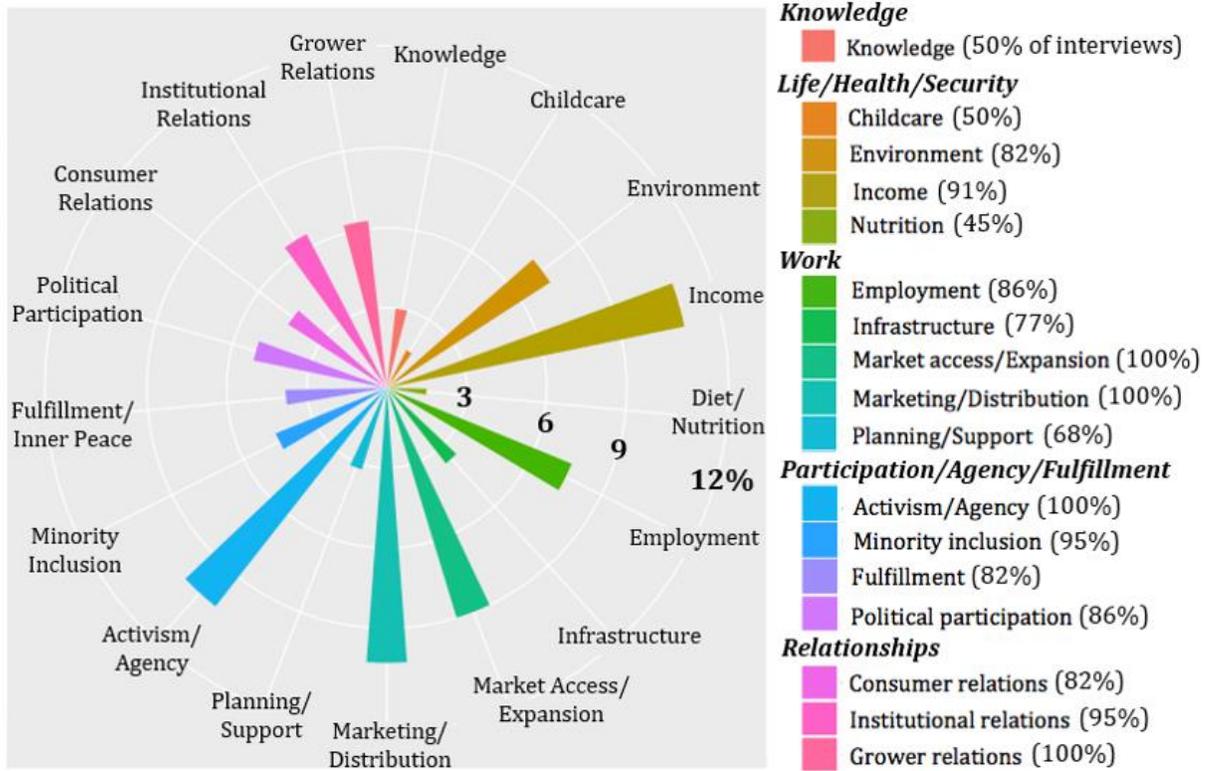
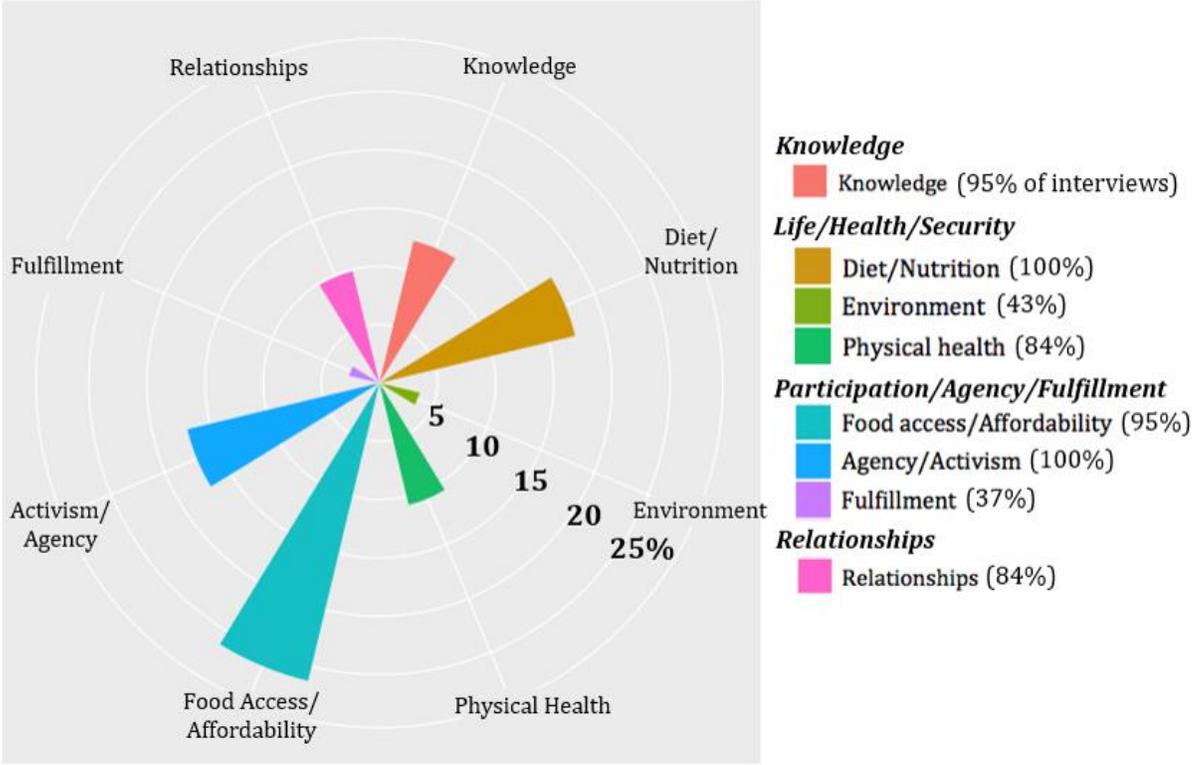


Figure C.2 Supplemental visualization depicting relative frequencies for CSA consumers' emergent functionings reported in Chapter 3.



Appendix D: Corresponding papers and publications

Papers and publications associated with each dissertation chapter are listed below.

Chapter 2

Motzer, N. (2013). A valuable alternative? Exploring locational factors and spatial distribution of regional food hubs in the United States. Annual Meeting of the Association of American Geographers, Los Angeles, CA.

Chapter 3

Motzer, N. 'You can't eat the view': Nourishing rural communities with regional food hubs? (In revision at *Social & Cultural Geography*).

Motzer, N. (2016). Changes in consumer capabilities following the establishment of a regional food hub in the Rocky Mountain West. Rural Studies Student Conference, State College, PA.

Motzer, N. (2014). Regional food hubs as rural development: Findings from the field. Annual Meeting of the Agriculture, Food and Human Values Society, Burlington, VT.

Chapter 4

Motzer, N. Women farmers, food hubs, and forces of change in rural and agricultural development. (In preparation).

Motzer, N. (2015). Female farmers, food hubs, and the power to empower: A case study. New Voices in Rural Geography, Annual Meeting of the Association of American Geographers, Chicago, IL.

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