

ABSTRACT

PEROFF, DEIDRE MARIE. *The Role of Tourism Microentrepreneurship and Agricultural Production in Shaping Stewardship of Working Lands in Guatemala's Highlands and North Carolina's Coastal Plains.* (Under the direction of Duarte B. Morais.)

Farmers experience regular constraints to their livelihoods and the conservation of their working lands. Poor commodity prices, rising input costs, environmental pressures exacerbated by climate change, and a lack of government support have driven small-scale farmers to seek alternative sources of income or transition to new ways of life. In an effort to mitigate these challenges, many farmers have diversified their livelihoods by implementing new enterprises such as tourism microentrepreneurship or have joined cooperatives (e.g., to join certification programs or to gain access to markets). While researchers have explored the potential for tourism to improve livelihoods and, in certain contexts, support environmental conservation efforts (e.g., through ecotourism), more research is needed to explore these concepts in the contexts of working lands. Accordingly, this dissertation examines how tourism microentrepreneurship and small-scale agricultural production can interact with involvement in collective processes to shape land stewardship. The conceptual model guiding this study integrates insight from collective action, place attachment, ecoliteracy, and self-determination, and this dissertation reports on the exploration of the model utilizing a primarily qualitative approach that included semi-structured, in-depth interviews, photo elicitation, free listing, and analysis of ethnographic field notes. We explored relationships among these constructs in two distinct rural settings: the Tz'utujil Maya indigenous community of San Juan la Laguna, in Lake Atitlán, Guatemala, and the coastal plains region in North Carolina, USA.

This study has furthered our understanding of how rural tourism microentrepreneurs involved in agricultural production use these activities to foster land stewardship. In Guatemala, participants' involvement in tourism microentrepreneurship and agricultural production did not directly influence their land stewardship. Instead, these relationships were fostered by cooperatives and San Juan's communitarian approach to development, which both fostered intrinsic motivation to conserve and

improved ecoliteracies. In North Carolina, involvement in agritourism microentrepreneurship also did not shape land stewardship directly, but participants used it as a way to mitigate agricultural illiteracy among the public. However, certain types of farmers (i.e., alternative, ethnic minorities) chose to participate in agritourism in order to demonstrate their land stewardship while others (i.e., conventional farmers) were driven more by socio-cultural or economic reasons. Distinct from Guatemala, in North Carolina collective action processes had both positive and negative influences towards land stewardship depending on type of farmer and perceived barriers (e.g., social, geographic) that limited participants' involvement in social circles.

Finally, we used a mixed methods approach (i.e., sorting and ranking of landscape photos followed by in-depth, semi-structured interviews) to assess if involvement in tourism microentrepreneurship and shade-grown coffee development has affected place attachment among the Tz'utujil Maya in the Guatemalan highlands. Participants expressed place dependence to working landscapes for economic and non-economic reasons (e.g., income from coffee production, firewood from forests), and place identity for sociocultural reasons (e.g., indigenous tradition of farming maize). Participants were also most attached to landscapes that they perceived to be managed using the most environmentally sustainable practices. Overall, this study provides insights from two very distinct rural settings about the ways small-scale agricultural production, tourism microentrepreneurship, collective action, and individual's attachment to their land interact to shape stewardship of working lands.

© Copyright 2016 Deidre Marie Peroff

All Rights Reserved

The Role of Tourism Microentrepreneurship and Agricultural Production in Shaping Stewardship of Working Lands in Guatemala's Highlands and North Carolina's Coastal Plains

by
Deidre Marie Peroff

A dissertation submitted to the Graduate Faculty of
North Carolina State University
in partial fulfillment of the
requirements for the Degree of
Doctor of Philosophy

Parks, Recreation, and Tourism Management

Raleigh, North Carolina

2016

APPROVED BY:

Erin Seekamp

Erin Sills

Duarte B. Morais
Chair of Advisory Committee

Tim Wallace

DEDICATION

I dedicate this dissertation to everyone who has supported me through this long process, and to everyone who never gave up on me, or sent encouraging notes with those three simple words I never got sick of hearing: “you got this”.

And to Mike, who moved across the country to take a chance on love and a new life living in the South, uncomfortably sweating through long hot and humid summers and putting his love of the mountains on hold for the possibility of new adventures. Thank you for being my partner through all of this, and for continuing to make sure I laugh each day, no matter how stressed or tired I am.

And to my family. Thank you to my parents for teaching me the importance of setting my goals high, and never doubting that through hard work and dedication I could accomplish seemingly impossible things. And to my sister, Amanda, for always supporting me, even though she felt my struggles too.

And, finally, to the farmers and people I’ve met in Guatemala and eastern North Carolina. The stories and experiences I’ve shared away from my computer have taught me more than I could ever begin to present in this dissertation.

BIOGRAPHY

Deidre Peroff was born and raised outside of Kansas City, Missouri in Prairie Village, Kansas. She moved to Madison, Wisconsin in 1999 to pursue a Bachelor of Science at the University of Wisconsin-Madison and graduated in 2003 with a degree in Geography: People and the Environment and a certificate in Environmental Studies from the Nelson Institute. Following the completion of her undergraduate studies, she taught outdoor environmental education in Tishomingo, Mississippi; Mountain Center, California; and outside Boston, Massachusetts, and served as a research assistant with the Program on Conservation Innovation at the Harvard Forest. In 2007, Deidre moved to Bellingham, Washington, where she received a Master of Science in Geography and taught undergraduate courses until 2012 when she moved across the country yet again to pursue a doctoral degree at North Carolina State University. Her research broadly assesses market-based approaches to environmental conservation and equitable development, through a process of participatory action and collaboration among communities that depend on natural resources for their livelihood. While finishing her dissertation, Deidre worked as a Social Science Research Assistant at the North Carolina Wildlife Resources Commission; and in February 2016, she moved back to Wisconsin after accepting a position as a Social Science Outreach Specialist for the University of Wisconsin-Sea Grant.

ACKNOWLEDGEMENTS

There are many people who have supported me throughout this process. While this is certainly not an exhaustive list, I must acknowledge those whose encouraging words, expertise, or time helped me immensely in completing this dissertation.

First, I'd like to thank my committee. Dr. Duarte Morais, for constantly challenging me to go beyond my perceived potential and work harder and accomplish more than I thought possible; and, perhaps most importantly, for dedicating his career to giving a voice to those who are less fortunate. Dr. Erin Seekamp, for being such a critical contributor to my success, who seemingly effortlessly balances being an excellent, critical scholar and a great friend. Dr. Erin Sills, for sharing so many opportunities with me and helping me become a better researcher; and, finally, Dr. Tim Wallace, for being such a great teacher, mentor, collaborator, and connection to the people of Lake Atitlán. I sincerely hope to continue to know and work with each of you throughout my career.

Secondly, thanks to all of the other people that provided their time and expertise to help me along this journey. Dr. Dave Garson for his help with statistics, Dr. Mark Darhower and Rony and Tito at *Escuela de la Montaña* for help with Spanish transcriptions, the "IT Guys" Josh and Dustin, Anju Singh, Debbie Hurst, and of course Dr. Dorothy Anderson, Dr. Myron Floyd, and Dr. Gene Brothers for putting up with all of my spontaneous questions and drop-in visits. Also thanks to all of the friends I've made in Raleigh, who provided support in numerous ways... from opportunities to get outside and just take a walk to editing, providing feedback on presentations, or dragging me away from my desk for a quick beer and slice of pizza. Particularly Dr. Chantell LaPan, Brendan Adams, Allie McCreary, Karly Meszaros, Matthew Jurjonas, Matt Whitlow, Dr. Christopher Serenari, Andreanne Meley, Tasha King, Gareth Jones, and Birendra KC. I couldn't have asked for a better cohort.

Thanks also to my parents, my sister, and for everyone that encouraged me to get a PhD and never gave up on me achieving that goal. Thank you, Mike, for being patient, in so many ways. It's been hard being so far from my family for so long, and missing out on so much, but I thank them for believing in me to go through this process and pushing me to finish.

Finally, thank you so much to all of the participants in this study both in Guatemala and North Carolina, who went out of their way to open up their doors to me and share with me so much from a place to stay, to a history lesson, to a tour of their farm or community, to a cup of coffee. I, truly, could not have accomplished this without the patience, generosity and support from so many others. Thank you.

TABLE OF CONTENTS

LIST OF TABLES	x
LIST OF FIGURES	xi
CHAPTER 1: Introduction	1
Overview	1
Conceptual Framework	2
Tourism Microentrepreneurship	3
Collective Action.....	6
Place Attachment.....	11
Land Stewardship	12
Methods	17
Research Questions	17
Setting.....	18
Design.....	19
Data Collection.....	23
Data Analysis	24
Definition of Terms	26
Delimitations	29
Limitations.....	30
Significance of the Study.....	31
Dissertation Organization.....	31
References	33
CHAPTER 2: Tourism microentrepreneurship, collective action, and land stewardship among Tz’utujil Mayan coffee farmers in Guatemala	44
Abstract	44
Introduction	45
Background and Review of Literature	46
Coffee Production in Guatemala	46
Tourism Microentrepreneurship and Land Stewardship	49
Collective Action through Cooperatives	51
Ecoliteracies and Stewardship of Working Lands.....	53
Methods	54
Study Setting	54

Sampling.....	57
Instrument Development	62
Data Analysis	64
Findings	65
Land Stewardship	65
Environmental Attitudes.....	65
Ecological Knowledge.....	67
Motivations Towards Environmental Behaviors	69
Role of Cooperatives in Facilitating Land Stewardship	74
Discussion	78
Livelihood Diversification.....	78
Land Stewardship	79
External Influences to Land Stewardship.....	81
Collective Action and Land Stewardship	82
Conclusion.....	84
References	85
CHAPTER 3: The role of agritourism microentrepreneurship and collective action in fostering stewardship of North Carolina’s small-scale farmlands.....	94
Abstract	94
Introduction	95
Review of the Literature.....	96
Tourism Microentrepreneurship.....	96
Stewardship of Working Lands	97
Collective Action.....	100
Methods	101
Study Region	102
Sampling.....	104
Instrument Development	108
Data Analysis	110
Findings	110
Characterization of Participants	110
Agritourism and Land Stewardship.....	113
Involvement in Collective Action	119
Discussion	124
Implications and Future Research	126

References	128
CHAPTER 4: A mixed methods approach to assessing residents' place attachment to the Guatemalan Maya landscape through photo elicitation.....	135
Abstract	135
Introduction	136
Context	137
Review of the Literature.....	138
Place Attachment and Landscape.....	138
Methodological Assessment of Place Attachment	139
Methods	141
Study Setting	142
Data Collection.....	143
Data Analysis	149
Results	152
Quantitative Photo Elicitation Findings	152
Integrating Multidimensional Scaling and Interview Findings	155
Dependence on Coffee	156
Dependence on Ecosystem Services	158
Coexisting with Nature and Maya Identity.....	161
Maya Attachment to Maize	163
Discussion	165
Place Attachment in San Juan la Laguna, Guatemala	165
Methodological Implications.....	167
References	170
CHAPTER 5: Conclusions	176
Chapter Summaries and Implications.....	177
Chapter 2	177
Chapter 3	178
Chapter 4	180
Theoretical Considerations.....	182
Methodological Considerations.....	184
Cultural Immersion and Field Notes	184
Interviews and Sampling	185
Free Listing.....	186
Photo Elicitation	186

Summary	187
References	188
APPENDICES	191
APPENDIX A: Guatemala Interview Protocol	192
APPENDIX B: NC Interview Protocol	198
APPENDIX C: Excerpts of segments coded in MAXQDA	205
APPENDIX D: Select excerpts from Guatemala Field Notes	209
APPENDIX E: Select excerpt from North Carolina Field Notes	211

LIST OF TABLES

Table 1.1: Self-Determination Continuum	15
Table 2.1 Self-Determination Continuum	50
Table 2.2: Participant levels of involvement in tourism microentrepreneurship and coffee farming ..	59
Table 2.3: Type of tourism involvement	61
Table 2.4: Activities performed and how participants described motivations behind them.....	72
Table 3.1: Description of participants	105
Table 3.2: Sources of trust among conventional and alternative agricultural farmers	122
Table 4.1: Descriptive statistics of photo elicitation sorting and ranking data.....	153
Table 4.2: Ranking of top five most important photographs.....	154

LIST OF FIGURES

Figure 1.1: Conceptual Model.....	3
Figure 2.1: Map of Guatemala.....	56
Figure 2.2: Study Site, San Juan la Laguna.....	57
Figure 2.3: Participant involvement in cooperatives	62
Figure 3.1: Coastal plains region of North Carolina	103
Figure 3.2: Type of involvement in agritourism microentrepreneurship by race and gender	111
Figure 4.1: Guatemalan Landscape Photographs for Sorting and Ranking.....	145
Figure 4.2: Multidimensional scaling (MDS) of landscape photographs.....	156
Figure 5.1: Theoretical relationships derived from Chapter 2.....	182
Figure 5.2: Theoretical relationships derived from Chapter 3.....	183
Figure 5.3: Theoretical relationships derived from Chapter 4.....	183
Figure C.1: Excerpt of segments coded in MAXQDA from Guatemala -A.	205
Figure C.2: Excerpt of segments coded in MAXQDA from Guatemala -B.....	206
Figure C.3: Excerpt of segments coded in MAXQDA from North Carolina -A.....	207
Figure C.4: Excerpt of segments coded in MAXQDA from North Carolina -B	208

CHAPTER 1: Introduction

Overview

Since the green revolution, globalization has contributed to a rapid growth in scale of agricultural production, and a global demand for crops to be distributed all over the world. Consequently, small-scale farmers and landholders have experienced frequent challenges that threaten their livelihoods and the sustainability of their working lands. For example, poor commodity prices, rising input costs, and environmental pressures related to climate change have driven farmers to seek alternative sources of income or transition to new ways of life (Barbieri, Mahoney, & Butler, 2008; Brandth & Haugen, 2011; Lyon, 2013; Hauserman & Eakin, 2008; McGehee & Kim, 2004; Yang, 2012). In an effort to mitigate the effects on rural livelihoods, many small-scale farmers have tried to diversify their livelihoods by either finding employment off-site, converting their land to other crops or structures, or by adopting new enterprises such as tourism microentrepreneurship into their business plan. Ellis (1999) defines this approach of rural livelihood diversification as, “the process by which households construct a diverse portfolio of activities and social support capabilities for survival and in order to improve their standard of living” (p.2). Ellis argues that, while there are potential positive and negative impacts from rural livelihood diversification, generally those who diversify are less vulnerable to oftentimes detrimental outside economic and environmental impacts because they are more adaptable to changing circumstances. Also, diversification has the potential to affect livelihoods on multiple levels (e.g. human, physical, social, financial, and natural capitals), rather than associating it solely with increased income. Conversely, those who have been unsuccessful in maintaining or diversifying their traditional rural livelihood have oftentimes ended up selling or leasing their land and moving away in search of a better life. In effect, the future of their land is left in jeopardy.

Particularly in less-developed countries, and more recently among small-scale farmers in Western countries, tourism microentrepreneurship is being used as a way for rural natural resource-

dependent communities to diversify their livelihoods. Additionally, scholars have found that diversification of farms, thought to be primarily for economic benefits, has also been linked to sustainability (e.g., by fostering social, ecological, or cultural benefits to landholders) and may help to retain farm household members in farming (Barbieri et al., 2008; Barbieri, 2012). While extensive literature has explored the potential for tourism to improve livelihoods and, in certain contexts, support environmental conservation efforts (e.g. through ecotourism), more research is needed to explore these concepts in the contexts of working lands. Accordingly, this dissertation examines how tourism microentrepreneurship and small-scale agricultural production can interact with involvement in collective action processes to shape land stewardship. Specifically, through the development of a conceptual model using the constructs of place attachment, collective action, self-determination, and ecoliteracy, this study presents findings on how tourism microentrepreneurship may shape land stewardship among small-scale natural resource-dependent producers in two geographical contexts: Lake Atitlán, Guatemala, and the coastal plains of North Carolina.

The following sections describe the conceptual framework guiding the study, including a description of key articles. Next, an overview of the methods used to conduct the study is provided, including a detailed description of the research design and study regions, data collection processes, and how constructs were both measured and analyzed. Lastly, I provide an explanation of delimitations, limitations, and brief overview of how each of the three manuscripts are organized.

Conceptual Framework

Figure 1 below illustrates the conceptual model guiding this study, which incorporates the theoretical constructs of place attachment and collective action to assess how involvement in agricultural production and tourism microentrepreneurship may foster stewardship of working lands among small-scale farmers. This conceptual model was assessed in two geographical contexts: Lake Atitlán, Guatemala and the coastal plains of North Carolina, contributing three scholarly manuscripts

to a larger body of literature on the constructs included in the model, which are each discussed thoroughly in this chapter.

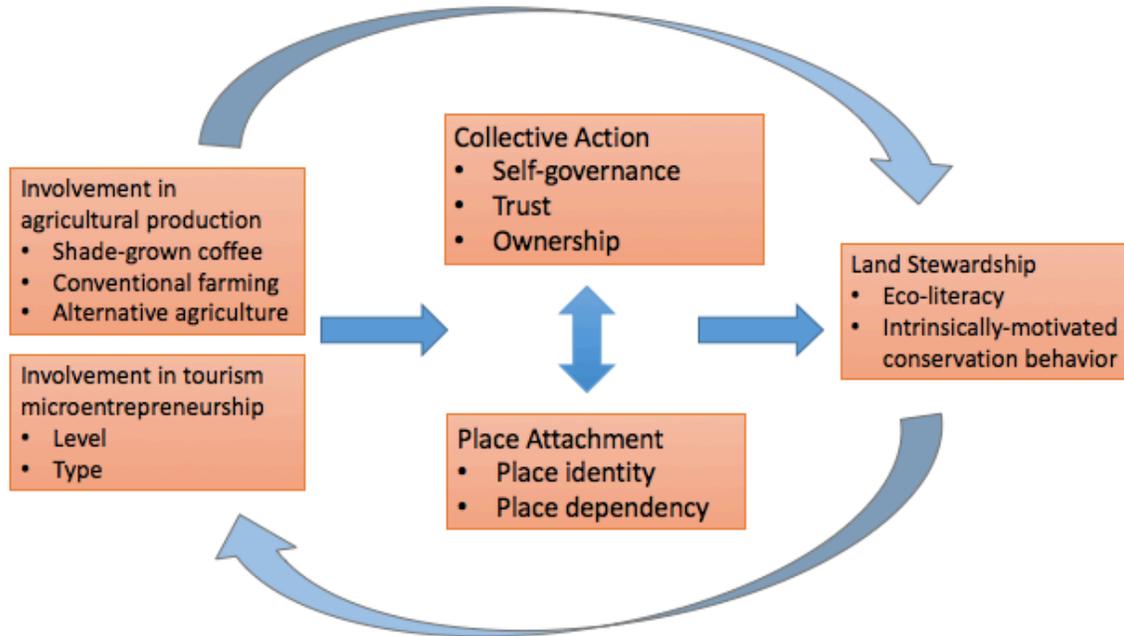


Figure 1.1: Conceptual Model

Tourism Microentrepreneurship

Literature has focused on various models of tourism development in an effort to both improve the livelihoods and well-being of marginalized populations and to support conservation efforts at the same time. Some of these models include, but are not limited to, community-based tourism (Kiss, 2004; Manyara & Jones, 2007; Mbaiwa & Stronza, 2010; Nyaupane, Morais, & Dowler, 2006; Tosun, 2000), ecotourism (Honey, 1999; Stronza & Pegas, 2008; West & Carrier, 2004), sustainable tourism (Mbaiwa, 2005), and co-management (Jamal & Stronza, 2009; Plummer & Fennell, 2009). While many of these models have been successful in certain contexts, none are considered a panacea.

Dependency on outsiders among local communities continues to be a main factor that often inhibits success of these tourism programs, or prevents host communities from experiencing the sense of ownership and human agency that is needed to be successful (Lyon, 2013; Yang, 2012). For

example, because of recent budget cuts and change in governance, Yang (2012) found that benefits that came from agritourism development (e.g., training programs and infrastructure development) in China's Yunnan province have since waned. While Yang's (2012) study focused on tourism that was highly supported by government, it also pointed out a need for future research to assess other development models (such as through cooperative management and micro-finance) that may limit dependency on external financial sources for longevity of the enterprise.

Many challenges also are centered on increased competition when tourism development is not perceived to benefit the community as a whole, even though all community members are affected (Lyon, 2013). Conversely, LaPan's (2014) study in Lake Atitlán, Guatemala found a cooperative approach to tourism development to be integral in shaping community support. Furthermore, while tourism programs may provide local benefits, marginalized communities generally are unable to use these opportunities to lift themselves out of poverty (Manyara & Jones, 2007). Additionally, market fluctuations and seasonality of tourism prevent the programs from providing secure benefits that meaningfully improve local livelihoods. In very rural areas, these struggles may be exacerbated because of difficult access to markets and, in less-developed countries, poor quality of education, and corrupt or non-existent support by government and non-governmental agencies. Moreover, Chandy & Narasimhan (2011) argue that, "for most of the world's poor, microentrepreneurship is the only way to eke out a living" (p. 52).

In recent years, programs such as "People-First Tourism" (Morais et al., 2012) have focused on the "development of human beings, not on the advancement of a tourism industry or the conservation of natural or cultural resources" (p. 117). This approach, influenced by Sen's concept of human agency (1999), claims that as individuals gain the freedom to fulfill their own lives and gain self-determination (Ryan & Deci, 2000), they may be more likely to engender eco-dependent livelihoods which in turn may lead to improved pro-conservation attitudes and behavior (Alkire, 2005; Morais et al., 2012; Morais, KC, Mao, & Mosimane, 2015; Morais & Zinn, 2010). According

to that paradigm, tourism microentrepreneurship is used as a tool to provide individuals with the self-determination (i.e. competence, relatedness, autonomy) that will motivate them to pursue their goals and improve their livelihoods (LaPan, Morais, Wallace, & Barbieri, in press). Further, microentrepreneurship can also be effective in reducing poverty, improving livelihoods, and providing opportunities for women who, particularly in rural settings, are often expected to work from home (Ahmed, 2008; Chandy & Narasimhan, 2011).

Similarly, agritourism has been provisioned as a way for rural people to diversify their farm businesses by adding both economic and non-economic value. In this study, agritourism is defined as activities intended to provide agricultural-related entertainment or education to visitors that take place at facilities that have working agricultural production (Arroyo, Barbieri, & Rich, 2013; Phillip, Hunter, & Blackstock, 2010). Economic benefits such as farmers using agritourism as a way to supplement their income and mitigate financial challenges on the farm have been widely observed (e.g., McGehee & Kim, 2004; Tew & Barbieri, 2012); however, non-economic benefits (e.g., social, cultural, environmental, or recreational benefits) are less studied (Barbieri, 2012; Brandth & Haugen, 2011). Further, almost all agritourism research has focused on working farms in North America, but the concept is growing internationally and may fall under various names (e.g., coffee tourism; Lyon, 2013 or *nongjale*; Yang, 2012) depending on the context.

Benefits to participating in agritourism are vast and may contribute to land stewardship. For example, in Yang's (2012) study, in addition to economic benefits that were perceived community-wide (e.g., income going towards children's education, health expenses, and more jobs), growth of tourism also improved living standards by improving roads and sanitation practices, and the rejuvenation of minority cultures and rural lifestyles. Yang's (2012) study also showed that because of gains in skill development and income, many young people were staying in the community to become agritourism entrepreneurs rather than migrating to urban areas for work. Studies also have demonstrated the potential for female empowerment through agritourism since women are more

likely to support such enterprises to increase social capital and gain income (Brandth & Haugen, 2010; LaPan, Morais, Wallace, & Barbieri, in press; McGehee, Kim & Jennings, 2007). While there is a dearth of research on agritourism in less-developed countries, these studies demonstrate the potential for improving livelihoods and environmental quality through the integration of agritourism into working lands globally. From a North American context, Barbieri (2012) also found agritourism entrepreneurs to engage in more environmentally-friendly stewardship practices, but acknowledged this as an under-researched area that could be better further explored in other contexts.

However, while tourism microentrepreneurship may provide benefits and opportunities for individuals in rural communities, Chandy & Narasimhan (2011) also point out three key barriers that often prevent micro-entrepreneurs from being successful: a lack of business skills, a lack of access to information, and a general lack of money and savings. Addressing these potential barriers to successful entrepreneurship, which are frequently worse among marginalized communities in less-developed countries, this study also assesses the role of collective action as a mechanism to mitigate them, as is discussed in the following section.

Collective Action

Generally, the concept of collective action involves any action taken together by a group of people whose goal is to enhance their status and achieve a common objective (Dowding, 2013). In the context of natural resource management, it involves the rethinking of top-down approaches to conservation by examining the potential for communities to sustainably manage their land and resources through collaboration. Since Mancur Olson, Jr. first published his book *The Logic of Collective Action* in 1965, numerous scholars have incorporated the concept of collective action into their research and, through this, have prompted extensive dialogue on the management of natural resources. Most notably, early research on collective action led to Elinor Ostrom's book *Governing the Commons* (1990) in which she reports that communities can effectively manage common-pool resources collectively through organized processes.

Both Olson (1965) and Ostrom (1990) acknowledged that efforts towards collective action often came across issues such as free-riding, commitment among stakeholders, and monitoring individual compliance. Acknowledging this, Ostrom (1990) developed a list of design principles to help overcome these issues. Her “Seven Design Principles,” which were summarized from years of researching groups of people and their efforts to collectively manage their land, follow three main themes: self-governance, trust, and ownership. Using these constructs, this study explores if, and to what degree, collective action facilitates the relationship between tourism microentrepreneurship and stewardship on working lands. These three sub-constructs are discussed more in depth in the following sections.

Self-governance.

First, distinct from regulations imposed from a higher governing body, self-governance exists when communities create, modify, and enforce rules and behavior internally. Research has shown that locals are less likely to support conservation efforts when they are not provided the rights to manage their own resources but are forced to follow rules imposed by outside parties. Further, in order to be effective, external authorities such as governments must respect the rights of community members to self-govern (Ostrom, 1990).

Researchers have documented this in several contexts. For example, in the case of the Maasai indigenous community in Kenya, previous negative attitudes towards conservation because of classic fortress conservation models were reversed when a community self-developed an eco-lodge and was able to gain benefits from ecotourism (Igoe, 2004; Simpson, 2009). Similarly, Fletcher (2009) showed that development of ecotourism will be more successful if planned and negotiated by local actors and Davis and Morais (2004) point out that when locals are not involved in development decisions, their general attitudes towards tourism decline. Moreover, Rivers and Gibbs (2011) found that when locals are not provided rights to manage their land, they may respond by illegally harvesting common-pool resources as an act of “protest” because of environmental injustices and

unfair access to resources. As an alternative to these top-down approaches to conservation, these examples emphasize the importance of involving all community members in conservation management.

Trust.

Several authors (e.g., Beritelli, 2011; Ostrom; 1990, Saxena, 2006) argue that trust is a key principle in contributing to the success of collective action. Ostrom claims that, once individuals gain trust in one another, resources can be collectively managed sustainably and that cooperative behavior towards conserving resources can eventually become the norm (Ostrom, 2010). Ostrom (1990) also proposes that the key to gaining trust is communication, which is crucial in helping to avoid the “free-riding problem” in which individuals reap benefits while letting others conduct the majority of work. In lab experiments that tested the *Prisoner’s Dilemma*, or the social dilemmas that individuals encounter in which they face collective action problems (Olson, 1965; Ostrom, 2010a), Ostrom and her research team discovered that when subjects were not able to communicate with each other about management decisions, conservation benefits were scarcer. When participants were able to communicate face to face informally, their conservation efforts were better. And, lastly, when they could design their own sanctioning system they did the best on sustainable management (Ostrom, 2010b). In *Governing the Commons*, Ostrom (1990) explains it is possible to foster functioning institutions that avoid the Prisoner’s Dilemma by fostering communication between most members, and engaging in particular with key members that are most likely to cooperate and agree on rules of conduct.

While communication is crucial, several factors may contribute to whether or not individuals choose to participate in collective action. Factors that may inhibit or support individual buy-in include the number of participants involved, whether benefits are subtractive or fully shared, heterogeneity of participants, face to face communication, reputations, and capability for entry or exit (Cardenas & Ostrom, 2004; Ostrom, 2010a). Studies have also shown that communication alone does not lead to

trust and future collaboration. For example, Beritelli (2011) found that after initial communication and information exchange, individuals often feel that they have already fulfilled obligations towards social norms and do not need to continue collaboration efforts. Further, Saxena (2006) argued that without the “personal and social bonding processes” needed to foster long-term commitment and reciprocity, trust may be difficult to gain from initial communication alone. Finally, from evidence she gained during her ecotourism study in the Peruvian Amazonian, Stronza (2010) claims that as cultures shift from subsistence into being dependent on commercialization (such as through the development of tourism), trust may be harder to achieve as increased competition may diminish willingness to cooperate with others. All of these factors may inhibit effective management of common-pool resources.

If individuals are able to get past all of these considerations, agree to participate, and can experience benefits, there is a chance that their levels of trust will increase and they are likely to initiate cooperation in the future. Moreover, if others view individuals as trustworthy and see them repeatedly initiating cooperation, they are more likely to follow norms of reciprocity and increase levels of cooperation (Cox, Arnold, & Tomás, 2010; Ostrom, 2010a).

Ownership.

Contrary to top-down management that often excludes locals from maintaining ownership rights to their land, a key component to the collective action framework is establishing clearly defined boundaries and at least a *sense* of ownership over natural resources, including to both the process and potential outcomes of an individuals’ involvement in managing those resources (Mbaiwa & Stronza, 2011; McCool, 2009; Ostrom, 1990). Ostrom (2010b) claims that when communities have ownership rights to the commons, they can effectively self-govern by making rules to avoid overuse and, in time, adjust to the institutional principles that lead to sustainable management. Lachapelle and McCool (2005) describe the concept of ownership as a “shared sense of problem and process” requiring several elements:

It requires ownership in the process (whose voice is heard), ownership in the outcome (whose voice is codified) and the ownership distribution (who is affected by the action). Ownership involves the association of citizens and agencies to collectively define, share and address problem situations with an implicit redistribution of power. (p.283)

Using a categorical distribution of ownership positions that include owner, proprietor, claimant, or authorized user, Ahmed et al. (2008) conducted a literature review to show how many case studies in less-developed countries emphasized the importance of ownership in collective action. They reported that across all those studies, individuals were more invested in self-regulated conservation practices when they had or felt that they had ownership of the common-pool resources. Further, Igoe (2004) showed that when individuals gain ownership rights, they were no longer excluded, which is a factor associated with opportunistic self-serving use of resources.

Cooperatives.

In this study, participants were commonly involved in collective action through cooperatives. Cooperatives are viewed as a potential way to accomplish goals of grassroots leadership, to mitigate issues involving control from external organizations, and to prevent unfair labor practices. The United Nations state that currently, “over 50% of global agricultural output is marketed through cooperatives” and they are defined by the International Cooperative Alliance as “an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly and democratically controlled enterprise” (Lund, 2013; United Nations, 2014). They were designed to provide local microentrepreneurs “greater control over their livelihoods” and to allow them to be competitive in markets (Bergman, 1997; United Nations, 2014). However, by the late 1960s and early 1970s cooperatives became the focus of “political conflicts, administrative inefficiency and corruption” and some people view their failures as much greater than successes in reaching their objectives (Milford, 2004, p. 34). For this reason, research is needed to assess the effectiveness of cooperatives in reaching goals towards improving livelihoods for small

producers through collective action and reaching goals towards sustainable management of working lands.

Place Attachment

Another theoretical construct considered in this study is place attachment. According to Hou, Lin and Morais (2005), when individuals are involved in a tourism activity anchored in a place or in specific resources, those individuals may develop a personal connection to that place or resource, in part because they depend on them for their favored activity, and in part because the accumulated life experiences associated with the place/resources begin to gradually define one's 'self-identity.'

Place attachment has been used across disciplines such as geography, anthropology, design, and recreation to assess the emotional bonds between people and the places they inhabit. Broadly, place attachment refers to a strong bond that an individual has with a built or natural setting that gives that place meaning (Altman & Low, 1992; Tuan, 1977). However, place is not necessarily a specific site or location, rather it can also be what Smith (2006) refers to as a "cultural process" of discovering meaning and making memories through experiences. Smith (2006) states that, "the 'power of place' is invoked in its representational sense to give physical reality to these expressions and experiences" (p.75) that societies may use to construct a shared identity.

Williams and Vaske (2003) characterize place attachment through a two-dimensional scale based on place identity and place dependence. Further, Davenport & Anderson (2005) explain that place identity is associated with "more symbolic meanings of place...based on the notion that places serve various functions in identity development that promote a sense of belongingness" while place dependency is related to "more tangible meanings of place... (and) denote a goal-oriented relationship with place and the belief that a place directly or indirectly satisfies certain physical or psychological needs" (p. 628). Research has focused on the way tourists develop connections to destinations (Cheng & Kuo, 2015; Gross & Brown, 2008; Hou, Lin, & Morais, 2005; Hwang, Lee, & Chen, 2005; McWatters, 2009), and several studies have examined how place attachment may impact pro-

environmental behavior or attitudes (e.g., de la Barre, 2013; Gosling & Williams, 2010; Halpenny, 2010; Scannell & Gifford, 2010; Walker & Ryan, 2008). Further, several studies (e.g., Chesire, Meurk, & Woods, 2013; Lokocz, Ryan, & Sadler, 2011; Stedman, Beckley, Wallace, & Ambard, 2004; Schuster, Sullivan, Kuehn, & Morais, 2011; Wyman & Stein, 2010) have explored how tourism may affect place attachment among residents.

Walker and Ryan (2008) assessed residents' willingness to engage in conservation planning through a photo-preference survey examining the level of attachment that local residents have to different landscapes. Through this method, they found a strong correlation between residents' place attachment and support for conservation. In another relevant study, Gosling and Williams (2010) measured place attachment among farmers in Victoria, Australia and assessed how an increased sense of connectedness to nature may lead to pro-environmental behavior. The study, which measured how farmers managed native vegetation on their farm, found a correlation between farmers' connectedness to nature and their pro-environmental behavior, but encouraged more research to focus on the strength of this relationship. Specifically, Gosling and Williams (2010) acknowledged that factors such as time and money greatly influenced whether or not the participants could demonstrate their pro-environmental behavior, despite having pro-environmental attitudes. The study also pointed out that, particularly in the context of land ownership, farmers may have varied goals or beliefs about what constitutes "pro-environmental behavior"; therefore, more research is needed to assess the complexity of how these terms are defined and how different types of knowledge are assessed.

Land Stewardship

In this dissertation, in order to assess the potential for long-term sustainable management of working lands, I examined how farmers demonstrated land stewardship. Specifically, two sub-constructs were used to assess the capacity for stewardship of working lands: the self-determination continuum and ecological literacy.

Stewardship has been discussed in a number of contexts. Land stewardship; however, is a term that became widespread after Aldo Leopold introduced the idea of a “land ethic” in his book the *Sand County Almanac* (1949). In this landmark memoir, Leopold called for a change to the way individuals interact with the land and proposed a re-thinking of land being viewed simply in economic terms. He called for a new ethic, “dealing with human’s relation to land and to the animals and plants which grow upon it” (p. 47) and proposed that “land” should also include nonhuman members of the biotic community. Leopold wrote:

The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land... [A] land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such. (Excerpts from *Sand County Almanac*, 1949).

While many scholars would undoubtedly argue that Leopold’s introduction to the idea of a land ethic has highly influenced environmental thinkers since, land stewardship has not been greatly explored in the scholarly literature or used as a tool to assess pro-environmental behavior or sustainable management. However, I contend that stewardship is an appropriate term for this study since one who is a good steward of the land and environment is more likely to be intrinsically motivated to practice sustainable techniques that will endure.

In this dissertation, land stewardship is defined as:

Stewardship is used to refer to landowners’ sense of what constitutes responsible and moral use such that their own and broader interests are met. In this sense the term is more flexible and not necessarily tied to modern conceptions of sustainability or accepted ‘best practice’. Nor does it assume commonality of interests. Rather it reflects the norms and values about land and ideas of appropriate use that landowners have when acquiring their land and that they develop in the course of land ownership. Casting stewardship in this way, as a general

stance towards land use, assists in examination and analysis of landownership as a package of intentions, motivations, norms, activities, and interactions (Gill, Klepeis, & Chisholm, 2010, p. 318).

Using the above definition, in this study land stewardship of working lands is assessed through the constructs of intrinsic motivation towards conservation and ecoliteracies, which are discussed further in the following sections.

Intrinsic motivation towards conservation.

Many studies have pointed out that, without intrinsic motivation among local communities to support sustainable management, conservation efforts will not last. For example, dominant conservation models with a “command and control” or “fence and fine” approach often exclude local people from their land and, in effect, instill negative views towards conservation (Igoe, 2004). Other authors argue that neoliberal models, which provide monetary incentives to locals to conserve their land are subject to a “crowding out” effect of intrinsic motivations when external (usually monetary) incentives are given as an approach to supporting conservation (Vollan, 2008), and that there is not necessarily a direct connection between economic incentives, such as through ecotourism and pro-environmental behavior (Wunder, 2000; Wyman & Stein, 2010). In effect, when and if the external incentives are gone (e.g. funding for project runs out, tourism demand wanes), locals may no longer have motivation to practice environmentally responsible behaviors. In this sense, many scholars (Ahmed, 2008; Vollan, 2008) have found evidence that some communities are able to manage their natural resources efficiently over long periods of time given that, with the “rights and responsibilities to design and enforce their own rules” their intrinsic motivation is not overshadowed by external incentives or coercive demands (Vollan, p.561). Further, Pelletier, et al. (1998) argued that, supporting Deci and Ryan’s (2000) self-determination theory, intrinsic motivation among individuals has been most effective in promoting pro-environmental behaviors. Accordingly, Deci and Ryan (2000) expressed that individuals’ behaviors are situated along a continuum depending on the level of

extrinsic and intrinsic motivation (Table 1.1). They asserted that behaviors can migrate across the ends of this continuum as intrinsic and extrinsic rewards compete to drive the behavior. Specific conservation behaviors may lose traditional internal regulation as individuals are faced with externally imposed incentives or punishments (e.g., premium payment for organic certified coffee), but behaviors may become gradually integrated if extant traditional knowledge and identity (e.g., use of traditional herbal medicines) are rekindled. In the context of tourism, while tourists may provide monetary incentives for landowners to manage their land more sustainably (e.g., ecotourism revenues), without the nurture of intrinsically regulated stewardship of the land, conservation efforts may prove short-term and may wane when tourism demand decreases.

Table 1.1: Self-Determination Continuum (Adapted from Alkire, 2005 and Deci & Ryan, 2000)

Extrinsic motivation		Intrinsic motivation	
<i>External regulation</i>	<i>Introjected regulation</i>	<i>Identified regulation</i>	<i>Integrated regulation</i>
Individuals behave in a particular way to get rewards or avoid punishment administered by others. Behaviors transfer when the external contingency is gone.	Individuals engage in behavior to get approval or avoid guilt. Norms are still considered to be external, but the consequences are administered by individuals themselves.	Individuals engage in behavior because they believe it is important. They accept and understand the underlying value of the behavior and behave more volitionally, but they are still extrinsically motivated.	Individuals engage in a behavior because the behavior makes good sense to them and they freely decide to do it. There is harmony between behavioral norms and the individuals' values and identity.

In the context of tourism, it may be argued that while tourists may provide monetary incentives for landowners to manage their land more sustainably (e.g. ecotourism), without a deeper connection to the land, conservation efforts may wane with tourism demand. In this study, these relationships are further examined in the context of how tourism microentrepreneurship may foster place attachment and collective action, and influence stewardship of working lands.

Ecoliteracy.

Land stewardship is also examined through what is referred to as ecological literacy or “ecoliteracies” in this study. Stevenson et al. (2013) claim that having the ability to tackle increasing global environmental challenges “depend entirely on publics who understand ecology, care about the environment, possess skills to assess environmental risk, and share a commitment to sustainability” (p.3). Appropriately, scholars have referred to this set of requirements as ecoliteracy, and argue that it is imperative that individuals can demonstrate these qualities to be aware of and tackle global environmental problems. Berkowitz, Ford, and Brewer (2005) define ecoliteracy as, “the ability to use ecological understanding, thinking, and habits of mind for living in, enjoying, and/or studying the environment” (p.228).

The concept of ecoliteracy has been applied regularly in recent years (Berkowitz, Ford, & Brewer, 2005; McBride, Brewer, Berkowitz, & Borrie, 2013; Stevenson, 2013), but a measurement scale has only recently been developed and is used in the context of environmental education of school-age children: the “Middle School Ecological Literacy Scale” (MSELS). MSELS has four dimensions (i.e., ecological knowledge, pro-environmental attitudes, pro-environmental behavior, and problem-solving skills). The theoretical grounding of this scale is very appropriate for this study; however, the scale is not applicable to more marginalized people in under-resourced rural populations that may have different pressing interests towards the environment, and different practical considerations towards reducing their environmental impact. An examination of ecoliteracy in such contexts requires more nuanced approaches that accept the complexity of local ecological knowledge to include traditional ecological knowledge (TEK) as well as “western” or scientific-based knowledge (Mazzocchi, 2006; Raymond et al., 2010). Therefore, in this study I use the term ecoliteracies to emphasize that knowledge and awareness of environmental challenges may come from multiple sources and may be complementary but also conflicting/competing. When assessing ecoliteracies among individuals with different worldviews and backgrounds, it is appropriate to consider all types

of ecological knowledge and how they may be integrated in environmental management (Raymond et al., 2010).

Methods

In this section, I present the specific research questions I addressed, how they were investigated, and how the data were analyzed. Additionally, I describe the study setting and participant sample.

Research Questions

The purpose of this dissertation is to examine how tourism microentrepreneurship and small-scale agricultural production can interact with involvement in collective processes to shape land stewardship among small-scale farmers. While using the above model as a conceptual guide (Figure 1.1), in the following I explain how my research questions are examined in each chapter of this dissertation.

In chapters 2 and 3, the following three research questions were considered in two distinct geographic regions (i.e., the community of San Juan la Laguna, Guatemala, and the coastal plains of North Carolina) respectively:

- 1) In what ways are small-scale farmers involved in tourism microentrepreneurship and agricultural production?
- 2) How does participants' involvement in tourism microentrepreneurship and agricultural production relate to their land stewardship (as assessed through ecoliteracies and intrinsically-regulated motivations for conservation behavior)?
- 3) In what ways does involvement in collective action processes shape land stewardship among small-scale farmers and tourism micro-entrepreneurs?

Chapter 4, also from the context of San Juan la Laguna, Guatemala, addresses:

- 4) To what extent can a mixed methods approach to photo elicitation be used to assess place attachment (i.e., place dependency and place identity) to working lands among an indigenous shade-grown coffee community?

Setting

This study focused on two study sites: the Tz'utujil Maya indigenous community San Juan la Laguna, Lake Atitlán, Guatemala and the coastal plains of North Carolina. These study sites were selected for both their similarities and differences. Both communities are traditionally dependent on agriculture for subsistence (e.g. maize and coffee in Lake Atitlán, tobacco and cotton in North Carolina), but have struggled in recent years due to market fluctuations and environmental vulnerabilities. For example, shade-grown coffee regions of Guatemala are regularly affected by extreme weather fluctuations, natural disasters, and issues with pollution that have caused contamination of the local drinking water, frequent landslides, and crop disease. Similarly, due to the high level of agricultural production in eastern North Carolina, residents frequently receive public and political backlash expressing environmental and social justice concerns. These challenges, as well as inherent struggles that are acquired from living in rural communities, have also led both communities to have considerably higher poverty rates than other rural areas and the national average. Additionally, both communities have sizeable ethnic and minority populations, with the communities in Lake Atitlán being more than 95% indigenous Maya and the communities in North Carolina being home to the Coharie Native Americans, many Hispanics, and a substantial African-American population. They are also peripheral tourism destinations, with the potential to draw from nearby tourists hubs (e.g., Panájachel and San Pedro in Lake Atitlán and the Outer Banks of North Carolina). Also, in recent years, many small agricultural landowners in both communities have joined cooperatives, yet they differ in why they have chosen to join.

In Guatemala, a majority of small coffee producers join cooperatives in order to compete with larger coffee markets and because they are supported by international lenders (Lyon, 2013). San Juan

la Laguna, Lago Atitlán, has also developed many cooperatively-run businesses such as Mayan weaving cooperatives, artist cooperatives, and a coffee cooperative that offers guided tours and stands out in this respect from its neighboring communities. LaPan (2014) refers to the approach to community development exemplified in San Juan as communitarian tourism. Further, Zorn and Farthing (2007) describe a communitarian tourism approach as focusing on “locally developed, owned, and managed enterprise(s) with a community-wide distribution of benefits” (p. 674). Conversely, in rural North Carolina, while cooperative membership is still far less common among small producers than in some regions, women and minorities are likely to join to gain skills that will help their business.

The two study regions also differ in the types of tourists that they receive. For example, communities (i.e., *municipios*) in Lake Atitlán attract primarily international tourists while North Carolina’s tourism industry relies most heavily on domestic tourism. Also significant is how tourists use transportation. In Guatemala, tourists arrive primarily by boat from other communities on the lake or, less frequently, by other arranged transportation methods (e.g. shuttle or *tuk tuk*) while tourists in North Carolina rely almost entirely on personal transportation (e.g. cars) to get to the experience. For this reason, Guatemalan tourist destinations are more accustomed to drop-in visitors while tourists in North Carolina more commonly need to pre-schedule visits.

Design

Based on the literature, a semi-structured interview protocol was developed in both English and Spanish (see appendices). The protocol consisted of primarily open-ended and free listing questions with a part dedicated to sorting and ranking of landscape photos followed by photo interviews. Probing was used to improve clarity and richness of the data. Hand-written notes were taken during interviews and they were also audio recorded. Comprehensive ethnographic field observations were taken through memoing, journaling, and daily field notes (Bernard, 2011; Guest, Namey, & Mitchell, 2013). These data helped support how themes were emerging from the

interviews and observations (Charmaz, 2006). In the following sections I briefly explain elements that were included in the protocol to assess the research questions:

Involvement in tourism microentrepreneurship and agricultural production.

Participants were first asked to list sources that make up their livelihood (in Spanish, *fuentes de ingreso*), and which is the most important in their life. Next, they explained which types of tourism activities they participate in, if any, and how long they have participated. These simple listing interview questions provided an idea of types of tourism involvement, as well as the length of time one may be involved in tourism before it may affect their stewardship. Stronza's (2005) 'tourism development index' was also adapted to this qualitative study to inform the type and degree of involvement.

Place attachment.

Place attachment was assessed through a mixed methods approach using the sorting and ranking of landscape photos followed by in-depth, semi-structured interviews where participants explained why certain photos were chosen in a certain order. Specifically, participants were given ten landscape photos and were asked to choose five photos that best "reflect who they are" or that they perceived to be "most important". Pictures included various landscapes endemic to the region and different levels of environmental management. Next, participants put five of the photographs in order of their importance and, through follow up questions and probing, they explained specific factors that they identified with or felt dependent on and why they chose the specific order.

This measurement of place attachment was adapted from Zhang & Lei (2010), which measured the type of place attachment that residents felt with landscapes to determine if, with a stronger sense of place identity, they would be more likely to support and participate in tourism development in the community. Zhang & Lei (2010) found that when a strong sense of place attachment through historical and cultural landscapes was felt (e.g. in a wetland area in Taiwan), residents showed stronger support for tourism development in the community and were more likely to

participate (Zhang & Lei, 2010). Since place identity implies more of an emotional connection to a place and place dependency is more of a functional attachment, in the study participants were asked to assess two statements for each of 14 landscape photos (Zhang & Lei, 2010).

Collective action.

To examine how and to which level participants were involved in collective action, three dimensions (i.e., self-governance, trust, and ownership) were assessed through open-ended questions and probing that were later supported by ethnographic field notes. Questions were adapted from Ostrom's (1990) "Seven Design Principles" while also considering more recent literature on collective action as well. Sample questions included:

- Who writes and modifies rules towards management of your land?
- Who ensures that collectively-developed rules are followed?

Trust was also assessed using open-ended questions and guided by Ostrom's (1990) recommendations to consider levels of communication among members. Sample questions included:

- How often and to what extent do you communicate with other landowners when making decisions about your land? (Probe: formal/informal, face to face, meetings, phone)

Lastly, ownership was assessed with open-ended questions. Sample questions included:

- Who owns your land?
- To what extent do government and non-governmental entities support your land management collaborations?

Land stewardship.

To assess land stewardship, I used ecoliteracy (i.e., environmental attitudes, ecological knowledge, environmental behavior) and the self-determination continuum to examine not only which activities participants did on their land (i.e., environmental behaviors), but to assess the

motivation behind these behaviors (i.e., extrinsic vs. intrinsic). Through the assessment of these sub-constructs, I examined which role, if any, participants' involvement in tourism microentrepreneurship and farming had in shaping their land stewardship. Specifically, to assess ecological knowledge, participants were prompted to reflect on both traditional ecological knowledge (TEK) and scientific "western" knowledge (Agrawal, 1995; Raymond et al., 2010). We found the assessment of TEK particularly important among indigenous peoples. Therefore, following Reyes-Garcia et al. (2006) indices of evaluating TEK, participants in Guatemala listed important medicinal plants, explained their use, and indicated when and where they last harvested these plants. To assess environmental attitudes and behaviors (adapted from the Middle School Environmental Literacy Survey, 2009), participants listed: environmental issues that they perceived might negatively impact the future of their land; programs, activities or techniques that they perceived could positively impact the future of their land; and they described measures taken to protect natural resources and their land.

Additionally, participants were asked a series of questions to determine their motivations to pursue activities on their land (i.e., why they exhibited specific environmental behaviors) using a self-determination continuum (adapted from Alkire, 2005 and Deci & Ryan, 2000). Deci and Ryan's (2000) framework of self-determination has been used in several studies and across multiple disciplines to show that, when people's innate psychological needs (i.e. autonomy, competence, relatedness) are nourished, they are more likely to demonstrate intrinsic motivation, self-regulation, and an enhanced sense of well-being. In their study examining nature-based tourism microentrepreneurship among pastoral indigenous communities in Namibia, Morais and Zinn (2010) analyzed the extrinsic or intrinsic motivations influencing the participants daily activities. They explained:

Informants were asked to identify aspects in their everyday life that they do "because they have no choice," things they do "to obtain others' approval or avoid guilt," things they do "because they have thought about them and feel that they are important," and things they do "because they like them and freely choose to do them" (Morais & Zinn, 2010, p. 18)

This process generates data that can then reveal which activities are situated at each level of the self-determination spectrum. In my study, I combined the same assessment using the self-determination continuum with a free listing activity. First, participants listed which activities they do on their land. After a list of items were compiled, activities were put each into one of the above categories (i.e. no choice, to obtain approval/avoid guilt, because they like them, feel important). Through this process in combination with thematic coding and analysis of interviews, I determined why participants chose to participate in certain activities.

Data Collection

Purposeful and chain referral sampling (Biernacki & Waldorf, 1981) was used to conduct in-depth semi-structured interviews (including free listing and photo elicitation) with participants who self-identified as small-scale agricultural landholders involved in tourism microentrepreneurship. In Lake Atitlán, Guatemala – Department of Sololá, data collection started at the *Cooperativa La Voz que Clama en el Desierto* who currently has over 100 active members who own small-scale coffee lands and who have collectively developed agritourism. In order to build rapport and trust, the cooperative was visited regularly during initial days in Guatemala and to familiarize myself with the background of the cooperative, its structural processes, and its current members. In North Carolina, data collection was initiated with the Small Family Farms Sustainable Agriculture Cooperative who (at time of data collection) had 18 members and recently had adopted agritourism programs into their management objectives. Additionally, over the last two years, I had established and fostered relationships with landowners in south-central North Carolina counties (i.e. Sampson, Duplin, Wayne, Lenoir, Pender) through two other research projects where I worked closely with microentrepreneurs and gained a general knowledge about their levels of tourism development and efforts towards environmentally sustainable management of their working lands. Relationships that were developed with landowners and community leaders helped me initiate contact with members of the cooperatives and contributed to the richness of data collected. Additionally, while spending

multiple consecutive nights in the field at each study site, I took extensive ethnographic field notes (following Bernard, 2011) to ensure rigor of mixed methods data collected. In Guatemala, 26 participants were formally interviewed over a period of five weeks in June and July 2014. In North Carolina, 15 participants were formally interviewed between November 2014 and March 2015.

Data Analysis

Qualitative analysis.

After completing fieldwork at each site, the recorded semi-structured, in-depth interviews were transcribed verbatim and Microsoft Word files were imported into MaxQDA 11 Qualitative Data Analysis Software for qualitative coding and analysis. Data were analyzed using a theory-driven approach where data were line-by-line coded as either semantic (verbally expressed meanings) or latent (underlying meanings) to identify how themes reflected the conceptual framework (Braun & Clarke, 2006; Flick, 2014; Namey, Guest, Thairu, & Johnson, 2008). Braun & Clarke (2006) define “theoretical thematic analysis” as:

A method for identifying, analyzing, and reporting patterns (themes) within data. It minimally organizes and describes your data set in (rich) detail. However, frequently it goes further than this, and interprets various aspects of the research topic. (Braun and Clarke, 2006, p.79)

Responses that failed to integrate theoretical constructs were also noted, so as to not only list positive responses and avoid confirmation bias (Greenwald, 1986). Field notes, memos and journal entries were used to inform emerging themes, including notes from several informal interviews and observations during time spent at study sites.

Trustworthiness was sought through a process of insider peer debriefing where some co-authors met weekly to discuss and compare how emerging themes were being interpreted (Spillett, 2003). Through this dynamic process, codes were re-analyzed and integrated until the coauthors reached an “endpoint” in understanding relationships between cases beyond individual cases (Flick, 2014, p.496). Additionally, findings were discussed with local key informants (e.g., host families) or

scholars who have conducted considerable research in the regions (e.g., co-authors) and compared to field notes.

Quantitative analysis.

Photo sorting and ranking data were put into an Excel file and organized with each row representing a different participant and columns displaying which photos were chosen by each participant, and how they ranked each of these from “1” to “5”. For analysis purposes, photos chosen as “most important” were given 5 points, the “second most important” photo chosen was given 4 points, etc. Photos that were not chosen among participants were given a score of “0”.

Next, the Excel file was imported into SPSS statistical software to explore the data quantitatively using descriptive statistics (e.g., mean, standard deviation, variance, sum) for the ranked data and frequency analysis to reveal which photos were found to be the most or least important among participants and how data was distributed. Lastly, multidimensional scaling was run in SPSS as an approach to analyze relationships between the photos chosen as most important (versus photos that were not chosen) among participants.

Multidimensional scaling.

Multidimensional scaling (MDS) was used to draw a perceptual map that shows correlations between variables or cases. In this study, the points on the perceptual map are the photos themselves and, through the inductive interpretation of dimensions, MDS, “shows graphically how different objects of comparison do or do not cluster” (Garson, 2012, p. 6). Accordingly, MDS is used to determine correlations between preference data and is preferable to factor analysis because it doesn't require assumptions of “linearity, metricity, or multivariate normality” (Garson, 2012, p. 6) so it can be used with nonmetric data (e.g., ordinal, categorical, binary).

In this study, multidimensional scaling was used to produce a perceptual map showing the distances (i.e., proximities) between the landscape photographs chosen by participants. Pinkley, Gelfand, and Duan (2005) explain that, “MDS focuses on how an individual perceives the objects,

rather than the objects themselves” (p. 82). Accordingly, MDS is used to show how the photographs that participants chose as important relate to each other to form clusters (or groups) that might reflect commonalities among participants and the landscapes they are most attached to.

To develop the perceptual map, we used SPSS to convert binary data collected by participants (i.e., photo chosen as important =1; photo not chosen as important=0) into graphic distances to show how similar or dissimilar the photos are to each other (Bernard, 2011). In other words, photos that are the farthest apart from each other were least likely to be chosen together by participants as most important, and photographs close together were more frequently clustered together by participants to reveal aspects of the landscape photos that were most important to them. While this technique was used as exploratory, the clustering of photos helped us to conceptualize why participants found certain photos to be important and what aspects the photos had in common that would be difficult to determine with descriptive statistics or interview data alone. Further, while some studies using MDS have inductively named the dimensions (e.g., Seekamp, Cervený, & McCreary, 2011), in this study it was deemed more appropriate to name the clusters to reflect how they coincided with major themes that emerged from thematic analysis.

Definition of Terms

This section provides definitions of keywords used in the study and how they are defined in the context of this dissertation. Each definition includes reference to key sources.

Tourism microentrepreneurship.

Tourism microentrepreneurship is a growing trend that is based off of a principle that, with advancements in technology and freedom of human beings to make choices, nearly anyone in the world can create their own jobs through self-employment (Morais et al., 2012; Wong, 2012). While there is no universal definition for tourism microentrepreneurship, microentrepreneurship can be defined as a tourism business that employs five or fewer employees that operates informally and they are much more common in less-developed countries where self-employment provides opportunity to

mitigate poverty and improve livelihoods (Biles, 2009; Chandy & Narasimhan, 2011; Chelekis & Mudambi, 2010). Figart (2013) explains that through People-First Tourism, an example of tourism microentrepreneurship, “provides opportunities for storytellers, artists, musicians, food growers and others to share their skills, knowledge and experience, and to create dignified and sustainable livelihoods through tourism” (para. 3).

Agritourism.

Activities intended to provide agricultural-related entertainment or education to visitors that take place at facilities that have working agricultural production (Arroyo, Barbieri, & Rich, 2013; Phillip, Hunter, & Blackstock, 2010). Activities may vary depending on type of involvement visitors have (e.g., active to passive) and level of contact with agricultural activities (e.g., direct to indirect contact; Phillip et al., 2010).

Conventional farming.

Also referred to as industrial agriculture or commodity farming, conventional farming comprises, “methods of farming which include the use of synthetic chemical fertilizers, pesticides, herbicides, and genetically modified organisms” (www.appropedia.org/conventionalfarming).

Alternative farming.

According to the Alternative Farming information Center, alternative agriculture is distinct from conventional farming and “focuses on sustainable food systems and practices in support of USDA’s effort to ensure a sustainable future for agriculture and farmers worldwide” and, “implies the use of environmentally-friendly farming practices in general, and the benefits of farm diversification” (<http://afsic.nal.usda.gov/>). Examples of alternative farming may include, but are not limited to: organic farming, permaculture, biodynamic farming, and may imply the use of entrepreneurial marketing strategies such as tourism and recreation.

Collective action.

Generally, the concept of collective action involves any action taken together by a group of people whose goal is to enhance their status and achieve a common objective (Dowding, 2013). In the context of natural resource management, it involves the rethinking of top-down approaches to conservation by examining the potential for communities to sustainably manage their land and resources through organized, collaborative processes focusing on self-governance, trust, and ownership (Ahmed et al., 2008; Lachapelle & McCool, 2005; Ostrom, 1990).

Place attachment.

Broadly, place attachment refers to a strong bond that an individual has with a built or natural setting that gives that place meaning (Altman & Low, 1992; Tuan, 1977). In this study, we characterize place attachment through a two-dimensional scale based on place identity and place dependence (Williams and Vaske, 2003). Davenport & Anderson (2005) explain that place identity is associated with “more symbolic meanings of place...based on the notion that places serve various functions in identity development that promote a sense of belongingness” while place dependency is related to “more tangible meanings of place... (and) denote a goal-oriented relationship with place and the belief that a place directly or indirectly satisfies certain physical or psychological needs” (p. 628).

Land stewardship.

In the context of agricultural producers, we use a definition by Gill, Klepeis, and Chisholm (2010) describe that stewardship is, “used to refer to landowners’ sense of what constitutes responsible and moral use such that their own and broader interests are met” (p. 318).

Self-determination.

Self-determination focuses on the degree to which an individual’s behavior is self-motivated and self-regulated and is based off of three sub-constructs: competence, relatedness, and autonomy (Ryan & Deci, 2000). In this study, we use the self-determination continuum (adapted from Alkire, 2005 and Morais & Zinn, 2010) to assess how motivations towards conservation influence

stewardship of working lands. The self-determination continuum suggests that individuals' behaviors are situated along a continuum depending on level of extrinsic and intrinsic motivations that drive behavior.

Ecoliteracy.

Berkowitz, Ford, and Brewer (2005) define ecoliteracy as, “the ability to use ecological understanding, thinking, and habits of mind for living in, enjoying, and/or studying the environment” (p.228) and tackle increasing global environmental challenges. These characteristics include ecological knowledge, pro-environmental attitudes, pro-environmental behavior, and problem-solving skills (Berkowitz, Ford, & Brewer, 2005; McBride, Brewer, Berkowitz, & Borrie, 2013; Stevenson, 2013). In this study, we assess the first three sub-dimensions of ecoliteracy.

Agricultural illiteracy.

Eileen Schell (2007) defines “agricultural illiteracy” as, “the general public’s inability, and perhaps unwillingness to understand how, where, and under what conditions our nation’s food is grown, distributed, and marketed” (p. 34).

Working lands.

Working lands are defined as, “lands that are used in a productive way and contribute harvestable resources, including farmland, forests, grazing lands, and fisheries” (Prokopy, McCormick, & Reimer, 2005, p. 2). These lands also signify a farm where agriculture is currently being practiced (Phillip, Hunter, & Blackstock, 2010).

Delimitations

Interpretation of the study findings are limited to the study sites and are not generalizable to a larger population. However, the richness of the data collected provides valuable insight that may be applicable in similar settings. For example, North Carolina has many small-scale farmers and a strong local foods movement; therefore, some of the lessons learned could be applicable to other regions in the United States or elsewhere that have similar characteristics. Additionally, the context in

Guatemala is characterized as indigenous people who suffered from colonial and internal colonial oppression and that are now trying to regain agency, adapt to global market forces and retain indigenous identity. Perhaps geographic contexts with a similar history of oppression towards indigenous people and recent patterns of development could be applicable if there was a need for research in these contexts.

Limitations

Limitations to this study existed; however, I did my best to mitigate them. In this section, I explain limitations to this study and how they were addressed to limit their effect on findings and conclusions.

Cultural biases.

I am a well-educated, Caucasian woman who is well-traveled and currently lives in a rural non-agricultural area. Since research was conducted in lower income rural communities, and in the case of Guatemala, with participants with considerably less education, inherent biases exist due to lack of similar backgrounds among the interviewer and participants. To overcome these biases, multiple days were spent in each study region to build rapport with community members so I could familiarize myself with cultural and social characteristics of study sites. Additionally, steps were taken to overcome language barriers in Guatemala. For example, interview protocols were verified with two co-authors who are fluent in Spanish as well as with my host family at the field site. Additionally, transcriptions of audio recordings were completed in Spanish by native Guatemalan speakers and coding and translations were also verified regularly with co-authors through analysis of data.

Time constraints.

Given there was limited time to complete this dissertation and collect data at each study site, the study was not assessed longitudinally. Any references to the past were therefore retrospective and were acquired from literature or as portrayed from community members. Therefore, several steps

were taken to mitigate the effect of limited time spent in the field affecting interpretations of the data. For example, study sites were strategically chosen based on previous familiarity and time spent in the area among both myself and co-authors in each of the studies. Additionally, contacts were made through informal field visits or contact by other means (e.g., e-mail correspondence) prior to field visits.

Number of participants.

Number of participants were limited (i.e., 26 in Guatemala, 15 in North Carolina) because of the difficulties in finding participants that fit the desired criteria (involvement in tourism microentrepreneurship and agricultural farming). However, prominent qualitative researchers suggest that with qualitative data, number of interviews is not as important as the quality of data that is being collected, and how this helps the researcher reach a state where patterns are forming and no new major themes emerge (Flick, 2014; Henderson and Bialeschki, 2010).

Significance of the Study

Numerous studies have investigated how tourism may improve livelihoods and support conservation goals with mixed results. Additionally, collective action and place attachment have been studied extensively with considerable research dedicated to how these constructs may explain sustainable management of natural resources. However, a dearth of research exists examining these constructs in the context of working agricultural lands and among marginalized, rural communities disconnected from traditional tourism markets. Accordingly, with an overall focus on how individuals in rural communities are connected to their working lands, this study assesses how involvement in agricultural production and tourism microentrepreneurship relates to land stewardship, and how this relationship may be influenced by collective action and place attachment.

Dissertation Organization

This dissertation is organized into a three-manuscript style in addition to an introduction chapter that contextualized the overall research, and a conclusions chapter that summarizes the

overall findings and implications of this research effort. Chapter Two addresses how involvement in tourism microentrepreneurship and shade-grown coffee farming may shape land stewardship among the Tz'utujil indigenous Maya in San Juan la Laguna. Further, we assessed the role of collective action processes (i.e., involvement in cooperatives) in facilitating this relationship. Chapter Three uses the same conceptual framework as Chapter Two; however, research questions are assessed among farmers in the coastal plains of North Carolina. In this chapter we also considered more specifically why and how different types of farmers (e.g., conventional vs. alternative agriculture producers; ethnic minorities and women vs. white males) were involved in agritourism microentrepreneurship and how this involvement related to their land stewardship. Chapter Four assesses the effectiveness of using a mixed methods approach to photo elicitation (i.e., sorting and ranking of landscape photographs followed by in-depth, semi-structured interviews) to assess place attachment (i.e., place dependency and place identity) among the Tz'utujil indigenous Maya in San Juan. While place attachment was included in my conceptual framework, I decided to examine the construct independently to reveal the effectiveness of a unique mixed methods approach I used to assess place attachment. Finally, Chapter Five provides a summary of the findings, and reflections on the cumulative implications of the three studies.

References

- Ahmed, I., Deaton, B. J., Sarker, R., & Virani, T. (2008). Wetland ownership and management in a common property resource setting: A case study of Hakaluki Haor in Bangladesh. *Ecological Economics*, 68(1), 429-436.
- Alkire, S. (2005). Subjective quantitative studies of human agency. *Social Indicators Research*, 74(1), 217-260.
- Altman, I., & Low, S.M. (Eds.). (1992). *Place attachment*. NY: Plenum Press.
- Arroyo, C. G., Barbieri, C., & Rich, S. R. (2013). Defining agritourism: A comparative study of stakeholders' perceptions in Missouri and North Carolina. *Tourism Management*, 37, 39-47.
- Barbieri, C. (2012). Assessing the sustainability of agritourism in the US: a comparison between agritourism and other farm entrepreneurial ventures. *Journal of Sustainable Tourism*, 21(2), 252-270.
- Barbieri, C., Mahoney, E., & Butler, L. (2008). Understanding the Nature and Extent of Farm and Ranch Diversification in North America. *Rural Sociology*, 73(2), 205-229.
- Beritelli, P. (2011). Cooperation among prominent actors in a tourist destination. *Annals of Tourism Research*, 38(2), 607-629.
- Berkowitz, A. R., Ford, M. E., & Brewer, C. A. (2005). A framework for integrating ecological literacy, civics literacy, and environmental citizenship in environmental education. *Environmental education and advocacy: Changing perspectives of ecology and education*, 227-266.
- Bernard, H. R. (2011). *Research methods in anthropology: Qualitative and quantitative approaches* (5th ed.). Lanham, MD: AltaMira Press.

- Biernacki, P., & Waldorf, D. (1981). Snowball sampling: Problems and techniques of chain referral sampling. *Sociological Methods & Research*, 10(2), 141-163.
- Biles, J. J. (2009). Informal work in Latin America: competing perspectives and recent debates. *Geography Compass*, 3(1), 214-236.
- Brandth, B., & Haugen, M. S. (2011). Farm diversification into tourism—Implications for social identity? *Journal of Rural Studies*, 27(1), 35-44.
- Braun, V. and Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Cárdenas, J. C., & Ostrom, E. (2004). What do people bring into the game? Experiments in the field about cooperation in the commons. *Agricultural Systems*, 82(3), 307-326.
- Chandy, R., & Narasimhan, O. (2011). How micro-entrepreneurs could change the world. *Business Strategy Review*, 22(1), 52-55.
- Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. London: Sage Publications Limited.
- Chelekis, J., & Mudambi, S. M. (2010). MNCs and micro-entrepreneurship in emerging economies: The case of Avon in the Amazon. *Journal of International Management*, 16(4), 412-424.
- Cheng, C. K., & Kuo, H. Y. (2015). Bonding to a new place never visited: Exploring the relationship between landscape elements and place bonding. *Tourism Management*, 46, 546-560.
- Cheshire, L., Meurk, C., & Woods, M. (2013). Decoupling farm, farming and place: Recombinant attachments of globally engaged family farmers. *Journal of Rural Studies*, 30, 64-74.

- Cox, M., Arnold, G., & Tomás, S. V. (2010). A review of design principles for community-based natural resource management. *Ecology and Society*, 15(4), 38 [online] <http://www.ecologyandsociety.org/vol15/iss4/art38/>
- Davenport, M. A., & Anderson, D. H. (2005). Getting from sense of place to place-based management: An interpretive investigation of place meanings and perceptions of landscape change. *Society and Natural Resources*, 18(7), 625-641.
- Davis, J. S., & Morais, D. B. (2004). Factions and enclaves: Small towns and socially unsustainable tourism development. *Journal of Travel Research*, 43(1), 3-10.
- de la Barre, S. (2013). Wilderness and cultural tour guides, place identity and sustainable tourism in remote areas, *Journal of Sustainable Tourism*, 21(6), 825-844.
- Deci, E.L., & Ryan, R.M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227-268.
- Dowding, K. (2013). Collective action problem. *Encyclopedia Britannica*. Retrieved from <http://www.britannica.com/EBchecked/topic/1917157/collective-action-problem>.
- Ellis, F. (1999). The determinants of rural livelihood diversification in developing countries. *Journal of Agricultural Economics*, 51(2), 289-302.
- Figart, F. (2013, April 1) “People-First Tourism gives local micro-entrepreneurs a chance” Retrieved from <http://www.wncwoman.com/2013/04/01/people-first-tourism-gives-local-micro-entrepreneurs-a-chance/>.
- Fletcher, R. (2009). Ecotourism discourse: Challenging the stakeholder’s theory. *Journal of Ecotourism*, 8(3), 269-285.
- Flick, U. (2014). *An introduction to Qualitative Research* (5th ed.). Thousand Oaks, CA: Sage Publications, Inc.

- Garson, G. D. (2012). *Multidimensional scaling*. Retrieved from <http://www.statisticalassociates.com/>
- Gill, N., Klepeis, P., & Chisholm, L. (2010). Stewardship among lifestyle oriented rural landowners. *Journal of Environmental Planning and Management*, 53(3), 317-334.
- Gosling, E., & Williams, K. J. (2010). Connectedness to nature, place attachment and conservation behaviour: Testing connectedness theory among farmers. *Journal of Environmental Psychology*, 30(3), 298-304.
- Greenwald, A.G., Pratkanis, A.R., Leippe, M.R., Baumgardner, M.H. (1986). Under what conditions does theory obstruct research progress? *Psychological Review*, 93, 216-229.
- Gross, M. J., & Brown, G. (2008). An empirical structural model of tourists and places: Progressing involvement and place attachment into tourism. *Tourism Management*, 29(6), 1141-1151.
- Guest, G., Namey, E. E., & Mitchell, M. L. (2013). *Collecting qualitative data: A field manual for applied research*. Los Angeles, CA: Sage Publications.
- Halpenny, E. A. (2010). Pro-environmental behaviours and park visitors: The effect of place attachment. *Journal of Environmental Psychology*, 30(4), 409-421.
- Hausermann, H., & Eakin, H. (2008). Producing "viable" landscapes and livelihoods in central Veracruz, Mexico: institutional and producer responses to the coffee commodity crisis. *Journal of Latin American Geography*, 7(1), 109-131.
- Henderson, K.A., & Bialeschki, M.D. (2010). *Evaluating leisure services: Making enlightened decisions* (third edition). College Park, PA: Venture Publishing.
- Honey, M. (1999). *Ecotourism and sustainable development: Who owns paradise?* Island Press.

- Hou, J. S., Lin, C. H., & Morais, D. B. (2005). Antecedents of attachment to a cultural tourism destination: The case of Hakka and non-Hakka Taiwanese visitors to Pei-Pu, Taiwan. *Journal of Travel Research, 44*(2), 221-233.
- Hwang, S. N., Lee, C., & Chen, H. J. (2005). The relationship among tourists' involvement, place attachment and interpretation satisfaction in Taiwan's national parks. *Tourism Management, 26*(2), 143-156.
- Igoe, J. (2004). *Conservation and globalization: A study of national parks and indigenous communities from East Africa to South Dakota*. Wadsworth Publishing Company.
- Jamal, T., & Stronza, A. (2009). Collaboration theory and tourism practice in protected areas: Stakeholders, structuring and sustainability. *Journal of Sustainable Tourism, 17*(2), 169-189.
- Kiss, A. (2004). Is community-based ecotourism a good use of biodiversity conservation funds? *Trends in Ecology & Evolution, 19*(5), 232-237.
- Lachapelle, P.R., & McCool, S.F. (2005) Exploring the concept of "ownership" in natural resource planning. *Society & Natural Resources: An International Journal, 18*(3), 279-285.
- LaPan, C. M. (2014). *Communitarian microentrepreneurship and gender in the Maya touristscape*. (Doctoral dissertation). North Carolina State University, Raleigh, NC.
- Leopold, A. (1949). The Land Ethic. In *A Sand County Almanac*. New York, NY: Oxford University Press.
- Lokocz, E., Ryan, R. L., & Sadler, A. J. (2011). Motivations for land protection and stewardship: Exploring place attachment and rural landscape character in Massachusetts. *Landscape and urban planning, 99*(2), 65-76.
- Lund (2013). *Cooperative Equity and Ownership: An Introduction*. Madison, WI: University of Wisconsin Center for Cooperatives.

- Lyon, S. (2013). Coffee tourism and community development in Guatemala. *Human Organization*, 72(3), 188-198.
- Manyara, G., & Jones, E. (2007). Community-based tourism enterprises development in Kenya: An exploration of their potential as avenues of poverty reduction. *Journal of Sustainable Tourism*, 15(6), 628-644.
- Mazzocchi, F. (2006). Western science and traditional knowledge. *EMBO reports*, 7(5), 463-466.
- Mbaiwa, J. E. (2005). The problems and prospects of sustainable tourism development in the Okavango Delta, Botswana. *Journal of Sustainable Tourism*, 13(3), 203-227.
- Mbaiwa, J. E., & Stronza, A. L. (2010). The effects of tourism development on rural livelihoods in the Okavango Delta, Botswana. *Journal of Sustainable Tourism*, 18(5), 635-656.
- Mbaiwa, J. E., & Stronza, A. L. (2011). Changes in resident attitudes towards tourism development and conservation in the Okavango Delta, Botswana. *Journal of Environmental Management*, 92(8), 1950-1959.
- McBride, B. B., Brewer, C. A., Berkowitz, A. R., & Borrie, W. T. (2013). Environmental literacy, ecological literacy, ecoliteracy: What do we mean and how did we get here? *Ecosphere*, 4(5), 1-19.
- McCool, S. F. (2009). Constructing partnerships for protected area tourism planning in an era of change and messiness. *Journal of Sustainable Tourism*, 17(2), 133-148.
- McGehee, N. G., & Kim, K. (2004). Motivation for agri-tourism entrepreneurship. *Journal of Travel Research*, 43(2), 161-170.
- McWatters, M. R. (Ed.). (2009). *Residential tourism: (De)constructing paradise* (Vol. 16). Bristol, UK: Channel View Publications.

- Milford, A. (2004). *Coffee, co-operatives and competition: The impact of fair trade*. File 6, Chr. Michelsen Institute, Development Studies and Human Rights, Bergen, Norway. Available at: <http://www.cmi.no/publications/publication/?1802=coffee-co-operatives-and-competition>
- Morais, D. B., Heath, E., Tlhagale, M., Payton, F. C., Martin, K., Mehta, K., & Bass, J. (2012). Concept Testing People-First Tourism in Rural South Africa. In Jafari, J. (Ed.). *Knowledge Management in Tourism: Policy and Governance Applications Bridging Tourism Theory and Practice*, Vol 4, 115-128. Emerald, Bingley, UK.
- Morais, D., & Zinn, H. (2010). Wildlife Value Orientations, Subjective Wellbeing and Perceived Self-Determination in CBNRM and Non-CBNRM Communities in Namibia. *World Wide Fund for Nature*.
- Namey, E., Guest, G., Thairu, L., & Johnson, L. (2008). Data reduction techniques for large qualitative data sets. In G. Guest & K.M. MacQueen (Eds.), *Handbook for team-based qualitative research* (pp. 137-162). Lanham, MD: AltaMira Press.
- Nyaupane, G. P., Morais, D. B., & Dowler, L. (2006). The role of community involvement and number/type of visitors on tourism impacts: A controlled comparison of Annapurna, Nepal and Northwest Yunnan, China. *Tourism Management*, 27(6), 1373-1385.
- Olson, M. (1965). *Logic of collective action: Public goods and the theory of groups*. Cambridge, MA: Harvard University Press.
- Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.
- Ostrom, E. (2010a). Analyzing collective action. *International Association of Agricultural Economists: Workshop in Political Theory and Policy Analysis*. Bloomington, IN: Center for the Study of Institutional Diversity.

- Ostrom, E. (2010b). Beyond markets and states: polycentric governance of complex economic systems. *The American Economic review*, *100*(3), 641-672.
- Pelletier, L. G., Tuson, K. M., Green-Demers, I., Noels, K., & Beaton, A. M. (1998). Why are you doing things for the environment? The motivation toward the environment scale (MTES) 1. *Journal of Applied Social Psychology*, *28*(5), 437-468.
- Phillip, S., Hunter, C., & Blackstock, K. (2010). A typology for defining agritourism. *Tourism Management*, *31*(6), 754-758.
- Pinkley, R. L., Gelfand, M. J., & Duan, L. (2005). When, where and how: the use of multidimensional scaling methods in the study of negotiation and social conflict. *International Negotiation*, *10*(1), 79-96.
- Plummer, R., & Fennell, D. A. (2009). Managing protected areas for sustainable tourism: prospects for adaptive co-management. *Journal of Sustainable Tourism*, *17*(2), 149-168.
- Prokopy, L., McCormick, R., & Reimer, A. (2005). *Open Space Planning (FNR-257)*. Retrieved from Purdue University Extension: <https://www.extension.purdue.edu/extmedia/FNR/FNR-257.pdf>.
- Raymond, C. M., Fazey, I., Reed, M. S., Stringer, L. C., Robinson, G. M., & Evely, A. C. (2010). Integrating local and scientific knowledge for environmental management. *Journal of Environmental Management*, *91*(8), 1766-1777.
- Reyes-García, V., Vadez, V., Tanner, S., McDade, T., Huanca, T., & Leonard, W. R. (2006). Evaluating indices of traditional ecological knowledge: a methodological contribution. *Journal of Ethnobiology and Ethnomedicine*, *2*(21), 1.

- Rivers III, L., & Gibbs, C. (2011). Applying a conservation-criminology framework to common-pool natural-resource issues. *International Journal of Comparative and Applied Criminal Justice*, 35(4), 327-346.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68-78.
- Saxena, G. (2006). Beyond mistrust and competition—the role of social and personal bonding processes in sustaining livelihoods of rural tourism businesses: a case of the Peak District National Park. *International Journal of Tourism Research*, 8(4), 263-277.
- Scannell, L. & Gifford, R. (2010) The relations between natural and civic place attachment and pro-environmental behavior. *Journal of Environmental Psychology*, 30(3), 289-297.
- Schell, E. (2007). The rhetorics of the farm crisis: toward alternative agrarian literacies in a globalized world. In *Rural Literacies* (pp. 77-119). Carbondale, IL: Southern Illinois University Press.
- Schuster, R., Sullivan, D., Kuehn, D., & Morais, D. B. (2011). Relationships among Resident Participation in Nature and Heritage Tourism Activities, Place Attachment, and Sustainability in HRV. *Journal of Park and Recreation Administration*, 29(3) 55-69.
- Seekamp, E., Cervený, L. K., & McCreary, A. (2011). Institutional, individual, and socio-cultural domains of partnerships: A typology of USDA Forest Service recreation partners. *Environmental Management*, 48(3), 615-630.
- Sen, A.K. (1999). *Development as freedom*. New York: Knopf Press.
- Simpson, D.E. (Director). (2009). *Milking the Rhino* [Documentary]. United States: Bullfrog Films.
- Smith, L. (2006). *Uses of heritage*. Abingdon, Oxon: Routledge.

- Spillett, M. A. (2003). Peer debriefing: Who, what, when, why, how. *Academic Exchange Quarterly*, 7(3), 36.
- Stedman, R., Beckley, T., Wallace, S., & Ambard, M. (2004). A picture and 1000 words: Using resident-employed photography to understand attachment to high amenity places. *Journal of Leisure Research*, 36, 580-606.
- Stevenson, K. T., Peterson, M. N., Bondell, H. D., Mertig, A. G., & Moore, S. E. (2013). Environmental, institutional, and demographic predictors of environmental literacy among middle school children. *PloS one*, 8(3), e59519.
- Stronza, A. (2005). Hosts and Hosts: the Anthropology of Community-Based Ecotourism in the Peruvian Amazon. *Napa Bulletin*, 23(1), 170-190.
- Stronza, A. (2010). Commons management and ecotourism: ethnographic evidence from the Amazon. *International Journal of the Commons*, 4(1), 56-77.
- Stronza, A., & Pegas, F. (2008). Ecotourism and conservation: Two cases from Brazil and Peru. *Human Dimensions of Wildlife*, 13(4), 263-279.
- Tew, C., & Barbieri, C. (2012). The perceived benefits of agritourism: The provider's perspective. *Tourism Management*, 33(1), 215-224.
- Tosun, C. (2000). Limits to community participation in the tourism development process in developing countries. *Tourism management*, 21(6), 613-633.
- Tuan, Y.F. (1977). *Space and place: The perspective of experience*. Minneapolis: University of Minnesota Press.
- United Nations. Cooperatives at Work. Retrieved March 16, 2014 from, <http://www.un.org/esa/socdev/social/cooperatives/documents/CoopsAtWork.pdf>.

- Vollan, B. (2008). Socio-ecological explanations for crowding-out effects from economic field experiments in southern Africa. *Ecological Economics*, 67(4), 560-573.
- Walker, A. J., & Ryan, R. L. (2008). Place attachment and landscape preservation in rural New England: A Maine case study. *Landscape and Urban Planning*, 86(2), 141-152.
- West, P., & Carrier, J. G. (2004). Getting away from it all? Ecotourism and authenticity. *Current Anthropology*, 45(4), 483-98.
- Williams, D. R., & Vaske, J. J. (2003). The measurement of place attachment: Validity and generalizability of a psychometric approach. *Forest Science*, 49(6), 830-840.
- Wong, J. (2012, May 29). The rise of the micro-entrepreneurship economy. Retrieved from <http://www.fastcoexist.com/1679903/the-rise-of-the-micro-entrepreneurship-economy>
- Wunder, S. (2000). Ecotourism and economic incentives—an empirical approach. *Ecological Economics*, 32(3), 465-479.
- Wyman, M., & Stein, T. (2010). Examining the linkages between community benefits, place-based meanings, and conservation program involvement: A study within the Community Baboon Sanctuary, Belize. *Society and Natural Resources*, 23(6), 542-556.
- Yang, L. (2012). Impacts and Challenges in Agritourism Development in Yunnan, China. *Tourism Planning & Development*, 9(4), 369-381.
- Zhang, H., & Lei, S.L. (2010). Effects of place attachment on participation intentions for local tourism development. In C.A. Brebbia & F.D. Pineda (Eds.), *Sustainable Tourism IV* (pp.501-509). Ashurst: WIT Press.
- Zorn, E., & Farthing, L. C. (2007). Communitarian tourism hosts and mediators in Peru. *Annals of Tourism Research*, 34(3), 673-689.

CHAPTER 2: Tourism microentrepreneurship, collective action, and land stewardship among Tz'utujil Mayan coffee farmers in Guatemala

Target Journal: *Journal of Latin American Geography*

Abstract

Shade-grown coffee trees provide environmental and economic benefits to farmers and their families. However, fluctuation of prices, unstable political systems, unexpected crop threats, and limited market access make it difficult for indigenous shade-grown coffee farmers to meet basic life needs. In an effort to mitigate these challenges, many small-scale, marginalized coffee farmers have joined cooperatives and have diversified their income through tourism microentrepreneurship. While these activities provide supplemental income to coffee farmers, the way in which livelihood diversification may foster indigenous land stewardship is unknown. Through a primarily qualitative approach, in the summer of 2014, data were collected among participants self-identifying as small-scale shade-grown coffee farmers involved in tourism in the community of San Juan la Laguna in Lake Atitlán, Guatemala. This study was formulated to better understand how involvement in shade-grown coffee farming and communitarian tourism microentrepreneurship may shape land stewardship. Through our assessment of ecoliteracies and motivations towards environmental behaviors, we found participants' involved in tourism microentrepreneurship and shade-grown coffee farming to be primarily intrinsically motivated to demonstrate stewardship on their lands. Secondly, cooperatives in San Juan were found to be highly focused on environmental initiatives and to provide opportunities for participants to gain ecological knowledge. While some participants did explain that their involvement in tourism microentrepreneurship influenced their land stewardship, we found participants' traditional relationships with the land and their involvement in cooperatives to be most influential in fostering an ethic of land stewardship.

Keywords: conservation psychology, pro-environmental behavior, ecotourism, self-determination, sustainable management, traditional ecological knowledge, ecological literacy

Introduction

Geographic regions where coffee is grown are generally known to be very rich in biodiversity, but to have some of the highest levels of economic poverty (Bacon, Mendez, Gomez, Stuart, & Flores, 2008). Particularly in Central America, fluctuation of market prices, unstable and corrupt political systems, limited access to markets, and environmental pressures such as climatic changes have contributed to a “situation of uncertainty” (Milford, 2004, p.3), making it difficult for farmers to both meet basic needs and plan for the future (Bacon, 2005; Jaffee, 2007; Hauserman & Eakin, 2008; Kronik & Verner, 2010). While recent efforts to improve livelihoods and support conservation goals among shade-grown coffee farms have focused on coffee certification (often through cooperatives), problems still persist. For example, extra income is gained through price premiums of certified coffee; however, research has shown that up to 85% of small-scale coffee farmers in Central America suffer from “*los meses flacos*,” or seasonal food insecurity when they are not earning enough profits from coffee and struggle to meet basic life needs (Morris, Mendez, & Olson, 2013). Additionally, shade grown coffee farmers in these regions have increasingly become susceptible to *la roya*, a coffee rust fungus that has destroyed entire harvests over a season and has forced farmers to use expensive and harmful pesticides rather than risking to lose their crops. Consequently, studies indicate that coffee bean sales alone cannot provide enough benefits to locals to alleviate food and income insecurity and coffee farmers have sought alternative sources of income (Bacon, 2005; Bacon et al., 2008). Further, Ellis (1999) argues that, while there are potential positive and negative impacts from rural livelihood diversification, generally those who diversify are less vulnerable to detrimental outside economic and environmental impacts because they are more adaptable to changing circumstances, thus, they are better able to sustain their livelihoods.

In San Juan la Laguna, Guatemala, the study site for this paper, small scale shade coffee farmers have diversified their income by either finding employment off-site as day-workers

(*trabajadoras*), diversifying their land by growing fruit trees or *hortalizas* (e.g., onions or tomatoes), or by adopting complementary enterprises such as tourism microentrepreneurship. Therefore, over the last 15 years, international tourism has grown substantially in San Juan as indigenous residents (*Juaneros*) are increasingly finding creative ways to participate in tourism microentrepreneurship (e.g., through involvement in cooperatives focusing on tourism, leading nature-based tours, selling traditional weavings). Tourism microentrepreneurship has also been utilized by landless residents and by women, who often have limited livelihood opportunities due to traditional cultural roles (LaPan, 2014). In this way, disenfranchised residents view tourism microentrepreneurship as a way to empower themselves and help improve their livelihoods by earning income.

However, as indigenous residents of San Juan are diversifying their livelihoods through tourism microentrepreneurship and by producing shade-grown coffee, it is unclear whether these activities have affected their land stewardship. Accordingly, the purpose of this study was to investigate how involvement in tourism microentrepreneurship and coffee production may interact with collective action processes to affect land stewardship (i.e., as assessed through ecological literacy and intrinsic vs. extrinsic motivations) among Maya indigenous residents in San Juan.

Background and Review of Literature

Coffee Production in Guatemala

Traditionally, small-scale farming in Guatemala has been largely subsistence oriented with a focus on staple foods such as *maiz* (corn) and vegetables for consumption until over the last century when improved means of transportation and communication have increased global demand for commodity crops to be produced and distributed worldwide. As global demand for coffee grew through the late 19th and 20th centuries, Guatemala became one of the top producers of coffee and much of the landscape was used to grow coffee on large-scale lower-altitude plantations (i.e., *fincas*); however, growth in production led to a shortage of labor for international companies (Fischer &

Victor, 2014). Correspondingly, work in the coffee fields was offered as an opportunity for Maya Indians to earn income, but led to dependency on forced wage labor and long-term debt servitude (Lyon, 2011; McCreery, 2003). While indigenous populations resisted working with non-Indians due to abuse, poor living conditions and racial inferiority projected from the finca owners, sometimes they found themselves trapped in a cycle of working to pay off debts or dependent on land they were renting for sustenance (McCreery, 2003). This growth of overt racism, control of land by outsiders and Guatemalan elites, and dependency on commodity production of exports contributed to a 36-year war in Guatemala where tens of thousands of Mayans were displaced and hundreds of thousands were killed.

In the years leading up to and during the war, indigenous farmers continued to struggle against rural poverty and hunger due to loss of access to land now controlled by the government and Guatemalan elites. Lyon (2011) stated that, “Guatemala possessed one of the most inequitable systems of land distribution in all of Latin America” (p. 38), which prevented farmers from having enough land to support their families with traditional subsistence agriculture. In response, seasonal labor migration on coastal cotton plantations became widespread as a source of income among rural communities. Introduction of chemical fertilizers in San Juan in the 1960s increased yields of *maiz* and *hortalizas* (e.g., vegetables such as tomatoes and onions) while using less land. This allowed Mayan farmers to reconnect to their agrarian identity through farming, but also led to decades of overuse contributing to an aggravation of environmental degradation. Additionally, farmers still suffered from hunger and poverty when they could no longer afford to purchase seeds and chemicals for their crops.

After the Peace Accords of 1996, the Maya regained rights to some of their traditional lands, and have gradually transitioned from a dependency on subsistence farming alone to producing high-quality shade-grown coffee. Fischer and Victor (2014) state that international consumer demand for high-quality, shade grown coffee over the last twenty years “has significantly altered the face of

Guatemalan coffee” (p. 156). Today most Guatemalan coffee is shade-grown on small parcels (e.g., less than five *cuerdas*) by indigenous farmers and is processed and sold through cooperatives (Fischer & Victor, 2014). Additionally, more natural shade-grown coffee farms, such as those endemic to the western highlands of Guatemala, serve as refuge for wildlife like howler monkeys and tropical birds, and provide environmental benefits such as biodiversity preservation, soil protection, erosion control, carbon sequestration, and improved pollination (Mendez & Bacon, 2006; Moguel & Toledo, 1999). While yields are often lower, biodiversity and ecological conservation is significantly higher compared with lower altitude conventional coffee-growing regions that have more sun and high levels of pesticides. Davis and Mendez (2011) argue that supporting shade-grown coffee farmers is a key mechanism in mitigating climate change and improving livelihoods of indigenous, forest communities.

Additionally, for indigenous coffee growers, Fischer & Victor (2014) found that coffee is providing a “path to upward mobility” improved quality of life (p. 172). For some, coffee production has also provided with the means to hire workers (rather than relying solely on family labor), invest, or receive more education. However, Fischer and Victor found that these benefits seldom reach the “poorest of the poor” since people with higher education levels, complementary sources of income and own land tend to receive the bulk of benefits (p. 172). Further, through cooperatives and with the incorporation of organic certifications, farmers follow strict requirements to ensure both conservation goals and quality requirements are met (Bacon, Mendez, Gomez, Stuart, & Flores, 2008), but land stewardship among farmers is still unclear. For example, while Lyon (2009) acknowledges that members of a coffee cooperative in San Juan la Laguna “shared an ethic of environmental stewardship and care for the land that provides their livelihood,” she later found that their practices resembled those of North American “environmentalists” by adopting certain environmental practices (e.g., certified organic coffee), but not others (e.g., using chemicals on *maiz*; p. 235). Accordingly, it is important to assess how local development processes (e.g., tourism microentrepreneurship, coffee

certification) have influenced land stewardship and ecoliteracies among indigenous shade-grown coffee farmers to consider potential long-term conservation benefits gained from these livelihood changes.

Tourism Microentrepreneurship and Land Stewardship

Tourism development models have been proposed in an effort to both improve the livelihoods and well-being of marginalized rural populations and to support conservation efforts at the same time. Some of these models include, but are not limited to, community-based tourism (Kiss, 2004; Manyara & Jones, 2007; Mbaiwa & Stronza, 2010; Nyaupane, Morais, & Dowler, 2006; Tosun, 2000), ecotourism (Honey, 1999; Stronza & Pegas, 2008; West & Carrier, 2004), sustainable tourism (Mbaiwa, 2005), and co-management (Jamal & Stronza, 2009; Plummer & Fennell, 2009). While many of these models have at times yielded positive results, none are considered a panacea for the largely unfulfilled role of tourism to improve host community livelihoods, and efforts towards conservation are often ineffective or short-lived (Ahebwa, 2013; Manyara & Jones, 2007; Morais, KC, Mao & Mosimane, 2015; Snyder & Sulle, 2011). Dependency on outside organizations for funding, inequities in management, and limited access to markets are identified as factors causing such limitations, which are often worse among marginalized communities (Davis & Morais, 2004; Morais et al., 2012).

Alternatively, neoliberal models are designed to provide economic incentives for locals to conserve, which may be problematic when those incentives run out (Vollan, 2008). Further, while neoliberal approaches may provide income to marginalized communities to conserve, if their values are not considered these approaches may actually reduce long-term support for conservation. Therefore, to assess land stewardship, it is important to consider individuals' intrinsic motivations to conserve, which are likely most effective in the long-term because they are based on personal choices aligned with one's self-identity (Deci & Ryan, 1985; Morais et al., 2015; Pelletier et al., 1998).

Deci and Ryan (2000) suggested that individuals' behaviors are situated along a continuum depending on the level of extrinsic and intrinsic motivation. They asserted that behaviors can migrate across the ends of this continuum as intrinsic and extrinsic rewards compete to drive behavior. Specific conservation behaviors may lose traditional internal regulation as individuals are faced with externally imposed incentives or punishments (e.g., premium payment for organic certified coffee), but behaviors may become gradually integrated if extant traditional knowledge and identity (e.g., use of traditional herbal medicines) are rekindled. In Table 2.1, below, we explain how behaviors may fall along a continuum from extrinsic to intrinsic motivations (i.e., external regulation, introjected regulation, identified regulation, and integrated regulation). In the context of this study, while tourists or a premium paid for organic certification may provide monetary incentives for landowners to manage their land more sustainably, without the nurture of intrinsically regulated stewardship of the land, conservation efforts may prove short-term and may wane when demand for coffee tours and organic coffee decreases.

Table 2.1 Self-Determination Continuum (Adapted from Alkire, 2005 and Deci & Ryan, 2000)

Extrinsic motivation		Intrinsic motivation	
			
<i>External regulation</i>	<i>Introjected regulation</i>	<i>Identified regulation</i>	<i>Integrated regulation</i>
Individuals behave in a particular way to get rewards or avoid punishment administered by others. Behaviors transfer when the external contingency is gone.	Individuals engage in behavior to get approval or avoid guilt. Norms are still considered to be external, but the consequences are administered by individuals themselves.	Individuals engage in behavior because they believe it is important. They accept and understand the underlying value of the behavior and behave more volitionally, but they are still extrinsically motivated.	Individuals engage in a behavior because the behavior makes good sense to them and they freely decide to do it. There is harmony between behavioral norms and the individuals' values and identity.

Similarly, in recent years, programs such as “People-First Tourism” (Morais, et al., 2012) focus on the “development of human beings, not on the advancement of a tourism industry or the

conservation of natural or cultural resources” (p.117). This approach, influenced by Amartya Sen’s concept of human agency (1999), claims that as individuals gain the freedom to fulfill their own lives by nurturing their own values and intrinsically-regulated motivations, they may be more likely to demonstrate pro-conservation attitudes and behavior (Morais et al., 2012; Morais, et al., 2015).. Moreover, this study focuses on a distinct characterization of “microentrepreneur” that goes beyond the size of the business alone to include individuals with vulnerable livelihoods who often use a variety of self-employment strategies, and may be associated with micro-credit banks or collective organizations designed to help them break out of an endemic dependency on aid (Biles, 2009; LaPan, 2014). Further, Nyaupane,& Poudel (2011) found that, while achieving simultaneous goals of conservation and reducing poverty through tourism was difficult, initiatives that focused on skill development, leadership training, and generation of economic benefits were most successful. Therefore, overall there is growing evidence that when residents’ livelihoods are tied to local natural resources through tourism microentrepreneurship, they become intrinsically invested in conservation efforts aligned with their livelihoods (Morais et al., 2015; Nyaupane & Poudel, 2011).

Collective Action through Cooperatives

This study also assesses the role of collective action as a mechanism to mitigate challenges to successful tourism microentrepreneurship and as a way to foster land stewardship. Generally, the concept of collective action involves any action taken together by a group of people whose goal is to enhance their status and achieve a common objective (Dowding, 2013). In the context of natural resource management, it involves the rethinking of top-down approaches to conservation by examining ways in which communities can effectively manage common-pool resources collectively through complex, strategic processes (Ostrom, 1990). Upon studying these diverse ways that communities have managed the commons well, Ostrom (1990) identified commonalities or principles that generally center on the notions of self-governance, trust, and ownership.

First, distinct from regulations imposed from a higher governing body, self-governance exists when communities create, modify, and enforce rules and behavior internally. Research has shown that when locals are not provided the rights to manage their own resources but are forced to follow rules imposed by outside parties, they are less likely to support conservation efforts or, worse, they may protest against them by illegally harvesting (e.g., Rivers & Gibbs, 2011). Also, in order to be effective, external authorities such as governments must respect the rights of community members to self-govern (Davis & Morais, 2004; Fletcher, 2009; Igoe, 2004; Ostrom, 1990).

Secondly, Beritelli (2011), Ostrom (1990), Saxena (2006) and others argue that trust is a crucial element to the success of collective action. Ostrom proposes that the key to gaining trust is communication; however, factors that may inhibit or support individual buy-in include the number of participants involved, whether benefits are subtractive or fully shared, heterogeneity of participants, face to face communication, reputations, and capability for entry or exit (Cárdenas & Ostrom, 2004; Ostrom, 2010). If individuals are able to get past all of these considerations, agree to participate, and can experience benefits, there is a chance that they will gain trust that may then lead to the adherence to norms of reciprocity which may in turn increase cooperation across members of a community (Cox, Arnold, & Tomás, 2010; Ostrom, 2010).

Third, a key component to the collective action framework is establishing a sense of ownership to the problem, process, (e.g., participating in decision-making and leadership, receiving benefits) and to the outcome (Lachapelle & McCool, 2005; McCool, 2009; Ostrom, 1990). While the concept of owning land is not traditionally valued among many indigenous populations, in his research with the Maasai, Igoe (2004) showed that when individuals gained rights to make impactful land management decisions, they no longer felt excluded, which is a factor associated with opportunistic self-serving use of resources.

According to Milford (2004) and a 2014 UN report (United Nations, 2014), cooperatives can facilitate livelihood diversification among rural landowners through grassroots leadership and

mitigating control from external organizations, but their effectiveness must be examined contextually and more in depth. In San Juan, cooperatives were formed to facilitate the process of farmers gaining organic and/or fair trade certification of their shade-grown coffee farms and to ensure farmers receive fair wages (Abreo, 2010). More recently, cooperatives have also been developed in San Juan to facilitate tourism and environmental initiatives.

Ecoliteracies and Stewardship of Working Lands

Stewardship has been assessed in a number of ways and in different contexts. From the context of agricultural producers, we use the definition by Gill, Klepeis, and Chisholm (2010) who describe that stewardship is, “used to refer to landowners’ sense of what constitutes responsible and moral use such that their own and broader interests are met.” In this study, we used two frameworks to assess the capacity for stewardship: the self-determination continuum (Table 2.1, above) and ecoliteracies (i.e., ecological knowledge, environmental attitudes, environmental behaviors). Defined as, “the ability to use ecological understanding, thinking, and habits of mind for living in, enjoying, and/or studying the environment” (Berkowitz, Ford, and Brewer, 2005, p.228), Stevenson et al. (2013) argue that having the ability to tackle increasing global environmental challenges “depends entirely on publics who understand ecology, care about the environment, possess skills to assess environmental risk, and share a commitment to sustainability” (p.1). Appropriately, authors have referred to this set of requirements as ecological literacy, and argue that it is imperative that individuals demonstrate these qualities to be aware of environmental challenges and remain effective in the responsible management of one’s working land.

While the concept of ecoliteracy has been applied regularly in recent years (Berkowitz, Ford, & Brewer, 2005; McBride et al, 2013; Stevenson, 2013), the scale used to measure this construct has been developed for and used among primarily school-age children in the context of environmental education. The theoretical grounding of this scale is very relevant to this study; however, the scale is not applicable to marginalized people in under-resourced rural populations (e.g., indigenous peoples

in less-developed countries). An examination of ecoliteracy in such contexts requires more nuanced approaches that accept the complexity of local ecological knowledge to include traditional ecological knowledge (TEK) as well as “western” or scientific-based knowledge (Mazzocchi, 2006; Raymond et al., 2010). Therefore, in this study we propose the term “ecoliteracies” to emphasize that knowledge and awareness of environmental challenges may come from multiple sources and may be complementary but also conflicting/competing. When assessing ecoliteracies among individuals with different worldviews and backgrounds, it is appropriate to consider all types of ecological knowledge and how they may be integrated in environmental management (Raymond et al., 2010).

Methods

The purpose of this study is to examine ways in which indigenous Maya farmers are diversifying their livelihoods through involvement in coffee and tourism microentrepreneurship, and how these activities may foster stewardship of their working lands. In order to assess these relationships, we examined the following research questions in San Juan la Laguna:

1. In what ways are residents diversifying their livelihoods through involvement in shade-grown coffee farming and tourism microentrepreneurship?
2. In what ways do farmers involved in tourism microentrepreneurship and coffee demonstrate land stewardship (i.e., as assessed through ecoliteracies, intrinsic motivation)?
3. In which ways does farmers’ involvement in tourism and coffee influence their land stewardship?
4. In what ways does collective action facilitate an ethic of land stewardship among participants?

Study Setting

San Juan la Laguna is one of about a dozen *municipios* (towns) situated along Lake Atitlán on the western highlands of Guatemala (Figures 2.1 and 2.2). With a population just under 5,000, San Juan residents (*Juaneros*) are over 95% Tz’utujil Maya indigenous and are dependent on land as a

primary source of income. For example, shade-grown coffee (either through agricultural production or wage labor) and traditional weaving with natural dyes (*tintas naturales*) are main sources of income and they reflect and shape local identities. Speranza, Modesto, & Niessen (2005) explain that, “Textile production is one of the only means of income available during the coffee off-season, and is sometimes the only source of cash where women are the heads of households” (p. 157).

As tourism in some neighboring *municipios* of Lake Atitlán (i.e., Panajachel, San Pedro la Laguna) has grown since the 1960s and 1970s, *Juaneros* are increasingly known for their skills in painting, traditional weavings, and coffee production. Correspondingly, tourism in San Juan la Laguna has grown substantially over the last 10-15 years and has recently provided new opportunities for *Juaneros* through ecotourism (e.g., guided nature walks), homestays (e.g., *posadas mayas*), and the selling of their traditional hand-woven textiles (e.g., *tejidos*) to international visitors.

However, while Lake Atitlán is one of the most beautiful lakes in the world, recent efforts among locals and NGOs have focused on reducing litter and pollution of the lake. Additionally, in October 2009, a bloom of cyanobacteria posed a public health risk for Maya peoples while international media contributed to misunderstandings and blame towards their indigenous way of life (Harvey, 2012)). Hurricane Stan in 2005 and Tropical Storm Agatha in 2010 also caused severe flooding, landslides, and loss of life and agricultural commodities in many villages around Lake Atitlán and much of Guatemala. Following Agatha, the lake rose substantially, and today the water level has continued to rise causing complete submersion of several businesses and houses along San Juan’s shoreline. While several theories for the cause of the rapid lake rise are proposed, the submersion of farmland, businesses, and housing structures has undoubtedly affected many local entrepreneurs, farmers, and the tourism industry.

To improve local socio-economic and environmental conditions, and to preserve local culture, *Juaneros* have also formed many cooperatives, often with the assistance of international NGOs and faith-based organizations. In this paper, the term cooperative includes organizations,

associations, and cooperatives under the same umbrella. In contrast with neighboring communities, San Juan has a large, diverse array of cooperatives that provide services for tourists and, according to Abreo (2010), demonstrate “connectedness and cooperation” in working together to “improve livelihoods and educational levels in the town” (p. 11).

Accordingly, we examined the role of cooperatives in fostering land stewardship among residents in San Juan who are involved in tourism microentrepreneurship and/or organic coffee farming. LaPan et al. (in press-a) refers to the community development approach exemplified in San Juan as “communitarian tourism,” which focuses on “locally developed, owned, and managed enterprise(s) with a community-wide distribution of benefits” (Zorn & Farthing, 2007, p. 674).



Figure 2.1: Map of Guatemala (Map data: 2015 Google)



Figure 2.2: Study Site, San Juan la Laguna (Map data: 2015 Google)

Sampling

During a fieldwork period of five weeks in summer 2014, the primary author conducted in-depth semi-structured interviews with members who self-identified as small-scale coffee landholders involved in tourism microentrepreneurship. The first several interviews took place with members of the *Cooperativa La Voz que Clama en el Desierto*, which currently has over 100 active members who own small-scale coffee lands and who have collectively integrated coffee tourism over the last ten years. *La Voz* was chosen as a starting point because of the cooperative's background in growing certified organic coffee and, more recently, their implementation of coffee tourism. To build rapport and trust at the cooperative, during initial days in Guatemala, the primary author visited *La Voz* daily, took a guided coffee tour, and familiarized herself with the background of the cooperative, its

structural processes, and many of its current members. After several interviews were conducted with members of *La Voz*, similar patterns were emerging. Simultaneously, informal discussions with *Juaneros* revealed that most residents involved in tourism did so through cooperatives (e.g., coffee cooperatives, weaving cooperatives, or other tourism-focused cooperatives, see Figure 2.3).

Therefore, sampling was expanded to include participants involved in other types of tourism as well, as long as they were participating in a cooperative and were also involved in shade grown coffee farming.

While many informal interviews were held with *Juaneros* involved in tourism, such as *tuk tuk* drivers (e.g., three-wheeled taxi) and artists, this study focuses on participants that are to some degree involved in both shade-grown coffee production and tourism microentrepreneurship. *Juaneros* with occupations related to transportation (e.g., *tuk tuk* drivers, *lancha* boat captains) were not included in the sampling because these services are not solely for use by tourists and are typically individual ventures and not collectively managed. Additionally, most artists and weavers that were informally contacted explained that they did not participate in coffee farming and, instead, focused on selling their work to tourists as their primary source of income. Therefore, while many artists and weavers were contacted (i.e., *artesanas*), only those who also participated in coffee farming were interviewed formally. Through this process of strategically searching for participants in San Juan that fit the selected criteria, and through chain referral sampling (Biernacki & Waldorf, 1981), 26 participants were selected and willing to participate in the study.

Namely, participants consisted of 16 men and 10 women ranging in age from 19 to 67 years (average age 36) and with years of education ranging from 1 to 17 years (average 6 years). This relatively high level of education for the region reflects that participants also involved in tourism microentrepreneurship have higher education levels than the average coffee farmer in San Juan (i.e., 3 years; Lyon, 2011).

Participants were involved in tourism microentrepreneurship either directly (e.g., guides, homestay) or indirectly (e.g., member of cooperative that provides tourism), and were also involved in coffee farming either as owners (e.g., direct management of small-scale coffee plots) or as workers (i.e., *trabajadoras* or day laborers). An overview of participants' level of involvement in tourism microentrepreneurship and coffee farming is displayed in Table 2.2.

Table 2.2: Participant levels of involvement in tourism microentrepreneurship and coffee farming

Involvement in tourism microentrepreneurship	Inv. in coffee farming	Pseudonyms	Description
high	high	Andrea* Angel Antonio Carlos Emiliano Enrique Javier Lucia* Miguel	Actively and regularly involved in both tourism microentrepreneurship and coffee production as equally important sources of livelihood.
high	medium	Alejandro Catalina* Claudia* Cristián	Primarily supports livelihood through tourism microentrepreneurship and secondly through coffee farming.
high	low	Clara* y Esmeralda* Lesvia* Magdalena* Marcelo	Primarily supports livelihood through tourism microentrepreneurship (mostly weaving) and very minimally through coffee farming.
medium	high	Fernando Pablo	Supports livelihood equally through alternative income (e.g., teacher, runs general store) and coffee farming. Recently growing involvement in tourism.
medium	medium	Felipe y Maria*	Primarily supporting livelihood through alternative income (e.g., traditional fishing). Occasionally involved in coffee and tourism microentrepreneurship.
low	high	Ana* Diego Don José Manuel	Supporting livelihood mostly through coffee farming. Very minimally or indirectly involved in tourism microentrepreneurship.

*Indicates a female participant

All but two participants (Carlos and Pablo) stated that they had less than twenty cuerdas¹ of land with the majority holding less than five cuerdas and three participants (all weavers) not owning any coffee land. Ten (38%) of the participants acknowledged that they used part of their coffee land or their *sitio* (where they live) to grow fruit or vegetables to sell. Most commonly, participants sold onions, tomatoes, and fruit trees such as bananas, avocados, and mangoes through local markets or informally. Nine participants (35%) also mentioned using their land for subsistence farming (i.e., growing *milpa* or *maiz*) to feed their family. Participants also diversified their income through tourism microentrepreneurship in several ways, with fourteen (54%) showing that their family's livelihood was supported by two or more types of tourism at the same time (see Table 2.3).

¹ Several different terms were used to describe amount of land. Roughly, 1 cuerda = 32² meters; 1 manzana = 32 cuerdas (D. Peroff, field notes, June 13, 2014).

Table 2.3: Type of tourism involvement (N=26 participants)

Type of tourism	Description	Number of Participants Involved
guia (pescador, café, comunidad)	guide (fishing, coffee, or tour of community); may be through tourism association, cooperative, or independent business	9
tejidos, artesanía	textiles, weavings (sells weavings and may give demonstrations, commonly through a cooperative)	8*
café	barista, coffee tours, or on coffee tourism board at cooperative	8
posadas mayas	homestays	5
asociación (turismo)	tourism association or organization	5
cafetería	owns coffee shop	3
maestro	teaches Spanish, art, or weaving to visitors	4
asociación (ambiente natural)	environmental association or organization facilitating sustainable tourism development & conservation in San Juan	2
camionetilla	organized trips through tourism shuttle company	1
arte	art	1

Note: many informants participated in more than one type of tourism.

*Additionally, three participants also mentioned that their wives made textiles.

Participants were also highly involved in cooperatives, which were often designed to facilitate collective management of natural resources and tourism microentrepreneurship in San Juan. For instance, nine participants (35%) were members of *La Voz* coffee cooperative, eleven (42%) worked at other tourism-focused cooperatives (e.g., local environmental organizations, local tourism organization named *Rupalaj K'istalin*), and ten participants (38%) were either members of weaving cooperatives or a member of their household was a member (See Figure 2.3). As illustrated in the diagram, it common for participants to be involved in more than one cooperative.



Figure 2.3: Participant involvement in cooperatives

Instrument Development

Based on the literature, a semi-structured interview protocol was developed in Spanish consisting of primarily open-ended and free-listing questions. Probing was used to improve clarity and richness of the data. Interviews were audio recorded and lasted between 32 and 110 minutes (average: 64 minutes). Comprehensive ethnographic field observations were also taken in English through memoing, journaling, and daily field notes (Bernard, 2011). These data helped support how themes were emerging from the interviews and observations (Charmaz, 2006).

Involvement in tourism microentrepreneurship and coffee farming.

To examine the level and type of involvement in microentrepreneurship, participants were asked to list sources that make up their livelihood and to identify which livelihood source is the most important in their life. They were also asked to explain which types of tourism activities they participate in, if any, and how long they have participated. Based on a set of criteria that were developed, we determined participants' involvement in tourism microentrepreneurship and coffee

farming to be on a scale of low, medium, or high (Table 2.2, above). This assessment was adapted from Stronza's (2005) tourism involvement index, to the qualitative method and cultural context of this study.

To assess their level of involvement in coffee farming and land use (e.g., hands-on management, day worker, size of plot), participants were asked to describe "*su tierra*" (your land) followed by probing questions about how much land they had, how long they'd possessed it, whether they owned the land or rented, and if they used employees to help farm the land. Since land could be a sensitive topic for *Juaneros* to discuss, we aimed to have them describe their land in their own words as much as possible to better understand their relationship and involvement with cultivating the land.

Collective action.

To assess collective action, open-ended questions were developed based on the three overall themes of self-governance, trust, and ownership. Using Ostrom's book *Governing the Commons* (1990) as a guiding framework, questions prompted participants to reflect on how they collaborate, influence, and are influenced by others in managing their land; their preferences towards collaboration (e.g. managing alone or collaboratively, who they trust); benefits and who receives them; who develops rules and how they are monitored and enforced; and how government and non-governmental organizations recognize and support (or not) efforts to collaborate on land management.

Land stewardship.

To assess land stewardship, we used ecoliteracy (i.e., environmental attitudes, ecological knowledge, environmental behavior) and the self-determination continuum to examine not only which activities that participants did on their land (i.e., environmental behaviors), but to assess the motivation behind these behaviors (i.e., extrinsic vs. intrinsic). Through the assessment of these sub-constructs, we examined what role participants' involvement in tourism microentrepreneurship and coffee farming had in influencing their land stewardship. Specifically, to assess ecological

knowledge, participants were asked questions about both traditional ecological knowledge (TEK) and scientific “western” knowledge (Agrawal, 1995; Raymond et al., 2010). Following Reyes-Garcia et al. (2006) indices of evaluating TEK, participants listed important medicinal plants, explained their use, and indicated when and where they last harvested these plants. To assess environmental attitudes and behaviors (adapted from the Middle School Environmental Literacy Survey, 2009), participants listed: environmental issues that they felt might negatively impact the future of their land; programs, activities or techniques that they felt might positively impact the future of their land; and they described measures taken to protect natural resources and their land.

Based on Ryan and Deci’s (2000) Self-determination Continuum, participants were asked a series of questions to determine their motivations to pursue activities on their land (i.e., why they exhibited specific environmental behaviors). Namely, participants first listed activities that they do on their land, and then they were asked why they chose to do the activity according to the following categories, which were explained in detail: no choice, to obtain approval/avoid guilt, because they like them, or because they feel it is important (Alkire, 2005; Morais et al., 2015). Further probing revealed where activities were situated on the self-determination spectrum (Table 2.1) and, in effect, why participants were motivated to do each activity.

Data Analysis

Twenty-six participants were interviewed in Spanish; however, two participants switched to speaking in English during the interview. All quotes are written in the language used by the participants and, when necessary, translated to English. After completing fieldwork in Guatemala, the recorded semi-structured, in depth interviews were transcribed verbatim in Spanish by local, native Spanish speakers and imported into MaxQDA 11 Qualitative Data Analysis Software. Then, transcriptions were analyzed using a theory-driven approach where data were line-by-line coded as either semantic (verbally expressed meanings) or latent (underlying meanings) to identify how themes reflected the conceptual framework (Braun & Clarke, 2006; Flick, 2014; Namey, Guest, Thairu, & Johnson, 2008). Responses that failed to integrate theoretical constructs were also noted to avoid

confirmation bias (Greenwald, 1986). Emerging themes were compared to field notes, memos and journal entries to inform findings, including notes from several informal interviews and observations during time spent in San Juan. Trustworthiness was sought through a process of insider peer debriefing where two of the authors met weekly to compare how segments had been coded and discuss emerging themes (Spillett, 2003). Through this dynamic process, codes were re-analyzed and integrated until co-authors came to an agreement in understanding relationships between cases beyond individual cases (Flick, 2014). Additionally, findings were verified with a co-author who has spent an average of three months per year coordinating various research and teaching projects in the region over the last fifteen years. In the following sections, we describe how participants explained that their involvement in shade-grown coffee production and tourism microentrepreneurship interacted with collective action processes to foster their land stewardship.

Findings

Land Stewardship

In these sections, first we explain how participants expressed their environmental attitudes and concerns towards environmental issues. Then, using the sub-constructs of “Westernized” and traditional ecological knowledge, we present how participants demonstrated ecological knowledge. Then, we present environmental behaviors that participants identified, including how participants described their motivations for doing these activities on their land. Finally, we explain the role of cooperatives in facilitating land stewardship among participants through collective action.

Environmental Attitudes

Participants were very concerned about environmental issues influencing the conservation of their land and natural resources. Main concerns included: pollution (e.g., contamination from chemicals, lake, air), deforestation, plastic/trash, people/community not helping, disease (e.g., *la roya*), and soil conservation (e.g., infertile soil, erosion, landslides). Notably, almost all of the

concerns or ecosystem changes mentioned were local (e.g., trash) and global concerns (e.g., climate change, genetically-modified crops) were mentioned far less frequently.

Participants also explained why they had these concerns. For example, participants expressed concern about how pollution could affect the health of the community's residents and future generations. Specifically, they were worried about rainfall washing trash and chemicals from agriculture into the lake or causing dangerous erosion and mudslides if specific management techniques were not implemented. Cláudia, a young weaver who also participates in coffee farming and beekeeping, stated, "*Yo me preocupo por la salud de los niños, yo digo que es por la naturaleza, ahora no sé en qué lugar se está contaminando el agua, no es lago sino el agua potable, porque hay muchos niños en San Juan que tiene hepatitis.*" [I worry about the health of the children, I say that it is for the nature, now I do not know where the water is contaminated, it is not a lake but it is drinking water, because there are many children in San Juan that have hepatitis.]

Further, participants expressed that other people (both in the community and outside of San Juan) were to blame for San Juan's environmental issues. For instance, Clara, a weaver whose husband works daily in the coffee fields claimed:

Como nosotros, hay personas que somos conscientes que nosotros guardamos y separamos la basura pero hay personas que no son conscientes tiran la basura en las calles o en el lago y así con los arboles también hay personas que siembran, y las personas los cortan o los sacan y hay personas que no son conscientes con el clima y queman las cosas así sin reciclarlas." [Like us, there are people that are aware that we keep and separate trash, but there are people that are not aware and throw the trash in the streets or in the lake, and with the trees also there are people who plant and people that cut them or take them, and there are people that are not aware about the climate and burn things without recycling them].

Positive behaviors or actions that participants perceived could help mitigate these issues were also listed, such as: use organic fertilizer, protect trees/forests (e.g., plant trees, prune coffee trees),

don't throw trash, protect/conserves/don't pollute, educate/train people, and practice good management. Those more involved in coffee farming listed specific techniques and practices to keep the land and soil healthy such as "*barreras vivas*" [live barriers] or "*barreras muertas*" [dead barriers] which are fences that are made with either plants or rocks to prevent landslides and erosion often caused from excessive rainfall. Farmers also mentioned *poda* [pruning] to ensure that the plants maintain a balance between sun and shade, and coffee farmers all expressed that making and using "*abonos organicos*" [organic fertilizer/compost] was important to prevent chemicals from spreading to the lake, contaminating soil, or affecting the health of people in the community and consumers that drink their coffee.

Teaching people about environmental issues and how to sustainably manage resources was also a key theme. For instance, participants expressed a need to educate children and adults in San Juan (e.g., through workshops) about reducing their use of plastic bags, how to properly sort and recycle trash, and the importance of planting trees and protecting the planet.

To summarize, despite varying levels of involvement in tourism microentrepreneurship and coffee farming, participants interviewed demonstrated strong pro-environmental attitudes and awareness. Pollution was a prominent concern among participants; however, perceptions towards who caused these problems differed. In effect, participants argued that better education could help mitigate environmental problems in San Juan or prevent further issues in the future, but that approaches should be sensitive to technology available and designed with community input.

Ecological Knowledge

An assessment of traditional ecological knowledge revealed that all participants were able to list at least three medicinal plants that were found in San Juan. Somewhat surprisingly, participants also explained that they still use medicinal plants rather than relying solely on Western, synthetic medicines. Residents either grew the plants in their home (*sitio*) or they collected them from the mountains or a neighbor's land. Generally, participants interviewed were very knowledgeable about

certain plants, where to find them, and how and when to use them. For example, participants mentioned *la ruda*, which they explained should be used to wash babies when they are ill. Universally, participants expressed that the plant could not be purchased or it would not work; instead, it must be traded or received as a gift. While some traditions are being lost (e.g., men no longer wear traditional dress except for special occasions), this example reflects a prominent awareness and practice of traditional medicine and knowledge in San Juan. This finding was also supported through direct participant observation with the primary author's host family.

While knowledge of shade-grown coffee production and appropriate techniques was apparent, particularly among members of *La Voz*, “scientific” or “Westernized” knowledge (i.e., protecting corn from genetically modified seeds, climate change) was mentioned less frequently. However, even though some participants were more involved with tourism as their main source of livelihood and did not work daily on the land, residents of San Juan were very in tune with ecological processes, cycles, and changes in the landscape. For example, participants explained changes such as deforestation and how this could affect ecological processes and livelihoods, but rarely used “Western science” terminology. In her own words, Lucía described how she carefully manages her land to limit deforestation:

Antes de talar el árbol, sembrar tres árboles, entre los tres siempre y cuando hay uno que se muere se quedan dos, y tala uno es porque ya está el otro.” [Before cutting down a tree, I plant three trees.. among the three if there is one that dies two remain, therefore if you must cut the other, one is left.]

Coffee farmers also demonstrated their knowledge of shade-grown coffee production by emphasizing the necessary management of coffee plants to maintain a balance between sun and shade and to ensure quality for consumers. For example, Javier described:

No se puede ver como café duro porque el café se necesita 60% de luz y 40% de sombra hay que tengamos un buen café que nosotros exportamos como café pero café de calidad. [It is not possible to grow strong coffee without shade because coffee needs 60% light and 40% shade, this is what we have, good coffee, we export not just coffee but coffee of quality].

Also demonstrating knowledge of shade-grown coffee, participants mentioned that *la roya* was less problematic when the coffee was grown at higher altitudes where it is cooler and the bacteria can't grow and spread as fast. Participants also commonly mentioned knowledge of techniques they implemented to prevent erosion and landslides. Furthermore, almost all participants stated they used "*abono organico*" [organic fertilizer], which they explained in depth to be a natural compost to fertilize their crops and coffee plants. However, because of the use of the word "*organico*" (which could refer to either organic certification or organic fertilizer), the only way to ensure that coffee farmers were not using chemical fertilizers was if they were members of the coffee cooperative.

In summary, participants demonstrated various types of ecological knowledge. While the quality and amount of education that residents receive in San Juan (and throughout Guatemala) are low, participants were knowledgeable about shade-grown coffee production. Further, they demonstrated extensive knowledge of traditional plants and medicines.

Motivations Towards Environmental Behaviors

An examination of the motivations influencing participants' environmental behaviors revealed that most activities were driven by a combination of intrinsic and extrinsic influences, but were much more intrinsically than extrinsically regulated. In other words, participants stated that they were involved in certain land management and conservation activities because they felt they were sound and important, but not all of these behaviors were aligned with their personal values and ethnic identities. Rather, they explained these behaviors would help them sustain resources for tourists or maintain organic certification through the coffee cooperative, reflecting economic incentives. Further, participants mentioned behaviors such as keeping the lake clean from trash and chemicals as well as

planting trees; however, they may have slightly different motivations towards these behaviors depending on how involved they were with tourism or coffee farming versus motivations to keep their community healthy. Also participants with all levels of involvement in coffee farming (i.e., high, medium, low) mentioned behaviors associated with producing organic, shade-grown coffee (e.g., pruning trees, making compost, cleaning plants, building barriers to prevent erosion) reflecting shade-grown coffee production was both incentivized by expected revenue and had become part of their culture. Catalina, who is highly involved in facilitating development of tourism microentrepreneurship through San Juan's local environmental organization, *At'it A'la*, stated:

Es importante para dar al turista cuando viene aunque sea una taza de café orgánico entonces estamos tratando con mi familia de usar abonos orgánicos y no químicos porque eso también nos ha perjudicado al usar químicos especialmente por el agua entonces estaríamos contaminando el agua y eso perjudicaría a que el turismo no venga, eso perjudicaría a que el turismo ya no pudiera apreciar la belleza, el lago los bosques por eso con mi familia estamos tratando de implementar el abono orgánico en todos. [It is important to give the tourist when they come at least a cup of organic coffee, therefore we try with my family to use organic fertilizer and no chemicals because that also has hurt us when using chemicals especially by the water, because then we would be contaminating the water, and that would be detrimental to the tourism industry if they could no longer appreciate the beauty of the lake and the forests - for this reason, my family is trying to implement only organic for everything.]

In this example, Catalina explained how intimately she perceived environmental health to be connected to San Juan's economic development (e.g., through tourism and coffee production) and, moreover, how this motivated her to practice environmentally sustainable techniques on her land. She also explained that it is important for her to protect the health of her community, but also that she would feel guilty if she didn't demonstrate environmentally responsible behaviors because tourists

wouldn't get to enjoy the natural environment in San Juan. Therefore, these behaviors exhibit both introjected and identified regulations (i.e., Chirkov, Ryan, Kim, and Kaplan, 2003, see Table 2.1).

Participants also explained other activities that they did to avoid guilt or seek approval (i.e., "introjected regulation"). For example, while indigenous coffee farmers valued producing coffee without chemicals (e.g., using organic fertilizer or compost), those who were members of *La Voz* had to follow specific regulations so that they could receive the extra premium for organic certification. Also, while participants explained the importance of maintaining shade coffee, they knew their coffee would not be the best quality and would not sell for the best price if they didn't maintain a specific sun-shade ratio throughout the year, which required frequent pruning.

To demonstrate the diverse behaviors mentioned, and how participants explained their motivations behind them, we present a list of behaviors that were mentioned by participants below (Table 2.4). In this table, each behavior listed was mentioned at least once, but they appear in separate columns when the behaviors were driven by multiple motivations. We also used colors to show how each behavior was influenced by either involvement in coffee farming (yellow), tourism microentrepreneurship (green), or neither (blue represents intrinsic motivations with no outside influences as described by participants).

Table 2.4: Activities performed and how participants described motivations behind them

Extrinsic motivation 		Intrinsic motivation	
<i>External regulation</i>	<i>Introjected regulation</i>	<i>Identified regulation</i>	<i>Integrated regulation</i>
using chemicals to treat <i>la roya</i>	pruning coffee trees to maintain shade	growing coffee	planting reeds in lake
	following regulations for organic certification	maintaining shade coffee	protecting natural resources (e.g., trees, land)
	using organic fertilizer (<i>abono organico</i>)	cleaning coffee	not contributing to deforestation
	not using chemicals	making barriers to prevent landslides	not using plastic
		making/using organic compost (<i>abono organico</i>)	not burning trash
		conserving soil	protecting species
		not littering/ picking up trash	saving native seeds (<i>criolla</i>)
		recycling/sorting trash	growing corn (<i>maiz/ milpa</i>)
		planting trees	educating others (e.g. to reduce consumption, protect natural environment)
		educating others (e.g., about sustainable management, not littering)	
		growing vegetables to sell	

Many participants also explained that some activities were entirely intrinsically motivated, or “integrated regulation” (Chirkov et al., 2003, p.102). These activities reflected their Maya identity and their intrinsic values towards being stewards of the environment. Explaining the importance of the natural environment to the Maya and his motivations towards stewardship, Alejandro (in English) stated:

We don't have to lose all these resources, because that's the base of everything, I mean that's the Mayan perspective also. ...we have to live at peace with our atmosphere and the

environment because we are part of it, and that's our home, for us the land it's our mother, it gives us everything we need to live.

Javier also stated, "*Si no conservamos nuestra tierra, ya no podemos vivir*" [If we don't conserve our land, we cannot live], while Antonio expressed that, "*Hay que convivir con los arboles*" [one must live in harmony with the trees]. A void of extrinsic motivations (e.g., income generated from tourism) in these examples reveals that participants expressed these activities to be entirely intrinsically motivated.

Therefore, participants described decisions they made on their land to be much less motivated by external pressures or incentives (i.e., "external regulation") or by an attempt to avoid guilt or seek approval from others (i.e., "introjected regulation"). However, seven participants that were not in the coffee cooperative (i.e., not following organic certification guidelines) perceived that they must use chemicals when they had no other choice to prevent their coffee plants from being devastated by *la roya* because they felt pressured from the government to use them. Expressing concern, Alejandro explained that the government's approach to provide free chemicals to people was harmful because it was designed to formulate dependencies so that people would have to buy much more expensive chemicals and apply them more frequently to rid crops of the fungus.

Through this assessment we revealed that, while participants were somewhat extrinsically motivated to practice environmentally responsible behaviors (e.g., to receive a premium from organic coffee certification or profits from tourism), their intrinsic motivation towards stewardship greatly influenced most of their environmental behaviors. Through the complementary income generated from tourism and coffee certification, participants were less likely to feel the need to use chemicals on their land that were provided by the government. Therefore, participants explained that the extra income they generated from their participation in tourism microentrepreneurship and coffee certification provided them opportunities to nurture their intrinsic motivations towards

environmentally responsible management and limit pressures from the government to use chemicals on their land.

Role of Cooperatives in Facilitating Land Stewardship

Overwhelmingly, participants expressed a lack of governmental regulations towards the environment, inequities in land distribution, and corruption by the government and Guatemalan elite regarding indigenous rights to land in San Juan. These factors, including a history lacking governmental support and acknowledgement of indigenous rights to organize contributed to a preference among participants to collaborate. Correspondingly, Alejandro, a 22 year-old Spanish teacher for tourists, commented (in English) how collaboration could mitigate some of the problems associated with a general distrust and lack of opportunity from the government:

Because they try to get everything from us – and they would like to have just one owner for the richness of Guatemala. That’s why I can see this system, it works better when everybody has small part and then everybody has small opportunity and then it’s just to organize these people to learn and to have – to learn different techniques and then work together.

In response to a general lack of concern about environmental issues by the government, participants explained that cooperatives in San Juan, regardless of type (e.g., weaving cooperatives, tourism associations, coffee cooperative) had clear objectives towards environmental stewardship. In the next section we describe strategies used by cooperatives to demonstrate this stewardship, in accordance with Ostrom’s (1990) principles of self-governance, ownership and trust, and we report how collective action was used to foster land stewardship.

Self-governance and ownership.

Participants described the organizational structure of their cooperative and how rules were collectively developed to benefit all members (e.g., with rotating committee members and a board of directors). Regardless of the type of cooperative that they were involved in, participants affirmed that

they either currently or in the past had held managerial positions or served on the board of directors, and that these positions were rotated regularly among members (usually every two years). This showed that their cooperative demonstrated self-governance in rule-writing and decision-making; however, participants also revealed that some of the cooperatives in San Juan were still very dependent on outside organizations and private donors for funding and marketing (e.g., Maya Traditions).

Furthermore, especially in *La Voz*, participants demonstrated a strong sense of inclusion and organizational capacity (Lyon, 2013). Describing his relationship with *La Voz*, Cristian stated that, “*somos parte de la cooperativa y el café es parte de nosotros.*” [we are part of the cooperative and the coffee is part of us]. Lucia also demonstrated the sense of self-governance and ownership she had in her cooperative to make decisions that would benefit all members by ensuring members were given opportunities to have a voice:

Nosotros manejamos la administración de nuestras tierras, nosotros llevamos todo, todo el control de nuestras parcelas no otras personas, y cuando se hacen las reuniones por la junta directiva dos días antes entregan notas en las casas de que en la cooperativa hay reunión pero les dan la nota. [We handle the land management of our lands, we can deliver everything - all control of our plots not other people, and when there are meetings with the Board of Directors two days before they deliver notes to the houses that are in the cooperative (the coop members) that there will be a meeting.]

Despite their willingness to accept new members, informants also contended that members must follow the rules proposed or they would lose their membership rights. Alejandro explained, “If you want to become a member, you have to fill out many things – papers and everything – so then when you become a member you get different rights and responsibilities, so then you have to work strict(ly) with organic coffee.” While the risk of losing membership rights (including a price premium for organic certification) was a potential concern for members of *La Voz*, weaving

cooperatives operated much more informally and had less rules and regulations to follow. For example, Claudia explained that there were some women who never wanted to work at the store; instead, they preferred to work from home and drop textiles off whenever they were completed. And, while all community members could apply to join *La Voz* or the weaving cooperatives, the tourism and environmental cooperatives (e.g., *Rupalaj K'istalin* and *Atit' A'la*) had less members and therefore required more specific skills and commitments for its' employees and members.

When there were conflicts, participants conveyed that they worked together in formal meetings to solve them and make decisions. Antonio, a member of *La Voz* who also owns a café in San Juan that sells Westernized coffees and baked goods, described how conflicts were resolved, “*Es en asamblea general en la cooperativa si se convoca a todos se platica, se expone el problema y se llega a una solución entre todos.*” [A general assembly convenes in the cooperative where everyone talks, the problem is exposed and we come to a solution together.] Conversely, since regulations were much more informal through the weaving cooperatives, participants stated there were less conflicts and they rarely required a formal meetings. In effect, the ability for *Juaneros* to self-govern through cooperatives and collectively make decisions towards land management with a focus on environmental initiatives (e.g., certified coffee, guided nature tours) has been integral to facilitating land stewardship in San Juan.

Trust.

Another key indicator of the success of cooperatives in San Juan in facilitating stewardship is that most participants claimed that they respected and followed the collectively-developed rules, and that they trusted the information they received about implementing environmentally sustainable land management techniques. For example, many participants mentioned that they joined *La Voz* to learn how to grow and sell their coffee as organic, and they learned new techniques through the cooperative to facilitate the process of producing organic coffee and maintaining certification. Enrique, a barista at *La Voz* whose wife also sells textiles, explained that he, “*sólo recibimos la asesoría que llega acá*”

[only receives advice that comes from here]. In addition to trusting information they received, participants that were not directly involved in coffee tourism also supported the coffee tours because of the income it brought to the cooperative. For example, David stated:

El beneficio que trae el turismo no es directamente a los asociados sino que lo dejan hay en la organización para que lo gastan en mantenimiento y pago de los trabajadores o comprar otro aparato entonces el dinero que trae el turismo se queda en la organización. [The benefit that tourism brings is not directly to partners but they leave it there in the organization to spend on maintenance and payment of workers or buy another device then the money that brings tourism stays in the organization.]

Trust in cooperatives was also reflected by non-members, particularly towards the organic coffee cooperative, *La Voz*. Although Alejandro had not joined *La Voz* yet, he stated, “for me it would not be a problem to follow these rules... it would be no problem because they get these rules because they know what they do, technically and professionally.”

The other cooperatives represented in this study also demonstrated high levels of trust and inclusiveness between members; however, trustworthiness between cooperatives was not shared throughout the community. Especially among the weavers interviewed, one weaver claimed that some of the other weaving cooperatives in town were being dishonest about using natural dyes in their weavings, and about actually being a cooperative. Off the record, one weaver criticized a weaver from another cooperative for not actually needing the money from the weavings, and claimed they were running a family business and not a cooperative designed to benefit all members equally.

Others revealed that with a growth in tourism microentrepreneurship and cooperatives came increased competition for tourists and resources. Two of the participants interviewed, Felipe and Claudia, also felt that since the physical location of their business became submerged in water, they

were dependent on the tourism association, *Rupalaj K'istalin*, to promote their business. Felipe, however, perceived that the tourism association expected too much money in return.

In summary, participants involved in cooperatives expressed a strong sense of self-governance, trust, ownership, and inclusion that contributed to effectively reaching land stewardship goals through collective processes. However, as San Juan is growing as a tourist destination and the community is increasingly challenged by environmental issues, individual community members and cooperatives are feeling pressure of competition for tourists, which has led to erosion of trust between organizations competing for scarce resources.

Discussion

Over the last twenty years, an increasing demand for shade-grown certified coffee and a growth in international tourism has shifted land use and livelihood sources among indigenous coffee farmers in the western highlands of Guatemala (Fischer & Victor, 2014; Lyon, 2013). Because of these changes, the Tz'utujil Maya have also shifted from a dependence on the land for sustenance to a focus on its economic value (See Chapter 4). Studies assessing how these changes in land use and development have influenced stewardship of working lands are scarce. Accordingly, this study examined how involvement in tourism microentrepreneurship and in shade-grown coffee farming has shaped land stewardship among a Maya indigenous community in San Juan la Laguna, Guatemala. Further, we assessed how collective action (through participants' involvement in cooperatives) fostered these relationships. In this section, we discuss our findings and how they relate to existing literature based on the four research questions we proposed.

Livelihood Diversification

We found participants to be involved in tourism microentrepreneurship and shade-grown coffee farming in many different ways and at various levels (i.e., high, medium, low). Supporting claims made by Ellis (1999), this study has shown that livelihood diversification can help rural

farmers be less dependent on farming (i.e., specialty coffee) and, less susceptible to environmental and economic crises. Notably, involvement in tourism microentrepreneurship also provided an opportunity for women to defy traditional roles in the community and gain independence by earning their own income and interacting with other entrepreneurial women in social circles; however, these opportunities were greatly facilitated by collective action processes (e.g., through involvement in weaving and other tourism-related cooperatives, LaPan et al., in press-b). Also, we found that while men did most of the coffee farming, cooperative membership provided opportunities for women to get involved with coffee production and with coffee tourism as guides and baristas. These opportunities allowed men and women to diversify their daily activities from traditional gender roles (e.g., farming, making tortillas) and gain skills, knowledge, and opportunities that could better reflect their own values and intrinsically-regulated motivations (Morais et al., 2012; Morais et al., 2015; Sen, 1999).

Land Stewardship

We assessed land stewardship of participants by examining their ecoliteracies (i.e., environmental attitudes, ecological knowledge, and environmental behavior) and the intrinsic and extrinsic motivations of their reported environmental behaviors. We found that participants demonstrated pro-environmental attitudes and awareness both at a local level (tangible) and at a national level (political), but less at a global level. *Juaneros* in this study were aware and concerned about local environmental issues that they feared could impact the health of their community and future generations; however, because of a lack of support from government, corruption, and a need for access to better education, they often felt stymied in mitigating environmental problems that couldn't be solved at a local, individual level. While awareness of global environmental challenges is useful, it would be advisable to involve these populations in local actions that target global problems (e.g., payments for ecosystem services like replanting trees, carbon credits, etc).

Extensive ecological knowledge was also demonstrated, primarily about the production of shade-grown coffee and the use of traditional plants. Interestingly, despite various levels of involvement in coffee farming, participants were all very familiar with techniques and processes related to shade-grown coffee suggesting that coffee has become an integral part of their culture, rather than just a livelihood activity for some. In the context of indigenous farmers and rural communities, we found it useful to assess both traditional and “Western” knowledge, since indigenous people may be very familiar with their natural resources but less so with scientific knowledge. We argue that failing to acknowledge and learn ways that locals use traditional knowledge could limit contextual understandings of ecological knowledge; therefore, integrating different types (and sources) of knowledge is essential for effective environmental management (Raymond et al., 2010). Accordingly, while participants didn’t demonstrate vast scientific knowledge, their extensive knowledge of local medicinal plants as well as when and how to use them, and where to find them, revealed a deep understanding of the local environment.

The activities that participants carried out on their land (i.e., environmental behaviors) appeared to be more highly intrinsically motivated. Namely, participants indicated that their commitment to farming their land sustainably reflected their intrinsic desire to connect with the land integral to their Maya identity. However, Lyon (2009) found that while *Juaneros* took pride in their high quality, organic coffee, she claimed that they were likely only following environmental standards to meet Western demands for quality and certification (i.e, they were primarily extrinsically motivated). Instead, in this study we found that while many of the activities relating to coffee and tourism were somewhat extrinsically motivated (e.g., following regulations for organic certification, keeping the community clean to attract visitors), participants commonly mentioned activities that they described as being entirely intrinsically motivated (e.g., planting trees, saving native seeds). Therefore, *Juaneros* seemed to be able to integrate intrinsic and extrinsic motivations in the

regulation of their land stewardship activities, and they seemed able to resist the potential crowding out effect of extrinsic rewards (Vollan, 2008).

External Influences to Land Stewardship

The findings suggest that farmers' involvement in tourism microentrepreneurship and coffee farming does not directly influence their stewardship; however, farmers do demonstrate their ethic of environmental stewardship through tourism. For example, with the growth of tourism in San Juan, participants have noticed an increase in pollution and trash. Instead of blaming the issue on a growth of tourism in San Juan, participants expressed that education was critical to teach residents about environmental issues and how to implement sustainable practices in their community. This finding supports LaPan et al.'s (in press-a) research that found residents to be supportive of tourism even if they were not receiving personal rewards. Further, it conflicts with Lyon's (2013) earlier research on coffee tourism in San Juan which found that benefits and drawbacks of tourism were perceived to be unevenly distributed among residents. Instead, San Juan's communitarian approach to tourism development has likely influenced residents' perceptions towards the tourism industry as they perceive managing negative environmental issues brought on by tourism as a collective responsibility rather than at an individual one.

Secondly, participants' involvement in tourism did not seem to influence their level of ecological knowledge. While two participants mentioned that tourists directly taught them new techniques (e.g., better ways to manage garbage), this was an exception. However, there were specific ties between participants' involvement in tourism microentrepreneurship and their ecological behavior (see Table 2.4). Namely, many participants explained that they enacted positive environmental behaviors partially to support the tourism industry (e.g., not littering, recycling), while others mentioned many of the same activities as being important regardless of any extrinsic influences. In effect, these conservation behaviors will likely be more effective in the long-term since they support personal rather than extrinsic values (Deci and Ryan, 2000).

Many participants did relate their environmental concerns directly to concerns about the conservation of their land for production of coffee and other crops. Perhaps because of the connection between the health of the land and their livelihoods, participants demonstrated strong pro-environmental attitudes and emphasized the importance of maintaining healthy soils and well-managed farms (e.g., pruning, using live barriers, organic fertilizer). As explained by Morais et al. (2015), people tend to become personally invested in resource conservation when the sustainability of those resources is important for their livelihoods. While we did not find participants' involvement in coffee farming to be directly related to their traditional knowledge, we did find that many of the environmentally sustainable techniques mentioned were related specifically to coffee production. Future research may want to focus more specifically on if these positive environmental behaviors were also practiced when cultivating other crops, such as maize and vegetables because, while participants did mention several environmentally sustainable techniques that they described as being intrinsically motivated, Lyon (2009) argued that organic coffee farmers are only held accountable by following regulations towards certification, which is a response to foreign demand and is not initiated by locals.

Collective Action and Land Stewardship

Perhaps the most important finding from this study is the importance of San Juan's cooperatives (i.e., coffee cooperatives, weaving cooperatives, or other tourism-focused cooperatives) in facilitating land stewardship through collective action. By providing needed resources and professional connections to help participants mitigate political and economic barriers, cooperatives encouraged and facilitated stewardship of working lands. This finding supports Ostrom's (1990) theory that through organized processes communities can collectively manage common-pool resources sustainably. Further, for conservation goals to be met, collective processes must be strategically planned and all members must contribute to ensure effective and equitable management of natural resources.

Involvement in cooperatives also strengthened participants' ecoliteracies in several ways that led to the facilitation of land stewardship (e.g., by teaching organic coffee production techniques, through nature-based tourism programs). It must be noted that extra income gained from participation in cooperatives may have extrinsically influenced certain behaviors; however, participants explained that their involvement with cooperatives aligned well with their goals towards land stewardship. Additionally, profits generated from organic certification and tourism microentrepreneurship were used to support pro-environmental objectives within cooperatives and helped reduce their dependency on outside funding sources for operations, which Lyon (2013) pointed out was a potential setback for long-term success and profitability during her time at *La Voz*. Often, these funds were used to support environmental training programs for cooperative members as well as for other people in the community.

Consistent with the literature (Ostrom, 1990) in this study, trust emerged as a critical factor conditioning the success of cooperatives in fostering land stewardship. However, the high sense of trust that participants and community members expressed towards *La Voz* in this study, contrasts with Lyon's (2011) work in San Juan, which revealed internal corruption and dishonesty in this particular cooperative. Further probing into the history of this cooperative revealed that the cooperative had lived through a period of conflict under the former leadership, but that its administration had become more transparent and inclusive. Additionally, this study revealed the importance of gaining trust community-wide rather than solely through organizational capacity (Lyon, 2013). For example, while all cooperative members demonstrated inclusion in their own cooperatives, some cooperatives (e.g., less-established weaving cooperatives) lacked credibility in San Juan or by other cooperatives. Considering the rapid growth in weaving cooperatives in recent years, careful development planning should be taken to ensure that this growth doesn't reduce inclusion at a community level as competition increases. Further, while cooperatives are helping to facilitate stewardship at current levels of tourism and certified coffee production, future research may want to explore if continued

tourism growth may lead to overharvesting of natural resources (e.g., plants used to make natural dyes), and what role cooperatives should have in fostering responsible behaviors to prevent environmental degradation.

Conclusion

In San Juan, tourism microentrepreneurship and coffee farming were closely related to stewardship among indigenous Tz'utujil Mayan coffee farmers. While participants perceived that governmental and environmental pressures threatened their ability to demonstrate stewardship on their working lands, they found that their involvement in cooperatives (e.g., through communitarian tourism microentrepreneurship and organic coffee farming) facilitated their efforts towards stewardship and supplemented their income. This study has further revealed benefits to livelihood diversification and a communitarian approach to development (Ellis, 1999; LaPan, 2014). Furthermore, involvement in tourism microentrepreneurship and organic coffee production through San Juan's cooperatives provided increased opportunities for shade-grown coffee farmers to foster their intrinsic connections with their working lands by providing skill training opportunities, support networks, and supplemental income needed to demonstrate land stewardship (Fischer & Victor, 2014; Mbaiwa & Stronza, 2010; Morais et al., 2015; Stronza & Pegas, 2008).

Therefore, this study has furthered research on the potential benefits of rural farmers diversifying their livelihoods through tourism microentrepreneurship or certification. We've also presented two sub-constructs that were effective in examining land stewardship in an indigenous community with strong historical dependence on natural resources. The combination of assessing ecoliteracies and intrinsic motivations to conservation helped us understand not only participants' level of ecological awareness, knowledge, and behavior; but, incorporation of the self-determination continuum furthered our understanding of *why* certain environmental behaviors were adopted and the likelihood that those behaviors will remain after the end of external pro-conservation interventions.

References

- Abreo, S. (2010). *Community-based education in San Juan la Laguna, Solola, Guatemala*. (Doctoral dissertation). Tulane University, New Orleans, LA.
- Agrawal, A. (1995). Dismantling the divide between indigenous and scientific knowledge. *Development and Change*, 26(3), 413-439.
- Ahebwa, W.M. & van der Duim, R. (2013). Conservation, livelihoods, and tourism: A case study of the Buhoma-Mukono community-based tourism project in Uganda. *Journal of Park and Recreation Administration*, 31(3), 96-114.
- Alkire, S. (2005). Subjective quantitative studies of human agency. *Social Indicators Research*, 74(1), 217-260.
- Bacon, C. (2005). Confronting the coffee crisis: can fair trade, organic, and specialty coffees reduce small-scale farmer vulnerability in Northern Nicaragua? *World Development*, 33(3), 497-511.
- Bacon, C. M., Ernesto Mendez, V., Gómez, M. E. F., Stuart, D., & Flores, S. R. D. (2008). Are sustainable coffee certifications enough to secure farmer livelihoods? The millenium development goals and Nicaragua's Fair Trade cooperatives. *Globalizations*, 5(2), 259-274.
- Beritelli, P. (2011). Cooperation among prominent actors in a tourist destination. *Annals of Tourism Research*, 38(2), 607-629.
- Berkowitz, A. R., Ford, M. E., & Brewer, C. A. (2005). A framework for integrating ecological literacy, civics literacy, and environmental citizenship in environmental education. *Environmental education and advocacy: Changing perspectives of ecology and education*, 227-266.
- Bernard, H. R. (2011). *Research methods in anthropology: Qualitative and quantitative approaches* (5th ed.). Lanham, MD: AltaMira Press.

- Biernacki, P., & Waldorf, D. (1981). Snowball sampling: Problems and techniques of chain referral sampling. *Sociological Methods & Research*, 10(2), 141-163.
- Biles, J. J. (2009). Informal work in Latin America: competing perspectives and recent debates. *Geography Compass*, 3(1), 214-236.
- Braun, V. and Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Cárdenas, J. C., & Ostrom, E. (2004). What do people bring into the game? Experiments in the field about cooperation in the commons. *Agricultural Systems*, 82(3), 307-326.
- Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. London: Sage Publications Limited.
- Chirkov, V., Ryan, R. M., Kim, Y., & Kaplan, U. (2003). Differentiating autonomy from individualism and independence: a self-determination theory perspective on internalization of cultural orientations and well-being. *Journal of Personality and Social Psychology*, 84(1), 97.
- Cox, M., Arnold, G., & Tomás, S. V. (2010). A review of design principles for community-based natural resource management. *Ecology and Society*, 15(4), 38 [online] <http://www.ecologyandsociety.org/vol15/iss4/art38/>
- Davis, A., and Mendez, V.E. (2011). Prioritizing food security and livelihoods in climate change mitigation mechanisms: experiences and opportunities for smallholder coffee agroforestry, forest communities, and REDD+. Salvadoran Research Program on Development and Environment (PRISMA), San Salvador, El Salvador.
- Davis, J. S., & Morais, D. B. (2004). Factions and enclaves: Small towns and socially unsustainable tourism development. *Journal of Travel Research*, 43(1), 3-10.

- Deci, E.L., & Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.
- Deci, E.L., & Ryan, R.M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227-268.
- Dowding, K. (2013). Collective action problem. *Encyclopedia Britannica*. Retrieved from <http://www.britannica.com/EBchecked/topic/1917157/collective-action-problem>.
- Ellis, F. (1999). The determinants of rural livelihood diversification in developing countries. *Journal of Agricultural Economics*, 51(2), 289-302.
- Fischer, E. & Victor, B. (2014). High-end coffee and smallholding growers in Guatemala. *Latin American Research Review*, 49 (1), 155-177.
- Fletcher, R. (2009). Ecotourism discourse: Challenging the stakeholder’s theory. *Journal of Ecotourism*, 8(3), 269-285.
- Flick, U. (2014). *An introduction to Qualitative Research* (5th ed.). Thousand Oaks, CA: Sage Publications, Inc.
- Gill, N., Klepeis, P., & Chisholm, L. (2010). Stewardship among lifestyle oriented rural landowners. *Journal of Environmental Planning and Management*, 53(3), 317-334.
- Greenwald, A.G., Pratkanis, A.R., Leippe, M.R., Baumgardner, M.H. (1986). Under what conditions does theory obstruct research progress? *Psychological Review*, 93, 216-229.
- Harvey, T.S. (2012). Cyanobacteria blooms: Maya peoples between the politics of risk and the threat of disaster. *Medical Anthropology*, 31(6), 477-496.

- Hausermann, H., & Eakin, H. (2008). Producing "viable" landscapes and livelihoods in central Veracruz, Mexico: institutional and producer responses to the coffee commodity crisis. *Journal of Latin American Geography*, 7(1), 109-131.
- Honey, M. (1999). *Ecotourism and sustainable development: Who owns paradise?* Island Press.
- Igoe, J. (2004). *Conservation and globalization: A study of national parks and indigenous communities from East Africa to South Dakota*. Wadsworth Publishing Company.
- Jaffee, D. (2007). *Brewing justice: Fair trade coffee, sustainability, and survival*. Univ. of California Press.
- Jamal, T., & Stronza, A. (2009). Collaboration theory and tourism practice in protected areas: Stakeholders, structuring and sustainability. *Journal of Sustainable Tourism*, 17(2), 169-189.
- Kiss, A. (2004). Is community-based ecotourism a good use of biodiversity conservation funds? *Trends in Ecology & Evolution*, 19(5), 232-237.
- Kronik, J., & Verner, D. (2010). *Indigenous peoples and climate change in Latin America and the Caribbean*. Washington, DC: World Bank Publications.
- Lachapelle, P.R., & McCool, S.F. (2005) Exploring the concept of "ownership" in natural resource planning. *Society & Natural Resources: An International Journal*, 18(3), 279-285.
- LaPan, C. M. (2014). *Communitarian microentrepreneurship and gender in the Maya touristscape*. (Doctoral dissertation). North Carolina State University, Raleigh, NC.
- LaPan, C., Morais, D. B., Wallace, T., & Barbieri, C. (in press-a). Power, altruism and communitarian tourism. *PASOS: Revista de Turismo y Patrimonio Cultural*.
- LaPan, C., Morais, D. B., Wallace, T., & Barbieri, C. (in press-b). Women's self-determination in cooperative tourism micro-enterprises. *Tourism Review International*.

- Lyon, S. (2009). What Good Will Two More Trees Do? The Political Economy of Sustainable Coffee Certification, Local Livelihoods and Identities. *Landscape Research*, 34(2), 223-240.
- Lyon, S. (2011). *Coffee and Community*. University Press of Colorado.
- Lyon, S. (2013). Coffee tourism and community development in Guatemala. *Human Organization*, 72(3), 188-198.
- Manyara, G., & Jones, E. (2007). Community-based tourism enterprises development in Kenya: An exploration of their potential as avenues of poverty reduction. *Journal of Sustainable Tourism*, 15(6), 628-644.
- Mazzocchi, F. (2006). Western science and traditional knowledge. *EMBO reports*, 7(5), 463-466.
- Mbaiwa, J. E. (2005). The problems and prospects of sustainable tourism development in the Okavango Delta, Botswana. *Journal of Sustainable Tourism*, 13(3), 203-227.
- Mbaiwa, J. E., & Stronza, A. L. (2010). The effects of tourism development on rural livelihoods in the Okavango Delta, Botswana. *Journal of Sustainable Tourism*, 18(5), 635-656.
- McCool, S. F. (2009). Constructing partnerships for protected area tourism planning in an era of change and messiness. *Journal of Sustainable Tourism*, 17(2), 133-148.
- McCreery, D. (2003). Coffee and indigenous labor in Guatemala, 1871-1980. In W. G. Clarence-Smith & S. Topik (Eds.), *Global Coffee Economy in Africa, Asia, and Latin America, 1500-1989* (pp. 191-208). New York, NY: Cambridge University Press.
- Méndez, V. E., & Bacon, C. M. (2006). Ecological processes and farmer livelihoods in shaded coffee production. *Leisa-Leusden*, 22(4), 22.

- Milford, A. (2004). *Coffee, co-operatives and competition: The impact of fair trade*. File 6, Chr. Michelsen Institute, Development Studies and Human Rights, Bergen, Norway. Available at: <http://www.cmi.no/publications/publication/?1802=coffee-co-operatives-and-competition>
- Modesto, H. S. (2005). The Revival of Traditional Practices as a Response to Outsiders' Demands: The resurgence of natural dye use in San Juan La Laguna, Guatemala. *Ethnobotany Research & Applications*, 3, 155-166.
- Moguel, P., & Toledo, V. M. (1999). Biodiversity conservation in traditional coffee systems of Mexico. *Conservation Biology*, 13(1), 11-21.
- Morais, D. B., Heath, E., Tihagale, M., Payton, F. C., Martin, K., Mehta, K., & Bass, J. (2012). Concept Testing People-First Tourism in Rural South Africa. In Jafari, J. (Ed.). *Knowledge Management in Tourism: Policy and Governance Applications Bridging Tourism Theory and Practice*, Vol 4, 115-128. Emerald, Bingley, UK.
- Morais, D. B., KC, B., Mao, Y., & Mosimane, A. (2015). Wildlife Conservation Through Tourism Microentrepreneurship Among Namibian Communities. *Tourism Review International*, 19(1-2), 43-61.
- Morris, K. S., Mendez, V. E., & Olson, M. B. (2013). 'Los meses flacos': seasonal food insecurity in a Salvadoran organic coffee cooperative. *The Journal of Peasant Studies*, 40(2), 423-446.
- Namey, E., Guest, G., Thairu, L., & Johnson, L. (2008). Data reduction techniques for large qualitative data sets. In G. Guest & K.M. MacQueen (Eds.), *Handbook for team-based qualitative research* (pp. 137-162). Lanham, MD: AltaMira Press.
- Nyaupane, G. P., & Poudel, S. (2011). Linkages among biodiversity, livelihood, and tourism. *Annals of Tourism Research*, 38(4), 1344-1366.

- Nyaupane, G. P., Morais, D. B., & Dowler, L. (2006). The role of community involvement and number/type of visitors on tourism impacts: A controlled comparison of Annapurna, Nepal and Northwest Yunnan, China. *Tourism Management*, 27(6), 1373-1385.
- Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.
- Ostrom, E. (2010). Analyzing collective action. *International Association of Agricultural Economists: Workshop in Political Theory and Policy Analysis*. Bloomington, IN: Center for the Study of Institutional Diversity.
- Pelletier, L. G., Tuson, K. M., Green-Demers, I., Noels, K., & Beaton, A. M. (1998). Why are you doing things for the environment? The motivation toward the environment scale (MTES) 1. *Journal of Applied Social Psychology*, 28(5), 437-468.
- Plummer, R., & Fennell, D. A. (2009). Managing protected areas for sustainable tourism: prospects for adaptive co-management. *Journal of Sustainable Tourism*, 17(2), 149-168.
- Raymond, C. M., Fazey, I., Reed, M. S., Stringer, L. C., Robinson, G. M., & Evely, A. C. (2010). Integrating local and scientific knowledge for environmental management. *Journal of Environmental Management*, 91(8), 1766-1777.
- Reyes-García, V., Vadez, V., Tanner, S., McDade, T., Huanca, T., & Leonard, W. R. (2006). Evaluating indices of traditional ecological knowledge: a methodological contribution. *Journal of Ethnobiology and Ethnomedicine*, 2(21), 1-9.
- Rivers III, L., & Gibbs, C. (2011). Applying a conservation-criminology framework to common-pool natural-resource issues. *International Journal of Comparative and Applied Criminal Justice*, 35(4), 327-346.

- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68-78.
- Saxena, G. (2006). Beyond mistrust and competition—the role of social and personal bonding processes in sustaining livelihoods of rural tourism businesses: a case of the Peak District National Park. *International Journal of Tourism Research*, 8(4), 263-277.
- Sen, A.K. (1999). *Development as freedom*. New York: Knopf Press.
- Snyder, K.A., & Sulle, E.B. (2012). Tourism in Maasai communities: a chance to improve livelihoods? *Journal of Sustainable Tourism*, 19(8), 935-951.
- Spillett, M. A. (2003). Peer debriefing: Who, what, when, why, how. *Academic Exchange Quarterly*, 7(3), 36.
- Stevenson, K. T., Peterson, M. N., Bondell, H. D., Mertig, A. G., & Moore, S. E. (2013). Environmental, institutional, and demographic predictors of environmental literacy among middle school children. *PloS one*, 8(3), e59519.
- Stronza, A. (2005). Hosts and Hosts: The Anthropology of Community-Based Ecotourism in the Peruvian Amazon. *Napa Bulletin*, 23(1), 170-190.
- Stronza, A., & Pegas, F. (2008). Ecotourism and conservation: Two cases from Brazil and Peru. *Human Dimensions of Wildlife*, 13(4), 263-279.
- Tosun, C. (2000). Limits to community participation in the tourism development process in developing countries. *Tourism Management*, 21(6), 613-633.
- United Nations. Cooperatives at Work. Retrieved March 16, 2014 from, <http://www.un.org/esa/socdev/social/cooperatives/documents/CoopsAtWork.pdf>.
- Vollan, B. (2008). Socio-ecological explanations for crowding-out effects from economic field experiments in southern Africa. *Ecological Economics*, 67(4), 560-573.

West, P., & Carrier, J. G. (2004). Getting away from it all? Ecotourism and authenticity. *Current Anthropology*, 45(4), 483-98.

Zorn, E., & Farthing, L. C. (2007). Communitarian tourism hosts and mediators in Peru. *Annals of Tourism Research*, 34(3), 673-689.

CHAPTER 3: The role of agritourism microentrepreneurship and collective action in fostering stewardship of North Carolina's small-scale farmlands

Target Journal: *Journal of Rural Studies*, Impact Factor: 2.444

Abstract

Agritourism is purported as a way to help mitigate economic challenges faced by small-scale family farmers; however, very limited research has addressed how farmers' involvement in agritourism may foster land stewardship. Accordingly, we employed a primarily qualitative approach to assess ways in which farmers' involvement in agritourism microentrepreneurship is related to their stewardship of small-scale farmlands in southeastern North Carolina. Further, we examined how farmers' involvement in social structures supported or hindered this relationship through an assessment of collective action. Findings suggest that involvement in agritourism microentrepreneurship does not directly influence land stewardship. The reasons for participation in agritourism microentrepreneurship differed greatly between conventional farmers and alternative farmers. While both groups expressed a need to reconnect the public with agriculture and rural life, conventional farmers were motivated primarily by sociocultural reasons (e.g., community and youth development) and alternative farmers wanted to educate visitors about land stewardship and environmentally sustainable food production. Minority and alternative farmers expressed that collective action was important in helping them promote land stewardship, but they felt restricted by sociocultural and geographic barriers preventing them from developing trust within their community. Conversely, non-minorities and conventional farmers typically reported deeper cultural roots in the community, and relied frequently on neighbors and family members. This study suggests that participation in agritourism does not bring a generalizable impact on farmers' land stewardship; instead, agritourism becomes a stage through which farmers try to demonstrate their pre-existing land ethic.

Keywords: agricultural illiteracy, ecoliteracy, self-determination, collective action, food

Introduction

Diversification of family farms has been promoted as a way to ensure environmental, social, and economic sustainability (e.g., avoiding chemical use and pollution associated with large-scale production of commodity crops; retaining family members on the farm by creating different ways for them to participate in the farming enterprise; reducing dependence on single markets and susceptibility to variation in yields and prices). One way for farmers to diversify their farms is to become involved in agritourism (Barbieri, Mahoney, & Butler, 2008; Brandth & Haugen, 2011; McGehee & Kim, 2004). While difficult to define, examples of agritourism may be educational or interpretive, volunteer tourism or paid visits, or seasonal activities such as pumpkin patches or hayrides (McGehee & Kim, 2004). Visits may also vary in length from a short tour (e.g., U-Pick fruits and vegetables, corn mazes) to longer farm stays.

The agritourism definition used in this study is adapted from Phillip, Hunter, and Blackstock's 2010 typology, which includes all activities that take place on working farms. In addition to diversifying income sources, agritourism has been found to support cultural heritage and social identity (Brandth & Haugen, 2011), to foster recreational benefits to individuals and communities through multifunctionality (Barbieri & Valdivia, 2010), and to promote socio-economic, cultural, and environmental sustainability (Barbieri, 2013). Barbieri (2013) found that those that adopted agritourism compared with other farm entrepreneurial ventures were much more likely to keep the farms in their family and to support certain environmentally-friendly techniques (such as integrated pest management). However, most studies on agritourism have been large, quantitative surveys that do not provide a deeper understanding of why farmers are often motivated by both economic and non-economic factors to participate in agritourism, and how their participation may influence land stewardship. In this study, we examine whether and how there is a relationship between agritourism microentrepreneurship and land stewardship of working agricultural lands, and how agripreneurs have used collective processes (e.g., through involvement in cooperatives) as a way

to facilitate this relationship. Further, we examined how these relationships may differ among different types of agricultural producers.

Review of the Literature

Tourism Microentrepreneurship

While somewhat under-researched, tourism microentrepreneurship is a growing trend that is based off of a principle that, with advancements in technology and freedom of human beings to make choices, nearly anyone in the world can create their own jobs through self-employment (Morais et al., 2012; Wong, 2012). While individuals in less-developed tourism-dependent countries are often dependent on tourism microentrepreneurship to support their livelihoods (e.g., selling of handicrafts, homestays), the trend has grown rapidly in recent years in developed countries as well (e.g., AirBnB, People-First Tourism, Vayable). According to Wong (2012), microentrepreneurs find this business model appealing because of the income it provides, skills that are developed, or the flexibility and creativity they have while customers also enjoy these experiences for similar reasons (e.g., price, flexibility, ease of use, unique experiences, authenticity). Further, research has shown that microentrepreneurship can also be effective in reducing poverty, improving livelihoods, and providing opportunities for women who, particularly in rural settings, are often expected to work from home (Ahmed, Deaton, Sarker, & Virani, 2008; Chandy, & Narasimhan, 2011).

Based on these definitions and the context of this study, agritourism is a type of tourism microentrepreneurship that has provided benefits such as women empowerment, social capital, and supplemental income to small-scale family farmers in the United States (Brandth, Haugen, & Kroken, 2010; McGehee, Kim & Jennings, 2007). For example, a study of 164 agritourism farms in Missouri, with a primary focus on leisure walks and educational tours, showed that 66.4% of respondents would recommend entrepreneurial involvement in agritourism to others because of its economic and non-economic benefits (Tew & Barbieri, 2011). Further, 66% of respondents also stated that they hoped to add additional agritourism activities and 64.4% stated profits on their farm had increased after

agritourism development, with 36.2% stating a significant increase (Tew & Barbieri, 2011).

Respondents from this study also viewed another major benefit of agritourism as the increased exposure of their farm by using tourism as a marketing tool (Barbieri, 2013). Other studies on agritourism have also shown that because of the gain of skill development and income, many young people were staying in the community to become agritourism entrepreneurs rather than migrating to urban areas for employment (Barbieri, 2013; Yang, 2012). Therefore, profits gained from agritourism may provide incentives for individuals to continue farming and, in effect, contribute to the conservation of small family farms. However, we found that the non-economic benefits of participating in agritourism (i.e., social, cultural, environmental) were much less studied, particularly relating to how farmers use agritourism as a way to demonstrate stewardship of their working lands (e.g., to visitors), and how their involvement in agritourism may foster stewardship of these lands (e.g., through implementing environmentally-friendly practices). Accordingly, these questions are further discussed in this paper.

Additionally, existing literature on agritourism in the United States has primarily consisted of quantitative studies relying on data from formally established agritourism programs. Indeed, studies on agritourism microentrepreneurs are not included in the literature. Accordingly, in this study, we made considerable efforts to include a wide, diverse range of agritourism microentrepreneurs.

Stewardship of Working Lands

While the development of agritourism microentrepreneurship is just one outlet that may help keep small-scale farmers in farming and promote stewardship of working lands, various approaches have been used. For instance, many developed countries (e.g., Australia, England, Canada) have adopted voluntary “agri-environmental schemes,” which are programs designed to incentivize farmers to adopt environmentally sustainable techniques on the landscape (e.g., by reducing pesticides, protecting biodiversity). These neoliberal programs, which are used in over half of the European countries, compensate farmers for financial losses from implementing the most environmentally sustainable practices on their land (Kleijn & Sutherland, 2003). Similarly, Australia’s national

'Landcare Program' provided monetary incentives (i.e., "stewardship payments") to landholders for implementing conservation with the idea that farmers often support sustainable land management techniques but are less likely to follow them because of cost setbacks (Cocklin, Dibden, & Mautner, 2006). However, programs such as these have not been implemented in the United States, and are argued by some to not be effective in ensuring long-term attitudinal changes towards the environment.

For example, Vollan (2008) argues that neoliberal models, which provide monetary incentives to locals to conserve their land lead to a "crowding out" effect of intrinsic motivations (Vollan, 2008), and that there is not necessarily a direct connection between economic incentives, such as through ecotourism, and pro-environmental behavior (Wunder, 2000; Wyman & Stein, 2010). In effect, when and if external incentives are gone (e.g., project funding runs out, tourism demand wanes), locals may no longer have motivation to practice sustainable land management. Further, Pelletier et al. (1998) have long argued that intrinsic motivation is most effective in promoting pro-environmental behaviors. Ryan and Deci's (2000) framework of self-determination has been used in several studies across disciplines to show that, when people's innate psychological needs (i.e. autonomy, competence, relatedness) are nourished, they are more likely to demonstrate intrinsic motivation, self-regulation, and an enhanced sense of well-being. In the context of tourism, it may be argued that while tourists may provide monetary incentives for landowners to manage their land more sustainably (e.g. ecotourism), without a deeper connection to the land, conservation efforts may wane with fluctuations in tourism demand.

Another way to assess land stewardship is through ecological literacy or "ecoliteracy." Stevenson et al. (2013) argue that having the ability to tackle increasing global environmental challenges "depends entirely on publics who understand ecology, care about the environment, possess skills to assess environmental risk, and share a commitment to sustainability" (p.1). Berkowitz, Ford, and Brewer (2005) define ecological literacy as, "the ability to use ecological understanding, thinking, and habits of mind for living in, enjoying, and/or studying the environment" (p.228). The

concept of ecoliteracy has been applied regularly in recent years (Berkowitz, Ford, & Brewer, 2005; McBride, Brewer, Berkowitz, & Borrie, 2013; Stevenson, 2013) in the environmental education literature. However, the scale used to measure ecological literacy has only been used among school-age children in primarily urban environments. Therefore, the scale is less applicable to adults in under-resourced rural regions that depend on the land for their livelihood. These populations may have different pressing needs towards environmental management or different practical considerations towards reducing their environmental impact. While still following three of the common sub-constructs of ecoliteracy (i.e., pro-environmental attitudes, ecological knowledge, and pro-environmental behavior), we adapted previously used scales to the specific context of this study.

Assessing ecoliteracy is also further complicated because farmers (e.g., conventional vs. alternative) often have extremely different views towards which techniques and practices are best for their land or which techniques may be the most “pro-environmental” or “sustainable”. Accordingly, in this paper we assessed ecoliteracy through themes that emerged from interviews focused on ways participants exhibit pro-environmental attitudes, behavior, and ecological knowledge, rather than using a pre-determined list of questions that may not be relevant contextually. Considering intrinsic motivation and ecoliteracy as constructs used to assess land stewardship in this paper, we used Clayton and Myer’s (2009) definition of stewardship as exhibiting an ethic that:

Builds on existing internalized moral feelings and world views, has the potential to generalize to many of an individual’s behaviors, and contributes to both personal and community senses of responsibility. On the other hand, it pays less attention to the outcome than to the character of the actor, and is weak if community norms are absent (p. 38).

Similarly, others (e.g., Burton & Paragahawewa, 2011; Sutherland & Darnhofer, 2012) argue that, without the creation of cultural and social capital that transform environmentally sustainable techniques into part of ‘good farming’ practices in conventional agriculture, neoliberal approaches to conservation will not endure. In effect, a deeper understanding of *why* different types of farmers

(e.g., conventional or alternative) participate in agritourism microentrepreneurship is necessary as well as an assessment of how land management decisions are influenced by social and cultural capital (i.e., collective action processes). Accordingly, in the following section we provide a background to how collective action has facilitated land stewardship, specifically in the contexts of small-scale tourism agripreneurs.

Collective Action

Generally, the concept of collective action involves any action taken together by a group of people whose goal is to enhance their status and achieve a common objective (Dowding, 2013). In the context of natural resource management, it involves the rethinking of top-down approaches to conservation by examining the potential for communities to sustainably manage their land and resources through collaborative organized processes (Ostrom, 1990). Key to collective action, and also to microentrepreneurship, is self-governance, or the ability for communities or individuals to create, modify, and enforce rules and behavior internally. Some authors (e.g., Ahmed et al., 2008; Ostrom, 1990; Volla, 2008) have found evidence that, when outside parties (e.g., governments) support communities to effectively self-govern, people were able to manage their natural resources efficiently over long periods of time and intrinsic motivation was not overshadowed by external incentives or coercive demands. Conversely, Ostrom (1990) found that when locals are not provided the rights to manage their own resources but are forced to follow rules inflicted by outside parties, they are less likely to support conservation efforts.

Secondly, trust is a key principle in contributing to the effective collective action (Beritelli, 2011; Ostrom; 1990, Saxena, 2006). Ostrom claims that, once individuals gain trust in one another, cooperative behavior towards conserving resources can eventually become the norm (Ostrom, 2010). Further, Ostrom found that the key to gaining trust is communication; however, Saxena (2006) argued that without the “personal and social bonding processes” needed to foster long-term commitment, and reciprocity, it may be difficult to gain trust from initial communication alone. Correspondingly, in

their study with conventional and organic farmers in England, Sutherland and Darnhofer (2012) found that while organic farmers were originally excluded from farming circles, the EU has seen a gradual transition of conventional farmers to organic farmers over the last two decades as social and cultural capital has strengthened. In effect, while ‘good farming’ has focused on “tidy fields, high yields, and high quality livestock” as indicators of economic capital, alternative strategies (e.g., agri-environmental schemes, farm diversification, organic farming) are increasingly valued as financially viable enterprises and are helping to re-create the ‘rules of the game’ (Sutherland & Darnhofer, 2012, p. 235). Therefore, ongoing communication improved trust, which in turn led to a gradual change in the farmers’ perceptions of ‘good farming’ practices to include more environmentally sustainable techniques.

In other examples, local change agents may be critical in initiating communication among disparate groups. For example, in the case of People-First Tourism, “empowerment agents” work with their local communities to develop networks of tourism microentrepreneurs through collective processes that provide individuals the opportunity to self-regulate their natural resources and livelihood choices (Morais et al., 2012). These examples justified our use of assessing the role of collective action processes in helping to influence land stewardship among agritourism microentrepreneurs. Therefore, in this study, we considered each of these sub-constructs of collective action (i.e., self-governance, trust, communication) and their role in facilitating land stewardship of working lands among agripreneurs.

Methods

The purpose of this study is to examine how and why small-scale farmers are involved in agritourism microentrepreneurship, and to assess how they may use agritourism as a way to either demonstrate or foster an ethic of land stewardship. We examined the following research questions through a primarily qualitative approach:

- 1) In what ways are small-scale landowners of working lands (e.g., conventional and alternative farmers) involved in agritourism microentrepreneurship and what factors motivated their involvement?
- 2) How is landowners' involvement in agritourism microentrepreneurship related to their stewardship of their working lands?
- 3) What is the role of collective action in facilitating or hindering this relationship?

In an effort to cross-validate results by using multiple methods, this study incorporates semi-structured in-depth interviews, free listing, and analysis of ethnographic field notes. The following sections describe the region where the study takes place and how theoretical constructs (e.g., collective action, land stewardship) were explored and analyzed.

Study Region

Referred to as the coastal plains of North Carolina, this study was conducted among landholders in five rural southeastern North Carolina counties: Johnston, Duplin, Lenoir, Wayne, and Sampson (see Figure 3.1). Although sources of agricultural revenue have changed through the years, agriculture continues to be a leading industry in North Carolina, particularly in this region. Since the mid-19th Century, NC has been a leading producer of tobacco until people were forced to find other viable options to make income off the land after the last major tobacco companies left NC in the late 1980s (McElwee, 2005). Now the region's economy consists of primarily contracted conventional farming (e.g., Tyson Foods, Prestage Farms, Sanderson Farms, Butterball) and confined animal feeding operations (CAFOs), which make this region in NC one of the country's leading producers of hogs, pigs, turkeys, and chickens. Sampson and Duplin counties specifically are the two top national producers of hogs and pigs (<http://www.ncse.org/regional-clusters/demographics>), which greatly contributed to a 1997 moratorium on the construction of new industrial operations in these counties that continues today.

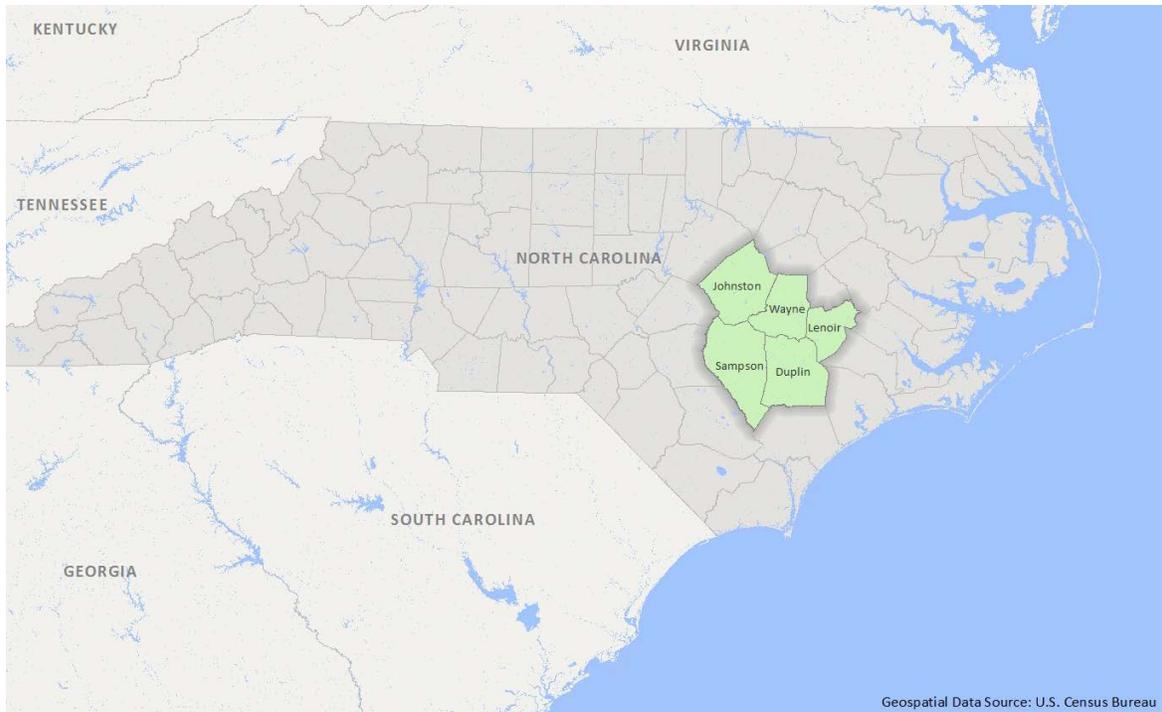


Figure 3.1: Coastal plains region of North Carolina (Geospatial data source: U.S. Census Bureau, 2016)

Despite the moratorium, counties in this region continue to be the epicenter of many social and environmental justice issues concerning the impacts of such large agribusinesses on the local environment and people, particularly among minorities and migrants. For example, Wing, Cole, & Grant (2014) found that air pollutants produced from industrial hog operations in North Carolina were disproportionately affecting residents of color (i.e., African Americans, Hispanics, Native Americans) in these regions. These challenges, often coupled with market fluctuations and environmental pressures (e.g., natural disasters, effects of climate change), have contributed to considerably high poverty rates among small-scale farmers and other residents in the region.

Additionally, while the nearby eastern seaboard has received substantial revenue from tourism, the coastal plains of North Carolina have not been a successful destination for tourism development. In an effort to tackle these challenges, some farmers have started to incorporate

agritourism into their business plan in recent years as a way to diversify farm income, and many farmers have also participated in collective action through cooperatives or by joining organizations or associations.

Sampling

Purposive sampling was used to select, interview, and observe participants who self-identified as small-scale farmers involved in agritourism. Since 2012, the primary author conducted extensive fieldwork in the study area while working on two other research projects and in that process she established relationships with landowners and gained general knowledge about their levels of involvement in tourism and agricultural production. These ongoing relationships with landowners and community leaders were used to initiate contact (by phone) with four of the nine members of the Small Family Farms Sustainable Agriculture Cooperative (SFFC), a grassroots group of minority small-scale alternative agriculture farmers with recent involvement in agritourism microentrepreneurship. Additionally, between November 2014 and March 2015 the primary author spent multiple days in the study area and, when possible, stayed overnight with locals to gain a better understanding and build rapport with community members.

Participants varied greatly in their level and type of involvement in agritourism as well as the type of farm they operated. For example, some participants stated they were in very early stages of diversifying their farm through agritourism (e.g., they had not yet received visitors) and others explained that visitors regularly came to pick produce from their farm but that they did not ask visitors to pay for the visit. Therefore, while all participants self-characterized as being involved in agritourism, their absence from tourism websites, lack of participation in agritourism associations and, in some cases, lack of a visit revenue model excluded several of them from participating in previous agritourism studies. For these reasons, we defined participants in this study as agritourism microentrepreneurs, to include individuals involved in the ownership and management of small, and often informal, agritourism business in their farms. We aimed to select a “maximal variation” of

participants (Flick, 2010, p. 175) to determine if stewardship varied among different types of farmers participating in agritourism (e.g., conventional vs. alternative, African American vs. Caucasian).

Specifically, we began by contacting members of cooperatives to assess if and how involvement in collective action processes supported or hindered land stewardship among agritourism entrepreneurs. However, as we continued to contact agritourism microentrepreneurs, we found that all participants characterized themselves as being involved in collective action through social networks, even if those networks were not formal cooperatives. Therefore, we provided participants an open-ended opportunity to define their involvement in collective action as part of the interview protocol and did not limit our sampling criteria to those involved in formal cooperatives. Additionally, we categorized participants by type of farmer (i.e., alternative, conventional, or mixed) based on definitions drawn from the literature. A description of each of the 14 participants contributing to this study, and how they described their involvement in agritourism and farming, is presented in Table 3.1, below.

Table 3.1: Description of participants

	Pseudonym Race, sex, age, type of farmer	Involvement in Agritourism ^a	Involvement in Farming ^a
1	Emmanuel Black male, 71 (retired), alternative	Very informal; P1t ^b entrepreneur; no direct income from tourism.	Vegetables for consumption; no chemicals, no income from land directly.
2	John and Laura White couple, 50 & 49, mixed	Give occasional kids' tours and ~12 informal tours a year when people come to farm to purchase products; no income directly from tourism.	Angus beef, peaches, timber. 50% of income comes from land, rest comes from their family- run hardware store.

Table 3.1: Description of participants (continued)

3	Jean White female, 63, (part time), conventional	Hopes to lead organized horse trail rides or a cheese-making course	Owens goats, sheep, horses, turkey, chickens, ponies; almost all income currently off-
---	--	---	---

		when retires; no current income from tourism.	farm, but when retires next year will farm full-time.
4	Robert White male, 62 (retired), conventional	No longer has visitors for wine picking because not profitable and not in contract.	Vineyards, hog houses, Angus cattle, hay – all contracted agriculture.
5	Andy White male, 24, conventional	Sells U-Pick peas in summer and runs fruit stand; P1t ^b entrepreneur; tourism provides ~5% of income.	Manages 200-acres produce farm.
6	Luisa Hispanic female, 75 (retired), alternative	Sells products informally; developing more formal operation (e.g., P1t*); currently very little income is from tourism.	Runs 7-acre permaculture farm with plants and animals; ~25% of income comes from land.
7	George Black male, 69 (retired), mixed	Not currently involved in tourism, but interested.	Manages <10 acres of vegetables and has a few chickens, goats. <5% of income comes from land – participates for enjoyment.
8	Grant Coharie Indian male, 61, alternative	Helps run community garden through the tribal center; feels tourism important, but not a direct source of income.	Doesn't tend his land, which is family-owned., works full time off-farm.
9	Paul Coharie Indian male, 61 (retired), alternative	Developing river maintenance program to improve waterways for residents and tourists to recreate; no current income from tourism.	Has 12 acres in woodlands that keeps as conservation land – doesn't harvest timber.
10	Dorothy White female, 61 (retired), alternative	Has a farm stay on property, occasionally offers farm tours.	Owens a “Century Farm” where has sheep, a few cows, donkeys, and horses.

Table 3.1: Description of participants (continued)

11	Susan White female, 48, conventional	Runs family-owned corn maze with seasonal activities. Rents animals to	Has contract to manage hog nursery and leases
----	---	--	---

		use for agritourism and coordinates with local businesses, which makes up ~ half of livelihood.	land to brother-in-law for row crops.
12	Charlene White female, 54, alternative	Wants to set up farm to accommodate people with disabilities and have hands-on participation activities; currently no income from tourism.	New farm with cows, sheep, goats, pigs, chickens, laying hens, and vegetable garden – no chemicals. Sells to farmer’s market and through CSA.
13	Zach White male, 22, conventional	Educational tours with local schools, rents barn out for weddings and events; rents animals for agritourism; not much income from tourism, but growing.	Contracted hog and turkey houses, cattle, row crops (corn, soy, wheat, cotton, hay)
14	Dennis Black male, 68 (retired), alternative	Occasionally teaches school groups and informal visitors; no income from tourism	Vegetables to sell at farmer’s market; no chemicals, leases part of land to board horses; ~40 acres

^a A summary of characteristics that participants used to describe their farm.

^b P1t=People-First Tourism

Throughout the process of conducting semi-structured interviews and ethnographic field observations, the primary author wrote daily field notes and conceptualized emerging themes through frequent memoing and diagrams (Bernard, 2011; Charmaz, 2006). When themes were not clear among a diverse group of participants (e.g., minority ‘lifestyle’ farmers), contact with additional participants was made through chain referral sampling (Biernacki & Waldorf, 1981) in combination with recommendations from local community members with whom the primary author interacted with during time in the field (e.g., at community cultural events). Additionally, online databases of agritourism entrepreneurs (e.g., www.ncagr.gov) were consulted to identify other small-scale farmers in the region who had incorporated agritourism into their business models. When themes were emerging throughout the process, informal phone interviews were held to validate findings and field notes were reviewed regularly. After 14 in-depth semi-structured interviews, in combination with

five informal phone interviews and extensive field notes, no new themes were emerging and no new interviews were scheduled.

Instrument Development

Based on the literature, a semi-structured interview protocol was developed consisting of primarily open-ended and free-listing questions. Probing was used to improve clarity and richness of the data. Formal interviews were audio recorded and lasted between 34 and 172 minutes (average: 89 minutes), but many farm visits lasted all or half of the day. Comprehensive ethnographic field observations were also taken through memoing, journaling, and daily field notes (Bernard, 2011). These data helped support how themes were emerging from the interviews and observations (Charmaz, 2006).

Involvement in agritourism microentrepreneurship.

To assess ways in which farmers were involved in agritourism microentrepreneurship and farming, participants were asked to list sources that made up their livelihood and which is the most important in their life. With probing from the interviewer, they also described characteristics of their farm (e.g., type of crops or livestock, management techniques, amount of land). Next, participants explained which types of tourism activities they participate, how they market their farm and sell products, and how long they participated in these activities. This assessment was adapted from Stronza's (2005) tourism involvement index, to the qualitative method and cultural context of this study.

Collective action.

To examine how collective action influences their land management and farm activities, we assessed three dimensions (i.e., self-governance, trust, and ownership) through open-ended, semi-structured questions. The questions were framed from Ostrom's (1990) work and were supplemented by current literature on collective action. Sample questions included: "Who writes and modifies rules towards management of your land? Who ensures that collectively-developed rules are followed?"

Trust was assessed using open-ended questions inquiring about how and to what extent participants communicated with others in the community (e.g., neighbors), social circles (e.g., friends, family), or cooperatives (e.g., SFFC). Lastly, ownership was also assessed with open-ended questions. Sample questions included: “Who owns your land?” and “To what extent do government and non-governmental entities support your land management collaborations?”

Land stewardship.

To assess how participants perceived their personal land stewardship, we used a self-determination continuum (Ryan & Deci, 2000 and Alkire, 2005). Adapted from Morais, KC, Mao, & Mosimane’s (2015) study on community-based natural resource management among pastoral communities in Namibia, participants first listed activities that they do on their land, and then they were asked if they do them because they have no choice, to obtain approval/avoid guilt, because they feel the activity to be important, or because they like to do it. Through this probing participants gradually articulated the extent to which each land management activity was intrinsically vs. extrinsically motivated along a self-determination continuum.

To increase robustness, we also assessed land stewardship of working lands through an analysis of participants’ ecoliteracy (i.e., ecological knowledge, pro-environmental attitudes, environmental behavior). Open-ended and free listing questions were designed to generate both opinions (i.e., attitudes) and knowledge about the environment and actions (i.e., behaviors) participants take to reduce environmental effects affecting the conservation of their land. Adapted from the Middle School Environmental Literacy Survey (2009), sample questions included: “List environmental issues that you feel may negatively impact the future of your land,” “Describe measures you have taken to protect your land from these issues,” and “Please list activities, programs, or techniques that you feel may positively impact the future of your land.”

Data Analysis

Recorded interviews were transcribed verbatim and imported into MaxQDA 11 Qualitative Data Analysis Software. Then, transcriptions were analyzed using a theory-driven approach where data were line-by-line coded as either semantic (verbally expressed meanings) or latent (underlying meanings) to identify how themes reflected back to the conceptual framework (Braun & Clarke, 2006; Flick, 2014; Namey, Guest, Thairu, & Johnson, 2008).

Responses that failed to integrate theoretical constructs were also noted, so as to not only list positive responses and avoid confirmation bias (Greenwald, 1986). Simultaneously, comprehensive field notes, memos and journal entries were analyzed to inform findings. Trustworthiness was sought through a process called insider peer debriefing where co-authors met weekly to compare coding schemes and discuss themes (Spillett, 2003). Through this dynamic process, codes were frequently re-analyzed and integrated until authors reached an agreement in understanding relationships between cases beyond individual cases (Flick, 2014).

Findings

Characterization of Participants

In this section, we reveal commonalities and differences among participants and discuss the way in which they are involved in agritourism and in agriculture, as well as their socio-cultural characteristics (i.e., conventional vs. alternative agriculture farmers; white vs. minority farmers). As illustrated in Figure 3.2, minority farmers tended to practice alternative agriculture (characterized as being more environmentally “sustainable”) more commonly than white participants, who tended to practice conventional agriculture, which Burton and Paragahawewa (2011) claim is associated with greater degradation of natural resources and biodiversity. Also of note, among agritourism microentrepreneurs we could recruit to this study, there was a lack of white males practicing in alternative agriculture, and a lack of minorities practicing conventional agriculture. Further, since none of the minorities farmed as their sole source of income (not including white women), and

several were retired, they may be considered “lifestyle” farmers (Gill, Klepeis, & Chisholm, 2010).

Gill et al. (2010) claim that:

In general, the characteristics of these new owners include limited, if any, dependence on farm income, relatively high interest in environmental stewardship, small-scale farming operations, sub-commercial landholdings and a focus on land ownership for ‘lifestyle’ reasons. As is the case with full-time farmers, however, the motivations and practices of these landowners are diverse (p. 317).

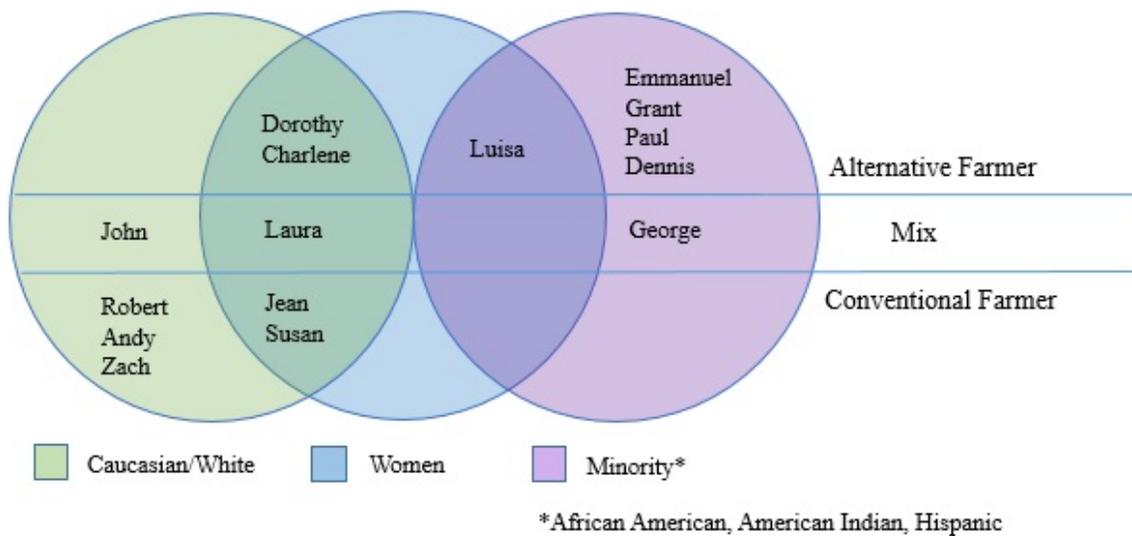


Figure 3.2: Type of involvement in agritourism microentrepreneurship by race and gender

Supporting this claim, many participants expressed that they gave informal tours of their farm, but that they did so primarily for non-monetary reasons. For example, Luisa stated, “Most of it’s free. Some of it is paid... so, it’s not a big portion of what I do, it just happens to be something that’s very satisfying for me to share with other people.” Similarly, John and Laura stated, “we don’t charge for tours, we just do it strictly for educational purposes.” Going even further, some lifestyle farmers simply gave products away for free. Emmanuel stated:

Well I mostly give mine away. I like to give mine to senior citizens and take it to them, the ones that are unable to come out. And I don't take funds from them...I won't take the money from them you know. I always felt this way...If I could help someone, you know. I don't mind.

Conversely, conventional farmers expressed concerns about making sure that participating in agritourism activities was an efficient use of their time. For example, Robert, a white conventional farmer with hog houses, Angus cattle, and contracted muscadine grape vineyards for wine production, mentioned that he no longer offers U-Pick grapes to visitors because people wasted too many grapes eating them and dropping them on the ground, and he felt it wasn't worth the financial loss. He stated, "This [farm] is a money-making situation, not a hobby." Similarly, Zach and Susan both mentioned that having small groups wasn't worth the effort for the profit they would get and they preferred to do larger events and focus on offering agritourism seasonally during peak times.

Type of agritourism involvement among participants also ranged from passive (e.g., weddings and events, guest house rental) to more active involvement (e.g., school visits, feeding animals). Passive activities were less common and those who did have passive activities also had active agritourism activities, or activities that fell on the middle of the continuum (e.g., U-pick fruits and vegetables, hayrides, corn mazes). Charlene, a new (full time) alternative agriculture farmer, stated, "I'm not a big proponent of tourism people who stand and don't do anything, I believe in 'agro-participation' – this gives people more access and investment in the farm." Similarly, Susan, a conventional farmer who also runs a thriving agritourism operation, mentioned new ideas she had on how to get children more involved in the farming experience, focusing on how they could also be economically invested in the land and learn business strategies that could help them in future careers:

Work ethics are a little bit different from what they were, (so) I thought, if I can get some kids involved and get some parents involved, grow some sweet corn, and do, like, little franchises, and call it 'corn for kids' ... And they'd sell corn and it'd go in your college fund

or something... and they can come help pull the corn. They could help, and this would be their little plot – we’d sell a plot to them and they could come and pull it. Now, how many kids these days had that opportunity?

Summarizing their involvement in agritourism microentrepreneurship and farming, farmer types varied in some important ways. In this study, farmers of color (i.e., African American, Native American, and Hispanic) tended to practice alternative agriculture more commonly than white farmers and were also mostly lifestyle farmers who were either retired or dependent on off-farm income or savings to sustain their livelihood. Conversely, white farmers were mostly characterized as conventional farmers (although less so among white women). Therefore, participants practicing alternative agriculture relied less on revenues from agritourism and instead, often gave away products or offered free tours while conventional farmers were more cognizant of ensuring time spent on agritourism was economically viable. Lastly, all participants tried to develop “active” activities over “passive” activities for visitors on the farm; however, reasons for this preference varied greatly.

Agritourism and Land Stewardship

We found participants’ involvement in agritourism to be related to land stewardship in a variety of ways. We found that land stewardship is highly influenced by both the type of farmer (e.g., conventional vs. alternative) as well as the social and cultural networks with which farmers identify. Therefore, while those farmers involved in agritourism may demonstrate land stewardship, we found values and worldviews to be the prominent factor influencing land stewardship. Participants that demonstrated an ethic of land stewardship often used agritourism as way to share their values with visitors by teaching them to be better stewards of the land. Conversely, other participants were involved in agritourism for reasons separate from land stewardship (such as social and cultural reasons).

Agritourism as an alternative to CAFOs.

Analysis of the data revealed that participants were very concerned about making income from their land in order to keep it economically viable and be able to pay taxes and fees. Minorities and alternative farmers in particular expressed that they couldn't compete with large agribusinesses in the region. They perceived that they would never be able to make a livable wage from small-scale farming and needed to supplement their livelihoods with off-farm income or diversify their farm business model with agritourism. For example, Dorothy, who owns a small alternative farming operation, perceived that participating in agritourism was her only option to keep her farm financially viable while practicing the agriculture techniques she believes in:

Yes, for this county the alternative has been – go put your farm into a huge amount of debt and have confinement animal feeding operations (CAFOs) – that's what's kept these farmers here on the farm – in addition to the direct payments from the government, and those direct payments now are gone – the tobacco buyout money is now gone. We had farmers in this county making well over 1 million dollars a year from the government payments alone, so now what's left is simply the CAFOs. Ok, if you don't want to go down that avenue, if you don't want for whatever reason – if it's strictly financial (you don't want to put your farm in debt that much and you don't want to be tied to a payment to payoff forever), if it's strictly financial, then what is your option? There are lots of other reasons why you would not want to do a CAFO (animal welfare, lots of reasons) – but if it's strictly financial, what is your option? I don't know what your option is – I haven't seen it.

Participants also mentioned that the scale of farming operations growing so rapidly had prevented small farmers from keeping up with new technologies and equipment, which were constantly becoming more expensive. George, a retired black farmer who has vegetables and some farm animals, stated:

They went from the mule, to the tractor. Then they went from the tractor, to a bigger tractor. Then they went from that tractor, to a bigger tractor. And it kept going up. And then, along

with doing that, the prices would rise. And when you ain't making nothing down here on the bottom, you can't catch up with the top.

Minority and alternative agriculture farmers in particular also perceived that it was much harder for them to get financial support from the government, either because government subsidies were reserved for large agricultural operations or because they felt they were not informed of opportunities to reduce economic costs on their farm. Also, participants feared that a spike in taxes could prevent them from keeping their land. Dennis explained:

Minorities, small farmers, they don't get to benefit – taxes make all the difference, tax is how people lose their farm. People farm and still don't get the tax benefit, they are still paying the same as the next door neighbor that got a lot – that's the taxes that you are paying if you got 10 or 20 acres, you can't pay it... you aren't producing that much.

Therefore, some participants viewed agritourism microentrepreneurship as a way to diversify their farming income without changing their practices and, at the same time, market their business. Charlene, who is about two years into production on her alternative agricultural farm, explained:

I don't care if I make any money or not. But you do have to have cash in order to pay the light bill... you can't trade eggs to the light company, so you have to remain in the cash society a certain amount, but most farmers would say 'my farm is a for-profit farm; I'm not a hobby farm'. And I'm like, well you can be more focused on process than profit and still not be a hobby farm. I mean, I don't do anything else.

She went on to demonstrate how agritourism could help her market her business in order to gain the income she needed to continue to run the farm: "I'm going to be dropping off CSA baskets at a gift shop in Wilmington where there'll be really high visibility there and a lot of those people will want to come to the farm." So, while she was still in the early stages of developing her farm, she was actively exploring ideas of how to incorporate farm visits as a way to generate income. Charlene, along with other alternative farmers, understands the steep financial investment in developing a farm without subsidies, but expressed how they felt it was extremely important to farm the land sustainably

rather than using other methods that may bring in higher profits. Alternative farmers expressed that they were intrinsically motivated to continue farming using alternative and more sustainable methods, and they sought extra income from agritourism so they could continue to be good stewards of their working lands.

Reducing agricultural illiteracy.

Another prominent theme that emerged from the data is landholder's motivation to participate in agritourism as a way to reconnect people with farms, farmers, and agricultural life. Eileen Schell (2007) defines agricultural illiteracy as the "public's inability, and perhaps unwillingness to understand how, where, and under what conditions our nation's food is grown, distributed, and marketed" (p. 34). In an effort to reduce this phenomenon, participants viewed agritourism as a way to educate the public about agriculture, about where food comes from, and about the passion farmers have for their land and for agriculture.

Dorothy explained, "We have to lure people from the city to come to the farm to establish a connection to the farm, to buy into the farm, to allow the farm to feel like it's their own, and I benefit from that financially and they benefit from that for various reasons – to know first-hand their farmer. You know, so that's my vision for this farm." Zach, a white 22-year-old conventional farmer also described his visions for agritourism on his farm:

We try to educate them about agriculture because a lot of kids these days have no clue where their meat or corn or anything comes from, so we try to help them understand that farmers are very important because it seems like nowadays people don't care if you're a farmer or not, so we're trying to get the word out so younger generations, when they grow up, they can be a little more active and give us more respect than some people do. Some people couldn't care less as long as they can go to the store and buy it, because they think it's grown there basically. So we try to do that.

In this quote, Zach reflects on some of the key themes that were prominent in the coding among participants: (1) education about agriculture and food sources, (2) education about respecting

farmers, and (3) obligation to teach future generations. These elements together, participants perceived, could help reduce agricultural illiteracy among the public and increase knowledge and respect for farmers and rural life.

However, while both groups of farmers (i.e., conventional and alternative) emphasized a desire to reduce agricultural illiteracy among the public through education, their reasons behind having this goal varied considerably. Namely, farmers practicing alternative agriculture tended to focus their educational efforts on teaching about healthy eating and about using environmentally sustainable practices (e.g., not using chemicals or planting genetically modified seeds). Grant, a Coharie tribal member who helps run a community garden at the tribal center, stated:

I do want to help with vegetables and help people be aware that they need to change their thinking to eating healthier and living better and not having to suffer with all these diseases that we can't find cures for.

This concern demonstrated his intrinsic motivation to improve the health of his community by using environmentally-friendly techniques on the land. Grant also explained how, while the community gardens were designed to support the Coharie people and improve health among the tribe, eventually the garden received media attention and became a tourism destination in Sampson County. Following these motives, many of the farmers practicing alternative agriculture took pride in being able to provide customers with fresh, healthy products that visitors could see were produced locally. John and Laura, who sell humane-certified Angus beef directly to customers explained:

There's a movement of people that are concerned about what they're eating and where it comes from. And so that's where our niche is. You can come out here to the farm. You can see where these cows are being raised, how they're being raised. Heck, you could even pick one out if you wanted to. And that'd be the one you get. And you could see how they're finished and see that they're treated humanely and that they're free range. They're not pent up in small pens and fed a bunch of garbage.

Conversely, conventional farmers associated their involvement with agritourism as a “family-oriented” effort and expressed the need to reduce agricultural illiteracy for primarily social and cultural reasons rather than for environmental reasons. For example, participants often stated they viewed agritourism as a way to either instill a work ethic and business skills in their own children (by helping with the family business), or to educate other children and strengthen rural communities by providing activities for families. Susan stated, “What drives me is I, as a mother, I’m creating things, or I’m creating a place, events that I would like to bring my family to”. Further, she explained how her family started agritourism as a response to a lack of “family friendly” activities to do in the community: She said:

We actually started the maze, because as far as for families, there wasn't much to do in Sampson County. Um, young kids - and there wasn't anything like this, like the fall festival maze. And so, we just keep adding events, to our site. I mean, families are looking for something to do.

Reflecting on these observations, data also revealed a different level of transparency among alternative farmers and conventional farmers. Namely, conventional farmers generally structured their farm into “front and back stages” (MacCannell, 1976), inviting visitors only to a section of their farm specifically designed to be tourist-ready. In these farm front-stages, the conventional farmers provided authentic hands-on experiences (e.g., harvesting produce) and also more “staged” experiences (e.g., petting zoos, hay rides). Arroyo, Barbieri, and Rich (2013) suggest that, “Staged agritourism refers to activities through which visitors experience agricultural operations but through staged scenarios and predetermined tours” (p. 41); however, both types of experiences can be designed for educational or entertainment purposes. For example, Susan and Zach explained that they would not take visitors to see their animal production (e.g., hogs produced in CAFOs) but instead preferred to “rent” pet farm animals from neighbors during agritourism events (e.g., goats, pigs, ponies) so children could pet the animals and they wouldn’t have to house them the whole year. While this type of agritourism may still serve the purpose of re-connecting people with the land,

ironically, “front stage” agritourism on some of the conventional farms was providing a misrepresentation of “where food comes from” and instead provided a staged representation of farms more commonly characterized to be considered alternative. To compound the challenge of any critical examination of this finding, we observed that conventional farmers justify this practice due to their need to protect the health of their livestock, and due to a perceived need to use large-scale agriculture to feed a growing world population.

In summary, while both groups of participants expressed a desire to reduce agricultural illiteracy among the public by providing educational opportunities that reconnect people with the farm and rural life, conventional and alternative farmers differed in their levels of transparency about food production (i.e., front vs. back stage authenticity). In effect, while conventional farmers used agritourism to provide opportunities to strengthen families and communities, they did not directly strive to teach an ethic of land stewardship. Conversely, alternative farmers used agritourism to educate visitors about environmentally sustainable farming practices and the importance of eating healthy, locally-produced food, in effect, using agritourism as an outlet to educate visitors about land stewardship.

Involvement in Collective Action

Through an investigation of participants’ involvement in collective action, we found that individuals’ land stewardship was highly influenced by the farmers’ social and cultural groups. For instance, participants stated various ways that other groups and individuals had influenced their land management decisions (e.g., regular communication with other farmers in the region to exchange information, resources, and knowledge about farming practices). Some of the participants were very involved in cooperatives or other organizations (e.g., agricultural or agritourism associations) and, through these collective processes, they communicated regularly with other farmers, extension and academic professionals, non-profits, and specialty associations. However, participants chose to collaborate for different reasons, and barriers that prevented successful collaboration on land management differed between the types of farmers.

Alternative farmers, all of whom were women and/or minorities, expressed greater interest in being involved in small grassroots cooperatives (e.g., women's groups, Small Family Farm Cooperative) than conventional farmers. Cooperative members explained that meeting regularly helped them learn about new alternative farming techniques and share knowledge about programs designed to help small-scale, minority, or alternative farmers. Additionally, alternative farmers explained how being members of a cooperative provided social opportunities, which were particularly important among some informants who did not have family in the region or felt hesitant or excluded from communicating with neighbors.

However, while cooperative members expressed overall benefits of collaboration, they often felt restricted by geographic barriers. For example, Luisa stated, "I can't collaborate with others, because they're too far away. And when I do - let's say that I do get involved? What happens is that I'm thinking about everything I need to do here while I'm over there."

Dorothy and Charlene both expressed that they could benefit from being involved in a cooperative or organized group with a specific focus on women farmers. Charlene reported that being both a woman farmer and a newcomer to the region prevented local people from taking her seriously, which made some aspects of her work difficult. For example, she expressed that it was very difficult to find good workers, stating that Hispanics were initially hesitant to work for a single woman (until they realized how qualified and appreciative she was). Further, she mentioned the following challenges with communicating with neighbors:

I do talk to the neighbors (...) but then you run into the cultural issues of being a single white female and if I ask somebody for a piece of equipment – and men trade equipment all the time – they think I want sex and I'm like, 'Really, I do not...otherwise I would say so, you know?' So that's really a problem that you just can't deal with men directly, or I feel like I can't.

Charlene then explains how other women may disagree, but that she perceives that they likely don't experience the same kind of discrimination if they have a husband or grew up in the area:

Now (Sarah) disagrees with this, but she is married to somebody who has a lot of family in this area. They all went to high school with her husband; they've all known him for years and years and years. So they relate to her differently than they do to me who has no family in the area and is single. (...) It's like one of those invisible things that you have to build all these relationships but in another time and place you would just be born into them.

Supporting Charlene's comments, and the difficulty of gaining cultural capital in some agricultural communities, Sutherland and Darnhofer (2012) also found that farmers' longevity in the community (and wealth gained) helped them earn the social and cultural capital needed to effectively collaborate with other farmers. Sutherland (2013) points out that alternative farmers tend to find it difficult to be accepted into established social circles that nurture Western symbols of 'good farming' that focus more on financial and economic elements (e.g., high yields). Our analysis suggests that social exclusion appears to make alternative farmers fear showcasing agricultural practices that collide with land management practices advocated by conventional farmers. Some participants mentioned that people may be "scared" to be active advocates for sustainable land stewardship and that some are even reluctant to participate in agritourism. Minority participants in particular (e.g., African Americans, American Indians, and women) felt hesitant to participate in community meetings about land tenure, or to boast that they have agricultural land because of deep-rooted fears that they could lose their rights to the land. Dennis explains:

If you have been taught, and it's a generational thing, that certain things you don't do.. it's there for you, but you are scared to go really see what's there for you. I call it the "wife beating syndrome" -- you basically mentally block yourself from stepping out of your zone, and that's what it is for a lot of people.. especially for small, minority farmers. My dad couldn't do that, I can't do that. And it's more prevalent than people think.

So, while collective action mechanisms associated with agriculture or agritourism have purportedly exposed some farmers to new business and land management ideas, deep-rooted cultural values, social networks and discrimination interact to significantly curtail communication between

alternative and conventional farmers and their support institutions. Alternative farmers appear to be most affected by this process, as many appear resigned with carving a simple livelihood without wanting to bring too much attention to themselves for fear of retaliations.

Trust informing land stewardship.

Of the three sub-constructs examined to assess collective action (i.e., trust, ownership, self-governance), trust emerged as the key factor when assessing who to collaborate with and where to get useful information regarding land management. Further, participants from each group identified different people or organizations that they trusted. Table 3.2 below displays organizations or individuals who were most frequently mentioned among each group when participants were asked who they regularly communicate with about land management decisions.

Table 3.2: Sources of trust among conventional and alternative agricultural farmers

		Conventional Farmers	Alternative Agriculture Farmers
Trust	Groups	Agribusiness groups/associations Extension agents Agritourism associations	Small, grassroots organized collectives Non-profits Agritourism associations
	Individuals	Family, neighbors, friends, community, other conventional farmers	Minorities and women trust each other
Lack of Trust		Government Environmental activists	People in community Extension agents Agribusiness associations

These findings indicate that participants trust groups and individuals that support their beliefs and goals towards land stewardship. While this is not surprising, these findings revealed barriers that could limit communication between groups with polarized values and worldviews, which could also hinder land stewardship and community involvement in agritourism. For example, as an extension of dialogue on reducing agricultural illiteracy among the public, most participants revealed their

polarized beliefs on the most appropriate way to “feed the world”. John and Laura expressed the importance of practicing environmentally sustainable techniques on their land, but felt it was a privilege that they were able to eat local food and live a healthy lifestyle. Moreover, they were very supportive of large-scale agriculture in the community and agribusinesses receiving government subsidies because they expressed conventional agriculture is necessary to feed a growing population. Similarly, Robert and Jean took pride in being able to have a small-scale farm, but acknowledged that large-scale agribusinesses were a necessity. Robert stated:

As far as supplying the food value and the food needed for the world, no, you can’t do it on open range... you have to have a confinement system where the nutrients, the environment, the conditions that they live are in our control.

Conversely, conventional farmers expressed that small-scale alternative agriculture was “more like a hobby instead of an enterprise” since this type of farming lacked market value and the capability to produce high yields necessary to feed a growing population. For example, while Jean cares for animals on her small farm, she said, “Do I want to do organic? No, I don’t believe in organic. It’s fine if people like it, but I’m perfectly happy using commercial fertilizer and Seven Dust (a pesticide) and actually getting a harvest occasionally.” Regarding animals, Jean also stated, “People do not understand. It’s the only way we can feed people. And it’s better for the animals. It’s better for the workers. It’s better for the environment.” Other conventional farmers, such as Andy and Zach, expressed similar views and communicated that following organic practices was not realistic or “worth the effort” versus the profit and productivity from using “chemicals, fertilizers, and growth enhancements” (Zach).

Conversely, all of the alternative farmers stated that it was not necessary to rely on practices that they perceived were damaging to the health of people and the environment (e.g., use of genetically modified seeds, CAFOs, chemicals) in order to feed the world. Instead, they perceived these practices to be unsustainable, inequitable, and focused more on profits for corporations and “people in power”. Charlene stated:

Okay, they can take \$10 million and give it to somebody else and figure out how to grow chickens outside just as efficiently as they do in those houses ... And that's really a waste. It's like living next to a giant pesticide plant for no reason other than greed (laughs). You know, all these companies that say we have to have these chemicals to make a living – we have to do this we have to do that – they could just as easily produce another product that's natural and not destructive to the ecosystem.

Therefore, our analysis revealed that participants have very polarized worldviews and values, which, as previously reported by Clayton and Myers, (2009), explain why they have opposing views on how to manage farm land. Conventional farmers perceived the practices they did on their land as the most effective and they supported large agribusinesses solutions to “feed the world.” Alternative farmers, on the other hand, felt that agribusiness was “killing the world” and expressed that humans should be better stewards of the environment. These divergent views lead to each group viewing the other as naïve, “ignorant” or “uninformed” and they undermine any efforts to build consensus on goals towards a collective land stewardship.

Discussion

This study examined how and why small-scale farmers are involved in agritourism microentrepreneurship, and how their involvement in agritourism relates to their stewardship of working agricultural lands. Further, we identified ways in which farmers' involvement in collective action supported or hindered this relationship. We found important differences between types of farmers (ethnic minorities and women vs. white male; conventional vs. alternative) in terms of their motivations to be involved in agritourism microentrepreneurship, and in regards to how collective processes influenced their land stewardship. We did not find that involvement in agritourism influenced farmers' stewardship of their agricultural land. Instead, farmers with different worldviews, agricultural practices and land management views participate in agritourism in markedly different ways, and they used agritourism as tool to educate visitors about their views.

As previously documented (Schell, 2007), the participants in this study were deeply concerned with the public's agricultural illiteracy. Alternative farmers were highly motivated to participate in agritourism because they desired to educate visitors about land stewardship, healthy eating, and environmentally sustainable production techniques (e.g., composting, intercropping). Most alternative farmers interviewed were also 'lifestyle' farmers (Gill, Klepeis, & Chisholm, 2010), as they were generally retired, non-white or women, and had off-farm income or savings. Consistent with findings previously reported by Arroyo, Barbieri, and Rich (2013), alternative farmers expressed the need to make their farm economically viable and many viewed agritourism as a way to earn additional revenues; however, they seldom charged fees for agritourism activities (e.g., corn mazes, renting event spaces). Instead, they tended to try to earn income through the direct sales of farm products to visitors. Conversely, while conventional farmers were also intrinsically motivated to reduce agricultural illiteracy by providing sociocultural opportunities to the community (e.g., family-friendly community activities, educational programs designed to learn about the struggles of rural life), they also considered agritourism as an important part of their revenue model and were more keen to charge fees for visits.

In addition to earning income, agritourism microentrepreneurs were also highly motivated by non-economic factors. Extending Barbieri's (2013) work on assessing the sustainability of agritourism farms, we found that participants articulated important sociocultural (e.g., instilling work ethic in children) and environmental (e.g., educating about permaculture) reasons for their involvement in agritourism microentrepreneurship. These findings contrast with previous reports that economic motivations for agritourism entrepreneurship are most important (e.g., McGehee & Kim, 2004). Therefore, we speculate that the relative importance of competing motivations is likely to differ between various types of farmers and contexts, and suggest that additional research is needed to gradually bring insight into this question.

Lastly, this study revealed that there are complex factors undermining the potential role of collective action to foster land stewardship. Specifically, ethnic minorities, women and alternative

agriculture farmers in our study felt disconnected and distrustful of conventional farmers and formal agricultural and agritourism support organizations. As a result, they hesitated to advocate for their land stewardship views in fear of retaliation. In contrast, conventional farmers viewed others as hobby farmers who did not really contribute to feed the world, and they discussed their land management views only with other like-minded farmers and support organizations. This division stifles the flow of trusted information about appropriate agricultural and agritourism practices, which reaffirms previous assertions of the difficulty in transcending conventional ‘good farming’ ideals centered on financial symbols of production (Burton and Paragahawewa, 2011; Sutherland, 2013). The lack of trust observed between conventional and alternative farming factions (i.e., including the farmers and select support organizations and associations aligned with one or the other group) is a strong indicator that the broader group will not be able to work towards a collective ethic of land stewardship (Ostrom, 1990). As suggested by Sutherland and Darnhofer (2012) there is a need to involve individuals with distinct worldviews in integrated networks so that they can gradually and jointly redefine approaches that are economically viable and also demonstrate stewardship for the long-term sustainable management of working lands.

Implications and Future Research

This study has provided important implications into how and why different types of farmers choose to participate in agritourism microentrepreneurship, and how their involvement relates to their land stewardship. We argue that ethnic minorities, women and alternative agriculture farmers especially could use agritourism microentrepreneurship as a way to increase the value of their land and become more competitive in markets driven by conventional farming, but they are limited by barriers that prevent them from forming networks with other farmers and institutions in their communities. Local government and non-profit programs should increase their efforts to encourage the participation of underserved minority farmers in both agritourism microentrepreneurship and in

forming agricultural cooperatives and grassroots groups to mitigate these barriers in the communities where they live.

This study has also revealed that agritourism research could benefit by differentiating between distinct types of farmers. In this study, we found important distinctions in why different types of farmers both chose to participate in agritourism and in the types of agritourism they developed. Acknowledging these differences (e.g., between conventional and alternative farmers) may help governmental or non-governmental organizations find businesses that better align with their objectives when facilitating the development of agritourism enterprises. Further, classifying different types of agritourism businesses can help networking groups and associations (e.g., agritourism associations) recognize which groups they need to reach out to about membership or resources that could help farmers develop their businesses. For example, in this study we found it particularly difficult to contact smaller-scale agritourism enterprises in early stages of development. By acknowledging agritourism microentrepreneurs as a growing population, marketing from agritourism associations could focus on better ways to integrate them into already established networks.

Similarly, we argue that more agritourism research should focus on certain groups of agritourism microentrepreneurs that typically have lacked presence in the literature. For example, it is argued that lifestyle farmers tend to be more involved in alternative agriculture and environmentally sustainable practices (Gill, Klepeis, & Chisholm, 2010); however, few studies exist on lifestyle farmers participating in agritourism. Based on the relationship between lifestyle farmers and land stewardship, we argue that agritourism is a viable, yet underutilized way for lifestyle farmers to both reduce agricultural illiteracy and educate visitors about stewardship. Additionally, while some studies have explored gender in agritourism (e.g., Brandth, Haugen, & Kroken, 2010; McGehee, Kim, & Jennings, 2007), few have considered differences between ethnic minorities. In effect, there may be important relationships between ethnic minorities and their involvement in agritourism that have been overlooked by not focusing on race as a variable. We also argue that acknowledging different types of farmers would be useful when investigating land stewardship since

the ethnic minorities in our study also tended to be lifestyle farmers. Future studies on agritourism (e.g., large sample surveys) should focus on including a full range of farmer types and how to classify them, specifically including farmers who offer more informal agritourism microentrepreneurship activities and distinguishing between conventional and alternative farmers, and different ethnic groups. This approach would allow researchers to assess whether patterns observed among participants in this study may be generalizable to broader populations of agritourism entrepreneurs.

Additionally, since participants expressed agritourism as a way to reduce agricultural illiteracy among visitors, future research should investigate the extent to which visitors have gained knowledge and awareness from participating in agritourism activities, and what they have learned. Participants in this study presented many objectives they had towards specific things they would like their visitors to gain from visits (e.g., work ethic, stewardship); therefore, future research should include tourists to assess if agritourism entrepreneurs are reaching their goals.

Lastly, data revealed that collective action is limited by traditional worldviews that are developed, encouraged, and supported by deep set social norms. These social norms inhibit communication between different types of farmers, and lead to imbalance of farmers' access to resources and support services. Future research should focus on how to incorporate strategies to erode these barriers and increase opportunities for farmers to communicate, share resources, and eventually build trusting relationships across factions. Further, while this study demonstrated similar goals among participants to reduce agricultural illiteracy among the public, further communication and collaboration towards agritourism development could help reduce polarizing views and stereotypes to find common ground and work towards the formation of a collective approach to land stewardship.

References

- Ahmed, I., Deaton, B. J., Sarker, R., & Virani, T. (2008). Wetland ownership and management in a common property resource setting: A case study of Hakaluki Haor in Bangladesh. *Ecological Economics*, 68(1), 429-436.
- Alkire, S. (2005). Subjective quantitative studies of human agency. *Social Indicators Research*, 74(1), 217-260.
- Arroyo, C. G., Barbieri, C., & Rich, S. R. (2013). Defining agritourism: A comparative study of stakeholders' perceptions in Missouri and North Carolina. *Tourism Management*, 37, 39-47.
- Barbieri, C. (2013). Assessing the sustainability of agritourism in the US: a comparison between agritourism and other farm entrepreneurial ventures. *Journal of Sustainable Tourism*, 21(2), 252-270.
- Barbieri, C., & Valdivia, C. (2010). Recreation and agroforestry: Examining new dimensions of multifunctionality in family farms. *Journal of Rural Studies*, 26(4), 465-473.
- Barbieri, C., Mahoney, E., & Butler, L. (2008). Understanding the Nature and Extent of Farm and Ranch Diversification in North America. *Rural Sociology*, 73(2), 205-229.
- Beritelli, P. (2011). Cooperation among prominent actors in a tourist destination. *Annals of Tourism Research*, 38(2), 607-629.
- Berkowitz, A. R., Ford, M. E., & Brewer, C. A. (2005). A framework for integrating ecological literacy, civics literacy, and environmental citizenship in environmental education. *Environmental education and advocacy: Changing perspectives of ecology and education*, 227-266.
- Bernard, H. R. (2011). *Research methods in anthropology: Qualitative and quantitative* (5th ed.). Lanham, MD: AltaMira Press.

- Biernacki, P., & Waldorf, D. (1981). Snowball sampling: Problems and techniques of chain referral sampling. *Sociological Methods & Research*, 10(2), 141-163.
- Brandth, B., & Haugen, M. S. (2011). Farm diversification into tourism—Implications for social identity? *Journal of Rural Studies*, 27(1), 35-44.
- Brandth, B., Haugen, M. S., & Kroken, A. (2010). Farm tourism: a question of gender and competence. *Nordic rural futures: pressures and possibilities*, Uppsala, 3-5.
- Braun, V. and Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Burton, R. J., & Paragahawewa, U. H. (2011). Creating culturally sustainable agri-environmental schemes. *Journal of Rural Studies*, 27(1), 95-104.
- Chandy, R., & Narasimhan, O. (2011). How micro-entrepreneurs could change the world. *Business Strategy Review*, 22(1), 52-55.
- Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. London: Sage Publications Limited.
- Clayton, S., & Myers, G. (2009). Conservation psychology. *Understanding and promoting human care for nature*, EUA: Wiley-Blackwell.
- Cocklin, C., Dibden, J., & Mautner, N. (2006). From market to multifunctionality? Land stewardship in Australia. *The Geographical Journal*, 172(3), 197-205.
- Dowding, K. (2013). Collective action problem. *Encyclopedia Britannica*. Retrieved from <http://www.britannica.com/EBchecked/topic/1917157/collective-action-problem>.
- Flick, U. (2014). *An introduction to Qualitative Research* (5th ed.). Thousand Oaks, CA: Sage Publications, Inc.

- Gill, N., Klepeis, P., & Chisholm, L. (2010). Stewardship among lifestyle oriented rural landowners. *Journal of Environmental Planning and Management*, 53(3), 317-334.
- Greenwald, A.G., Pratkanis, A.R., Leippe, M.R., Baumgardner, M.H. (1986). Under what conditions does theory obstruct research progress? *Psychological Review*, 93, 216-229.
- Kleijn & Sutherland (2003) How effective are European agri-environment schemes in conserving and promoting biodiversity? *Journal of Applied Ecology*, 40, 947-969.
- MacCannell, D. (1976). *The tourist: A new theory of the leisure class*. New York: Schocken Books.
- McBride, B. B., Brewer, C. A., Berkowitz, A. R., & Borrie, W. T. (2013). Environmental literacy, ecological literacy, ecoliteracy: What do we mean and how did we get here? *Ecosphere*, 4(5), 1-19.
- McElwee, R. (Filmmaker). (2005). *Bright Leaves: North Carolina & Tobacco: Historical Background*. [Documentary Film]. United States. Retrieved from <http://www.pbs.org/pov/brightleaves/historical-background/>.
- McGehee, N. G., & Kim, K. (2004). Motivation for agri-tourism entrepreneurship. *Journal of Travel Research*, 43(2), 161-170.
- McGehee, N. G., Kim, K., & Jennings, G. R. (2007). Gender and motivation for agri-tourism entrepreneurship. *Tourism Management*, 28(1), 280-289.
- Morais, D. B., Heath, E., Tlhagale, M., Payton, F. C., Martin, K., Mehta, K., & Bass, J. (2012). Concept Testing People-First Tourism in Rural South Africa. In Jafari, J. (Ed.). *Knowledge Management in Tourism: Policy and Governance Applications Bridging Tourism Theory and Practice*, Vol 4, 115-128. Emerald, Bingley, UK.

- Morais, D. B., KC, B., Mao, Y., Mosimane, A. (2015). Wildlife conservation through tourism micro-entrepreneurship among Namibian Communities. *Tourism Review International*, 19(1-2), 43-61.
- Namey, E., Guest, G., Thairu, L., & Johnson, L. (2008). Data reduction techniques for large qualitative data sets. In G. Guest & K.M. MacQueen (Eds.), *Handbook for team-based qualitative research* (pp. 137-162). Lanham, MD: AltaMira Press.
- Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.
- Ostrom, E. (2010). Beyond markets and states: Polycentric governance of complex economic systems. *The American Economic Review*, 100(3), 641-672.
- Pelletier, L. G., Tuson, K. M., Green- Demers, I., Noels, K., & Beaton, A. M. (1998). Why are you doing things for the environment? The motivation toward the environment scale (MTES) 1. *Journal of Applied Social Psychology*, 28(5), 437-468.
- Phillip, S., Hunter, C., & Blackstock, K. (2010). A typology for defining agritourism. *Tourism Management*, 31(6), 754-758.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68-78.
- Saxena, G. (2006). Beyond mistrust and competition—the role of social and personal bonding processes in sustaining livelihoods of rural tourism businesses: a case of the Peak District National Park. *International Journal of Tourism Research*, 8(4), 263-277.
- Schell, E. (2007). The rhetorics of the farm crisis: toward alternative agrarian literacies in a globalized world. In *Rural Literacies* (pp. 77-119). Carbondale, IL: Southern Illinois University Press.

- Spillett, M. A. (2003). Peer debriefing: Who, what, when, why, how. *Academic Exchange Quarterly*, 7(3), 36.
- Stevenson, K. T., Peterson, M. N., Bondell, H. D., Mertig, A. G., & Moore, S. E. (2013). Environmental, institutional, and demographic predictors of environmental literacy among middle school children. *PloS one*, 8(3), e59519.
- Stronza, A. (2005). Hosts and Hosts: the Anthropology of Community- Based Ecotourism in the Peruvian Amazon. *Napa Bulletin*, 23(1), 170-190.
- Sutherland, L. A. (2013). Can organic farmers be ‘good farmers’? Adding the ‘taste of necessity’ to the conventionalization debate. *Agriculture and Human Values*, 30(3), 429-441.
- Sutherland, L. A., & Darnhofer, I. (2012). Of organic farmers and ‘good farmers’: Changing habitus in rural England. *Journal of Rural Studies*, 28(3), 232-240.
- Tew, C., & Barbieri, C. (2012). The perceived benefits of agritourism: The provider’s perspective. *Tourism Management*, 33(1), 215-224.
- Vollan, B. (2008). Socio-ecological explanations for crowding-out effects from economic field experiments in southern Africa. *Ecological Economics*, 67(4), 560-573.
- Wing, Cole, & Grant (2014). Environmental Injustice in North Carolina’s Hog Industry. *Environmental Health Perspectives*, 108(3), 225-231.
- Wong, J. (2012, May 29). The rise of the micro-entrepreneurship economy. Retrieved from <http://www.fastcoexist.com/1679903/the-rise-of-the-micro-entrepreneurship-economy>
- Wunder, S. (2000). Ecotourism and economic incentives—an empirical approach. *Ecological Economics*, 32(3), 465-479.

Wyman, M., & Stein, T. (2010). Examining the linkages between community benefits, place-based meanings, and conservation program involvement: A study within the Community Baboon Sanctuary, Belize. *Society and Natural Resources*, 23(6), 542-556.

Yang, L. (2012). Impacts and Challenges in Agritourism Development in Yunnan, China. *Tourism Planning & Development*, 9(4), 369-381.

CHAPTER 4: A mixed methods approach to assessing residents' place attachment to the Guatemalan Maya landscape through photo elicitation

Target Journal: *Journal of Mixed Methods Research*

Abstract

In this paper, we present a technique that integrates photo importance ranking with semi-structured interviews to acquire a deeper understanding of farmers' connections to working landscapes. Using a collection of landscape photographs endemic to rural Guatemala, we assessed place attachment among an indigenous Maya community involved in communitarian tourism microentrepreneurship and shade-grown coffee production. Participants expressed place dependence to landscapes for economic and non-economic reasons (e.g., income from coffee production, firewood from forests), and place identity for sociocultural reasons (e.g., tradition of farming maize). Multidimensional scaling and descriptive statistics, combined with thematic coding of interview data, enabled us to overcome cultural and language barriers with indigenous participants and enhanced our interpretation of place meanings.

Key words: photo elicitation, place identity, place dependency, Central America

Introduction

Place attachment research has yielded important insights into how the enjoyment of resources through recreation and tourism may shape individuals' bonds with natural areas (e.g., Cheng & Kuo, 2015; Gross & Brown, 2008; Hou, Lin, & Morais, 2005; Hwang, Lee, & Chen, 2005), and studies have examined how place attachment may impact pro-environmental behavior or attitudes (e.g., de la Barre, 2013; Gosling & Williams, 2010; Halpenny, 2010; Scannell & Gifford, 2010; Walker & Ryan, 2008). However, there is limited insight into how residents' use of working lands for their livelihood may affect their attachments to these lands, and also influence their stewardship of those lands (Garcia-Ramon & Canoves, 1995; Lokocz, Ryan, & Sadler, 2011; Stedman, Beckley, Wallace, & Ambard, 2004; Schuster, Sullivan, Kuehn, & Morais, 2011; Wyman & Stein, 2010). Additionally, most place attachment research has focused on the white leisure class or people traveling to destinations without an ancestral connection to the land. However, place attachment is multidimensional and varies greatly between tourists, residents, and individuals of different ethnic backgrounds (Cheshire, Meurk, & Woods, 2013; Hou, Lin, & Morais, 2005; McWatters, 2009). Therefore, when considering the long-term viability of tourism development and land stewardship in natural resource-dependent communities, appropriately assessing place attachment among local, often disenfranchised, individuals is important.

These assessments may also be particularly important among indigenous populations, who traditionally have rather distinct worldviews and connections to the natural landscape compared to visitors, and whose voices have historically been excluded from planning for land-use change and tourism development (Coria & Calfucura, 2012; Mbaiwa & Stronza, 2011). For example, Fletcher (2009) acknowledges that individuals establish very different relationships with the rural landscape, including consumptive and non-consumptive uses, and perhaps cultural or spiritual uses. Therefore, an assessment of place attachment among residents is highly contextual and important in considering changes in land use and regional development. Research has examined how indigenous people relate

to their land, but these studies have been essentially anecdotal and based on ethnographic observations without a closer examination of specific landscapes or features that stimulate place attachment. Therefore, this study examines the context of indigenous locals' attachment to their working lands using a mixed methods approach.

Context

In Lake Atitlán, Guatemala, gradual development of the region through a growth in communitarian tourism (LaPan, in press), the development of local cooperatives, and a shift in landscape use has brought concern for changes in indigenous people's attachment to native lands and traditional ways of life. For example, much of the land in the Guatemalan highlands has transitioned from primarily subsistence crops such as *maiz* (maize) or *hortalizas* (vegetable gardens) to commodity exports such as shade-grown coffee. Maize has traditionally held great cultural, historical and spiritual importance to the Maya people; however, in some regions the residents have shifted land uses to the production of shade-grown and certified coffee with hopes of economic gain. Additionally, in some cases tourism has served to further connect local people with their land and to strengthen ethnic identities (e.g., Brandth & Haugen, 2011), while in other cases control of the tourism industry by outsiders and a lack of local involvement in strategic planning has disconnected people from their native landscape and identities (Bruner, 2005; Stronza, 2008).

In this study, sorting and ranking of landscape photographs followed by semi-structured interviews were used to investigate place attachment (i.e., place dependency and place identity) in a rural indigenous community supporting their livelihoods primarily through involvement in tourism and/or agricultural production. Photo elicitation was chosen as an appropriate method to draw information where differences in literacy level, socioeconomic status, race, and language could all potentially cause barriers between the researcher and participant. A collection of ten landscape photographs endemic to rural agricultural and forested regions of Guatemala were used to assess which landscapes participants deemed particularly important and meaningful. While photo elicitation

has been used to assess place attachment (e.g., Stedman, Beckley, Wallace, & Ambard, 2004; Walker & Ryan, 2008; Zhang & Lei, 2010), our study is unique in that, in addition to ranking the landscape photographs in order of importance or personal significance, we then used them to prompt in-depth discussions about which landscape features participants found most meaningful. We used both quantitative analysis (i.e., descriptive statistics and multidimensional scaling) and qualitative analysis (i.e., thematic coding) to interpret the data. While multidimensional scaling provided a visual representation of how participants' attachment to certain landscapes clustered, thematic coding derived from qualitative interviews provided a deeper understanding of why participants are attached to certain landscapes and helped to guide overall theme development and interpretation. Accordingly, the purposes of this manuscript are to: (1) demonstrate a new mixed methods photo elicitation approach for assessing place attachment (i.e., place dependency and place identity) to working lands among the indigenous Maya in the Guatemalan highlands; and (2) describe how the approach can enhance elicitation of place meanings, particularly among indigenous communities, in other contexts.

Review of the Literature

Place Attachment and Landscape

Place attachment is a theoretical construct that has been used extensively across disciplines such as geography, anthropology, natural resource management, design, recreation and tourism to assess the emotional bonds between people and places (Lewicka, 2011). The construct is defined as the affective relationships that individuals develop with a built or natural setting, which gives that place personal meaning (Altman & Low, 1992; Tuan, 1977). However, place is not necessarily a specific site or location; rather, place can also be what Smith (2006) refers to as a “cultural process” of discovering meaning and making memories through experiences. Smith states that, “the ‘power of place’ is invoked in its representational sense to give physical reality to these expressions and experiences” (2006, p.75) of heritages that societies use to construct a shared identity.

Williams and Vaske (2003) characterize place attachment through a two-dimensional scale based on place identity and place dependence. Accordingly, Davenport & Anderson (2005) explain that people may develop “more symbolic meanings of place...based on the notion that places serve various functions in identity development that promote a sense of belongingness” (i.e., place identity) or individuals may develop “more tangible meanings of place... (and) denote a goal-oriented relationship with place and the belief that a place directly or indirectly satisfies certain physical or psychological needs” (i.e., place dependency, p. 628). For example, individuals may be attached to a place because they feel it is a part of who they are and of their heritage (i.e., place identity) or because that place supports the activities that they do there recreationally or to support their livelihood (i.e., place dependency).

While researchers may struggle to settle on a concrete definition of this construct and its dimensions, extensive literature examines how attachment to a place may influence an individual’s pro-environmental attitudes, behavior, motivations, or desired management outcomes (de la Barre, 2013; Gosling & Williams, 2010; Halpenny, 2010; Lokocz, Ryan, & Sadler, 2011; Smith, Davenport, Anderson, & Leahy, 2011; Walker & Ryan, 2008). Further, Huff (2006) stated that, “An understanding of the local sense of place can allow outsiders a glimpse into the experiences that establish cultural identity through the varied relationships that people have with the land” (p. 82). Therefore, understanding these relationships through an assessment of place attachment is important for successful tourism development and has implications for land stewardship. Moreover, individuals who do not exhibit connection to a place (particularly place identity) may be less likely to care about the setting or about what happens to it in the future (Schuster et al., 2011).

Methodological Assessment of Place Attachment

Place attachment has been assessed through different approaches, both quantitatively and qualitatively. Quantitatively, place attachment has often been operationalized through multidimensional likert-type scales (e.g., Gosling & Williams, 2010; Smith, Davenport, Anderson, &

Leahy, 2011) designed to provide numerical scores based on the different dimensions of place attachment that can be further analyzed statistically. Qualitative approaches such as in-person interviews, participant observation, or storytelling have also provided more in-depth insight into place-based meanings (Chesire, Meurk, & Woods, 2013; Davenport & Anderson, 2005; de la Barre, 2013; Huff, 2006). Further, some studies have used photographs to employ quantitative, qualitative, or mixed methods approaches to assessing place attachment (e.g., Cheng & Kuo, 2015; Stedman, Beckley, Wallace, & Ambard, 2004; Walker & Ryan, 2008; Zhang & Lei, 2010). Harper (2002) states that, “Photographs may lead an individual to a new view of their social existence. It is also possible to use images as bridges between worlds that are more culturally distinct” (p. 21). For example, photo-preference surveys have been used to examine the level of attachment that local residents have to different landscapes (Walker and Ryan, 2008; Lokocz et al., 2011; Zhang & Lei, 2010). In these studies, photographs were pre-selected and included in surveys and respondents rated each photograph based on likert-type scales designed to measure levels of attachment to each photograph.

Conversely, Stedman et al. (2004) provided single-use cameras to residents in a high amenity tourism site and asked them to take photographs of places or things that had special meaning to them. Then, the photographs were developed and participants met with the researcher again to analyze why certain photographs were selected. This method, which may be referred to as photovoice (Guest, Namey, & Mitchell, 2013), provides an outlet for individuals to have their voices heard, and indirectly can also be a tool to enhance self-growth, independence, and self-worth among participants as they may view their own surroundings from a new perspective. Additionally, photographs have been used to elicit information and encourage dialogue (i.e., photo interviews) and have been effective in conducting studies with children (Cappello, 2005). However, studies focusing on using photo interviews with low-literacy, disenfranchised populations as a way to mitigate social barriers are scarce. Therefore, we argue that a mixed methods approach to photo elicitation can be used as a

way to mitigate potential cultural or social barriers among the researcher and participants (e.g., literacy levels, social class, language) and may be an effective method to build rapport with participants in low-literacy, culturally sensitive communities. For example, based on her research with a Maya indigenous community, Huff (2006) revealed that using storytelling was particularly useful in expressing sense of place, which likely could be initiated by photographs of familiar landscapes.

While place attachment has been assessed in a number of ways, Stedman et al. (2004) point out that much of the literature has focused on using quantitative methods to examine “*how much* a setting means to a person” rather than methods assessing “particulars of *what* the setting means” (p. 581). Correspondingly, mixed methods approaches using photo elicitation can determine not only which landscapes elicit place attachment among residents, but they can also be used to assess which features of the landscape influence this bond, and why. Responding to this need, this study incorporated photo sorting and ranking into semi-structured in-depth interviews as a mixed methods approach to further understand both landscapes to which participants felt most attached or connected and how participants expressed personal meaning in certain features of the Guatemalan landscape. The process of using photographs to identify specific landscape characteristics that elicit place attachment from participants has both theoretical and methodological implications that will guide future research on place attachment. Further, we argue that using photo elicitation as a mixed methods approach is a very useful but underused method.

Methods

In this study, a mixed methods approach was used to assess place attachment among an indigenous natural resource-dependent community that has undergone extensive tourism development and rural land use changes. Through sorting and ranking of landscape photographs, participants revealed which landscapes they viewed as most important or best reflected their identity. Then, a combination of thematic coding of interview data and quantitative analyses revealed not only which

landscapes participants were attached to but *why* they were attached to certain landscapes (e.g., which attributes of the landscape they identified with or felt dependent on). In this way, quantitative and qualitative data informed each other to demonstrate the types of landscapes to which participants were most attached to and why.

Study Setting

San Juan la Laguna is a community located on the western highlands of Lake Atitlán, Guatemala whose residents are over 95% Tz’utujil Maya indigenous. Reflecting on the community’s tradition of farming maize (known in Spanish as *maiz* or *milpa*), their name means the ‘flower of the maize plant’ and the Maya still practice traditional subsistence farming on their land today using “centuries-old technologies and indigenous knowledge” (Loucky, 2001, p.153). *Maiz* continues to be crucial for local subsistence, and it also holds spiritual, cultural, and social significance among the Maya (Huff, 2006).

Coffee, however, has a much more complex history among the indigenous Maya in Guatemala. From the late 19th century until as late as the 1940s Maya were forced to work on large-scale, low altitude coffee plantations (i.e., *fincas*) and manipulated into a cycle of debt servitude (Loucky, 2001; Lyon, 2011; McCreery, 2003). This, combined with a history of overt racism towards indigenous people in Guatemala and corruption by the Guatemalan government and elite, led to great loss of land, extreme poverty, and a tragic 36-year civil war in which hundreds of thousands of indigenous Maya were displaced or killed.

Since the signing of the Peace Accords in 1996 that officially ended the war, a consumer demand for high quality, environmentally friendly coffee has transitioned Guatemala coffee production to small-scale specialty crops in the western Guatemalan highlands, which are largely managed by indigenous farmers (Fischer & Victor, 2014). While yields are often lower, shade-grown coffee is much less detrimental to tropical ecosystems and biodiversity when compared to lower

altitude coffee varieties more dependent on sun (Mendez & Bacon, 2006; Moguel & Toledo, 1999). Further, incorporation of certifications, such as organic and fair trade, ensures a higher quality product, which also can provide more equitable wages to coffee producers. Accordingly, Mayans in this region have converted much of their land to shade-grown coffee over the last several decades. However, while today coffee may symbolize independence and prosperity for the Maya in the Guatemalan highlands, land ownership in Guatemala is still highly divided with the non-Indian elite controlling most of the land and a large percentage of rural, indigenous populations remain landless. Despite a history of oppression, landlessness, and land inequality, the Tz'utujil Maya still remain very socially, culturally, and economically dependent on land.

Also, international tourism in San Juan la Laguna has provided new opportunities for *Juaneros* through ecotourism (e.g., guided nature walks), homestays (e.g., *posadas mayas*), and the selling of their traditional hand-woven textiles (e.g., *tejidos*) to visitors. However, while tourism in San Juan has grown substantially over the last 10-15 years, tourism in some neighboring communities of Lake Atitlán (e.g., San Pedro la Laguna) have been growing since the 1960s and 1970s. Additionally, several international non-governmental and faith-based organizations have facilitated the development of cooperatives in the area with the goal of improving local socio-economic and environmental conditions. Therefore, a region that has traditionally been dependent on land primarily for sustenance has seen somewhat rapid changes in land use (e.g., from maize to shade-grown coffee) and more recent development through tourism that may have implications on place attachment among the Tz'utujil Maya.

Data Collection

During summer 2014, the primary author spent five weeks in San Juan la Laguna, Guatemala, conducting semi-structured qualitative interviews and a photo elicitation study with participants who self-identified as small-scale coffee landholders involved in tourism microentrepreneurship. An ethnographic approach (i.e., staying with a local host family, participant observation, informal

interviews with community members) was used to gain multiple perspectives by using different data collection methods and to increase the richness of the data (Bernard, 2011).

Photo elicitation and interviews.

A photo elicitation method involving ranking and describing landscape photographs was used to assess participants' attachment to their working lands (Walker & Ryan, 2008; Zhang and Lei, 2010). Based on corresponding literature on landscapes endemic to historical and present-day rural Guatemala (e.g., Loucky, 2001; McCreery, 2003), an online search of Google images was used to strategically select ten photographs most appropriate for the study. Examples of search terms used to select Guatemalan landscape photos included: "shade-grown coffee Guatemala," "farm Guatemala," "plantation coffee Guatemala," and "maize Guatemala". The photographs were selected to include varying landscapes and levels of environmental management (Figure 4.1). For example, while coffee is now a staple in the Guatemalan economy, photograph #1 depicts shade-grown coffee that is currently more common in the study region and photograph #5 depicts a large scale, coffee plantation (*finca*) that was more common in Guatemala through most of the 20th Century. Similarly, while photographs #3 and #8 both depict fields with maize (*maiz*), the soil in photograph #3 appears to be more fertile and the landscape in photograph #8 appears to have suffered from drought.

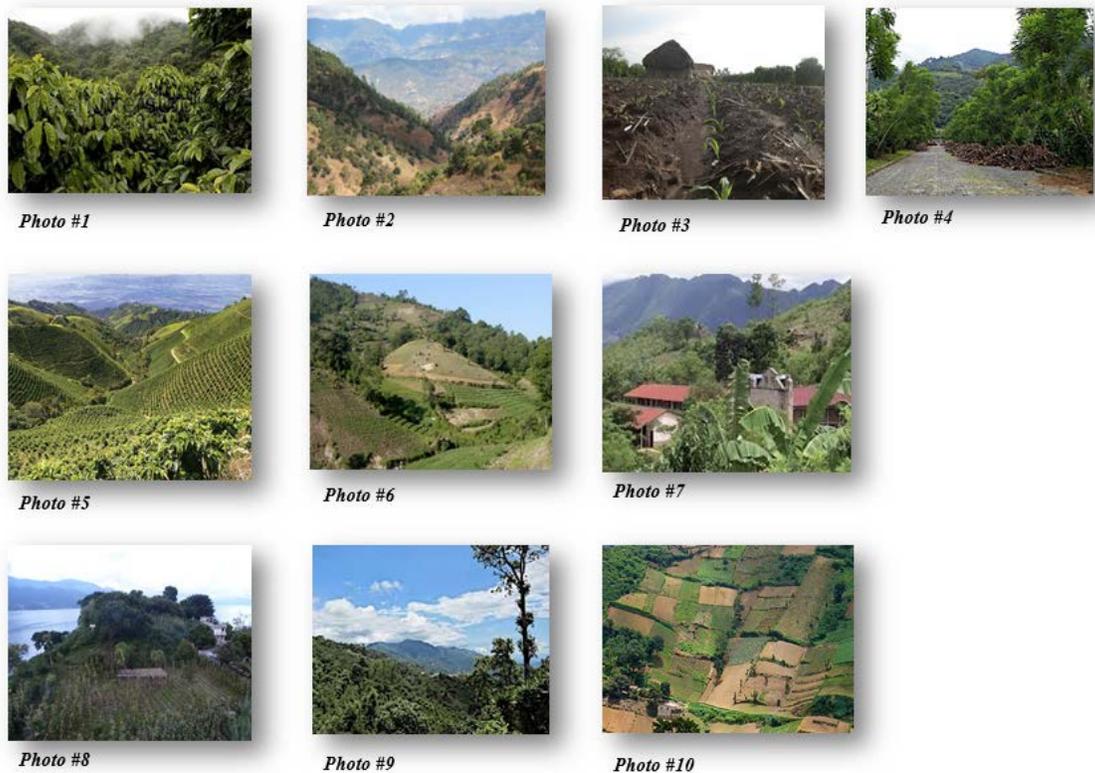


Figure 4.1: Guatemalan Landscape Photographs for Sorting and Ranking

Next, steps were taken to choose photographs that were most representative of the rural Guatemalan landscape, and that had the least number of distracting variables (e.g., photographs containing people and photographs that looked altered were removed). To maintain uniformity, photographs were then assessed to determine if they were of high enough quality to be printed at roughly the same size (i.e., four by six inches) and that landscapes were portrayed from roughly the same vantage point. After these initial assessments, the sixteen remaining photographs were printed and laminated.

Next, key informants were consulted during pilot interviews both in the US and in Guatemala to ensure the photographs accurately represented landscapes found in Guatemala. For example, one co-author has spent several months per year over fifteen years conducting fieldwork in the study

region; therefore, he helped advise which ten photographs were most representative of the region and which should be discarded. While in Guatemala, the primary author also discussed the photographs informally with her native host family to verify which photographs most appropriately represented landscapes in Guatemala. Through this process, the larger pool of photographs was reduced to ten landscape photographs for use in the study (Figure 4.1).

During the data collection process, participants were asked to choose five of the ten photographs “*que reflejan quién eres, o los lugares que son más importantes para usted*” [that reflect who you are or the places that are most important to you]. Next, participants were asked to put the five photographs in order of importance. Through additional probing, participants described why they chose each photograph (e.g., first, second, third, etc.) and the ways in which each of the five photographs reflected their attachment to these landscapes (i.e., place identity, place dependency). For example, participants were encouraged to spend time explaining how and why specific features of the landscape drew them to that photograph, or were asked why they chose one photograph over another.

Ethnographic field observations.

Throughout the data collection process, comprehensive ethnographic field observations were taken through memoing, journaling, and field notes each day in the field (Bernard, 2011; Guest, Namey, & Mitchell, 2013). Bernard’s (2011) method was followed closely, which distinguishes four types of field notes: jottings, diary, log, and notes. Field notes, which were written every day, generally fell within these four categories. Acknowledging that days in the field move quickly and researchers often don’t have time to write extensive notes or reflections until later in the evening, “jottings” were used to write down notes during interviews or while walking around in San Juan and “diary” entries were taken to provide context to the conditions during data collection. Bernard states that, “A diary chronicles how you feel and how you perceive your relations with others around you” (2011, p. 294). While these notes did not directly inform research findings, they helped to point out

any biases taking place during data collection by acknowledging the emotional state the researcher was in the day of the interview. Daily logs were also written to keep track of activities (both planned and carried out) while in the field and how much money was spent.

Additionally, “methodological notes, descriptive notes, and analytic notes” were taken (Bernard, 2011, p. 297). Through “methodological notes,” new insights were written throughout data collection noting the effectiveness of current methods or protocols with participants, and how methodological issues were resolved moving forward. “Descriptive notes” were used to provide a written record of what occurred at the study site and during data collection processes (e.g., who was at the interview, type of clothing worn, body language, etc.) to account for details that could be lost over time. Lastly, “analytic notes” were used occasionally to “lay out ideas about how you think the culture you are studying is organized” (Bernard, 2011, p. 299). For example, each July there is a large fair throughout Lake Atitlán. Analytic notes were taken occasionally to provide cultural context of traditions surrounding the fair and the significance among locals towards many of the events and celebrations occurring during these events.

Sampling.

This study examines attachment towards working lands among individuals involved in tourism microentrepreneurship and coffee farming. Accordingly, the first seven interviews were conducted with members of *La Voz que Clama en el Desierto*, San Juan’s organic coffee cooperative. As of July 2014, *La Voz* had over 100 active members who produce organically-certified shade-grown coffee and has focused on developing and expanding operations over the last ten years to incorporate coffee-based tourism activities (e.g, building a café for tourists to visit and sample coffee served by baristas, coffee tours). *La Voz* was chosen as a starting point because of the cooperative’s background in growing sustainably managed (e.g., certified organic) coffee and, more recently, their provision of tourism offerings (e.g. providing coffee tours and Westernized coffee drinks for purchase). To build rapport with participants, the primary author visited *La Voz* daily, took a guided

coffee tour, and familiarized herself with the background of the cooperative, its structural processes, and many of its current members. Contact with additional study participants was made through chain referral sampling (Biernacki & Waldorf, 1981) and through direct solicitations with San Juan residents, coffee farmers and tourism entrepreneurs in the community so as not to circumscribe sampling to a specific community faction.

Through this process called theoretical sampling, data was continuously assessed to identify emerging themes throughout the data collection process (Silverman, 2010). Theoretical sampling is a type of purposeful sampling in which the researcher analyzes data with the intention of “filling out your major categories” to determine what’s missing in the study (Charmaz, 2006, p.12). For this reason, it is not necessary to estimate a specific amount of data or a number of participants, but to conduct analysis throughout the process to assess research questions and determine perspectives that may be missing. For example, after several interviews were collected at the coffee cooperative and similar patterns were emerging through preliminary analysis, the primary author deliberately searched for additional participants outside of the coffee cooperative by having informal conversations with community members involved in tourism and coffee production. After 24 interviews were completed (2 including 2 participants at once), data collection stopped when it became too difficult to find additional participants that fit the desired criteria of residents involved in both small-scale coffee production and tourism microentrepreneurship.

Sixteen males and ten females (including one male/female pair and one female/female pair) participated in the study. Participants demonstrated various levels of involvement in tourism (e.g., guides, weavers, Spanish teachers) and coffee production (e.g., member of organic coffee cooperative, coffee shop owner, wage laborer), and all were involved in some type of collective action (e.g., through a cooperative, association, or organization). While data revealed San Juan to be a ‘coffee community’, levels of involvement among participants varied greatly. Data collected from interviews (formal and informal) revealed that, while it was common for residents of San Juan to be

involved in both coffee production and tourism, certain types of tourism (e.g., guides through a tourism organization, coffee shop owner) allowed more time and financial flexibility for residents to hire workers, oftentimes limiting the amount of time they spent in the fields. Moreover, most artists and weavers in San Juan did not own or manage coffee land for income. Instead, they tended to focus primarily on selling their work to tourists as their only source of income and, therefore, were not directly dependent on the land for coffee. However, most participants still owned or cultivated small parcels of land for other purposes such as growing *milpa* (corn or maize) for sustenance or *hortalizas* (vegetables) to sell or consume.

Data Analysis

Recorded interviews were transcribed verbatim in Spanish by native Guatemalan speakers and imported into MaxQDA 11 Qualitative Data Analysis Software. Then, transcriptions were analyzed using a theory-driven approach where data were coded line-by-line as either semantic (verbally expressed meanings) or latent (underlying meanings) to identify how themes reflected place attachment or connection to landscape (Braun & Clarke, 2006; Flick, 2014; Namey, Guest, Thairu, & Johnson, 2008). Code and keyword frequencies were then recorded to reflect themes relating to place attachment that emerged from each photograph and field notes were reviewed to assess potential discrepancies in findings.

Photo elicitation data were input to Excel and organized with each row representing a different participant and columns displaying which photographs were chosen by each participant, and how they ranked each of these from “1” to “5”. For descriptive analysis purposes, photographs chosen as “most important” were given 5 points, the “second most important” photograph chosen was given 4 points, etc. Photographs that were not chosen among participants were given a score of “0”. Then the Excel file was imported into SPSS statistical software to explore the data quantitatively using descriptive statistics to determine how photographs compared in their level of importance (i.e., mean, sum), and how the photograph’s level of importance varied between participants (i.e., standard

deviation). Lastly, multidimensional scaling was run in SPSS as an approach to analyze relationships between the photographs chosen as most or less important.

Multidimensional scaling.

Multidimensional scaling (MDS) can be used to draw a perceptual map that shows correlations between variables or cases. In this study, the points on the perceptual map are the photographs themselves (i.e., objects) and the MDS output “shows graphically how different objects of comparison do or do not cluster” (Garson, 2012, p. 6). Accordingly, MDS is used to determine correlations between preference data and is preferable to factor analysis because it doesn't require assumptions of “linearity, metricity, or multivariate normality” (Garson, 2012, p. 6) so it can be used with nonmetric data (e.g., ordinal, categorical, binary) and is preferable with small sample sizes.

In this study, we used multidimensional scaling to produce a perceptual map showing the distances (i.e., proximities) between the landscape photographs chosen by participants. Pinkley, Gelfand, and Duan (2005) explain that, “MDS focuses on how an individual perceives the objects, rather than the objects themselves” (p. 82). Accordingly, MDS is used to show how the photographs that participants chose as important relate to each other to form clusters (or groups) that might reflect commonalities among participants and the landscapes to which they are most attached.

To develop the perceptual map, we used SPSS to convert binary data collected by participants (i.e., photo chosen as important =1; photo not chosen as important=0) into graphic distances to show how similar or dissimilar the photographs are to each other (Bernard, 2011). In other words, photographs that are the farthest apart from each other were least likely to be chosen together by participants as most important, and photographs close together were more frequently clustered together by participants to reveal aspects of the landscape photographs that were most important to them. This technique was used as an exploratory, interpretive technique; that is, the clustering of photographs helped us to conceptualize why participants found certain photographs to be important and what aspects the photographs had in common that would be difficult to determine with

descriptive statistics or interview data alone. Further, while some studies using MDS have inductively named the dimensions (e.g., Seekamp, Cerveny, & McCreary, 2011), in this study it was deemed more appropriate to name the clusters to reflect how they coincided with major themes that emerged from thematic analysis, rather than forcing labels on dimensions that don't effectively interpret the data (Garson, 2012).

Trustworthiness.

Since only the primary author collected the data, consistency among data collection techniques was ensured. Extensive, daily field notes were also reviewed during analysis to inform emerging themes. For example, field notes were consulted when data analysis revealed brevity in a participant's responses to probing questions to assess conditions that may have limited the depth of responses (e.g., time constraints, language barriers). While the primary author line-by-line coded all interviews, coding was also verified with a co-author during weekly meetings held to discuss emerging themes. This approach, referred to as insider peer debriefing (Spillett, 2003), enhanced rigor of analysis. Also during the coding process, Spanish words or phrases that were unclear or difficult to translate were noted and verified with co-authors for the most accurate translation. Three of the authors are fluent in Spanish and one is particularly familiar with common expressions in the study region.

An audit trail was written and updated regularly that provided a detailed account and timeline of data collection and analysis activities both in the field and after returning to the United States (Bernard, 2011; White et al., 2012). Specifically, the audit trail was updated during the process of data collection (e.g., finding participants to interview, conducting interviews, noting residents choosing not to participate, etc.), as well as transcribing interviews (e.g., communication with transcribers, when payments were made) and during analysis (e.g., dates when interviews were coded and shared with co-authors). Additionally, memos were made to reflect how themes emerged and were further supported throughout the process (Charmaz, 2006).

Results

Quantitative Photo Elicitation Findings

Descriptive statistical findings are displayed in Table 4.1, which illustrate the photographs to which participants felt most attached and how their mean, standard deviations, and sums compared with other photographs. Photograph numbers 1, 3, 4, 5, and 8 were selected by 50% or more of participants with the two most apparent coffee photographs chosen most frequently (i.e., shade-grown coffee and conventional coffee). Correspondingly, these five photographs also had the highest means indicating that they were perceived to be the most important landscapes among participants. However, while photo #7, which depicts infrastructure mixed with fruit and coffee trees and a mountainous landscape, was not selected very frequently among participants (chosen by 33.3% of informants), the high standard deviation revealed that most informants who chose the photograph felt it was the most important of all ten photographs (as clarified in Table 4.2, below, which displays how participants' top five chosen photos were ranked in order of importance). Photograph #1, which depicts shade-grown coffee and low clouds over a high altitude forest, also was selected frequently as a first choice and all except four participants chose the photograph as one of their five most important. Conversely, photographs #2 and #6 have low means, which is not surprising because these two photographs depict a low level of forest cover and a landscape that is more common on the dryer areas of the Lake Atitlán region.

Table 4.1: Descriptive statistics of photo elicitation sorting and ranking data (N=24)

	Pic 1	Pic 2	Pic 3	Pic 4	Pic 5	Pic 6	Pic 7	Pic 8	Pic 9	Pic 10
Choose 5 photographs that best reflect who you are or are most important to you (1=important; 0=not important)										
N*	20	4	14	13	18	8	8	12	9	11
% Chose	83.3	16.7	58.3	54.2	75.0	33.3	33.3	50.0	37.5	45.8
Rank the top 5 photographs you chose in order of importance (5=most important; 4=second most important; 3=third most important; 2=fourth most important; 1=fifth most important; 0= photo not chosen as one of top 5 most important)										
Mean	2.70 8	.583	1.66 7	1.45 8	2.37 5	.792	1.37 5	1.45 8	1.16 7	1.292
Std. Dev.	1.92 2	1.34 9	1.78 6	1.69 3	1.92 9	1.21 5	2.14 3	1.74 4	1.76 1	1.654

Table 4.2: Ranking of top five most important photographs (N=24 participants)

	Pic 1	Pic 2	Pic 3	Pic 4	Pic 5	Pic 6	Pic 7	Pic 8	Pic 9	Pic 10
	Freq (%)									
Not chosen as important	4 (16.7)	20 (83.3)	10 (41.7)	11 (45.8)	6 (25.0)	16 (66.7)	16 (66.7)	12 (50.0)	15 (62.5)	13 (54.2)
Fifth most important	4 (16.7)	0	3 (12.5)	4 (16.7)	4 (16.7)	0	1 (4.2)	2 (8.3)	1 (4.2)	2 (8.3)
Fourth most important	3 (12.5)	0	3 (12.5)	1 (4.2)	3 (12.5)	6 (25.0)	0	3 (12.5)	3 (12.5)	2 (8.3)
Third most important	5 (20.8)	2 (8.3)	3 (12.5)	4 (16.7)	1 (4.3)	1 (4.2)	1 (4.2)	2 (8.3)	1 (4.2)	4 (16.7)
Second most important	0	2 (8.3)	3 (12.5)	3 (12.5)	6 (25.0)	1 (4.2)	1 (4.2)	4 (16.7)	2 (8.3)	2 (8.3)
Most important	8 (33.3)	0	2 (8.3)	1 (4.2)	4 (16.7)	0	5 (20.8)	1 (4.2)	2 (8.3)	1 (4.2)
Total	24 (100)	24 (100)	24 (100)	24 (100)	24 (100)	24 (100)	24 (100)	24 (100)	24 (100)	24 (100)

Using multidimensional scaling analysis, a perceptual map was created (See Figure 4.2) to spatially illustrate how the photographs clustered together, based on whether participants viewed them as most important (i.e., chosen in top 5) or not (i.e., not chosen in top 5). Since we used MDS as an exploratory tool, we did not attempt to define the dimensions; instead, we examined how themes that were revealed through qualitative data (i.e., interviews and ethnographic field notes) could explain the formation of the photo clusters. In other words, we examined if the photographs that clustered together through MDS had similar characteristics or reflected similar themes as those identified through the qualitative analysis. Bernard (2011) and Guest et al. (2013) point out that the subjective interpretation of the clusters or dimensions is the appropriate way to use qualitative analysis to interpret quantitative findings. Further, Guest et al. (2013) state:

This is why the qualitative data and supplemental information collected during the interview activity are important. They are extremely helpful in developing an interpretation that reflects the participants' view of the conceptual domain being studied.
(p. 230)

MDS results, when combined with qualitative analyses, suggested that the photographs were organized into four clusters: economic dependence on coffee, dependence on ecosystem services, coexistence with nature reflecting Maya identity, and attachment to maize.

Integrating Multidimensional Scaling and Interview Findings

In this section, we discuss how the main themes that emerged from qualitative analysis helped us interpret clusters revealed from MDS. When appropriate, keywords and quotes from participants are used to support our interpretations of the findings. Each thematic cluster (Figure 4.2) is presented in relation to its primary theme, as well as to how the primary theme relates to how shade-grown coffee farmers in a community undergoing recent tourism development reveals attachment to Guatemalan landscapes.

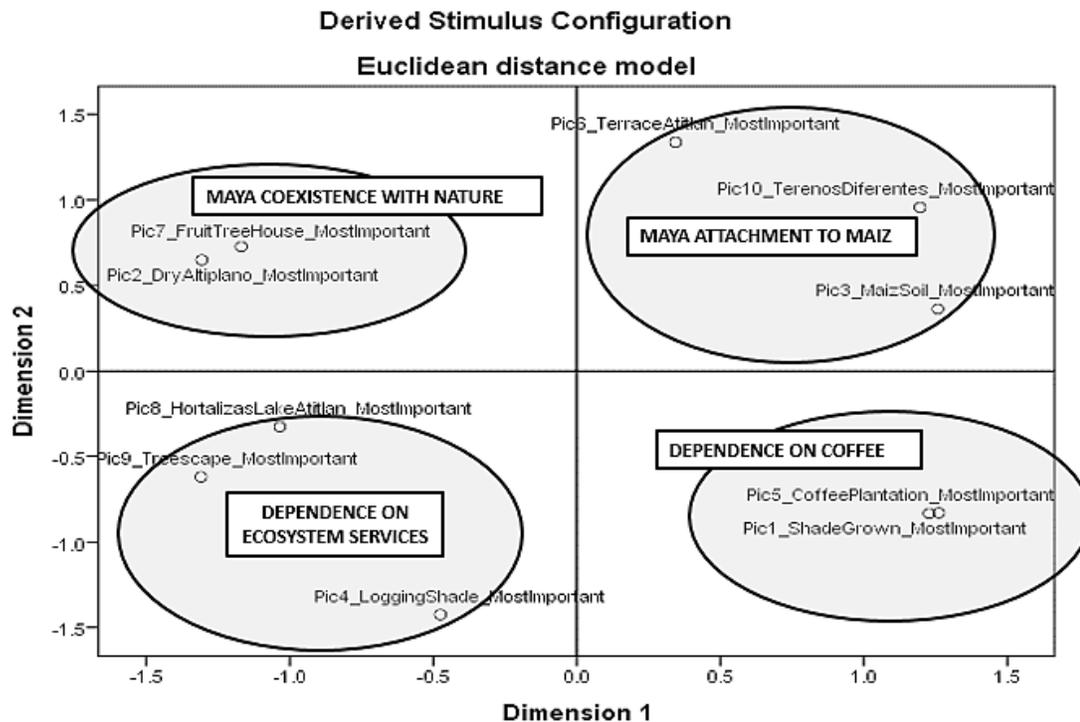


Figure 4.2: Multidimensional scaling (MDS) of landscape photographs

Dependence on Coffee

Participants demonstrated strong place dependence to photographs with landscapes distinctly portraying coffee. Compared with other landscape photographs, the two distinct coffee photographs (photographs #5 and #1) received the highest rankings by informants and they also clustered closely together through MDS analysis (Figure 4.2). Photograph #1, which depicts a dense shade-grown coffee forest and low cloud cover, was perceived by 83.3% of participants to be one of their top five “most important” photographs revealing that most participants perceived the shade-grown coffee landscape as a critical feature of their attachment to place when compared to other landscapes (Table 4.1). Also, 33.3% of participants chose photograph #1 as their first choice or explained that the landscape was “most important” to them. Photograph #1 also had a

mean of 2.71 when ranked by participants, which is the highest mean of all the photographs. Since this type of coffee is commonly found in the region of San Juan, this finding in itself is not surprising; however, explanations of why participants chose this photograph revealed they felt connected to this landscape for primarily economic and environmental reasons (rather than social or cultural). Comments about photograph #1 were positive and included key words such as “*abono organico*” [organic fertilizer], “*buenos cultivos y calidad*” [well-cultivated and good quality], “*buen producción*” [good production], “*limpia*” [clean], “*buen café*” [good coffee], and “*no roya*” [no disease]. Participants also stated that this coffee would sustain their family because of the quality of the coffee and better price received when getting organic certification.

Photograph #5, which depicts larger-scale, conventional, sun-grown coffee that typically requires substantial pesticides inputs and chemicals to increase yield (Moguel & Toledo, 1999), and is not typically managed collectively, was also perceived to be very important (chosen by 75% of informants). Participants generally expressed less familiarity with this type of coffee (i.e., place identity), but still associated it with positive economic impacts (i.e., place dependency). While this type of large-scale production coffee has been common in Guatemala in the past (through *fincas* in lower-altitude regions), most Guatemalan coffee is produced today in the western highlands on small parcels by indigenous farmers (Fischer & Victor, 2014). Also, considering the historical relationship of indigenous Guatemalans as forced laborers on large-scale coffee plantations, it is not surprising participants did not identify with this type of coffee. Participants who expressed this landscape as important frequently used words related to economic output or yield, such as: “*finca*” [coffee plantation], “*los ingresos*” [income], “*posibilidades económicas*” [economic possibilities], “*bien manejado*” [well-managed], and “*más producción*” [more production] to describe the photograph. However, many participants also perceived the coffee as less environmentally-friendly, stating that “*no se ve nada de árboles*” [you don’t see any trees] on the land, perceiving a higher use of chemicals, and that the sun would burn the

coffee leaves without shade. Generally, participants viewed the landscape as being well-managed and productive, but they expressed concern about the impact that large-scale production would have on the environment and the social impacts of one person owning so much land.

Regardless to which coffee photograph participants felt the most connected, they overwhelmingly demonstrated place dependency on coffee, primarily for its economic value. For example, a weaver whose husband works as a day laborer in the coffee fields (*trabajador*) stated, “*si no hay café, no hay trabajo*” [if there is no coffee, there is no work]. And, reflecting on dependency for coffee to be well-managed and sustainable, a 22-year old coffee farmer just starting out expressed that the best type of coffee farming would be for farmers to, “apply techniques, but then always respect the environment,” or to find a way to grow production and use of technology while still being respectful to the land. He stated (in English) that:

If I want to utilize the earth, I have to take care of it. And part of caring for it is making use of technology, making individual terraces, and giving them proper maintenance.

Because of this, the land helps me and I, too, have to help it. Not just to exploit but also to help... for me it generates income.

In summary, through mixed methods analysis, participants revealed strong place dependency to coffee in San Juan – primarily for economic reasons. However, participants also revealed a perceived need for coffee to be well-managed by demonstrating stewardship. We have shown that as San Juan is increasingly becoming a part of a globalized economy (e.g., through a growth in tourism and production of specialty coffee), locals have become more dependent on coffee as a way to gain income and be more competitive in global coffee markets.

Dependence on Ecosystem Services

In the bottom left quadrant of the MDS map, photographs #8, #9, and #4 clustered to reveal a dependency on ecosystem services (Figure 4.2). In other words, a commonality among

the three photographs is how participants described that they were dependent on the featured landscapes because of the ecosystem goods and services that they provide people based on ecological, socio-cultural, or economic values (de Groot, Wilson, & Boumans, 2002). While studies on ecosystem services have primarily focused on providing a monetary value to natural resources and services as a way to increase leverage towards conservation in decision-making processes (Urquhart & Acott, 2014), we found participants to be dependent on local mixed-use ecosystems in San Juan for both monetary and non-monetary reasons.

Photograph #8 features a field of corn (i.e., maize) surrounded by dense forest, man-made structures, and Lake Atitlán in the background; photograph #9 depicts a densely forested mountainous region typical to the Guatemalan highlands; and photograph #4 depicts a shade-grown coffee forest that has been pruned with wood piled on the side of a paved road (Figure 4.1). All three photographs were frequently perceived as important among participants (Table 4.1), with more than one-half of participants selecting photograph #4 and photograph #8, and both photographs had a mean of 1.458 when ranked scores were averaged.

At first glance, it is apparent that the three photographs all have rich forest cover. Correspondingly, participants explained that the forests were an important reason that they chose these photographs, and they demonstrated a dependency on forests for services they provide such as oxygen, shade, and firewood. Reflecting on photograph #9, Carlos, the director of San Juan's coffee cooperative, argued, "*esto es lo más importante con muchos árboles, el árbol contribuye con el medio ambiente mejora la fertilidad de los suelos ayuda a la purificación del medio ambiente*" [this is the most important thing with many trees, the tree contributes with the environment, improves the fertility of the soils and helps to purify the environment]. Fernando, a 45-year-old coffee producer who is also the co-owner of a general store in town and grows fruit trees on his property, also stated:

San Juan es como un bosque pero abajo hay cafetal, y hay árboles y eso es muy bueno para el ambiente porque así el árbol es el que da agua, el árbol es el que dan aire puro que respiramos entonces es muy importante... y yo miro que éstos aquí están dando un manejo al árbol bien.” [San Juan is like a forest, but below are coffee plants and there are trees and that is very good for the environment because that tree is what gives water the tree gives pure air we breathe, therefore it is very important... and I see that here the trees are managed well.].

Notably, analysis and coding of the data also revealed that participants understood the importance of sustainably managing the forested landscapes (i.e., ecological value) in order to continue receiving benefits without harming the forest overall. For example, speaking about photograph #4, Antonio, a 44-year-old coffee producer and owner of a local coffee stop, stated:

Si tu mantienes, si tu alimentas bien el árbol, te produce más. Si le faltan nutrientes, es débil y no produce mucho. Entonces, cuando tú alimentas, es una persona sí? Si alimenta, tiene energía y está contento. Pero si le falta una alimenta, una deficiencia nutricional, está débil, está triste. [If you maintain, if you nourish the tree well, it will produce more for you. If it is lacking nutrients, it'll be weak and not produce much. Therefore, when you feed it, it's like a person, right? If you eat, you have energy and are happy. But, if it is lacking food, a nutritional deficiency, it is weak, it is sad.]

Also reflecting on photograph #4, participants expressed the importance of pruning coffee trees regularly to maintain 60% shade and 40% sun for the best production, and that the branches could be used for firewood, which most families still depend on since they use traditional wood-burning stoves. Participants perceived that through well-managed shade grown coffee they could protect natural resources, which they expressed were essential for pure air, tranquility, biodiversity, water, firewood, soil fertility, shade, and protection from erosion and storms.

Comparably, informants perceived a dependency on the lake for both economic and non-economic reasons (as portrayed in photograph #8), stating the importance of caring for the lake in order to protect the tourism industry. Alejandro said (in English), “I love this lake... for me, apparently it’s one of the biggest reasons that tourists come here, so the lake is our sister and our opportunity of development... so, tourism represents to me this photo, and also (to) preserve our culture of corn.” In this quote, Alejandro has pointed out both socio-cultural and economic values that are gained from conserving the landscapes and natural resources of San Juan.

In summary, informants expressed a strong dependence on forested and mixed-use landscapes for a variety of ecosystem services that reflected their ecological, socio-cultural, and economic values towards natural resources. These findings support research that ecosystem services provide both monetary and non-monetary value for humans that influence their place attachment (de Groot, Wilson, & Boumans, 2002).

Coexisting with Nature and Maya Identity

While participants portrayed a dependence on landscapes for ecosystem services and anthropocentric benefits, they also used the photographs to express the idea of “co-existing’ with nature as an integral part of their Maya identity. For example, Alejandro explained the importance of co-existing with nature as a “Mayan perspective,” arguing that, “we have to live at peace with our atmosphere and the environment because we are a part of it, and that’s our home, for us the land is our mother, it gives us everything we need to live.”

Similarly, Antonio stated:

Nosotros tenemos que convivir con la naturaleza. Que no tengo que eliminar naturaleza si tengo mi casa allí. Puedo convivir la naturaleza. Y a mí me beneficia en la salud, en mí temperamento. Hay que convivir con los árboles. [We have to coexist with nature. It’s that

I do not have to get rid of nature if I have my house there. I can live with nature. And for me it's a benefit to my health and to my mind. One must live in harmony with the trees.]

Photograph #7 was perceived as very important among some participants because, while it was only chosen by eight people (33.3%), five of them chose it as their first choice, or felt the most attached to it. Photograph #2, which features a dryer landscape more endemic to the other side of Lake Atitlán, was not perceived as very important among participants. Those who did view photograph #2 as important seemed to do so more because of a need to improve the landscape to be more healthy and provide benefits. For example, participants mentioned that it looked “*triste*” [sad] and some explained, “*es necesario sembrar más plantas*” [It's necessary to plant more plants]. Felipe, a fisherman who also manages coffeelands and occasionally teaches traditional fishing techniques to tourists, stated: “*no podemos tener un manejo de todos los arboles de una vez destruimos los árboles para madera, no hemos hecho nada para consérvalo o para forestarlo*” [we can't have a system where we have destroyed all of the trees for wood, but we have not done anything to conserve it or afforest it].

While multidimensional scaling revealed photographs #7 and #2 to cluster in the upper left quadrant, participants' explanations indicated that they were not very related except for an expression of dependency on trees and shade on the landscape (with photograph #7 fulfilling this need and #2 lacking) revealing a desire to coexist with nature. However, since so few participants viewed photograph #2 as important (16.7%), substantial inferences need not be made. More specifically, while the clustering of these two photographs did help us conceptualize themes from the qualitative analysis, the lack of participants represented here signifies a weak relationship between the two photographs and, likely, that the content of the photographs did not include critical components of their attachment to place.

Maya Attachment to Maize

Another significant finding was the importance of *maiz* and *hortalizas* [vegetables] among participants – representing both place identity and place dependency. Over half of the participants (58.3%) perceived photograph #3 as important, which depicts a field of *maiz* growing in dark soil with housing in the background. Participants emphasized the importance of maize for sustaining life and cultural identity, having fertile soil and planting a variety of crops for sustenance, and the production of maize “*para el beneficio de todos*” [for the benefit of everyone]. As exemplified in photograph #10, which depicts many *parcelas* [plots] of land growing different crops, participants also expressed the importance of having many owners of agricultural land and viewed growing vegetables and *maiz* or *milpa* important elements in sustaining their families and community. For example, while many participants commented that there were not enough trees in photograph #10, they also perceived there were many owners to the land (*diferentes dueños*) and that the diversification of crops (*una variedad de plantas*) could improve health and provide work for many people, demonstrating a communitarian place identity common to San Juan (LaPan, in press).

Similarly, participants felt connected to photographs #3 and #8, and they commented on the importance of maize to sustain their livelihoods and culture (i.e., place dependency, place identity). For example, participants stated, “*vivimos por maiz*” [we live for maize] and “*el producto más importante para nosotros que es el maíz.*” [the most important product for us is maize]. These findings follow closely with literature on maize (i.e., *milpa* or *maiz*) as being a key component to Maya culture and identity, particularly among the indigenous Tz’utujil of San Juan (Loucky, 2001; Lyon, 2011). Therefore, while informants exhibited economic dependence on coffee for income and opportunity, they were still very dependent on maize and vegetables for sustenance as well as an integral part of their indigenous Maya identity. One participant also reflected on the transition of much of the land in San Juan from maize to coffee, and how this is

influencing livelihoods in her community. Describing photograph #3, Catalina, a 31-year-old woman working at a local environmental organization, explained:

Acá, también yo veo importante porque por la milpa. Ahora casi la gente ya no siembra la milpa, toda la se compra. Pero antes, la gente siempre tiene su parcela de milpa, siempre lo cosecha, y eso hace que consuma durante el año...pero ahora no haya espacio, y no hay donde la cosecha porque toda la gente ahora tiene en casi todo cafetales. Para poder la cosecha realmente ya no hay. Pero es muy importante porque cuanto hay bien, la gente no tiene la necesidad de comprar la maíz, porque todo la gente tiene su propio maíz y lo consumo durante el año. [Here, I find this to be important because of the maize. Now almost nobody plants maize, everyone just buys it. But before, people always had a plot of maize, always a harvest, and then they would eat that during the year, but now there is no space, and there's nowhere for a maize harvest because now all the people's plots of land are all coffee. So now there really isn't a maize harvest. But it's very important because when there is enough, people don't need to buy maize because everyone has his own to eat during the year.]

Again, sustainable management emerged as a theme when participants expressed dependency on these landscapes to be sustained for future generations. Informants perceived photograph #3 to have healthy, fertile soil to grow maize organically, without the use of chemicals. Commenting on photograph #3, Manuel, an agricultural consultant at the coffee cooperative, stated: *“Aquí lo que vi yo es que como que están haciendo unas zanjas aquí están aprovechando todo el desecho, toda esa basura como que la están enterrando y aquí hay protección de terreno, protección del medio ambiente”* [Here what I saw is that they are digging a few trenches here (and) they are making use of the whole waste, they are burying all this garbage and there is protection of the land, protection of the environment]. Similarly, commenting on photograph #6, which depicts corn and other row crops growing on a hillside, Marcelo, a weaver

in San Juan, expressed: “*si tiene vida la planta aquí por ser montañoso el cerro como que está protegido con curvas a nivel para no tener erosión en tiempo de lluvia*” [if the plant has life here for being mountainous the hill that is protected by level curves will not have erosion during the rainy season].

In summary, when participants speak of coffee, they do so with primarily an economic focus. Conversely, participants spoke of their dependency on *maiz* and vegetables for sustenance as well as how maize and the natural environment reflect their Maya identity and history.

Discussion

Place Attachment in San Juan la Laguna, Guatemala

Through a mixed methods approach, this study identified how dimensions of place attachment (i.e., place dependency, place identity) to rural landscapes have been influenced by changes in landscape use (e.g., from sustenance crops to shade-grown coffee production) and tourism development among an indigenous community of shade-grown coffee farmers in the western highlands of Guatemala. In this study, we used quantitative (i.e., descriptive statistics, multidimensional scaling) and qualitative (i.e., thematic coding) analyses to inform findings from photo elicitation and interview data. Descriptive statistics and multidimensional scaling provided quantifiable and representational data to help conceptualize key themes emerging from thematic coding of interviews.

We found participants’ place attachment to be influenced by changes from tourism development and landscape use in a number of ways. First, the growth of shade-grown and specialty coffees in San Juan have been critical to transforming Tz’utujil Maya place dependency on the landscape from dependence on the land for sustenance (e.g., through maize) to dependence on the landscape for income and opportunity (Fischer & Victor, 2014). Participants also expressed a need to preserve their natural landscapes in order to bring tourists to the community,

exhibiting a shift of landscape values from sustenance to opportunity and economic value. Secondly, participants demonstrated a dependence on the landscape for ecosystem services supporting claims that, in addition to economic value, ecosystem services can hold ecological and socio-cultural values (e.g., de Groot, Wilson, & Boumans, 2002). However, despite a transition from dependency on landscapes for sustenance to use of the land for cash crops, participants have not lost their attachment to the land for ecological and socio-cultural reasons. Demonstrating this, in addition to a dependence on coffee for primarily economic benefits, participants still expressed an attachment to traditional crops such as maize for both sustenance and to reflect Tz'utujil Maya identity (Huff, 2006; Loucky, 2001).

Additionally, a key theme that emerged from analysis of the data was that participants stressed the need to sustainably manage the land and ecosystems to foster their connections with the land, indicating a clear relationship between one's connection to a place and desired management outcomes (Smith, Davenport, & Anderson, 2011). Moreover, participants expressed the need to co-exist with nature as part of their indigenous identity, or that to conserve the landscapes they were attached to, they must be able to work with natural ecosystems without harming them. This theme was prevalent among descriptions of photographs as participants acknowledged the necessity to sustainably manage the landscapes on which they depend or with which they identify. These findings have important implications towards sustainability and support recent literature that place identity may better foster long-term sustainability than place dependence (de la Barre et al., 2012; Halpenny, 2010; Schuster et al., 2011), and that place identity may be provisioned through tourism development (Brandth & Haugen, 2011).

As a region continues to develop (through tourism or changes in landscape use) it is important to understand that, while locals may be supportive of development (when implemented strategically with locals involved such as through a collective approach), they are likely to better identify to landscapes that are perceived to be sustainably managed. This was reflected by the

negative words associated with some of the photographs that showed landscapes that were not sustainably managed by locals (e.g., the *fincas* or photographs that participants expressed looked “sad” because they had less trees).

Therefore, settings where residents demonstrate a strong sense of place and a dependency on sustainable management to conserve these landscapes may benefit in implementing nature-based tourism activities or ecotourism. However, special consideration should go into ensuring that ecotourism does not further disenfranchise local communities, is effectively managed through locals collectively, and is meeting conservation goals. More research is needed to ensure that tourism development and changes in landscape use consider the intimate bonds that residents may have with a place and strategic planning is needed to ensure that place attachment (i.e., place dependency, place identity) is not lost among residents.

Methodological Implications

The integration of photo importance ranking, multidimensional scaling and thematic analysis was found to be an effective way to interpret quantitative data and further conceptualize qualitative data. Specifically, after participants ranked photographs they perceived were most important or best reflected their identity, in-depth semi-structured qualitative interviews were conducted. Through this mixed methods approach, descriptive statistics provided an overview of how informants were attached to each landscape, MDS was used to provide a visual representation of how photographs clustered into groups, and the thematic coding and analysis of qualitative data (i.e., interviews and field notes) helped us understand commonalities among the photographs in each group. In effect, key themes emerged by mixing quantitative and qualitative analyses that strengthened our understanding of place attachment in San Juan.

Mixing methods through quantitative and qualitative data collection and analysis techniques helped to mitigate potential limitations that these methods have exhibited when used alone. For example, a limitation to using only ranking or rating of photographs to assess place attachment

through photo elicitation has been a lack of understanding about which attributes informants are attached to, or why they chose each photograph (Stedman et al., 2004). By incorporating qualitative interviews into the study, we provided a more rigorous assessment of place attachment by also identifying and explaining specific characteristics the photograph possesses that generates a perception of attachment among informants. Further, a limitation of MDS has been the subjectivity of interpreting dimensions or clusters (Guest, Namey, & Mitchell, 2013). In this study, the use of qualitative data helped to mitigate this limitation by assessing how emerging themes and quotes explained the clusters that formed during MDS. Moreover, if our study had used solely qualitative data to assess place attachment, we may have found difficulty in recognizing patterns between groups of photos that could be used to further explain emerging themes.

Finally, we found the combination of sorting and ranking photographs with semi-structured interviews to be useful in building rapport and mitigating barriers between researchers and participants. This tool was particularly useful given the presence of distinct social classes, literacy rates, and social barriers, which makes it appropriate when working with indigenous peoples, communities with different cultural values from the researcher, or other contexts. Through this mixed methods approach, participants were eager to share information and reflect on personal meaning and importance they found in the photographs, even when minimal time was given to build rapport. Instead, we found the method helped to build rapport and ease cultural or socio-economic barriers by introducing photographs that participants could recognize as familiar to them. Participants often used the photographs to share personal reflections and in-depth stories that perhaps would not have likely been triggered by surveys or interview questions alone. Therefore, we contend that this integration of data collection and analysis methods can serve as a model for future researchers exploring place attachment, and that this approach may be particularly useful among indigenous communities and other settings where land use and livelihood changes are occurring.

In summary, this study has contributed important research to both place attachment and mixed methods literature. While literature on place attachment is abundant, studies addressing how residents' place attachment may be affected by land use changes and development are scarce, particularly among indigenous communities. Whereas landscapes and their uses will continue to change, additional research that assesses residents' economic and non-economic attachments to their land will be critical in informing conservation and development goals. Accordingly, this study has proposed a new mixed methods approach to help future researchers better communicate with culturally and socially diverse communities to provide a deeper understanding of place attachment in similar contexts.

References

- Altman, I., & Low, S.M. (Eds.). (1992). *Place attachment*. NY: Plenum Press.
- Bernard, H. R. (2011). *Research methods in anthropology: Qualitative and quantitative approaches* (5th ed.). Lanham, MD: AltaMira Press.
- Biernacki, P., & Waldorf, D. (1981). Snowball sampling: Problems and techniques of chain referral sampling. *Sociological Methods & Research*, 10(2), 141-163.
- Brandth, B., & Haugen, M. S. (2011). Farm diversification into tourism—Implications for social identity? *Journal of Rural Studies*, 27(1), 35-44.
- Braun, V. and Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Bruner, E. M. (2005). *Culture on tour: Ethnographies of travel*. Chicago, IL: University of Chicago Press.
- Cappello, M. (2005). Photo interviews: Eliciting data through conversations with children. *Field Methods*, 17(2), 170-182.
- Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. London: Sage Publications Limited.
- Cheng, C. K., & Kuo, H. Y. (2015). Bonding to a new place never visited: Exploring the relationship between landscape elements and place bonding. *Tourism Management*, 46, 546-560.
- Cheshire, L., Meurk, C., & Woods, M. (2013). Decoupling farm, farming and place: Recombinant attachments of globally engaged family farmers. *Journal of Rural Studies*, 30, 64-74.

- Coria, J., & Calfucura, E. (2012). Ecotourism and the development of indigenous communities: The good, the bad, and the ugly. *Ecological Economics*, 73, 47-55.
- Davenport, M. A., & Anderson, D. H. (2005). Getting from sense of place to place-based management: An interpretive investigation of place meanings and perceptions of landscape change. *Society and Natural Resources*, 18(7), 625-641.
- de Groot, R. S., Wilson, M. A., & Boumans, R. M. (2002). A typology for the classification, description and valuation of ecosystem functions, goods and services. *Ecological Economics*, 41(3), 393-408.
- de la Barre, S. (2013). Wilderness and cultural tour guides, place identity and sustainable tourism in remote areas, *Journal of Sustainable Tourism*, 21(6), 825-844.
- Fischer, E. & Victor, B. (2014). High-end coffee and smallholding growers in Guatemala. *Latin American Research Review*, 49(1), 155-177.
- Fletcher, R. (2009). Ecotourism discourse: Challenging the stakeholders theory. *Journal of Ecotourism*, 8(3), 269-285.
- Flick, U. (2014). *An introduction to Qualitative Research* (5th ed.). Thousand Oaks, CA: Sage Publications, Inc.
- Garcia-Ramon & Canoves (1995). Farm tourism, gender and the environment in Spain. *Annals of Tourism Research*, 22(2), 267-282.
- Garson, G. D. (2012). *Multidimensional Scaling*. Asheboro, NC: Statistical Associates Publishers. Retrieved from <http://www.statisticalassociates.com/>
- Gosling, E., & Williams, K. J. (2010). Connectedness to nature, place attachment and conservation behaviour: Testing connectedness theory among farmers. *Journal of Environmental Psychology*, 30(3), 298-304.

- Gross, M. J., & Brown, G. (2008). An empirical structural model of tourists and places: Progressing involvement and place attachment into tourism. *Tourism Management, 29*(6), 1141-1151.
- Guest, G., Namey, E. E., & Mitchell, M. L. (2013). *Collecting qualitative data: A field manual for applied research*. Los Angeles, CA: Sage Publications.
- Halpenny, E. A. (2010). Pro-environmental behaviours and park visitors: The effect of place attachment. *Journal of Environmental Psychology, 30*(4), 409-421.
- Harper, D. (2002). Talking about pictures: A case for photo elicitation. *Visual Studies, 17*(1), 13-26.
- Hou, J. S., Lin, C. H., & Morais, D. B. (2005). Antecedents of attachment to a cultural tourism destination: The case of Hakka and non-Hakka Taiwanese visitors to Pei-Pu, Taiwan. *Journal of Travel Research, 44*(2), 221-233.
- Hwang, S. N., Lee, C., & Chen, H. J. (2005). The relationship among tourists' involvement, place attachment and interpretation satisfaction in Taiwan's national parks. *Tourism Management, 26*(2), 143-156.
- Huff, L. A. (2006). Sacred sustenance: Maize, storytelling, and a Maya sense of place. *Journal of Latin American Geography, 5*(1), 79-96.
- LaPan, C., Morais, D. B., Wallace, T., & Barbieri, C. (in press). Power, altruism and communitarian tourism. *PASOS: Revista de Turismo y Patrimonio Cultural*.
- Lewicka, M. (2011). Place attachment: how far have we come in the last 40 years? *Journal of Environmental Psychology, 31*(3), 207-230.

- Lokocz, E., Ryan, R. L., & Sadler, A. J. (2011). Motivations for land protection and stewardship: Exploring place attachment and rural landscape character in Massachusetts. *Landscape and Urban Planning*, 99(2), 65-76.
- Loucky, J. (2001). The Tz'utujil Maya of Guatemala. In S.C. Stonich (Ed.), *Endangered Peoples of Latin America: Struggles to Survive and Thrive* (pp. 152-169). Westport, CT: Greenwood Press.
- Lyon, S. (2011). *Coffee and Community*. University Press of Colorado.
- Mbaiwa, J. E., & Stronza, A. L. (2011). Changes in resident attitudes towards tourism development and conservation in the Okavango Delta, Botswana. *Journal of Environmental Management*, 92(8), 1950-1959.
- McCreery, D. (2003). Coffee and indigenous labor in Guatemala, 1871-1980. In W. G. Clarence-Smith & S. Topik (Eds.), *Global Coffee Economy in Africa, Asia, and Latin America, 1500-1989* (pp. 191-208). New York, NY: Cambridge University Press.
- McWatters, M. R. (Ed.). (2009). *Residential tourism: (De)constructing paradise* (Vol. 16). Bristol, UK: Channel View Publications.
- Méndez, V. E., & Bacon, C. M. (2006). Ecological processes and farmer livelihoods in shaded coffee production. *Leisa-Leusden*, 22(4), 22.
- Moguel, P., & Toledo, V. M. (1999). Biodiversity conservation in traditional coffee systems of Mexico. *Conservation Biology*, 13(1), 11-21.
- Namey, E., Guest, G., Thairu, L., & Johnson, L. (2008). Data reduction techniques for large qualitative data sets. In G. Guest & K.M. MacQueen (Eds.), *Handbook for team-based qualitative research* (pp. 137-162). Lanham, MD: AltaMira Press.

- Pinkley, R. L., Gelfand, M. J., & Duan, L. (2005). When, where and how: the use of multidimensional scaling methods in the study of negotiation and social conflict. *International Negotiation*, 10(1), 79-96.
- Scannell, L. & Gifford, R. (2010) The relations between natural and civic place attachment and pro-environmental behavior. *Journal of Environmental Psychology*, 30(3), 289-297.
- Schuster, R., Sullivan, D., Kuehn, D., & Morais, D. B. (2011). Relationships among Resident Participation in Nature and Heritage Tourism Activities, Place Attachment, and Sustainability in HRV. *Journal of Park and Recreation Administration*, 29(3) 55-69.
- Seekamp, E., Cerveney, L. K., & McCreary, A. (2011). Institutional, individual, and socio-cultural domains of partnerships: A typology of USDA Forest Service recreation partners. *Environmental Management*, 48(3), 615-630.
- Silverman, D. (2010). *Doing Qualitative Research* (3rd ed.). London: Sage.
- Smith, L. (2006). *Uses of heritage*. Abingdon, Oxon: Routledge.
- Smith, J. W., Davenport, M. A., Anderson, D. H., & Leahy, J. E. (2011). Place meanings and desired management outcomes. *Landscape and Urban Planning*, 101(4), 359-370.
- Spillett, M. A. (2003). Peer debriefing: Who, what, when, why, how. *Academic Exchange Quarterly*, 7(3), 36.
- Stedman, R., Beckley, T., Wallace, S., & Ambard, M. (2004). A picture and 1000 words: Using resident-employed photography to understand attachment to high amenity places. *Journal of Leisure Research*, 36, 580-606.
- Stronza, A. (2008). Through a new mirror: Reflections on tourism and identity in the Amazon. *Human Organization*, 67(3), 244-257.

- Tuan, Y.F. (1977). *Space and place: The perspective of experience*. Minneapolis: University of Minnesota Press.
- Urquhart, J., & Acott, T. (2014). A sense of place in cultural ecosystem services: The case of Cornish fishing communities. *Society & Natural Resources*, 27(1), 3-19.
- Walker, A. J., & Ryan, R. L. (2008). Place attachment and landscape preservation in rural New England: A Maine case study. *Landscape and Urban Planning*, 86(2), 141-152.
- White, D. E., Oelke, N. D., & Friesen, S. (2012). Management of a large qualitative data set: Establishing trustworthiness of the data. *International Journal of Qualitative Methods*, 11(3), 244-258.
- Williams, D. R., & Vaske, J. J. (2003). The measurement of place attachment: Validity and generalizability of a psychometric approach. *Forest Science*, 49(6), 830-840.
- Wyman, M., & Stein, T. (2010). Examining the linkages between community benefits, place-based meanings, and conservation program involvement: A study within the Community Baboon Sanctuary, Belize. *Society and Natural Resources*, 23(6), 542-556.
- Zhang, H., & Lei, S.L. (2010). Effects of place attachment on participation intentions for local tourism development. In C.A. Brebbia & F.D. Pineda (Eds.), *Sustainable Tourism IV* (pp.501-509). Ashurst: WIT Press.

CHAPTER 5: Conclusions

The purpose of this dissertation was to examine the ways in which tourism microentrepreneurship and involvement in agricultural production may foster land stewardship among small-scale landholders. I structured this research process in the form of three manuscripts (Chapters 2-4). Chapter Two addressed how involvement in tourism microentrepreneurship and shade-grown coffee farming is related to land stewardship among the Tz'utujil indigenous Maya in San Juan la Laguna, Guatemala, and explained the role of collective action processes (i.e., involvement in cooperatives) in facilitating this relationship. Chapter Three explored the same conceptual framework among agricultural producers in the coastal plains of North Carolina. Additionally, I found more specifically why and how different types of farmers (e.g., conventional vs. alternative farmers; racial minorities and women vs. white farmers) in the study were involved in agritourism microentrepreneurship, and how their involvement in collective processes supported or hindered land stewardship. Finally, Chapter Four examined the effectiveness of using a mixed methods approach to photo elicitation (i.e., sorting and ranking of landscape photos followed by in-depth semi-structured interviews) to assess place attachment (i.e., place dependency and place identity) among the Tz'utujil indigenous Maya in San Juan la Laguna, Guatemala. In this chapter, I provide broad conclusions derived from the three studies and I discuss how results of these studies support, challenge, or extend my conceptual model. Lastly, I discuss what I have learned from the methodological approaches used in this study and how those lessons might inform the methods used in future research.

Chapter Summaries and Implications

Chapter 2

In San Juan, we found that participants diversified their livelihoods through tourism microentrepreneurship and coffee farming in various ways, and that they commonly used these livelihood activities to demonstrate their land stewardship. We did not, however, find that participants' involvement in coffee farming and tourism microentrepreneurship directly influenced their land stewardship; rather, this study showed that participants were already primarily intrinsically motivated to practice environmentally responsible behaviors on their land and cooperatives had an important role in fostering stewardship through San Juan's communitarian approach to development (LaPan, 2014). While participants did express the importance of keeping San Juan clean and natural for the tourism industry (i.e., extrinsic motivations), they indicated that demonstrating an ethic of stewardship is a critical element of their Maya identity and is also important to help keep their community healthy. Similarly, while participants perceived that practicing environmentally responsible techniques was important for the production of quality shade-grown coffee, they felt these activities also fit their intrinsic motivation to be good stewards of the land. Therefore, this study supported previous assessments that initiatives leveraging, or at least consistent with, local intrinsic motivations are more likely to be accepted and effective in the long-term (Deci & Ryan, 2000; Morais, KC, Mao, & Mosimane, 2015).

Additionally, while participants exhibited an ethic of land stewardship, they often were restricted by political or economic barriers. To help mitigate these barriers and foster stewardship, San Juan's cooperatives (i.e., coffee cooperatives, weaving cooperatives, or other tourism-focused cooperatives) provided many social, financial, and environmental benefits for both individual members and the community (Milford, 2004). Furthermore, cooperatives' emphasis on environmental initiatives in San Juan (e.g., through organic coffee certification and nature-based tourism), was critical in helping members gain knowledge that impacted their

environmental behavior and provided them extra resources to foster stewardship of their land. This study found that, particularly in communities that are intrinsically motivated to demonstrate stewardship but are restricted by barriers, cooperatives may be effective in facilitating collective action to foster stewardship of working lands. However, supporting Ostrom (1990), this study revealed self-governance and trust was key to effective collective action.

Chapter 3

In this study, with farmers in the coastal plains of North Carolina, we used a primarily qualitative approach to examine how and why small-scale farmers are involved in agritourism microentrepreneurship, and to assess ways in which they might use agritourism as a way to foster or demonstrate an ethic of land stewardship. Additionally, we determined how participants' involvement in collective processes supported or hindered their land stewardship. This study revealed important differences between groups of farmers (ethnic minority and women vs. white male; conventional vs. alternative), the ways in which they were involved in agritourism, and their motivations to be involved; in effect, bearing implications for stewardship of their working lands.

First, we found important distinctions between types of farmers involved in agritourism microentrepreneurship and their motivations to participate. Ethnic minorities (i.e., African American, Native American, and Hispanic) in our study tended to practice alternative agriculture (e.g., organic, permaculture) more commonly than white farmers and were also mostly lifestyle farmers who did not rely on agriculture as their sole source of income and tended to be more interested in environmental stewardship (Gill, Klepeis, & Chisholm, 2010). Conversely, white male farmers were mostly characterized as conventional farmers, associated with larger-scale agriculture with higher yields, as well as higher levels of environmental degradation (Burton & Paragahawewa, 2011).

Participants' involvement in agritourism did not directly influence their land stewardship; and, motivations to participate in agritourism varied greatly among types of farmers and included both economic and non-economic factors. Conventional farmers were motivated primarily by sociocultural reasons (e.g., community and youth development) while alternative farmers wanted to educate visitors about land stewardship and environmentally sustainable food production. Motivations to participate in agritourism varied, yet this study revealed a widespread desire to use agritourism as a way to reduce agricultural illiteracy by educating visitors about where their food comes from and re-connecting the public with rural life (Schell, 2007).

This study also revealed the importance of collective action in influencing land stewardship among different types of farmers as well as limitations to collective action fostering land stewardship among farmers in eastern North Carolina. Specifically, ethnic minorities, women and alternative farmers felt limited in forming networks because of sociocultural and geographic barriers that prevented them from cultivating trust within their local communities. In effect, they perceived having less access to resources that could improve their production, help gain knowledge, or provide access to assistance programs. Conversely, the deeper cultural and social roots conventional farmers have in their communities and professional associations helped them establish networks that influenced their land management, but prevented them from gaining exposure to diverse perspectives. Supporting previous literature (e.g., Ostrom, 1990; Sutherland & Darnhofer, 2012), this study reinforced that, without communication and building of trust through collective processes, individuals or groups will not be able to work together towards land stewardship. This research has also shown that, rather than agritourism being used as a tool to influence land stewardship among farmers; instead, it is used as an outlet for farmers to demonstrate their pre-existing land ethic. Further, without strategies designed to encourage farmers with different backgrounds and values to communicate, it will be difficult to develop

trust across farming factions and as a result, a collective vision of land stewardship will not develop.

Chapter 4

This study examined the effectiveness of using a mixed methods approach to photo elicitation to assess place attachment among a Maya indigenous community in the western Guatemalan highlands, San Juan la Laguna. Specifically, this study identified how dimensions of place attachment (i.e., place dependency, place identity) to rural landscapes have been influenced by changes in landscape use (e.g., from sustenance crops to shade-grown coffee production) and tourism development among an indigenous community of shade-grown coffee farmers. We used quantitative (i.e., descriptive statistics, multidimensional scaling) and qualitative (i.e., thematic coding) analyses to inform findings from photo ranking and qualitative data (i.e., interviews, ethnographic field notes). Descriptive statistics of the data and multidimensional scaling provided quantifiable and representational data to help conceptualize key themes found from thematic coding of interviews and field notes.

Participants expressed that their place attachment was influenced by changes from tourism development and landscape use in a number of ways. First, a growth of shade-grown and specialty coffees in San Juan has been critical to transforming Tz'utujil Maya place dependency on the landscape for sustenance (e.g., through *maiz*) to dependence on the landscape for income and opportunity (supporting Fischer & Victor, 2014). Secondly, participants demonstrated a dependence on the landscape for ecosystem services supporting claims that, in addition to economic value, ecosystem services also hold ecological and socio-cultural values (e.g., de Groot, Wilson, & Boumans, 2002). However, despite a transition from dependency on landscapes for sustenance to use of the land for cash crops, participants have not lost their attachment to the land for ecological and socio-cultural reasons. Demonstrating this, in addition to a dependence on coffee for primarily economic benefits, participants still expressed an attachment to traditional

crops such as maize for both sustenance and to reflect their Tz'utujil Maya identity (Huff, 2006; Loucky, 2001).

Additionally, participants felt most connected to landscapes that they perceived to be environmentally sustainably managed and indicated a need to co-exist with nature as part of their indigenous identity, indicating a clear relationship between one's connection to a place and desired management outcomes (Smith, Davenport, & Anderson, 2011). In other words, in order to conserve the landscapes they were attached to, they emphasized working with natural ecosystems without harming them and employing sustainable management techniques. This theme was prevalent among descriptions of photos as participants acknowledged the necessity to sustainably manage the landscapes to which they depended on or that reflected their identity. These findings have important implications towards sustainability and support recent literature that place identity is a better indicator of long-term sustainability than place dependence (de la Barre et al., 2012; Halpenny, 2010; Schuster et al., 2011), and that place identity may be nurtured through tourism development (Brandth & Haugen, 2011).

Therefore, settings where residents demonstrate a strong sense of place and a dependency on sustainable management to conserve these landscapes may benefit in implementing nature-based tourism activities or ecotourism. However, special consideration should go into ensuring that ecotourism does not further disenfranchise local communities, that it is effectively managed through locals collectively, and that it is meeting conservation goals. Therefore, more research is needed to ensure that tourism development and changes in landscape use consider the intimate bonds that residents may have with a place and strategic planning is needed to ensure that place attachment (i.e., place dependency, place identity) is not lost among residents.

Theoretical Considerations

To further demonstrate how the conclusions of this dissertation were explained through the conceptual model I proposed in Chapter 1, in this section I have redrawn the model to reflect the findings from each chapter and I briefly summarize how the theoretical constructs related to each other in each study.

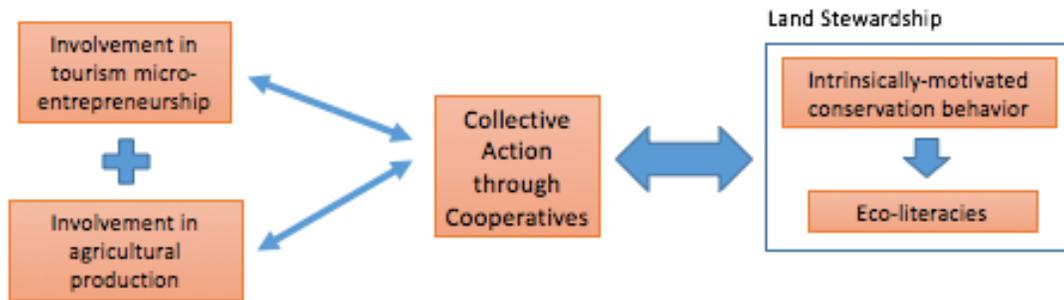


Figure 5.1: Theoretical relationships derived from Chapter 2

This model demonstrates that among participants in San Juan la Laguna, Guatemala, involvement in tourism microentrepreneurship and agricultural production did not directly influence their land stewardship. Instead, these relationships were fostered by cooperatives and San Juan's communitarian approach to development, which both fostered intrinsic motivation to conserve and improved ecoliteracies. Figure 5.1 also displays how participants were intrinsically motivated to demonstrate environmentally responsible behaviors.

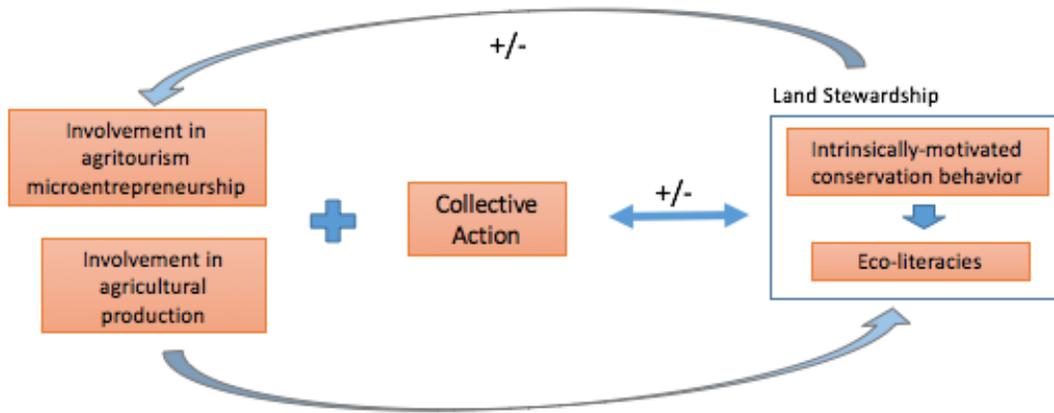


Figure 5.2: Theoretical relationships derived from Chapter 3

Similarly, this model (Figure 5.2) demonstrates that among participants in North Carolina, involvement in agritourism microentrepreneurship did not foster land stewardship. Instead, certain types of farmers choose to participate in agritourism in order to demonstrate their land stewardship and to reduce agricultural illiteracy among the public (Schell, 2007). Collective action had both positive and negative influences towards land stewardship depending on type of farmer and barriers (e.g., social, geographic) that limited participants' involvement in collective action.

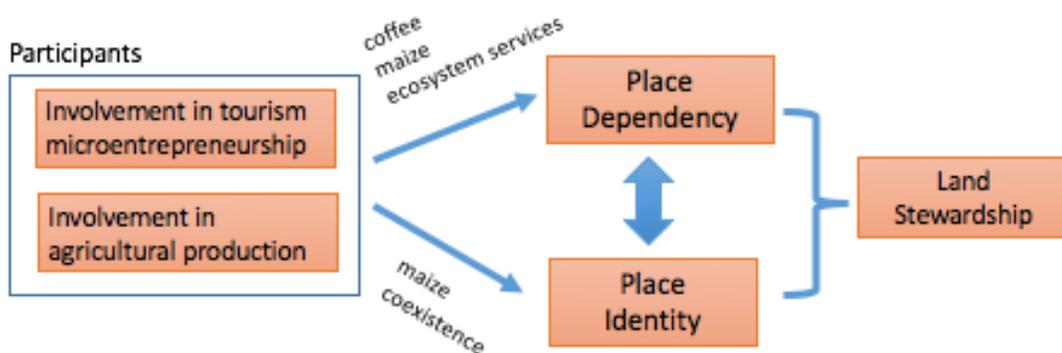


Figure 5.3: Theoretical relationships derived from Chapter 4

Finally, as displayed in Figure 5.3, participants in the photo elicitation study perceived attachment to Guatemalan landscapes through both place dependency (i.e., through coffee, maize and ecosystem services) and place identity (i.e., through maize and coexistence with nature). Moreover, while not the main objective of the study, land stewardship was reflected when participants revealed being most attached to photographs that displayed landscapes that were perceived to be environmentally sustainably managed.

In summary, this dissertation has revealed important findings that better explain the relationships between agricultural producers, tourism microentrepreneurs and their land stewardship. I also found how implementing a collective approach to natural resource management can be an effective mechanism to foster stewardship among underserved communities, but that a variety of barriers may inhibit successful collaboration between distinct social groups. Further, this dissertation has provided important implications into how using mixed methods to assess place attachment is an important tool to explain how and why participants find personal meaning in landscape photographs, particularly in the context of indigenous communities.

Methodological Considerations

Cultural Immersion and Field Notes

A key component to this study and contribution to the richness of data collected was my effort to immerse myself in the communities being studied. Through this ethnographic approach to data collection, daily notes were taken through journaling that reflected informal interactions with community members, observations, and analytical reflections relating to the study moving forward (Bernard, 2011). Additionally, I spent multiple nights in the field at both study sites, sometimes staying with participants and other times with members of the community not involved in the study directly. For example, in North Carolina I stayed multiple times in a room in a mobile home that was booked through a widely-growing alternative to hotels, AirBnB, and in

Guatemala I stayed with a host family (i.e., homestay) who lived in the community. This approach was critical in providing a cultural immersion experience (e.g., eating with local community members; learning about cultural traditions, events, and history through informal discussions; practicing Spanish and learning words in Tz'utujil). Rather than focusing on data collection for only short periods of time, multiple consecutive days in the field all helped inform or verify findings. Further, field notes were effective in eliciting contextual significance that perhaps would be lost without this ethnographic approach to data collection. While I did my best to limit biases and remain objective throughout the study, in certain contexts (e.g., San Juan la Laguna) participants were aware of the family I stayed with and this may have influenced their biases towards me or the study. Similarly, when receiving insights from my hosts in North Carolina, I was careful to provide context in field notes and not let opinions by certain individuals I spent more time with overshadow data collected from others.

Interviews and Sampling

In-depth, semi-structured interviews were conducted as a main part of data collection. Since I am not fluent in Spanish (although I am proficient), some depth of interviews may have been lost when time was spent explaining certain words or concepts and this may have limited probing for more explanation of responses. However, in both study sites, richness of interviews improved over time. Many informal interviews in the community also helped enrich the data I collected by providing further context to the study site, issues, and knowledge about cultural and political influences. For example, when concepts were brought up in interviews that were unfamiliar, I spent time communicating with locals to clarify. This also helped to build rapport and become recognized as a researcher among locals interested in the research.

Follow-up interviews or “member checking” with locals could have strengthened the validity of results; however, this was not possible due to time and technology constraints. Instead, interpretations were discussed with select co-authors to verify findings based on thematic

coding and analysis. Also given the amount of time spent in communities, theoretical sampling, chain referral, and purposeful sampling were all found to be useful and effective approaches during data collection. Through theoretical sampling, data was analyzed on an ongoing basis, which helped to be efficient in selecting the next participant to interview. When no themes were emerging with a particular group (e.g., *La Voz*, the coffee cooperative in San Juan), the researcher returned to informal interviews and purposeful sampling to determine which type of participant was missing from the sample.

Free Listing

Several parts of the protocol were designed to include free listing of ideas (particularly when assessing ecoliteracy). While this was useful in acquiring information, these questions also stimulated further explanations and examples from participants rather than a simple, straightforward listing of words or concepts relating to the question. If time constraints are an issue in future studies, it would likely be more efficient to have participants list words and concepts on the sheet directly as this would avoid additional conversation that extends the length of the interview.

Photo Elicitation

The mixed methods approach to photo elicitation I used helped us to address previous limitations with using photo elicitation to assess place attachment. For instance, this study (Chapter 4) provided insights into not only how important places are to residents but it further explored why residents felt connected to these settings (Stedman, Beckley, Wallace, & Ambard, 2004). Therefore, the combination of multi-dimensional scaling (MDS) and thematic analysis was found to be an effective way to interpret quantitative data and further conceptualize qualitative data. Specifically, MDS was used to cluster the photos, and the qualitative data (i.e., interviews and field notes) helped us understand commonalities among the photos in each group. This mixed methods approach to photo elicitation also helped to strengthen interpretations of

clusters and reduce subjectivity by supporting interpretations with “in vivo” quotes and thematic coding generated from qualitative analysis. We also found the combination of sorting and ranking photographs with semi-structured interviews to be useful in building rapport and mitigating barriers between researchers and participants – particularly when distinct social classes, literacy rates, or social barriers were present. Overall, I’d argue that this mixed methods approach to photo elicitation was effective in providing in-depth qualitative and exploratory quantitative analysis to reveal place dependency and place identity and was particularly effective in regions where clear barriers may exist among the researcher and participant.

Summary

Overall, this study has furthered our understanding of how rural tourism microentrepreneurs involved in agricultural production use these activities to demonstrate land stewardship. This study has also expanded theory on tourism, collective action, place attachment, and land stewardship, and has contributed to research examining the relationships between these constructs. In effect, this dissertation has important theoretical and methodological contributions that will help inform future research and policymakers when addressing these topics in other contexts.

References

- Bernard, H. R. (2011). *Research methods in anthropology: Qualitative and quantitative approaches* (5th ed.). Lanham, MD: AltaMira Press.
- Brandth, B., & Haugen, M. S. (2011). Farm diversification into tourism–Implications for social identity? *Journal of Rural Studies*, 27(1), 35-44.
- Burton, R. J., & Paragahawewa, U. H. (2011). Creating culturally sustainable agri-environmental schemes. *Journal of Rural Studies*, 27(1), 95-104.
- Deci, E.L., & Ryan, R.M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227-268.
- de Groot, R. S., Wilson, M. A., & Boumans, R. M. (2002). A typology for the classification, description and valuation of ecosystem functions, goods and services. *Ecological Economics*, 41(3), 393-408.
- de la Barre, S. (2013). Wilderness and cultural tour guides, place identity and sustainable tourism in remote areas, *Journal of Sustainable Tourism*, 21(6), 825-844.
- Fischer, E. & Victor, B. (2014). High-end coffee and smallholding growers in Guatemala. *Latin American Research Review*, 49(1), 155-177.
- Gill, N., Klepeis, P., & Chisholm, L. (2010). Stewardship among lifestyle oriented rural landowners. *Journal of Environmental Planning and Management*, 53(3), 317-334.
- Halpenny, E. A. (2010). Pro-environmental behaviours and park visitors: The effect of place attachment. *Journal of Environmental Psychology*, 30(4), 409-421.
- Huff, L. A. (2006). Sacred sustenance: Maize, storytelling, and a Maya sense of place. *Journal of Latin American Geography*, 5(1), 79-96.

- LaPan, C. M. (2014). *Communitarian microentrepreneurship and gender in the Maya touristscape*. (Doctoral dissertation). North Carolina State University, Raleigh, NC.
- Loucky, J. (2001). The Tz'utujil Maya of Guatemala. In S.C. Stonich (Ed.), *Endangered Peoples of Latin America: Struggles to Survive and Thrive* (pp. 152-169). Westport, CT: Greenwood Press.
- Milford, A. (2004). *Coffee, co-operatives and competition: The impact of fair trade*. File 6, Chr. Michelsen Institute, Development Studies and Human Rights, Bergen, Norway.
Available at: <http://www.cmi.no/publications/publication/?1802=coffee-co-operatives-and-competition>
- Morais, D. B., KC, B., Mao, Y., & Mosimane, A. (2015). Wildlife Conservation Through Tourism Microentrepreneurship Among Namibian Communities. *Tourism Review International*, 19(1-2), 43-61.
- Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.
- Schell, E. (2007). The rhetorics of the farm crisis: toward alternative agrarian literacies in a globalized world. In *Rural Literacies* (pp. 77-119). Carbondale, IL: Southern Illinois University Press.
- Schuster, R., Sullivan, D., Kuehn, D., & Morais, D. B. (2011). Relationships among Resident Participation in Nature and Heritage Tourism Activities, Place Attachment, and Sustainability in HRV. *Journal of Park and Recreation Administration*, 29(3) 55-69.
- Smith, J. W., Davenport, M. A., Anderson, D. H., & Leahy, J. E. (2011). Place meanings and desired management outcomes. *Landscape and Urban Planning*, 101(4), 359-370.

Stedman, R., Beckley, T., Wallace, S., & Ambard, M. (2004). A picture and 1000 words: Using resident-employed photography to understand attachment to high amenity places. *Journal of Leisure Research*, 36, 580-606.

Sutherland, L. A., & Darnhofer, I. (2012). Of organic farmers and 'good farmers': Changing habitus in rural England. *Journal of Rural Studies*, 28(3), 232-240.

APPENDICES

APPENDIX A: Guatemala Interview Protocol

Key

**may delete for sake of time, ask somebody later, or delete after get same answer a few times..

Deidre Peroff

NC STATE UNIVERSITY

PROTOCOLO DE ENTREVISTA

Declaración de consentimiento informado

Este estudio es una investigación sobre el turismo agrícola sostenible de las tierras. Si usted no se siente cómodo con cualquiera de las preguntas, puede dejar de responderlas en cualquier momento. Esta información será confidencial y participación en este estudio es completamente voluntaria. No debe haber ningún riesgo a usted de la investigación. Yo voy a tomar notas durante la entrevista y si estaría bien contigo quisiera grabar la entrevista para ayudame con lo traducción. Si usted tiene alguna pregunta sobre la entrevista, por favor pregúntame durante la entrevista o tambien puede contactarme en la futura. ¿Si esta bien y no tiene preguntas, está bien para empezar?

Fecha:

Entrevista tiempo comenzó:

Entrevista tiempo terminado:

1) Place Dependency/Livelihood Assessment

Algunas veces, personas y sus familias reciben sus ingresos de una variedad de fuentes. Por favor, escribe una lista aquí de sus fuentes de ingreso (o yo puedo escribir):

- 1) _____ 5) _____
- 2) _____ 6) _____
- 3) _____ 7) _____
- 4) _____ 8) _____

- ¿Cual es el más importante para su vida?

1.1) (Si hay turismo): ¿En cuales maneras participa usted en el turismo, y por cuánto tiempo ha participado?

- ¿Por qué participa en el turismo?

1.2) ¿Hay maneras que el turismo ha cambiado su vida? ¿porque?

1.3) ¿Y que ha aprendido del turismo y turistas?

1.4) ¿Hay maneras que el turismo ha cambiado la manera que usted administra su tierra?

2) Porque estoy aprendiendo sobre agricultura aquí, me gustaría hablar con usted sobre “su tierra.” ¿Puede describir su tierra para mí? (Por ejemplo, cuanto tierra tiene, por cuánto tiempo ha tenido, ¿la tierra que usted tiene, lo cultiva todo o alquila una parte? ¿Usted necesita otras personas para cultivar su tierra?)

** (Sólo usted, o es por ejemplo, la propiedad compartido de algunas personas o administrado por muchas personas en la comunidad?)

2.1) Por favor piensa por un momento sobre las actividades que usted tiene en su tierra. Y, podemos hacer una lista aquí.

Actividades

¿Porque usted participa?

**2.3) ¿Porque participa en cada actividad? (Por ejemplo, porque usted lo disfruta, porque es muy importante, para obtener aprobación o evitar la culpa, o porque hay presiones de otras personas o organizaciones).

- ¿Quién enseno usted?

3) Place Attachment: Para esta parte, yo tengo diez fotos.

Por favor, mire a estas fotos y piensa sobre el significado para usted. Entonces, por favor escoge 5 fotos que reflejan quién eres, o los lugares que son más importantes para usted y pongo estas fotos en orden de importancia.

- ¿Por favor explique porqué esta foto es el único más importante para usted? (y porque otros importantes?)

4) Traditional Ecological Knowledge (conocimiento ecológico tradicional)

Aquí vamos a escribir una lista de plantas tradicionales (o plantas medicinales) que son importantes para usted. ¿En cuales maneras usted los utiliza? ¿los has traído a la casa en las ultimas 48 horas? ¿Quién enseno usted?

Nombre de planta tradicional	¿Por qué es importante?

- ¿Tienes estas plantas en la casa? (Si no..) ¿Dónde cortas estas plantas?

4.1 Scientific knowledge (conocimiento científico)

a) ¿Cree que hay cambios negativos en el medio ambiente natural en San Juan la Laguna? ¿Si, cuales?

1) _____ 5) _____

2) _____ 6) _____

3) _____ 7) _____

4) _____ 8) _____

- ** ¿De esta lista, cual es el que mas le preocupa? ¿Por qué?

b) Por favor haga una lista de actividades, programas o técnicas que siente podría impactar positivamente la conservación de la tierra:

1) _____ 5) _____

2) _____ 6) _____

3) _____ 7) _____

4) _____ 8) _____

- ¿De estos artículos, ¿en cuáles practicas o participas?

- ¿Qué esperas para el futuro de su tierra? (Por ejemplo, ¿de qué manera espera que su tierra sería utilizadas en 50 o 100 años?)

5) Collective Action

- ¿Prefiere administrar su tierra solo o colaborando con otros?

- ¿Por favor, explica como habla usted con otras personas sobre decisiones sobre tu tierra? (Probe: con que frecuencia y en que capacidad se comunica con las otras personas? Por ejemplo – campesinos, vecinos, su familia, miembros de la comunidad, etc)

- ¿Hay reglas, normas, o tradiciones que se debe seguir en la administración de su tierra? (¿Si si, puede usted darme un ejemplo?)
 - ¿Quién escribe y modifica las reglas sobre la administración de su tierra? (el gerente/el director? Junta directiva=board of directors)

IF TIME:

- ¿Beneficia usted de colaborar a tomar decisiones sobre su tierra usted? ¿De qué manera?
- (ONLY if in copos) ¿Se siente que los beneficios son distribuidos equitativamente entre todos los colaboradores (o miembros)? (Si o no, y porque? – piense sobre mujeres.. personas el mas pobre, etc)

5c) *supervisión (Monitoring)*

- ¿Quién asegura que se sigan las reglas y que pasa si una persona no sigue una de estas reglas? (¿Tiene un ejemplo usted?)

5d) *mecanismos de resolución de conflictos (conflict-resolution mechanisms)*

- ONLY COOP: ¿Cómo se resuelven los conflictos (incluyendo los desacuerdos y malentendidos de expectativas).

5e) *mínimo reconocimiento de los derechos de sindicación (minimal recognition of rights to organize)*

- ¿Siente que el gobierno y otras organizaciones apoyan esfuerzos para colaborar en la administración de la tierra? (¿en cual maneras?)

6) Demografía

1) Edad: _____

2) Género: masculino femenino

3) Idiomas hablados: Español Tz'utujil inglés otros ____

4) ¿Por cuantos años ha estudiado usted en escuela?

APPENDIX B: NC Interview Protocol

Informed Consent Statement

This research study is about agricultural tourism and sustainable land management among farmers. If you feel uncomfortable with any of the questions, you may stop answering them at any time. This information will be kept confidential and your identity will be protected in any publishing of the findings. To participate in the interview, you must be 18 years old or older. Participating in this study is voluntary and involves one interview. There should be no risks to you from the research. The researcher will take notes during the interview and will only audio record the interview with your permission. There will be no link between your identity and your answers. Participating the interview implies that you consent to take part in the study. If you have any questions about the interview, please ask them at any time. If you have questions or concerns about the interview in the future, please use the information on this card to contact me at North Carolina State University.

At this time, if you don't have any questions and you agree to participate in the interview, is it OK for us to begin?

Date:

Time interview began:

Time interview ended:

1) Tourism Livelihoods

- Please list ways in which you are involved in tourism (*Probe*). How long have you been involved? [*Probe about key "decision" factors that led them into farming and agritourism*]

- Can you imagine how your life would be different if you didn't offer agritourism? [*Could you envision yourself working and living elsewhere? Why/why not*]

2) Place Attachment

2.1. Place dependency (adapted from PIT baseline interviews, 2013)

- People and families generally draw their livelihoods from a variety of sources. Our livelihoods consist of all the means we use to secure our life necessities. Some are purely monetary (e.g., work for wage), but some are non-monetary (e.g., grow food to nourish us). Please think for a moment and then we'll list sources and activities that support your livelihood:

1) _____	5) _____
2) _____	6) _____
3) _____	7) _____
4) _____	8) _____

- What proportion of your livelihood comes currently from tourism revenues? _____%
- From your land? (e.g. agriculture) _____ %

2.2. Place identity – photo elicitation (adapted from Zhang & Lei, 2010)

- Please look through these pictures and reflect on what they mean to you. Then please pick the 5 pictures that best reflect who you are, or places that are most important to you. Lastly, of those 5, which one is most important to you, and why? (*The picture that is chosen as “the best” will be weighted higher during analysis*).
- Please explain why you chose these pictures in this order.
- Are any of these places that you can't imagine your life without? (*why?*)
- [If needed...] *What is it about your farm (land/county) that connects you to the land and resources? Why?*

3) Intrinsic motivation

**Adapted from Chirkov et al (2003), and Morais et al. Namibia Study (2010) with livestock farming.*

Self-determination continuum

- I'd like to talk with you about "your land." Can you describe your land to me? (How much land do you have, how long have you had it, etc?)

- Please take a moment to consider the many ways you use your land (for income, culture, recreation, etc.) and list them here: *(then reflect on WHY you do each activity – based, roughly, on descriptions below)*

1) _____	6) _____
2) _____	7) _____
3) _____	8) _____
4) _____	9) _____
5) _____	10) _____

- Considering the ways that you just mentioned that you use your land, please help me generate the following four lists, which we can go through one-by-one: *(may want to probe further for each – ex: Why do you feel that pressure?)*
 1. Please list examples of things that you do with your land because of external pressures. You engage in these behaviors because someone insists on you doing that. You expect to get some kind of reward or avoid some punishment for behaving that way.
 2. Please give us examples of things that you do on your land to get others' approval or avoid guilt. You do these things because others approve of it and/or because if you didn't you'd feel guilty, ashamed or anxious.
 3. Please give us examples of things that you do with your land because they are important. You do these things because you personally believe that it is important and worthwhile to do these things.
 4. Please give us examples of things that you do with your land because you simply choose to. You just do these things because they make you feel good.

Probe as needed: For example, why do you feel that pressure?

You do this because of external pressures	To get other's approval or avoid guilt
It is very important	I enjoy it

4) **Eco-Literacy** (*Adapted from Hollweg et al. (2011) to measure knowledge, attitudes, and behavior*)

4.1 Please list some **native** plants and/or animals that are important to you and their use:

Name of Plant/ Animal	Use

- Why do you feel the above resources are important

- Are there ways that you actively try to preserve these resources?

4.2 a) Are there things that you worry may negatively impact the conservation of your land? [*envt, soc, econ, govt, other*]

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

- Of items listed above, which do you worry about the most? Why?
- Please describe measures you have taken to protect your land from these concerns.

b) Please list activities, programs, or techniques that you feel may positively impact the conservation of your land:

_____	_____
_____	_____
_____	_____
_____	_____

- Of items listed above, which do you feel are most important?
- Of items listed above, which of these do you practice or participate in?

- What do you hope for the future of your land? [For example, in what ways do you hope your land is used in 50 years?]

5) **Collective Action** (*Adapted from Ostrom's "7 design principles of collective action"*)

- **Do you prefer to manage your land alone or by collaborating with others?** [*How might your life be different if you didn't collaborate – or weren't part of co-op, etc.*]
- **Are there ways in which you collaborate with other farmers? (If so, describe...)**

5a) *Clearly defined boundaries.*

- Who owns and manages your land? (Only you or, for example, is some of the land owned or managed by many people in the community?)

5b) *Collective-choice arrangements.*

- **How have you influenced others' management of their lands? How have others influenced the way you manage your land? (Probe: formal/informal, face to face, meetings, phone)**

For example, how have you influenced others in the management of their land? And how have others influenced the way you manage your land? (e.g. neighbors, community members)

- **Are there people that you trust to make decisions that provide mutual benefit to you? To other members?**

5c) *Congruence.*

- **In what ways do you benefit from those collaborations when making decisions about your land?**

- Do you feel benefits are equitably distributed among all collaborators?
- Can you identify any negative consequences created by these collaborations?
- Do you feel those negatives or costs affect all members equitably?

5d) *Monitoring*

- **Are there rules, norms, traditions that you must follow when managing your land? (If yes, can you provide an example? Who writes and modifies these rules?)**
- Who ensures that collectively developed rules are followed?

5e) *Graduated sanctions*

- What happens if one of these rules is not followed? (Do you have an example of a situation in which rules were not followed?)

5f) *Conflict-resolution mechanisms*

- How are conflicts (including disagreements and misunderstandings of expectations) settled? *Maybe voting or consensus - Example?*

5g) *Minimal recognition of rights to organize*

- **To what extent do you feel that government and non-governmental entities such as organizations help or support your efforts to collaborate with others about land management? (or do they instead support farmers to manage their land individually?)**

6) **Demographics**

- 1) Age: _____
- 2) Gender (circle one): Male Female
- 3) Education Level: _____

APPENDIX C: Excerpts of segments coded in MAXQDA

The screenshot displays the MAXQDA 11.1.0 interface. On the left, the 'Code System' pane shows a hierarchical tree of codes. On the right, the 'Document Browser' shows excerpts from a document titled 'Works at Envi Org that does tourism (2)\R20'. The excerpts are numbered and have colored brackets indicating the codes applied to them.

Code	Excerpt
..Depend on native plants	104 ENTREVISTADORA. Los cambios negativos en el medio ambiente, medio ambiente me dijo que contaminación. ENTREVISTADO. La contaminación, mucha contaminación por el, el, lo químico y la tala de árboles, ¿sabe que es talar? Es talar es cortar árboles eso nos ha perjudicado mucho hay especies de árboles que son muy importante, están desapareciendo.
..Deforestation	105 ENTREVISTADORA. Dónde piensa que contaminación es malo y dónde es peor.
..Chemicals/contamination	106 ENTREVISTADO. Antes nosotros podíamos gozar y comer algo de hongo silvestre pero ahora ya no, ya no hay hongo porque por el uso de químicos. ¿No puede cambiar? No, se desapareció ya no se produce. En las montañas. Exacto, en las parcelas y montañas.
..Lago	107 ENTREVISTADORA. Hongos. Y en el lago. ENTREVISTADO. Huy en el lago peor, peor.
..Wornes most	108 ENTREVISTADORA. Y de éstos lo que le más preocupa.
..Wornes most	109 ENTREVISTADO. Que es lo que más me preocupa, la basura, la bolsa plástica y el abono químico también.
..Wornes most	110 ENTREVISTADORA. Y por qué la basura es lo peor.
..Quote	111 ENTREVISTADO. Vas en una tienda, si compras una libra de azúcar te dan bolsa plástica, vas a comprar queso te dan bolsa plástica, compras un agua gaseosa envase plástico, todo es plástico, si vas al banco te dan dinero plástico también. Y no puede reciclar. No es reciclable, más la bolsa color negra que no es reciclable. Pero blanco. Se puede reciclar pero lamentablemente donde podemos convocar nosotros para reciclar.
..Plastic/trash	112 ENTREVISTADORA. Un poco más está bien. ¿Estás cansado si? No pero. A qué hora anoche acostó. Me acosté si como a las once. ¿Once? Cuatro horas para dormir porque a las cuatro tuve que ir a la playa para pescar. Pero después de almuerzo vas a tener una siesta. Descansar no, no, aquí no. Pescar otra vez. Si a pescar otra vez. Por la tarde. Si.
..Describing business	113 ENTREVISTADORA. Aquí por favor haga una lista de actividades programas o técnicas que siente podría impactar positivamente en la conservación de la tierra, para proteger la tierra.
..Quote	114 ENTREVISTADORA. Para proteger la tierra tal vez, empezaría una charla con los niños de las escuelas. Una charla. ¿Sabe que es una charla? una plática con los niños de las escuelas, en todas las escuelas como es un cómo le llamaría yo, para darles a conocer el daño que causan todo esas bolsas plásticas, la contaminación, entonces instruir a los niños, anteriormente cuando alguien iba a la tienda tiene que llevar su, un pedazo de trapo para echar el pan y traerlo, ahora no, compras pan te da bolsa plástica entonces hay que educar a los niños incentivarlos para que ya no reciban esas bolsos plásticos, ése sería un medio para ayudar a la tierra, dos programas tendríamos que ser, un programa para reforestar, tener un semillero para árboles nativos, y parcelas de café donde no hay árboles regalarles árboles o ir personalmente, sembrarle árboles para que tengan ayuda en esa forma.
..Talk to children	115 ENTREVISTADORA. Para sombra. ENTREVISTADO. Para la sombra, porque hay algunos que no han sembrado por no tener recurso porque hay que comprar las plantas para sembrarlas pero si pudiéramos nosotros tener un semillero, llevar el semillero y sembrarlo, solo en esa forma podemos ayudar a la madre tierra que nos ha dado de todo, es que nos ha gustado a nosotros solo sacarle, sacarle y no darle lo que, como agradecimiento yo creo que eso sería y también hacer conciencia en cada, cada uno de nuestra familia también, porque a veces el abuso del uso del agua también nos afecta a nosotros, no tenemos control del uso del agua entonces no tenemos medida, solo de esa forma podemos ayudar a la tierra también que se mantenga un poco fresca la tierra, que circule al agua que Dios ha puesto ahí, eso es lo que yo opino solo eso es. For the shadow, because there are some who have not planted by not having recourse because you have to buy the plants for planting but could we have a nursery take the seed and sow it only in this way can we help
..Sembrar mas arboles	
..Educate/help/train people	

Figure C. 1: Excerpt of segments coded in MAXQDA from Guatemala –A. Column on left shows an example of how segments were coded using a theory-driven approach where data were line-by-line coded as either semantic (verbally expressed meanings) or latent (underlying meanings) to identify how themes reflected constructs (e.g., ecoliteracy) and sub-constructs (e.g., ecological knowledge) in the conceptual framework (Braun & Clarke, 2006; Flick, 2014; Namey, Guest, Thairu, & Johnson, 2008).

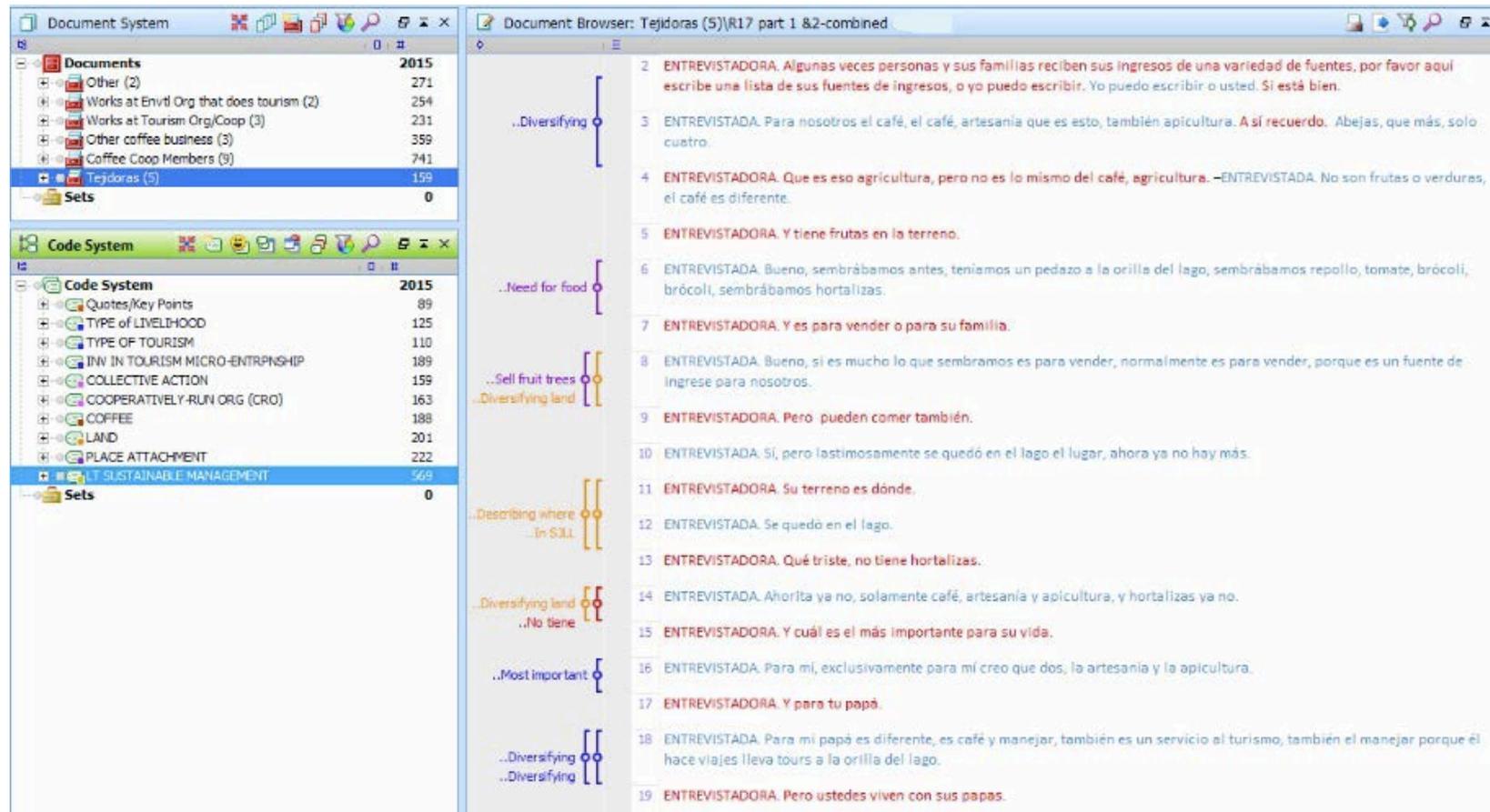


Figure C.2: Excerpt of segments coded in MAXQDA from Guatemala –B. Left columns reveal the total number of coded segments from the Guatemala transcriptions (i.e., 2015) and how codes were represented among key constructs to the conceptual framework (e.g., involvement in tourism microentrepreneurship, collective action/cooperatively-run organizations, place attachment, long-term sustainable management), and among different groups of participants that were interviewed (e.g., tourism organization, coffee cooperative, tejedoras). The right column displays an excerpt of coded data from interview R17.

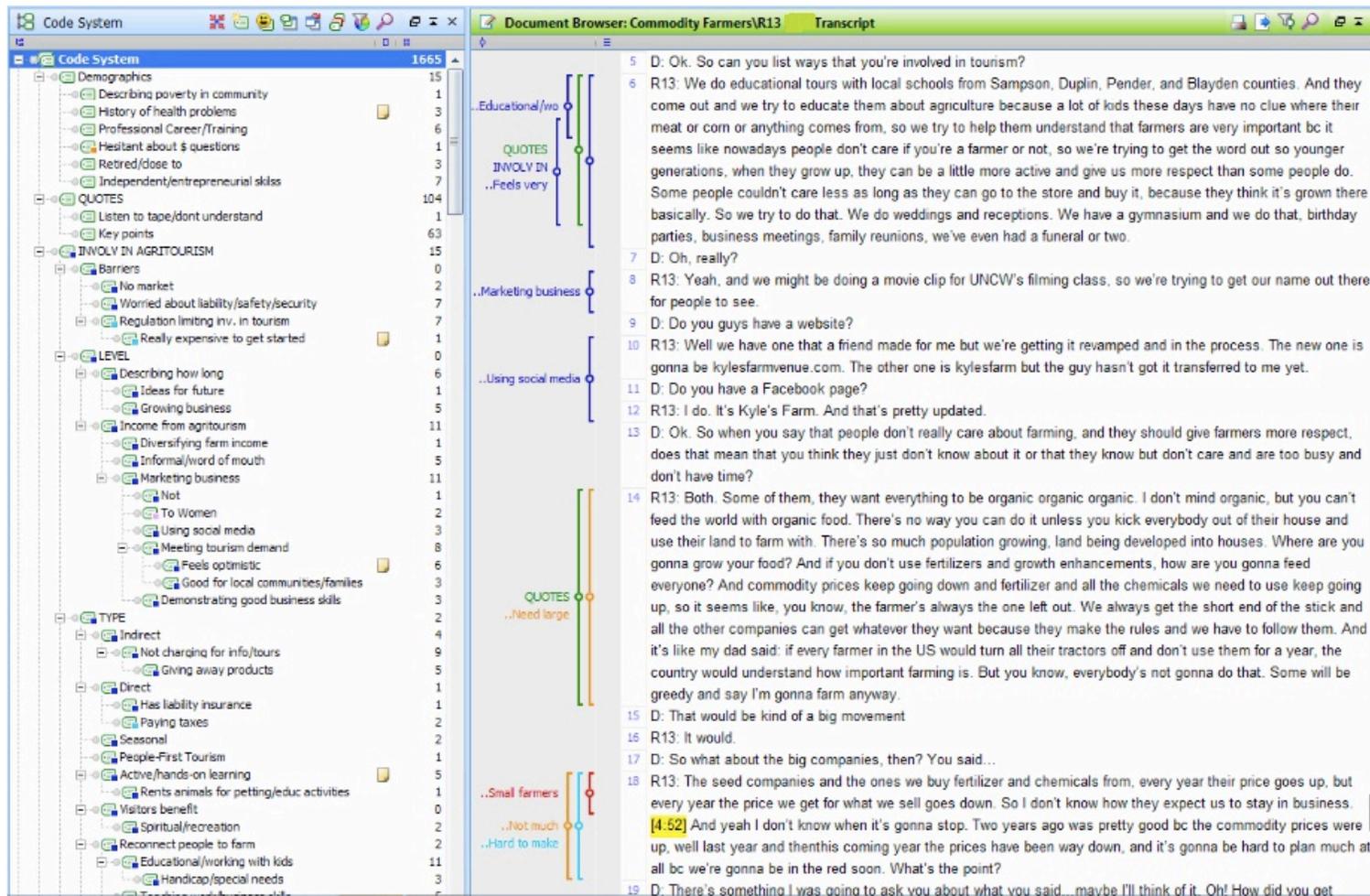


Figure C.3: Excerpt of segments coded in MAXQDA from North Carolina -A. Column on left shows an example of how segments were coded using a theory-driven approach where data were line-by-line coded as either semantic (verbally expressed meanings) or latent (underlying meanings) to identify how themes reflected constructs (e.g., involvement in agritourism) and sub-constructs (e.g., level of involvement in agritourism) in the conceptual framework (Braun & Clarke, 2006; Flick, 2014; Namey, Guest, Thairu, & Johnson, 2008).

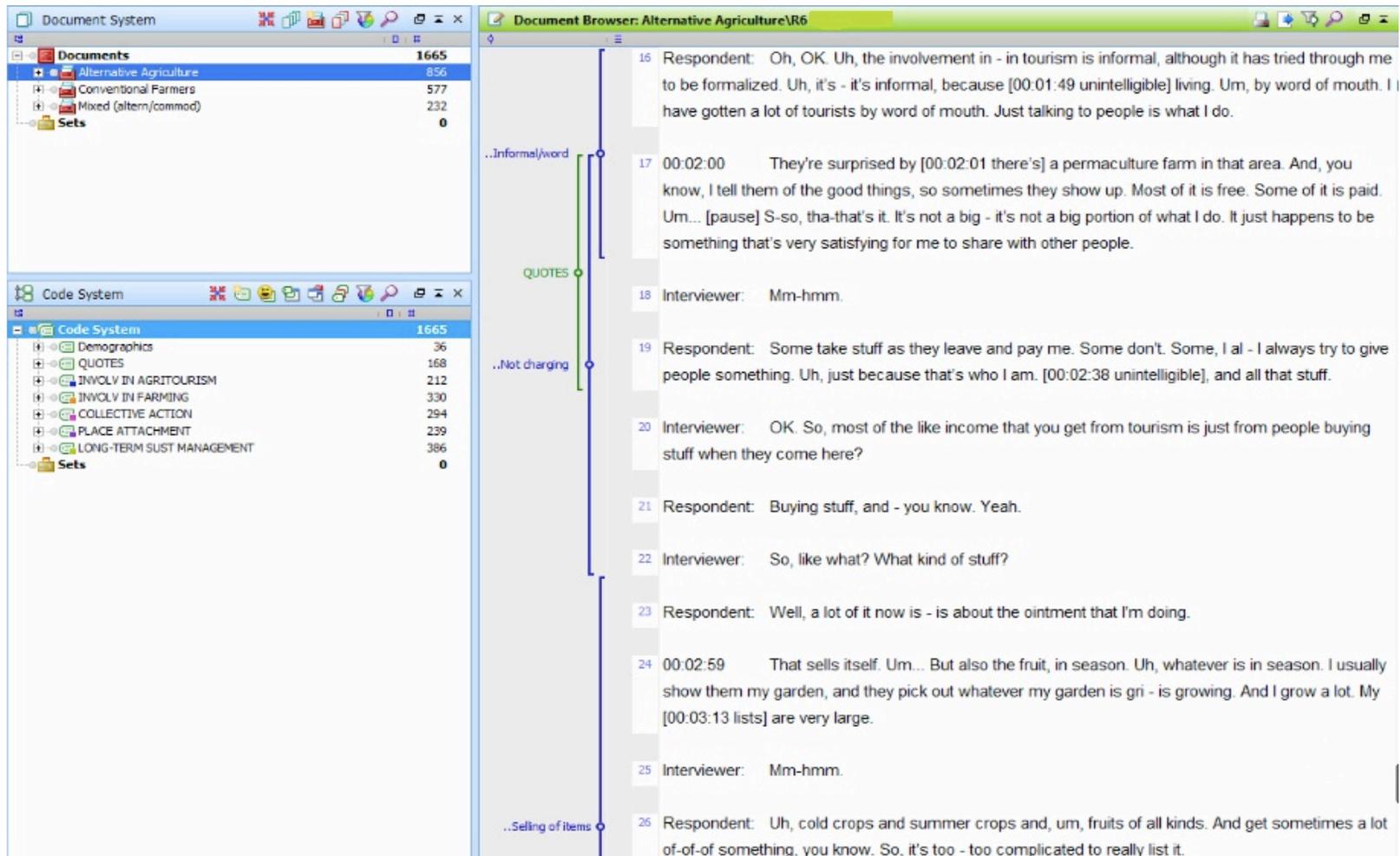


Figure C.4: Excerpt of segments coded in MAXQDA from North Carolina –B. Left columns reveal the total number of coded segments from the North Carolina transcriptions (i.e., 1665) and how codes were represented among key constructs to the conceptual framework (e.g., involvement in agritourism, involvement in farming, collective action, place attachment, long-term sustainable management/land stewardship), and among types of farmers interviewed (i.e., alternative agriculture, conventional farmers, mixed). The right column displays an excerpt of coded data from interview R6.

APPENDIX D: Select excerpts from Guatemala Field Notes

Note: Names have been changed.

June 13, 2014 (Friday!)

After that for breakfast I had a new fruit to me “la pitaya”. It is a beautiful pink color with lots of seeds inside and tastes kind of like a kiwi. Then, Fernando walked me down to the cooperative I want to study (La Voz que Clama en el Desierto). I got a tour there by Andrea and learned probably more than anyone really needs to know about coffee, but to me it was really interesting. She showed me the process of making coffee, the different classes and varieties of coffee, the trees that they use to shade the coffee and the barriers they use to prevent things like erosion and contamination of the plants. I also met a few of the campesinos that are members of the cooperatives. Amazingly, everyone I met was so nice and willing to help and they told me to return to the coop on Monday and Tuesday afternoon to meet with other workers and members of the coop during their meeting. There should be about 15 people there! The plan now I guess is to go introduce myself and explain my project and then hope that they’ll agree to set up a time with me so I can interview them later. That’s the plan - of course it can all change! This weekend I’m going to do a test run of the interview protocol with Fernando and his sister, Carmelita. She’s a teacher of English and will hopefully be really helpful. First perception of La Voz is that the people there were very nice and willing to talk to me.. also it really is beautiful and peaceful. There’s a nice view of the “indio” (nose in the mountain) and everything was clean, people were friendly and welcoming – definitely a place set up for tourists. It seems like a well run operation, but still is very much a business.. and a little pricy. My tour was Q100 (although it would have been a bit cheaper if I had someone with me). My tour guide was really knowledgeable and patient with my questions – and I met some campesinos and other workers on the walk too. One was Manuel and the other was Cristian, both who I spoke too for a minute and they agreed to interview with me or help me with anything. Everyone said that Cristian spoke English well but we spoke in Spanish. That made me feel good, although I’m sure my Spanish wasn’t great! Enrique (Barista) told me to come back for meetings they would have on Monday and Tuesday – one on Monday with the board of directors and on Tuesday with people at the coop who work with tourism.

June 25, 2014 (Wednesday)

Next, I went to the dock to just take in the view and watch a man that was wading in the water and fishing and a tuk tuk driver came up to talk to me – Alberto. He was really nice and talked a lot, probably only about 16 years old I would guess? He came up and asked where I was from and we chatted about how much the water had risen in the last few (5?) years. I asked him about the fisherman “pescadoras” – he said a lot of people fish because there are all sorts of fish in the lake. Coincidentally we just ate fish for dinner for the first time since I’ve been here. He said that the business I’m talking about doesn’t have an office anymore because it’s immersed and we can’t even see it.. there is one that you can see that was a gallery and only the 2nd level is coming out of the water. There’s another house to the left of the dock (facing dock) where you can only see the roof. He said that there used to be corn and beans and crops growing in fields there and they got immersed, and that a lot of people had to move when the water kept getting closer. I asked where they went and he said they went to live with friends and family members (he wasn’t sure).. “que triste” I said (how sad). He said that the fisherman now just run

the business out of their house (the president/director lives in the center of town somewhere), but he can't remember his name. We also looked up at the mountain and he told me the names of the mountain "nariz de indio" is the one you see on the postcards, but there was another he mentioned (can't remember), and also the name of the business where Pedro works is the Maya name. He said you could climb to the top of the nose and it would take about 2.5 hours (and he would take me if I want to go).. he also pointed out the cross and said that would take like 30-45 minutes to climb to and it was really a sacred place for the Maya. He said there's a cross and also a Virgin Mary there and sometimes they'll have religious ceremonies up there. I'm hoping to climb it on Saturday with Francisco (we were going to go last week but didn't make it because it was too hot and then I was double booked with another interview this last Saturday). Then he remembered that he picked me up the day I got there with Fernando and also I remembered the seats on his tuc tuc were from Auburn University and he said I could take a picture for my friend (Ginger). Then we talked for a while about the different pueblos – he pointed out San Pablo (which is on the other side of San Juan) and said it's bigger than here (here there are about 10-11,000 people I think he guessed) but that there it was really different. He said basically that people just lived there and then commuted to San Pedro or San Juan, and that there was no tourism. And he said San Marcos is a lot smaller but has some tourism. And that San Pedro is nice (and has good music) but that San Juan is much more "tranquilo" or calm. I would agree with that – also SP has good food!!

APPENDIX E: Select excerpt from North Carolina Field Notes

Note: Names have been changed.

December 3, 2014 (Wednesday)

I'm exhausted and need to go to bed because I'm meeting Mr. Nelson at 7:30am tomorrow (yikes). Doing some sort of farm tour all day that Emmanuel told me about should be good.

Met with Andy today – we chatted for a long time after the interview, he's really nice and was open with me and I do feel close with him now like he's my friend. Had a great interview, chatted mostly about food after but he did ask me about Guatemala – showed him some pictures of the people and told him about how coffee grows and stuff, and the women and the traditional dress and the tortillas – how the women cook all day. He seemed really interested in all that, but mostly he just really likes to talk about food! We sat outside it was a really nice day.

Before that spoke with Jerry –he is a real nice guy but adjusting b/c of his hearing aid right now so can't really communicate or listen well. His wife's brother in law ran over to talk to me and had a great interview with him – super informative and we talked a lot about “values” – he seemed pretty knowledgeable but repetitively referred to himself as “ignorant”. They talked about how the beavers are ruining all the streams. And he talked about the “real value in antiques and dogs, etc” – really he said the only value that there is how much somebody is going to pay for it. A dog doesn't have any value – I could sell my dog for \$10 on the street. Good conversation – I'll have to think more about it and try and pick up more of what wasn't in the interview (recorded). Very kind man and more than willing to sit down and talk to me.

I've been really impressed with how people just sit down and talk to me all the time – even though I'm assuming they can tell we're different and probably have different views. I still am confused about how to appropriately communicate about stuff – I feel like certain words are really “trigger” words and I'm hesitant to use them but I struggle to get the answers I really want to know without using the specific words. I babbled about this a little on my hand recorder....