

An analysis of technical assistance providers in Copanch'orti' Guatemala

by

Victoria Samantha LeBeaux

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Sustainable Agriculture

Program of Study Committee:
Cornelia Flora, Major Professor
Carmen Bain
Kathleen Delate
Michael Duffy
Jan Flora

Iowa State University

Ames, Iowa

2013

Copyright © Victoria Samantha LeBeaux, 2013. All rights reserved.

TABLE OF CONTENTS

| | |
|---|-----|
| CHAPTER 1: INTRODUCTION | 1 |
| CHAPTER 2: LITERATURE REVIEW - FOOD INSECURITY AND RELEVANCE OF SELECTED THEORETICAL FRAMEWORKS TO TAP ACTIVITIES IN COPANCH'ORTI', GUATEMALA | 9 |
| CHAPTER 3: CONTEXT OF THE STUDY | 32 |
| CHAPTER 4: METHODOLOGY - FIELD RESARCH METHODS IN COPANCH'ORTI AND DATA ANALYSIS FRAMEWORK | 41 |
| CHAPTER 5: RESULTS - DEVELOPMENT INITIATIVES OF TAPS IN COPANCH'ORTI' | 50 |
| CHAPTER 6: CONCLUSION | 100 |
| APPENDIX: INTERVIEW GUIDE | 107 |
| REFERENCES CITED | 108 |

LIST OF TABLES

| | |
|---|----|
| TABLE 3-1: RATES OF MALNUTRITION IN COPANCH'ORTI' | 36 |
| TABLE 4-1: INDICATORS OF TAP ENGAGEMENT WITH COMMUNITY CAPITALS | 48 |
| TABLE 4-2: INDICATORS OF TAP ACTION TO BUILD COMMUNITY CAPITALS | 49 |
| TABLE 5-1: ORGANIZATIONAL STRUCTURE OF COPANCH'ORTI' TAPS | 54 |

LIST OF FIGURES

| | |
|--|----|
| FIGURE 2-1: COMMUNITY CAPITALS FRAMEWORK | 20 |
| FIGURE 3-1: TYPES OF TAPS FIGURE AND NUMBER OF TAP EMPLOYEES | 34 |
| FIGURE 5-1: TYPES OF TAPS | 53 |
| FIGURE 5-2: NUMBER OF TAP EMPLOYEES | 53 |
| FIGURE 5-3: CULTIVATION OF BASIC GRAINS IN COPANCH'ORTI' | 55 |

ABSTRACT

Guatemala has the fourth highest rate of chronic under-nutrition for children under five in the world. One region particularly impacted is the Copanch'orti' area of eastern Guatemala where chronic under-nutrition affected 61% of the population in 2008. Although efforts to solve the malnutrition problem have been underway for several decades, there is a persistent need for greater and better coordination and integration of food security programming, within and across sectors (agriculture, education, environment, health, etc.), as well as across local, regional, and national platforms. In this dissertation I addressed the question of how the actions of development practitioners can be better coordinated to result in cumulative successes in regional food security. I addressed this question through a joint application of the community capitals framework and the agency theory of incentives to empirical data collected from a diverse group of development organizations working to enhance food security for rural, farming households in the Copanch'orti' region of eastern Guatemala. Findings reveal that systemic barriers to change exist in the form of a lack of incentives for investments in long-term improvements that would challenge existing power structures that allow inequalities to persist among the poorest groups. Future research should seek to gather in-depth information from a wider range of actors including citizens' groups and funding agencies to better identify mechanisms that will advance the region's food security goals.

CHAPTER 1: INTRODUCTION

Hunger and malnutrition are considered one of the gravest threats to global public health. In addition to being challenges to human dignity and human rights, hunger negatively impacts the ability of nations to prosper socially and economically (Sheeran, 2008). Hunger and malnutrition persists in many areas of the world in spite of decades of investment in development interventions and outreach intended to counter these problems. This is due in part to a lack of coherent and cohesive action by the organizations working to combat malnutrition (World Bank, 2005). This dissertation addresses the question of how the actions of development practitioners can be better coordinated to result in cumulative successes in regional food security. This will be done through the application of two theoretical frameworks, the community capitals framework (C. B. Flora & J. Flora, 2008) and agency theory (Perrow, 1986) to empirical data on development organizations collected in Copanch'orti' Guatemala, an area of persistent food insecurity in eastern Guatemala. The findings will be useful for policy makers and funders of international development who partner with development organizations to enhance food security in areas experiencing high degrees of malnutrition.

Copanch'orti', food insecurity and development organizations

Copanch'orti', Guatemala is located in the eastern region of Guatemala in the Department of Chiquimula. A majority of the inhabitants are farmers who are struggling to make a living on degraded soils in a climate environment that is increasingly variable (AECI-SEGEPLAN, 2003). In 2011 62.68% of the department's residents lived at or below the

poverty line of \$1,134.81 USD in income per year, with accompanying high levels of chronic malnutrition prevalent throughout the region, particularly in rural areas (SEGEPLAN, 2006). Organizations that act to reduce food insecurity include government, nonprofit, and civil society¹ groups as well as private businesses and academic institutions. These groups facilitate people's access to financial, technical, entrepreneurial and information services and will be referred to as technical assistance providers or TAPs throughout this dissertation.

In Copanch'orti' significant investments in rural development have taken place since the 1990's, particularly in the areas of agricultural development, health, education, and livelihood improvements. Activities aimed at reducing malnutrition include distribution of food for immediate consumption, provision of technical inputs to improve subsistence production and natural resource management, and human and social capital investments in education. According to Warren (2005) the "development industry" has become an important component of both life and of the local economy in the region. "Most educated people are, or have been, working for the development programs and institutions and development jargon has become part of people's everyday language" (Warren, 2005). Despite this proliferation of TAPs, rural communities in Copanch'orti' account for some of the country's highest rates of malnutrition. Prevalence of chronic malnutrition, measured by prevalence of stunting (low height for age) ranged between 60% to 73% of the population in 2008 ("Desnutrición Crónica," n.d.).

¹ The term 'civil society' refers to groups of people organized around common interests or values that, through organized activity impact the state and the market, but do not seek to make a profit from their participants. Civil society is made up of both formal associations and informal groups (C. B. Flora & J. Flora, 2008).

To advance long-lasting change it is critical that development organizations learn from each other to avoid repeating the same mistakes. Time, money, and other resources can be saved through utilization of methods and techniques that already exist and are proven effective in the field. In order for this type of organizational learning across different organizations to be achieved, (a bridging of social capital at the organizational level), comparable information is needed by donors and TAPs regarding the practices and projects currently being implemented in the region. While many of the development projects in the region have laudable goals of reducing malnutrition, increasing family incomes, and promoting sustainable livelihoods, more information is needed regarding the specific agricultural practices that will be utilized to further these objectives. Given the history of environmental degradation in the region, restoration and conservation of natural resources is a key component of regional strategies to develop sustainable rural livelihoods (AECI-SEGEPLAN 2003). However, it is unclear what types of practices TAPs are promoting and implementing and the degree to which donors versus local people determine these practices.

As noted by Green, Kleiner, & Montgomery (2007), often there is not a clear consensus among groups working to combat poverty about which strategies are the most appropriate for confronting the problems (even after different strategies are tried and evaluated), and/or there is a lack of coordination of aid efforts and little agreement on the indicators of project success. As Valladares & Neira (2003) point out, differences of opinion and interests between and within governmental institutions and civil society groups, and between these groups and the public, further hinder development of cumulative strategies to effectively combat poverty.

Objectives

Using empirical data collected in a food insecure region of eastern Guatemala, this dissertation will examine the processes by which TAPs can become more effective through the use of two theoretical frameworks: the community capitals framework and agency theory. The community capitals framework is a methodological model designed to help organizations and other groups understand and work with existing assets within communities and will be used to show how TAP efforts can be better coordinated to result in long-term accumulation of development successes. The community capitals framework helps communities discover how existing assets can be mobilized and invested in to achieve economic security, ecosystem health, and social inclusion (C.B Flora, Emery, & J. Flora, 2012). Barriers to mobilizing these assets however, may come from outside forces. To account for those outside influences, I use an additional theoretical framework from institutional economics, the principal-agent model of agency theory. Agency theory when applied to organizations examines the transactions between groups and the pressures in place that influence the ability of each group to accomplish their objectives (Waterman & Meier, 1998). As Buffardi (2011) explains, “from a political economy perspective, the delivery of development assistance represents a classic principal-agent problem, in which principal actors attempt to influence the behavior of agents but are limited by the extent to which the agents’ actions are observable and principals have sufficient technical information to judge the agents’ performance” (p. 81). In addition, competition for continued access to funding decreases the incentive for collaboration in sharing access to community capitals with other agents.

The principal-agent problem can affect every stage of aid delivery including program design, implementation, compensation, incentives, evaluation, and allocation of funding (Martens, Mummert, Murrell, & Seabright, 2002; Radelet, 2006). From one perspective, taxpayers, their governments, and individuals giving charitable donations to organizations to design and implement foreign aid are the principals and the donor organizations who receive those, from USAID to Heifer International are the agents (Gibson et al., 2005; Martens, 2002). Donor agencies then contract local and/or international nongovernmental organizations (NGOs), firms or recipient country governments to implement their aid projects, putting the donor agencies in the position of principal and the program contractor in the position of agent. Along the entire chain of implementation principal-agent relationships exist with a potential for information asymmetries and unwanted outcomes of the aid contract appearing at each stage (Buffardi, 2011).

A key insight of the principal-agent model is that full responsibility for aid ineffectiveness cannot be ascribed solely to the aid recipient. Constraints emanating from the nature of the aid relationship and the aid delivery system as well as the aid agencies' own political constraints and incentive structures must also be taken into account (Paul, 2006). As Paul (2006) explains “ aid performance is not determined only by the individual circumstances of the aid program and the recipient country but also, and perhaps predominantly, by the incentives embedded in the aid agencies' institutional environments and delivery processes” (p.2). To achieve effective aid implementation, it is critical to design institutions and incentives that clarify goals, objectives, incentives, and rewards along the chain of aid implementation (Acharya, De Lima, & Moore, 2006; Buffardi, 2011; De Renzio,

Booth, & Rogerson, 2009; Seabright, 2002). In this study, goal clarity, objectives, and incentives provided by the donors to the TAPs and by the TAPs to the recipients communities are identified.

The community capitals framework and agency theory when combined help explain the current situation of development assistance. In order to design institutions and incentives that will allow for more effective aid, both outside influences and contextual factors need to be considered. The combination of these two frameworks allows for such an analysis. The community capitals framework, applied at the level of the farming communities with which the TAPs work, at the organizational level of the ‘TAP community’, and to an examination of the capitals which the donor agencies dispense, reveals the state of currently existing assets in the region as well as those that could be mobilized to enhance the region’s food security. Agency theory reveals influences from outside the community that may exist and hinder improved coordination among TAPs to better mobilize those community assets.

The analysis I present is also uniquely positioned in regard to the level of disaggregation of my empirical units. While agency theory is increasingly being used to consider the institutional environment and characteristics of donors, applications of this theory to empirical data are largely limited to macro-level units of analysis that examine the effectiveness of bilateral aid agencies on recipient countries at large (Knack & Rahman, 2007; Paul, 2006; Wane, 2004). Within country affects (the field-level implications of the principal-agent problem) are not considered. As Buffardi (2011) argues, mezzo-level cross donor and cross-project comparisons that investigate the ways donors influence aid implementation and effectiveness are key to developing effective poverty reduction aid

strategies. I undertake this type of mezzo-level analysis by utilizing agency theory to describe features of the institutional environment that cause the principal agent dilemma to arise among a varied group of technical assistance providers and donors. I apply agency theory across multiple types of agents (both local and international nongovernmental organizations as well as local, municipal level, government organizations) whose funding sources include a variety of principals (national government, bilateral, international nonprofit, etc); principles who often privilege certain capitals over others when making their investment decisions. By linking agency theory to the community capitals framework I establish how the structural incentives of principals and agents (funder and TAPs respectively) impact the practical, day-to-day decisions that affect the TAPs' abilities to mobilize the seven capitals of the community capitals framework to achieve effective collective action.

Dissertation Organization

The remainder of my dissertation is structured as follows. In chapter two I define food insecurity, describe approaches to examining food insecurity interventions, and present the two theoretical models I use to frame my study. In chapter three I examine the geographical context of the study, that of eastern Guatemala, and explain in greater detail the challenge of poverty and food insecurity faced by region's primarily rural inhabitants. In chapter four I explain the research methodology utilized and in chapter five I present the empirical data collected during a six-month period of field research on Copanch'orti' TAPs and their food security enhancement initiatives. Also in chapter five I use the community capitals framework (Flora & Flora, 2008) to show how TAP efforts can be better coordinated to result in more cumulative successes for food security enhancement and agency theory to

examine the difficulties that exist and hinder such coordination. Finally, in chapter six, I summarize my research and findings, discuss the limitations of my analysis, and point out areas for further study.

CHAPTER 2: LITERATURE REVIEW - FOOD INSECURITY AND RELEVANCE OF SELECTED THEORETICAL FRAMEWORKS TO TAP ACTIVITIES IN COPANCH'ORTI', GUATEMALA

Introduction

In this chapter I briefly explain the meaning and measurement of food insecurity and malnutrition. Given that one of the core objectives for most of the TAPs working in Copanch'orti', Guatemala is to enhance food security, understanding the meaning of this term as well as the potential implications of the area's malnutrition crisis is an important part of the discussion. I describe some of the approaches to studying and combating food insecurity, including economic-centered techniques focused on supply and demand of food supplies as well as more holistic approaches that consider an individual's ability to sustainably acquire adequate food. I then describe the two theories that will be used to frame the discussion and analysis of my data on TAP interventions in Copanch'orti', Guatemala, the community capitals framework and agency theory.

Defining Food Security and Food Insecurity

The term food security first appeared in international development literature in the 1960's and 1970's. Today, over 200 definitions of the term 'food security' can be found in published writings (Maxwell & Smith, 1992). With so many different definitions available, it can be challenging for development agents to come to an agreement on how to achieve or even measure food security. For this reason, starting in 1976, as a response to the global food crisis of 1972-74, global political focus turned for the first time to food security (FAO, 2003) and a single definition was created by the Food and Agriculture Organization (FAO) of the

United Nations (UN) to guide policy discussions. This definition stated that food security is “availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices” (FAO, 2003, p 27). As this definition illustrates, the focus during this time was only on the supply side issues of the volume and stability of commodity food supplies at the global level (FAO, 2003). Since that time, this definition has undergone several changes, evolving from a supply-only based definition to one that includes the demand component of consumer access to food and to include a focus on adequate nutrition and wellbeing. The most recent definition put forth by the FAO was issued as part of the 1996 World Food Summit and continues to be utilized today as a guiding definition by the UN and other international organizations as well as by national governments in both the global North and South. This definition states that food security is: “Access by all people at all times to enough food for an active, healthy life. Food security includes at a minimum: 1) the ready availability of nutritionally adequate and safe foods, and 2) an assured ability to acquire acceptable foods in socially acceptable ways (e.g., without resorting to emergency food supplies, scavenging, stealing, or other coping strategies)” (FAO, 2003, p.29).

This definition helps to ensure that people’s quality of life is taken into consideration. However, this definition of food security does not specify where the food will come from, or by whom it will be produced. Critics contest that this lapse has allowed unrestricted control of food by large multinational companies, which contributes to creating more dependency, poverty and marginalization, weakening people’s ability to provide for themselves and their families (McIntyre, Herren, Wakhungu, & Watson, 2009, pp. 113–114). Thus, instead of

relying on this definition, some groups prefer to seek food security through pursuit of food sovereignty.

Food sovereignty is based on the concept that people and sovereign states have the right to democratically determine their own agricultural and food policies. Via Campesina, a global farmers' movement, created the concept in the 1990's with the goal of promoting local autonomy, local markets, and community action as the foundation for achieving food security. For advocates of food sovereignty, it is critical for small-scale farmers to define their own agricultural, labor, fishing, food and land policies and practices. Proponents of the food sovereignty concept contend that a majority of small farmers and landless peasants are unable to compete in the current industrial agricultural paradigm and these proponents advocate for an end to World Trade Organization (WTO) control over food and agriculture (McIntyre et al., 2009, pp. 113–114). They argue that decentralized, diverse, and locally adapted food and farming systems, based upon democratic and participatory decision-making, will be more equitable and environmentally sustainable than a globalized food system (Cohn et al., 2006). However, while this term is gaining popularity, there are no agreed upon mechanisms for measuring the attainment of food sovereignty, nor standard descriptions of what food sovereignty looks like at the household level. Thus the term food security and its counter 'food insecurity' are most often used to guide measurement techniques and to divine strategies for pursuing nutrition and health improvements at the household level.

When food security is not realized, the term 'food insecurity' is generally used to reflect that problem. Food insecurity is the inability of people to access enough food for a

healthy and active life at all times. Depending on the context, the term ‘food insecure’ may be used interchangeably with the terms undernutrition and hunger. Undernourishment exists when “caloric intake is below the minimum dietary energy requirement which is the amount of energy needed for light activity and to maintain a minimum acceptable weight for attained height” (FAO, 2010, p. 8). Hunger in turn, can be understood as “...a potential consequence of food insecurity that, because of prolonged, involuntary lack of food, results in discomfort, illness, weakness, or pain that goes beyond the usual uneasy sensation” (Nord, Andrews, & Carlson, 2010, p. 55).

Malnutrition is another term that historically has been used to represent a lack of food security with traditional measures reported in terms of the health impacts of malnourishment which can include wasting (low weight for height), stunting, (low height for age), and underweight (low weight for age) (Alderman, Hoddinott, & Kinsey, 2006). However, since malnutrition can result from either excessive or inadequate intake of the appropriate amounts, types and varieties nutrients, overweight and obesity are also considered consequences of malnutrition. While overweight and obesity are growing problems in both the global North and South, these health impacts are at the opposite extreme from those experiencing undernourishment and are not traditionally at the heart of international discussions on ‘hunger’ and food insecurity (Leathers & Foster, 2009, p. 23).

Measuring Food Insecurity

While global and national estimates of food security are often compiled using calculations of actual and predicted supplies of commodity foods (particularly of grains and oils) (FAO, 2010), interventions to enhance food security generally take place at community

and household levels (Allen & Gillespie, 2001). Thus, this section will focus on techniques to measure food security primarily at the household level. However, it should be noted that household food security does not necessarily ensure intra-household or individual food security (particularly in developing countries where males are often favored over females in household food distributions) (Agarwal, 1997).

To measure food insecurity, data can be collected using anthropometric measures such as height and weight, or using food intake diaries. Both the anthropometric and food recall data collection methods can be relatively costly ways of measuring household food insecurity since field workers need to be present in the communities in order to capture the data. However, they result in very accurate data and can enable rapid appraisals and interventions for extreme cases. Site visits to households at risk for food insecurity can also be critical for discovering related health risks such as consumption of unsanitary water, anemia, vitamin deficiencies and related illnesses (*Physical status*, 1995). Even though less than one billion people are considered food insecure, the World Health Organization estimates that two billion people suffer from vitamin and mineral deficiencies. More than 250 million children suffer from vitamin A deficiency, up to half a million children go blind every year because of this deficiency, and forty percent of children in poor nations are anemic due to low iron (World Health Organization, 2009). As these problems indicate, the consequences of inadequate food intake can be devastating. As Leathers and Foster (2009) explain, malnutrition can have far reaching consequences both for individuals and nations. People who are malnourished are more susceptible to disease, have a reduced capacity to do physical work and have impaired intellectual growth. These consequences in turn reduce a

person's ability to be productive economically and when viewed in aggregate where malnutrition is widespread, can reduce the pace of a nation's economic growth (Leathers and Foster, 2009, p.55).

Approaches to Examining and Combating Food Insecurity

Economic analyses of the causes of malnutrition and the policies necessary to combat malnutrition use the tools of supply and demand to examine the purchasing power of individuals experiencing food insecurity. As Leathers and Foster (2009) explain from an economic standpoint, a household is food-insecure if it does not produce enough food for an active healthy life, and its income is less than the costs of buying enough food to make up for their food production deficit² (p.118). The supply-demand framework of economics contributes to an understanding of food security by explaining the factors that influence the price of food and the income levels needed to sustain a household's ability to acquire food outside the home. However, given that the definition of food security (access by all people at all times to enough food for an active healthy life) emphasizes not only prices and incomes, but also nutritional needs and home food production, economic models of supply and demand are limited in their ability to reflect on the full range of conditions that lead to a household being food secure. Amartya Sen, 1998 Nobel Prize winner for the field of economics, considers that "people's consumption depends on their 'entitlements'; that is, on the bundles of goods over which they can establish ownership through production and trade, using their own means" (Sen, 1991).

² A household's food production deficit is the difference between the amount of food the household needs and the amount the household produces for itself (Leathers and Foster, 2009, p.118).

People's ability to establish ownership over these consumptive bundles of goods depend on the cultural, political, and social systems in which they live as well as on the ecological conditions impacting their lives (Leathers & Foster, 2009, p. 119; Sen, 1991). For Sen, whose work was influential in the development of the United Nation's Human Development Report that moved analyses of poverty away from purely economics to include human and social factors, it is important to consider not only the resources available to the poor but their ability to use those resources to improve their lives ("National Development Agencies and Bilateral Aid," 2009, p. 242). Using this broader definition of poverty and food security, a variety of holistic approaches that seek to build off people's existing abilities and resources has been created for use in the development context. These approaches, known as assets-based approaches to community development, were devised as a response to 'needs based development', which scholars saw as a fundamental reason why struggling communities were hindered in their ability to make significant progress out of poverty.

Needs based strategies, used by institutions, governments, donors, and researchers to find out what is wrong in a community, can put the community on a path to undervalue the gifts that individuals in the community have to offer. Need based strategies also lead to the replacement of care by individuals and community based organizations to the delivery of services by professionals. This leads to the belief that it is the welfare professionals and not the local church who are able to help struggling families; that it is the social worker and not the local community center who knows the right way to deal with at-risk teens, and that it is the school nutritionist who knows the proper way to feed one's children not the family. Such professionalization of the development process undermines the confidence of both

individuals and communities to solve their own problems and leads to isolation of families in need as they become surrounded by service professionals (welfare professional, parole officer, food assistance officer, etc.) and cut off from the community (Kretzmann & McKnight, 1993).

The assets-based approach seeks to reestablish the confidence of individuals and community groups to help one another by identifying the gifts that each individual has that can be used as a contribution to the community and to identify community groups that could be mobilized to aid the community in helping itself. An asset is a stock of financial, human, natural or social resources that can be acquired, developed, improved and transferred across generations (Ford Foundation, 2004). Assets-based approaches do not seek to ignore the community's needs. Many communities have problems, several of which are rooted in historical oppression and misappropriation of community resources by outsiders. The problems of the community tend to make up the overwhelming majority of news stories reported by the media and the individuals in the community are well aware of the many challenges they face. Rather than ignore needs, assets-based approaches enable communities to look at their needs from a new perspective that values the talents of all individuals regardless of what outside labels have been applied to such persons (ex-con, disabled, welfare recipient, illiterate, elderly, etc.) (Bebbington, 1999; Chaskin, 2001; Kretzmann & McKnight, 1993)

While the application of assets-based approaches has been done in the global North in the context of 'community development', (see for example Kretzmann & McKnight (1993) who describe successful utilization of assets-based community development in towns across

the U.S.), the approach has been applied in the international context through livelihood frameworks. In Bebbington's (1999) classic work for example, the concept of livelihoods is built upon to emphasize the need to consider not only the resources that people use in building livelihoods but also those assets that give people the "capability to be and to act" (p. 2022). Such work has laid a theoretical foundation that has allowed various applications of assets-based development to empirical analyses.

Alwang, Jansen, Siegel, & Pichon (2005) for example, use the approach to show that assets have direct effects on a the well-being of a household and indirect effects on a household's choice of livelihood strategies. Using a combination of quantitative analyses of household level data, geographic information systems (GSI) mapping techniques, and qualitative analyses of assets and livelihoods, the authors examine the differential effects of policies and asset bundles across space and households. They determine that access to agricultural and other community organizations is associated with higher levels of well-being, as are education and training. They also find, however, that diversified livelihood strategies are associated with higher incomes and conclude that investments in agriculture alone cannot solve the rural poverty problem. They also report that "the asset-based framework has the potential to be an important tool for policy formulation and targeting" (p.37).

Other interesting cases are those presented by Mathie & Cunningham (2008), wherein the Asset Based Community Development (ABCD) approach promoted by the Coady International Institute was deliberately introduced by the outside development agency, Oxfam Canada, and applied by locally established NGOs in Kenya, Egypt, and Ethiopia. The

results of these interventions were largely positive. The authors write that individual community members reported changes in attitudes regarding their capabilities as individuals and a greater willingness for community members to work together (pp. 272-273; 278-280). In some cases women gained increased power over household decision making as their abilities to contribute to income generating activities were recognized (pp. 287-288; 292-293). Landless and marginalized ethnic groups that had previously been excluded gained acceptance as their skills as potters and blacksmiths gained appreciation (p. 284). NGOs and government officials were also reported to have seen positive changes with ABCD communities being more willing to get involved with government initiatives and with these communities approaching government offices with the goal of getting technical assistance instead of free goods as in the past (pp. 289-290). The Community Capitals Framework, discussed below, is an additional assets-based approach to development.

Community Capitals Framework

Definitions: Communities and Capitals

Communities

The Community Capitals Framework (CCF) is an analytical methodology that uses an assets-based approach to development. The methodology can be particularly useful in understanding a community's existing resources from a systems rather than solely individual perspective. A foundational aspect of this methodology is that of community. Often communities are thought of as geographic boundaries within which people have common goals and needs. While the concept of community is often based on a shared sense of place

(C. B. Flora & J. Flora, 2008, p. 7), it is important to recognize that communities are not homogeneous but rather driven by differences in power and privilege both among and within households (Mathie & Cunningham, 2008, p. 7). As explained by Defilippis, Fisher, & Shragge (2006) communities are formed both by the practices and relations that take place within them and by larger, external contexts and practices. Following C. B. Flora & J. Flora (2008) I use the term community to refer to both communities of place, referring to geographic location, and communities of interest, referring to relationships based on common ideas, goals, or beliefs that give identity and meaning to their members (p. 8).

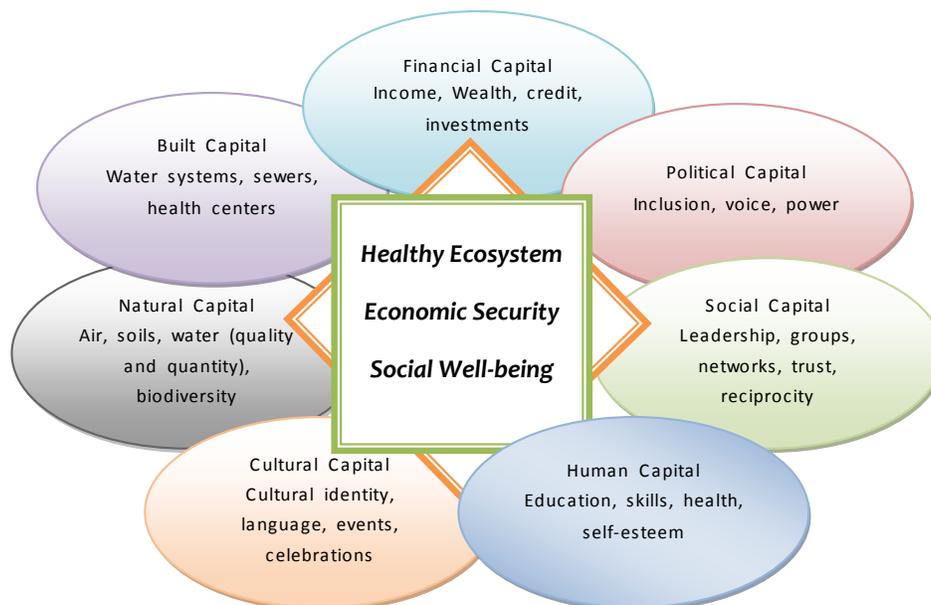
The TAPs studied for this research work within communities that are geographically and politically bounded into units at the levels of watersheds, municipalities, villages (*aldeas*) and even smaller areas known as *caseros*. They also work with communities in the sense of groups that share a common interest, such as women's groups focusing on agricultural entrepreneurship. Finally, the TAPs themselves, when taken as a group, form a community of organizations and have resources that can be invested both individually and collectively to mobilize capitals both at the level of their organizational community and throughout their other levels of engagement in the region (Freeman & Audia, 2006).

Capitals

From the perspective of the CCF all communities have resources. These resources can be spent, saved for future use, or invested to create new resources. When, over time, a community invests the resources they have to create new resources these investments can be termed 'capital'. As depicted in Figure 2-1, the CCF includes seven types of capital: natural, built, financial, political, human, social, and cultural.

Natural capital includes soil quality, water quantity and quality, natural and cultivated biodiversity, and landscapes, while built capital consists of physical infrastructure, machinery, and tools, and financial capital is money that is used for investment rather than for consumption. Political capital is the power to influence the standards, rules, regulations and asset distributions of state, civil society, laws, and the market entities. Political capital is fostered by purposeful organization and development of strategic connections.

Social capital refers to the bonds that exist between people in the community and with outside groups. Social capital consists of groups, organizations, and networks in the community, the sense of belonging and the bonds between people. These groups and networks are a resource because they can be a source of shared knowledge and ideas, reciprocal labor and money exchange, or other mutually beneficial endeavors. These groups can also create norms and trust that give a community its reputation. Human capital includes health, education, leadership skills, self-esteem, and the ability people have to access and utilize other resources. Cultural capital determines how we see the world, how we explain what happens, and what we think is possible to change (Fey, Bregendahl, & Flora, 2008).

FIGURE 2-1: COMMUNITY CAPITALS FRAMEWORK

(Adapted from (C. B. Flora & J. Flora, 2008)

Why use the CCF: Comparisons with other Assets-Focused Frameworks

As discussed previously assets-based approaches to development were created as a response to needs-based development strategies that focused on the problems to be addressed and did not take into account existing resources and skills that could aid in the discovery of development solutions. Besides the CCF, two other widely used frameworks that use an assets approach are the Assets Based Community Development model created by Kretzmann & McKnight, (1993), and discussed in detail above, and Sustainable Livelihoods Approaches (SLA) also developed during the 1990's. In SLA a livelihood consists of the resources, capacities, and activities needed to live. A livelihood is sustainable when a person or household can maintain or improve their resources and capacities without deteriorating their natural resource base and recover from shocks or stresses. While the ABCD approach

seeks to identify the strengths or 'gifts' of individuals that can be harnessed toward community development goals (Kretzmann & McKnight, 1993), SLA analyzes five capitals: human, social, natural, physical, and financial. These capitals are analyzed in the context of promoting improvements in food security, nutrition, and health as well as improvements in household and community well-being, and sustainable natural resource management (Bebbington, 1999; Gutierrez-Montes, Emery, & Fernandez-Baca, 2009; Scoones, 1998).

The CCF, designed as an analytical tool to be used in the field by development practitioners and community members to assess, mobilize, and invest in key resources towards a sustainable collective future (C. B. Flora, Emery, and J. Flora, 2012), is particularly suited for the present study, which seeks to examine not only household attributes as with SLA, but those existing among TAPs and families, within and across communities, at a regional scale. Moreover, unlike Kretzmann and McKnight's (1993) ABCD approach, the CCF considers not only interactions within the community but also outside influences, particularly through the lens of political capital. This allows an understanding of power dynamics that influence the ability of the community to mobilize the seven capitals.

All three of these approaches lack an explicit gender focus. This can limit the usefulness of the methodologies in targeting and including women or other disadvantaged groups and in uncovering and challenging inequalities. While all of these methods have been used in conjunction with gender equity analyses and projects, this has happened because the practitioners made purposeful efforts to include women (see for example Flora, 2001; Gutierrez-Montes, Emery, & Fernandez-Baca, 2012). On their own, and when used without

such purposeful, gender focused intentions, there is no indication that such inclusiveness will result from use of these analytical strategies (Krantz, 2001). Moreover, when these methodologies are used to analyze the household (as with the Sustainable Livelihoods approach) or the community as with the CCF (Gutierrez-Montes et al., 2009), intra-household differences can be ignored, as can the fact that within a community certain voices are often privileged over others (Krantz, 2001).

In the present case, however, the impact of these limitations is minimal given that the focus is not explicitly on rural families, but rather, the community of TAPs working in Copanch'orti'. While the TAPs do engage with issues connected with equity for women and marginalized groups as part of their work in rural communities (as will be discussed in later chapters), as organizational entities, the TAPs themselves are not a disadvantaged or marginalized group. Moreover, while the diversity of projects and methods in use by the various TAPs contributes to calls for more coordinated and cohesive action towards development (Delgado, 2010), such diversity may actually lend itself to more balanced community negotiations than in other arenas. Given that each TAP faces their own demands regarding donors and constituents, there is little incentive for elite capture, that is, for a particular TAP to dominate collaborative spaces. Rather, the focus of the CCF on the interaction of structure and collective agency encourages participants and researchers to focus on discovering how communities can work together for change (Flora et al., 2012) which makes it an ideal tool to use for examining Copanch'orti' TAPs striving to promote positive and sustainable change in the region.

It is important to note that while the CCF and other assets-based approaches can aid TAPS in focusing their efforts on supporting the development of a community's existing resources, utilizing an assets-based approach does not make development agents apolitical. Decisions about how development projects are executed may still be based on how the aid recipients will be evaluated by donors. One popular approach to evaluation for example, results-based management, requires measurable and verifiable results of the aid's effectiveness. While the goal of this strategy is to reduce mismanagement of aid, not all goals can be accurately quantified a-priori. Those less tangible objectives, although equally important for long-term success, can miss out on receiving the bulk of aid efforts in favor of goals with more measurable indicators ("National Development Agencies and Bilateral Aid," 2009, p. 148). Thus it is important to consider the influence of other actors on TAP decision making processes. The principal-agent model of agency theory, described below, will be utilized along with the community capitals framework to allow a more complete examination of how TAP activities may be better coordinated to result in cumulative successes in regional food security enhancement.

Principal-Agent Model of Transaction

To understand the influence donors exert over the choices made by technical assistance providers (TAPs), it is useful to consider the dynamics between these two groups using the principal-agent model of transactions of agency theory. Agency theory is utilized in a diverse range of disciplines including economics, law, political science, finance, sociology, and public administration to elucidate contractual relationships between individuals or groups (principals and agents) that buy or exchange good or services. As Perrow (1986) explains:

In its simplest form, agency theory assumes that social life is a series of contracts. Conventionally, one member, the ‘buyer’ of goods or services is designated the ‘principal’, and the other, who provides the goods or service is the ‘agent’ – hence the term ‘agency theory’. The principal-agent relationship is governed by a contract specifying what the agent should do and what the principal must do in return (p. 224).

Applying that model to this study, it can be assumed that donors (the principals) have incomplete information on which to base funding decisions, while TAPs (the agents) have few funding options and thus have considerable incentive to satisfy the principals. As stated by Nunnenkamp, Weingarh, & Weisser (2009), to demonstrate success, TAPs are “inclined to minimize risk which weakens their incentive to operate in difficult environments where failure may jeopardize future funding” (p. 423). Thus it can be advantageous to TAPs to work towards shorter-term, easier to achieve objectives that produce visible results. This can be accomplished by establishing projects addressing less entrenched forms of poverty (Nunnenkamp et al., 2009). This may explain the popularity of home gardening projects (Behrman, Dillon, Moreira, Olney, & Pedehombga, 2011; Faber, Witten, & Drimie, 2011; Keatinge et al., 2012; Marsh, 1998) to enhance food security. While the long-term success of such projects may be questionable, (particularly after external support from TAPs is removed), transforming a barren or ill-used space into a flourishing garden abundant with produce may be a relatively quick and cost-effective way of demonstrating positive results to donors.

To further their own agenda (which includes presenting a likable public appearance to their own financial backers), donors seek to support and promote innovative strategies which

they feel will address past problems and program deficiencies, as noted in the many agenda setting documents of donors that tout the value of ‘lessons learned’ and use of ‘best practices’. Thus, to receive funding, TAPs must continually change their work to appear innovative and cutting edge. This can result in a service provider ending projects that may need further investments for long term sustainable progress and proposing new ones in an effort to ‘revamp’ their trajectory and appear to funders that they are gaining new knowledge and evolving in response to ‘lessons learned’ (Easterly, 2002).

Also, there can be incentives for TAPs to locate where donors are engaged instead of moving to harder to reach areas with more marginalized populations. Initiating projects in an area in which other TAPs are already present reduces the ability of the donor to determine who is responsible for development outcomes (both positive and negative). In such circumstances, donors are less likely to definitively evaluate the work of a TAP as poor quality and are less likely to restrict future funding (Nunnenkamp et al., 2009). As a result of such systems, TAPs drawing on international development aid can struggle to gain trust from community members. When analyzed from the lens of principal-agent interaction, aid contracts are negotiated solely between the western donors (principals) and heads of the TAPs (agents). Local accountability becomes minimized and transmission of outside values is amplified, which harms the legitimacy of the TAP leadership among its constituency and can even result in reduced membership and participation from local communities (Bano, 2008).

Recent empirical research that has examined the principal-agent dynamic between donors and NGOs includes work by Nunnenkamp & Öhler (2011). In examining whether or

not major motives driving aid (recipient need, recipient merit, and self-interest of donors) differs across official aid channels, they find that in Germany, the extent to which aid allocation is needs based differs significantly across aid channels, with certain aid groups lacking a true poverty orientation. They also found that financial cooperation was associated with political support by recipient countries in the United Nations General Assembly. They conclude that "The closeness of NGOs to the poor is less compelling than widely perceived, as far as cross-country studies can tell. More flexible forms of ODA [Official Development Assistance] such as financial grants tend to involve a trade-off for the recipient between more discretion in how to use aid and more pressure to politically support the donor" (Nunnenkamp & Öhler, 2011).

Herzer & Nunnenkamp (2012) examine the possible effects of non-altruistic incentives of aid allocation in their investigation of the distributional effects of Official Development Assistance. Specifically they test the notion that donors "may allocate aid in a way that deviates from the pro-poor growth rhetoric" by studying the effect of foreign aid on income inequality. Employing data from 1970–1995 for 20 countries they found that aid exerts an inequality-increasing effect on income distribution and conclude that donors do not necessarily target those with the greatest need. The authors conclude that it is important to consider the commercial and political self-interest of the donors, stating that "The temptation of aid agencies to put all the blame on rent seeking in recipient countries tends to ignore that their own incentive problems may prevent aid from reducing inequality" (Herzer & Nunnenkamp, 2012).

Brass (2012) also considers the impacts of incentives on development agent decision making in her examination of the factors influencing NGOs to choose their locations within a country based on data from Kenya. Following Fruttero & Gauri (2005) she contends that understanding the various factors that influence NGOs' decisions about where and with whom to work will aid policymakers and donors in understanding how NGOs work and what their priorities are as organizations. Brass (2012) further explains that this information is becoming particularly important as the number of NGOs in developing countries continues to grow, and as these non-state actors increasingly take part in state decision-making and implementation of development efforts. Her results show that both need and convenience play a role in determining NGO location.

By examining influences on donor and NGO decision-making Brass (2012), Fruttero & Gauri (2005), Herzer & Nunnenkamp (2012) and Nunnenkamp & Öhler (2011) contribute to an understanding of externally induced social change. They examine the political environment in which donors and NGOs work. NGOs and donors are not neutral; they have agendas, priorities and political inclinations ("National Development Agencies and Bilateral Aid," 2009, pp. 140–141), and establishment of these organizations can often be rooted in historical inequalities (Kolb & Bartunek, 1992, pp. 165–166). The success of one NGO over another or the success of one person in an NGO or donor agency in becoming the leader is likely based on biases that are part of the historical culture of the society. Analyses of principal-agent interactions reveal that evaluations of an NGO's degree of success in achieving change can be more accurate and expectations of change can be made more realistic if the issues driving and influencing these organizations and the persons working in

them are better understood. While NGOs are capable of driving change through their investments in education, health, sanitation, finance, etc., studies of principal-agent relations reveal that the scale and scope of the change that is possible and the individuals that will have the opportunity to participate in that change process can be influenced by the transactions that occur in the NGO-donor environment and by pragmatic considerations that influence the working conditions of NGO staff (Brass, 2012; Fruttero & Gauri, 2005; Dierk Herzer & Nunnenkamp, 2012; Peter Nunnenkamp & Öhler, 2011). Such findings are relevant when analyzing attempts to induce social change because they make it clear that change should be examined within realistic parameters. Instead of simply asking whether or not an NGO targeted the very poor, we should first ask, “Is it a goal of the NGO to target the very poor and what pragmatic barriers might hinder their ability to do so?” Then, controlling for those pragmatic barriers, such as distance from the poorest, most marginal groups; short time period for producing results; low levels of human capital among those populations, etc., we can look across NGOs and discover those with successful innovations for targeting these groups. We could ask, for example, not only what did they do differently than other NGOs, but how did the way their funding was set up or the evaluation criteria for their program make it possible for innovative TAPs to succeed.

Concluding Remarks

As revealed in the literature, while poverty and food insecurity are grave challenges that governments, international funding agencies, and NGOs are all trying to address, these agents still have their own agendas about which they need to be transparent. Approaches to development have evolved from needs-based strategies to assets-based strategies that focus

on the existing resources of families and communities struggling with poverty. Still, given the severity of global poverty-related crises, such as malnutrition and food insecurity, pressures on the international aid community are rising, resulting in mounting incentives for tradeoffs between the need to show immediate results and long-term intangible investments in holistic development programming. A better understanding of the strategies being used by development practitioners is critical to inform both research and policy decisions about these tradeoffs. What capitals are mobilized? Which are valued as inputs and outputs by donors? Moreover, from a practical standpoint, TAPs working in a single region toward a common goal can benefit from systemic investigations that reveal trends, common challenges, and opportunities for collaboration among peer organizations. Such targeted explorations however, are largely absent from current research agendas. As Lewis & Opoku-Mensah (2006) explain, while an extensive research literature on NGOs has emerged over the past twenty years examining NGO roles in development in a variety of geographical contexts, a growing critique of this body of work has also emerged. Such critiques posit that within the body of development research there is "an over-emphasis on organizational case studies that are rich in detail but lacking in contextualisation" (Lewis & Opoku-Mensah, 2006, p.669). To mitigate this problem, Lewis & Opoku-Mensah, (2006) stress that "We must therefore seek to improve our understanding of NGOs as both subjects of development research, and as actors in development processes, since these are inextricably linked" (p. 674). Following the call of Tvedt (1998) the authors conclude that what is needed is research which "better reflects empirical realities of the world of NGOs, including their wide diversity"(Lewis & Opoku-Mensah, 2006, p.673). While the recommendations of these authors focuses on research on NGOs, there is also a growing need for analyses that incorporate the insights of

various stakeholders, both government and nongovernmental, civil and private (Committee on Twenty-First Century Systems Agriculture, 2010; Food and Agriculture Organization of the United Nations., 2011; McIntyre, Herren, Wakhungu, & Watson, 2009). Such calls reflect the growing need for collaborative approaches to poverty reduction and sustainable development, as put forth in the 2008 International Assessment of Agricultural Knowledge, Science and Technology for Development, which determined that:

Strong collective will and creativity are needed to develop new institutional governance arrangements that can generate and implement agricultural policies that prioritize the small-scale farm sector; rural livelihoods; national food security; a public goods focused agricultural research agenda; and the protection of sustainable management of natural resources" (IAASTD, 2008, p. 5).

To contribute to filling these gaps, this study investigates TAP (comprised of both NGOs and government agencies) activities in Copanch'orti', Guatemala. Based on this data I consider what policies should be promoted to support expansion of mechanisms that further food security enhancement for rural families in Copanch'orti'. The following chapters present the methodology used and data collected in pursuit of these objectives.

CHAPTER 3: CONTEXT OF THE STUDY

Introduction

In this chapter I will describe the persistent problems of food insecurity in Guatemala and specifically in the Guatemalan department of Chiquimula, where I collected the data used in this study. I will explain the way nonprofit organizations are characterized in Guatemala, and I will briefly discuss issues of violence and governmental corruption that affect the environment in which TAPs work. This information will be useful in later chapters in understanding how these contextual factors act as barriers to the accumulation of development successes.

Food insecurity in Guatemala and Chiquimula, Guatemala

The nation of Guatemala is comprised of 108,889 km² distributed among 22 administrative and political subdivisions known as departments. The population is 14,636,487, which represents approximately 2,983,543 households with an average household size of 4.91 people. Approximately 52% of the population is 20 years old or younger (Sanchez Dominguez, Toledo Chaves, & Rodriguez Valladares, 2011). The average population density is 135 people per km². Approximately 48% of Guatemala's population lives in urban areas. Urban is defined as an area having at least 2,000 inhabitants with electricity and piped drinking water to at least 51% of the area's housing units (Instituto Nacional de Estadística Guatemala, 2011). The 2011 measurements for poverty and extreme poverty were based on annual incomes of 9,030 Guatemalan Quetzals (Q) (1,134.81 USD) (poverty) and 4,380Q (560.14 USD) (extreme poverty). Using those measures Guatemala's

National Statistical Institute reports that in 2011 41% of the population lived in poverty and 13% lived in extreme poverty (Sanchez Dominguez et al., 2011).

About 39% of Guatemalans identify themselves as indigenous and 73% of indigenous Guatemalans are poor. Accordingly there are large gaps between the indigenous and non-indigenous populations in the attainment of access to education and health services, land tenure, and political participation among other equity indicators (Hall & Patrinos, 2006). For an excellent and detailed discussion on the meaning of indigenous in Guatemala and in particular for the Chorti' Maya, see Metz (2006), who found that the Ch'orti' do not exhibit obvious indigenous markers such as use of their traditional language or dress as do Mayas of western Guatemala, Chiapas, and the Yucatán Peninsula of Mexico, but continue to create positive identities for themselves that are distinctive and indicative of their cultural heritage (Metz, 2006).

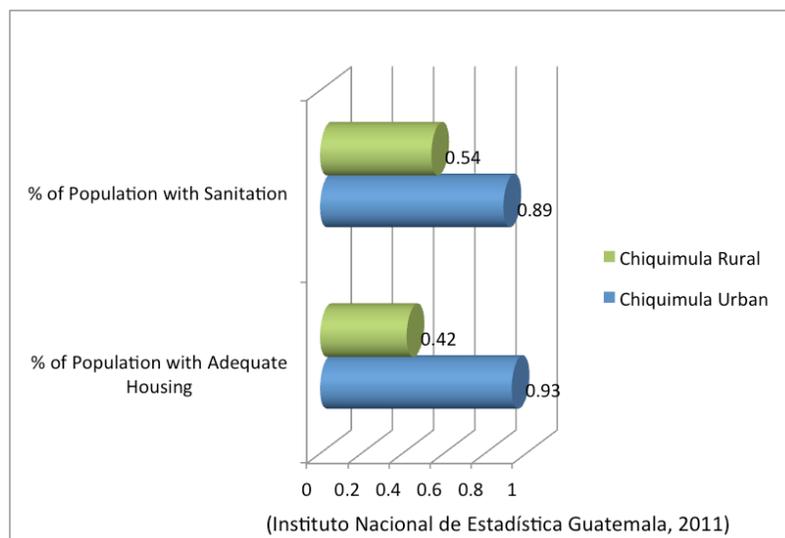
Chiquimula

I collected data for this dissertation in the Copanch'orti' area of Eastern Guatemala which includes four municipalities, Camotan, Jocotan, Olopa, and San Juan Ermita, in the department of Chiquimula. The department of Chiquimula is located in the northeast section of Guatemala bordering the Guatemalan departments of Zacapa, Jalapa and Jutiapa and the countries of El Salvador and Honduras. According to the most recent estimates, the population of Chiquimula is 370,891, of which 45,558 identify as Maya, 255,921 as Ladino, 76 as Xinka and 20 as Garifuna ³. In 2011 62.68% of the department's residents lived at or

³ While only 76 Xinka (a non-Mayan indigenous people group of Guatemala) and 20 Garifuna (a people group with a mix of African and indigenous Caribbean ancestry) are reported to live in the Department of Chiquimula,

below the poverty line of \$1,134.81 USD in income per year. There are approximately 73,471 households in Chiquimula, of which 27% are located in urban areas. While poverty in Chiquimula's urban areas impacts less than one-fifth of the population (17.90% of the urban population), poverty in rural areas affects the majority of the population with 78.98% of Chiquimula's rural residents living at or below the poverty line. Well over a third of the rural population, 37%, live at or below the extreme poverty measure of an annual income of \$560 USD or less (which is equivalent to living on \$1.53 USD per day). Figure 3-1 depicts the percentage of households with adequate housing (defined as houses containing flooring, walls, and roofs) and the percentage of houses connected to piped water and sewage disposal systems for the department of Chiquimula comparing urban and rural households (Instituto Nacional de Estadística Guatemala, 2011).

FIGURE 3-1: DEPARTMENT OF CHIQUIMULA QUALITY OF LIFE INDICATORS



at the national level, 16,214 people self-identified as Xinka and 5,040 as Garifuna in Guatemala's 2002 National Census (Instituto Nacional de Estadística Guatemala, n.d.; Minority Rights Group International, 2011).

The population density of Chiquimula is 153 people per km² (“INE Guatemala,” n.d.; Sanchez Dominguez et al., 2011). The average farm size is 6.75 acres (compared with an average farm size of 11 acres for the nation as a whole) (Instituto Nacional de Estadística Guatemala, 2004). Metz (2006) reports that this land never lays fallow, soil fertility is low, and forests are being cleared at an alarming rate, leading to soil erosion and water pollution. Although development aid has promoted technological intensification and the Ch'orti's have been adopting chemical fertilizers since the 1970s, only 41% of households find them affordable (Metz, 1998, p. 332). Moreover, runoff from chemical applications of fertilizer and pesticides has degraded water quality both for rural farm families and for urban centers in Honduras and El Salvador which share one of the department's principal watersheds, the Upper Lempa River Watershed (CATIE, 2008).

While families supplement subsistence agriculture by selling handmade crafts, fruits and vegetables, Metz (1998) also notes that Ladino intermediaries control local marketable products through their monopoly of vehicles and town stores, limiting the profitability of such activities for farm families. Additional survival strategies include participation in wage labor, with some males traveling to Zacapa, Guatemala City or to Honduras to work as day laborers on coffee plantations, earning up to \$2.75 per day (Metz, 2001). However, according to the 2003 Agricultural Census, of the 23,104 farmers participating in the survey in the Department of Chiquimula, 20,968 reported having no off-farm employment (Instituto Nacional de Estadística Guatemala, 2004, p. 44). Moreover, even for those households with males with off-farm employment, the money from these off-farm jobs does not necessarily result in improved household nutrition and health, as numerous studies emphasize the

importance of women's control of finances in contributing to child and family health. Specifically, when women have more influence over economic decisions, their families allocate more income to food, health, education, children's clothing and children's nutrition (FAO, 2011a; Quisumbing, Brown, Feldstein, Haddad, & Peña, 1995).

Due to these challenges the rural communities in Copanch'orti' account for some of the country's highest rates of malnutrition. The prevalence of stunting or height retardation in young children is a valid and accurate indicator of health and nutritional status, for it reflects inadequate nutrition from conception through the first three years of life, a time when growth of young children occurs the fastest (Allen & Gillespie, 2001). Prevalence of chronic malnutrition, measured by prevalence of stunting (low height for age) ranged between 60-73% of the population in 2008, as can be seen in Table 3-1 ("Desnutrición Crónica," n.d.).

TABLE 3-1: RATES OF CHRONIC MALNUTRITION IN COPANCH'ORTI'

| PREVALENCE OF STUNTING IN THE COPANCH'ORTI' AREA OF CHIQUIMULA | | |
|--|-----------------|---|
| MUNICIPALITY | NUMBER OF CASES | PREVALENCE (PERCENTAGE OF CHILDREN AFFECTED) |
| <i>JOCOTÁN</i> | 2,324 | 72.80% |
| <i>OLOPA</i> | 986 | 72.30% |
| <i>CAMOTÁN</i> | 2,054 | 63.50% |
| <i>SAN JUAN ERMITA</i> | 564 | 59.80% |

("Desnutrición Crónica," n.d.)

In addition to the widespread problem of chronic malnutrition, a 2009 survey of severe acute malnutrition among children in Guatemala was undertaken following the previous year's spikes in the prices of grains and fuel (Delgado, 2010). Concerns were

especially high for the Department of Chiquimula and surrounding areas, as an extended drought led to the declaration of a state of emergency by then President Álvaro Colón on September 8, 2009. Accordingly, families in Chiquimula and surrounding departments in the East Central Pacific region of the country lost between 50-80% of corn and bean harvests (Fieser, 2012).

The 2009 survey of malnutrition found that an estimated five percent of children measured had severe acute malnutrition (measured by middle upper arm circumference) (Delgado, 2010). Malnutrition among school children in Guatemala is associated with high levels of poverty, lack of running water in the household, high levels of crowding in the home, use of wood fire as the main fuel source for food preparation, density of small farms, a high percentage of illiteracy among women, and a high level of job insecurity (Delgado, 2010). To combat these challenges there are a variety of different organizations working toward the goal of improving the lives of the rural families in the area. However, the ability of these groups to be successful is impacted by the environment in which they work, which in Guatemala includes elements of violence and a lack of political freedom, particularly for those groups working to combat the inequalities underlying the malnutrition problem as will be discussed in the following section.

A Note on Nongovernmental Organizations in Guatemala

The data collected for this research was collected from both governmental organizations and nongovernmental organizations (NGOs). NGOs in Guatemala can be categorized according to the type of funding and whether or not Guatemala is the sole country in which they operate as either international or national NGOs. International NGOs

are those whose work transcends the territorial boundaries of a particular country. These organizations are maintained through funding sources outside the country of Guatemala, but are expected to operate in accordance with all relevant Guatemalan laws. National NGOs are those whose creation and operation are focused primarily on issues within the country of Guatemala. Their funding may be from international sources or from the government of Guatemala, or other national or local donors (Fuentes Orozco de Maldonado, 2007). The government of Guatemala requires NGOs to register with the Guatemalan Ministry of Governance. Doing so establishes the nonprofit organization as a legal entity, which allows the organization to conduct business in the country, such as renting or purchasing property, or entering into labor contracts. It also allows the nonprofit organization to qualify for tax-exempt status in its business operations. Beyond the Guatemalan Ministry of Governance with which NGOs must register, the other governmental entity working with NGOs is the General Secretariat of Planning and Programming of the Presidency (Spanish acronym: SEGEPLAN). According to their website, SEGEPLAN monitors nonprofit and civil society organizations, facilitates the public investment process, the management, negotiation and monitoring of international cooperation for the development of Guatemala, and assesses the implementation and impact of these public investments (“Secretaría de Planificación y Programación de la Presidencia - Segeplan,” n.d.). It is unclear, however, what support these institutions provide to the nonprofit employees in their daily activities, particularly with regard to their ability to function safely and autonomously.

The safety of TAP employees is an important aspect to consider before any assessment of their work can take place. This is particularly important in Guatemala where there are increasing instances of violence, which act as barriers to effective poverty

mitigation work. According to the US State Department's Country Report of Human Rights Practices in Guatemala, human rights-related problems in 2011 included widespread institutional corruption particularly in the police and judicial sectors. Police have been implicated in drug trafficking, murders, extortion, and violence against women. While the US State Department does report increased efforts by the government of Guatemala to prosecute and punish police and other officials who have committed crimes and abuses, they also report that impunity for government officials involved in committing crimes remains a widespread problem. This insecurity becomes part of the TAPs' working environment and can also have direct implications for TAP employees as threats and intimidation against, and killings of, journalists and trade unionists, as well as a failure by the government to protect judicial officials, witnesses, and civil society representatives from intimidation, are all problems currently found in Guatemala (U.S. Department of State, Bureau of Democracy, Human Rights and Labor, n.d.). One nonprofit organization which tracks and advocates for the protection of civil society workers, the Guatemalan Human Rights Defenders Protection Unit (Spanish acronym: UDEFEGUA) reported 402 attacks against human rights defenders, including 19 deaths during 2011, a 33% increase from 2010 ("UDEFEGUA," n.d.). These problems impact the security of NGO employees and others who work to end food insecurity and poverty throughout the country. These workers are at risk not only in their daily activities but also in advocating for the changes that are needed in the political arena because there is no guarantee that they can do so without fear of retribution from protected personnel in political arenas who oppose their activities ("Observatorio Interamericano de Seguridad - OEA," n.d.).

Conclusion

In this chapter I have briefly described the problem of food insecurity in Guatemala and in the eastern region of Guatemala in the department of Chiquimula where data for this study were collected. I have described how nonprofit organizations are categorized and the support given these groups from an administrative standpoint through government ministries at the federal level. I have also given a brief overview of the country's current, increasing violence against nonprofit, human rights workers and activists. This information provides a foundational understanding of both the problems the nonprofit organizations and other TAPs are working to solve and the challenges that are inherent in their working environment as they attempt to solve those problems. Such an understanding will be helpful in considering the data collected on TAP actions in Copanch'orti' to enhance regional food security. An explanation of how this data was collected and analyzed is presented in the following chapter with results and data analysis presented in chapter five.

CHAPTER 4: METHODOLOGY - FIELD RESEARCH METHODS IN COPANCH'ORTI AND DATA ANALYSIS FRAMEWORK

Introduction

In this chapter I will explain how this research was initiated through collaboration with a research institution in Central America that has ongoing research and extension activities in Eastern Guatemala and neighboring Central American countries. I will explain what my initial research proposal entailed and how and why this changed during my time in the field. I will describe the sampling and interview methods I used during the six months I spent in the field as well as the method I used to analyze the data I collected using the community capitals framework. The data collected will be presented in the following chapter, along with an analysis of the data as it relates to my selected theoretical frameworks.

Research Process

This research began with an invitation from the Center for Tropical Agricultural Research and Higher Education (CATIE) to work with their Mesoamerica Agricultural Program (MAP). MAP is a "knowledge and innovation platform" of CATIE that seeks to advance sustainable rural livelihoods through programming in three interconnected thematic areas: adaption to climate change, markets and value chains, and ecosystem services. After explaining some of my research interest via e-mail I was invited to join an ongoing project titled 'Multi-sector innovations for specialty horticulture value chains in the Trifinio Region' ('Multisector Innovations') which includes parts of El Salvador, Guatemala, and Honduras. The 'Multisector Innovations' project in Trifinio falls within the MAP thematic area of markets and value chains, which has a goal of helping rural families and farmer organizations

in priority zones of Mesoamerica adopt sustainable production and natural resource management practices and become integrated into value chains (CATIE, 2008).

Based on documentation from CATIE describing both the MAP and the 'Multisector Innovations' project in Trifinio, I wrote a proposal to obtain research funding through the USDA National Needs Fellowship (NNF) International Research and Travel Award. I also submitted an application to the Institutional Review Board (IRB) at Iowa State University. My IRB approval was granted in December 2010, and my research was determined to be exempt from the requirements of the human subjects protections regulations. I was granted a research and travel award in December 2010, and I traveled to Guatemala to collect data from January to June 2011.

Given that one of the primary features of this MAP project was the engagement of multiple stakeholder groups including farm families, farmers' associations, other nonprofit and government institutions, I decided to center my research around the intermediaries at work in the region aiming to support and advance rural livelihoods. Using the Community Capitals Framework as a guide, I planned to utilize qualitative research techniques to gather data from intermediaries (state and civil society actors and, where possible, with private stakeholders who work with smallholder agriculture) to determine which capitals they see themselves providing, which others might be necessary, and what they expect to happen as a result of the capitals they bring to small farmers. While I initially intended to work throughout the three-country Trifinio area of Guatemala, Honduras, and El Salvador, this was not logistically possible given the time and resources at my disposal so I was advised by my hosts at CATIE to narrow my focus to a single country. I choose to work in Guatemala where

the CATIE 'Multisector Innovations' office is located and narrowed my geographic area of study to the Copanch'orti' area in Eastern Guatemala where the 'Multisector Innovations' team had ongoing work with a farmers' organization and an agricultural services provider. A graduate student from CATIE, was already working in the area and was willing to help me get established by assisting me to find an apartment or a homestay within the area and by introducing me to contacts she had already made at the regional commission office and at one of the health centers. While the focus of the 'Multisector Innovations' project of CATIE was on markets and value chains, I learned that the efforts of the majority of the TAPs in the Copanch'orti' area were focused on the more immediate issue of food security. This was unsurprising, given that, as described previously, the rates of malnutrition in the area are among the highest in the nation. As will be discussed later, the majority of the organizations that do have market-oriented production initiatives do so only at the local or regional level and pursue this objective in addition to projects aimed at enhancing subsistence production. Thus I sought to gather data primarily from those TAPs specifically working in the area of enhancing regional food security.

Identifying Research Participants

I used a referral sampling technique to identify TAPs to participate in my research project. Referral sampling is a non-probability sampling approach that does not use random selection methods. While in probability sampling all elements (e.g., individuals, households) in the population have some opportunity of being included, in the case of non-probability sampling, population elements are selected on the basis of their availability and the unknown portion of the population is excluded. This approach is appropriate in cases where the

sampling frame (all elements in the population of interest) are unknown (Groves, Fowler, Couper, Lepkowski, & Singer, 2009). Such was the case for the research presented here, as at the start of my field research I could not locate any complete list of the TAPs operating in the region. Thus, following the referral sampling procedure, beginning with my research host institution, each time I met with a TAP, I asked them for the names of other organizations working with the theme of food security. I continued this process for several weeks, and the process ended when I did not receive any new names when asking for referrals. My final list of TAPs contained the names of 23 organizations, which is the known universe of TAPs in Copanch'orti'. Of the 23 names of organizations identified, I located and collected data from 14 (approximately 61% of the total) from February through June 2011. The TAPs participating in the project included government offices, non-profit organizations, health-oriented organizations, and an academic/research institution with a strong extension component.

Interview Protocol and Questionnaire

Each interview began by acquiring informed consent, explaining the interview procedures, and getting permission to use an audio recording device. An Olympus® Digital Voice Recorder was used for all of the interviews. I began my interviews with a single TAP to test my interview protocol. The primary finding from the pilot test was that the interview contained questions that were redundant. For example, while answering the general question about the types of activities their organization pursued, the interviewee touched on many of the community capitals without prompting. Thus it was unnecessary to ask again, in seven additional sections, about each of the capitals. The other major limitation was that in

attempting to collect descriptive data about the TAPs, and specifically, the names of the villages in which they work, I was unable to understand and spell the locations mentioned.

In response to the limitations identified when piloting the interview protocol, I removed those questions found to be redundant. As I had originally intended, the structure of the interview remained primarily open-ended⁴ so that there would still be flexibility and space for me to ask follow-up questions to gain more information, or elicit a more detailed account from the interviewee when necessary. To ensure accuracy of descriptive information about the TAPs, I created a written questionnaire for the participants to complete themselves. This requested information included the names and locations of the villages where they work, the number of families involved in their development projects, their source and amount of financing, and the number and type (agronomist, social worker, health worker, etc.) of staff employed by their organization⁵. Using this protocol I interviewed representatives from 14 organizations. I collected approximately 25 hours of recorded audio, which was transcribed after I returned to the US by an outside transcription services company, GMR Transcription (Tustin, California). In addition to the semi-structured interview format I followed⁶, other qualitative research methods used included taking field notes during site visits to communities where development projects were taking place and during observation of

⁴ Open-ended questions are designed to allow respondents to express their own knowledge and/or feelings. Such questions allow more detailed responses than closed-ended questions, which encourages a short or single-word answer (Bernard, 2000).

⁵ Questionnaire included as Appendix A.

⁶ Semi-structured interviews are those in which the same open-ended questions are asked to all interviewees. In contrast to informal, conversational interviews in which no predetermined questions are utilized, semi-structured interviews result in data that can be more easily analyzed and compared, while at the same time allowing the interviewer flexibility to gather more detailed information when needed. Such flexibility is not available when using closed, fixed-response interview wherein all interviewees are asked the same questions choose answers from among a predetermined set of responses (Bernard, 2000).

project activities (ex. farmer field days, capacity building classes⁷, etc.), and collecting commentaries⁸ from clients (families on the receiving end of development project outreach services).

Measuring Community Capitals using Indicators

As part of the process of preparing for this research I established indicators of TAP engagement with each community capital. Indicators are simple rules for making decisions when time is pressing and/or when only limited or partial information is available. Indicators can be quantitative or qualitative variables that provide a simple and reliable means to track achievement, reflect changes connected to an intervention or trend, or help assess the performance of an organization (Gigerenzer, Todd, & The ABC Research Group, 1999). Since the seven capitals that comprise the community capitals framework are analytical concepts and not in themselves always tangible goods that can be easily measured, the constructs will be measured through observance of indicators representing each capital following the works of C. B. Flora, Livingston, Honyestewa, & Koiyaquaptewa (2009); Fey et al. (2008); Flora & Gillespie (2009); and Flora & Thiboumery (2005). For example, in examining the way TAPs interact with a community's political capital, indicators for political capital – such as, participation in local and state government – will be used to help ascertain TAPs engagement with this capital.

⁷ Overall I observed six capacity building workshops held by six different TAPs.

⁸ Commentaries refer to informal discussions that I held with farmers that I took note of by hand after first receiving permission from each individual and on the basis of anonymity (I did not take note of the individuals' names nor record any contact information). I requested permission to collect this type of data as part of my approved application to Iowa State University's Institutional Review Board.

The indicators created for use in this research are based on numerous examples found in both the theoretical and empirical community development literature (Ellis, 2000; Flora, Emery, Fey, & Bregendahl, 2005; O’Gorman, 2006) and examples of types of indicators are shown in Tables 4-1 and 4-2. These indicators were created as part of a survey designed in a graduate course in survey research methodology. While the survey was not created for use in the field per se, it was intended to be used as a tool for later reference. Academic and community development professionals (including a CATIE staff person connected with the Central American project) at the 2010 Community Capitals Institute examined the survey. After improving the indicators based on feedback collected during that event, the indicators served as a reference for the CCF analysis presented in chapter five of this dissertation.

Conclusion

In this chapter I have explained the way this research project was initiated through a partnership with the research institution CATIE. I have also described the changes that took place from the initiation of this research through the creation of a funding proposal and data collection periods in Guatemala. I have also described the method that I utilized in examination of my data using indicators of the community capitals. In the next chapter, chapter five, I will present the data I collected on TAPs working to combat food insecurity in Copanch’orti’ Guatemala, and relate my findings and analysis to the literature. I present information on the types of TAP activities, grouping their activities into agricultural and nonagricultural focused initiatives. This aids in establishing an understanding of the broad range of actions TAPs are undertaking which will help to identify how their efforts might be better coordinated to lead to cumulative successes in enhancing the region’s food security.

TABLE 4-1: INDICATORS FOR TAP ENGAGEMENT WITH THE COMMUNITY CAPITALS

| Are TAP staff communicating with farmers and farm families about the following issues: | Type of Capital Indicated: |
|---|-----------------------------------|
| Changes in weather patterns over time (Ex. Frequency of severe weather events; longer/shorter rainy seasons, higher daily average temperatures than in the past) | Natural Capital |
| Nonconsumptive use of natural resources (Ex. Tourism, education, arts and crafts, celebrations, stories, research) | Natural Capital |
| Income (Ex. Does it cover basic needs? How stable is family income [does it vary widely between one week and the next? Between seasons?]) | Financial Capital |
| Sources of employment (Ex. How many are there [is there only a single major employer in the community or several]? What are the sources of employment for women vs. men?) | Financial Capital |
| Access to telephone/internet services (Ex. Is service affordable? Reliable?) | Built Capital |
| Condition of housing units (Ex. Building quality [problems with rotting wood? mold?]; Land ownership [owners, renters, squatters?]) | Built Capital |
| Community movements (Ex. In the past, how successful has the community been in Getting their issues heard/dealt with?) | Political Capital |
| Political partners and contacts (Ex. What contacts exist in different branches of government [health services, education, public infrastructure]?) | Political Capital |
| Traditional knowledge (Ex. Traditional cropping rotations, knowledge about local genetic diversity of plants, insects, wildlife, herbal medicines) | Cultural Capital |
| Cultural events (Ex. Dance, music, sports, arts, book fairs) | Cultural Capital |
| Administrative and business capacities (Ex. What opportunities are there for learning business skills) | Human Capital |
| Self-esteem (What do [women, men, youth] consider themselves capable of achieving?) | Human Capital |
| Family relationships (Ex. Is there a strong sense of unity within families? How has migration affected family structure [roles/responsibilities within families]?) | Social Capital |
| Networks/Organizations (Ex. Where can/do community members turn when they need help? How do these networks differ among [women/men, youth/adults, those with disabilities, ethnic minorities]?) | Social Capital |

TABLE 4-2: INDICATORS OF TAP ACTION TO BUILD COMMUNITY CAPITALS

| Are TAPs committing time and resources to the following activities? | Type of Capital Indicated: |
|---|-----------------------------------|
| Promoting sustainable agricultural practices (Ex. organic farming, integrated pest management) | Natural Capital |
| Fostering environmental stewardship practices (Ex. recycling, water conservation) | Natural Capital |
| Supporting investment in public infrastructure (Ex. roads, sewage, electricity, telephone and internet services) | Built Capital |
| Supporting efforts to increase access to and quality of health and education services (Ex. increasing the number of local clinics) | Built Capital |
| Providing credit to people who previously lacked access to credit (Ex. microfinancing, farmer credit cooperatives) | Financial Capital |
| Increasing family income (Ex. production of higher value crops, greater access to markets) | Financial Capital |
| Encouraging healthy relationships within families (Ex. decreasing instances of domestic violence) | Social Capital |
| Building relationships between different groups within the communities (Ex. creating partnerships between farmers and local government) | Social Capital |
| Promoting community appreciation of traditional, local knowledge (Ex. compiling data on traditional uses of herbal/medicinal plants) | Cultural Capital |
| Increasing the number and type of cultural events offered in the community (Ex. sponsoring heritage festivals or classes in dance or art) | Cultural Capital |
| Providing job skills training (Ex. classes in communication, computer skills, marketing, etc.) | Human Capital |
| Encouraging participation in local government by all community stakeholders (Ex. facilitating greater participation by women/ethnic minorities) | Political Capital |
| Establishing new political contacts and relationships (Ex. bringing relevant political leaders to farming communities) | Political Capital |

CHAPTER 5: RESULTS - DEVELOPMENT INITIATIVES OF TAPS IN COPANCH'ORTI'

Introduction

In this chapter, I present data from my study to analyze ways TAPs work towards reducing persistent food insecurity. As explained previously, in Copanch'orti' regional progress toward food and nutritional security continues to be thwarted after decades of targeted investments by government and development organizations. Development successes have occurred as a result of targeted poverty reduction initiatives (see for example Hill, Gonzalez, Frongillo, & Pelletier, 2008), but it is unclear why these successes have not been replicated across the region. What hinders the accumulation of such successes and how can such accumulation be facilitated to result in significant advancements toward secure livelihoods across the region and across time?

I address this question through an investigation of current development efforts in the Copanch'orti' region of Guatemala using qualitative data collected from TAPs in this region, as described in Chapter Four. Such data enabled a timely and unique analysis of this issue using the theoretical framework laid out in Chapter One. The data provide first-hand insights from development practitioners working daily, 'in the field' mobilizing different community capitals and confronting the direct and indirect barriers to collaboration and cumulative development from the principal agents who funded their projects. The perspectives of these front line development professionals, particularly when examined across different organizations, are critical to advancing an understanding of how persistent, regional

challenges can be addressed in the light of limited resources (community capitals) and the latent power of the variety of donors.

In presenting these data I first provide descriptive information about the organizations participating in this study. I then describe the actions they are taking to improve food security among area families, grouping their activities into six categories for ease of presentation: farm diversification, reforestation, water management, education, family health, and TAP coordination. In addition to presenting descriptive data on the types of actions TAPs pursue in each of these categories, I also include a specific example of the work being done in each category in the form of a short vignette of a single TAP's particular effort. By presenting the data in this way I allow both an in-depth understanding of how TAPs are working on a daily basis to combat the food security problem and an overarching view, critical for regional examination of this issue, of the similarities among and connectivity between TAP initiatives in spite of individual differences in the organizational make-up (size, funding, etc.) of each TAP. I present an analysis of the TAP activities against the backdrop of two theories: the Community Capitals Framework and agency theory.

Overview of participating TAPs in Copanch'orti', Chiquimula, Guatemala

Descriptive data for the TAPs participating in this study are presented in Table 5-1. Government offices account for 43% of the TAPs sampled, while non-government organizations represent the remaining 57%. Half of the nongovernmental TAPs worked only within Guatemala, and half were international with offices in multiple countries (Figure 5-1). Two of the TAPs had a focus on health, including one international health NGO and one government-run health center. One of the TAPs was an academic, research and outreach

organization. The number of employees working within each TAP ranged from one to twenty-eight. Nearly three-quarters of the TAPS (71%) maintain a staff of six or fewer employees (Figure 5-2). Regarding the types of staff positions maintained by the TAPS, 57% of TAPS employ a staff person whose job focus is agricultural production. These employees have academic training and/or experience in agronomy, crop production, horticulture, forestry, water management, and natural resources conservation and management. Other staff positions maintained by TAPS address agribusiness, information technology, administration and management, as well as staff positions for gender equity programming.

TAPS are promoting a variety of different agricultural practices for enhancement of food security. Some of these practices, such as reforestation activities, are aimed at minimizing soil erosion and improving long-term soil quality. Other practices are aimed at providing alternative incomes for area residents, both men and women, such as payments for ecosystem services and 'green jobs' schemes that offer payment in exchange for tree planting or conservation of natural areas. Farm diversification, one of the most widely promoted food security enhancement strategies among Copanch'orti' TAPS, is advanced for the dual purpose of increasing dietary diversity of farming families, and, in those cases where adequate household consumption is achieved, enabling the families to have additional produce for sale in local markets. It is here where the initiatives begin to address issues of building value chains. While some of the TAPS simply acknowledged that when farmers have extra produce they sell the surplus to others in their villages, several TAPS deliberately support the establishment of farmers' associations and more coordinated marketing of vegetable surplus. In addition to these agricultural initiatives, TAPS also work to enhance

access to primary, secondary and vocational education, develop greater collaboration among TAPs and support overall health and well-being for Copanch'orti' families, with particular emphasis on women in vulnerable situations, as will be further discussed in the following sections.

FIGURE 5-1: TYPES OF TAPS

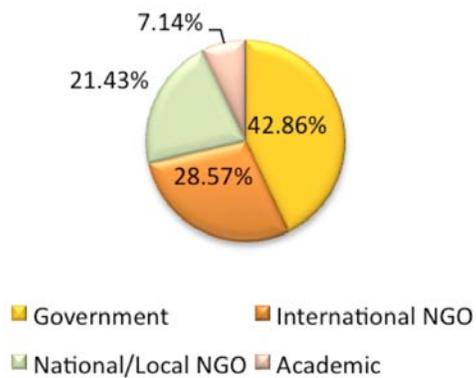


FIGURE 5-2: NUMBER OF TAP EMPLOYEES

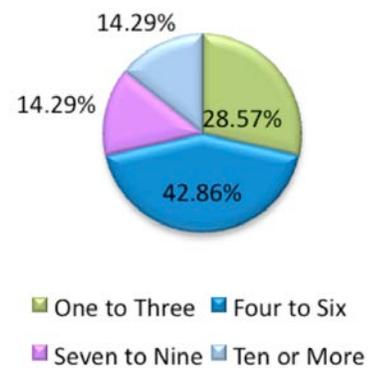


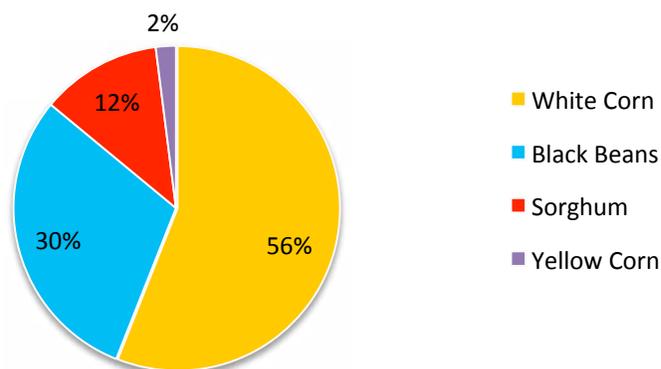
TABLE 5-1: ORGANIZATIONAL STRUCTURE OF COPANCH'ORTI' TAPS

| Organization | Type | Number of Employees | Funding Source | Level of Financing (USD) | Ag Specialist on Staff | Required by Funders to Include Gender | Number of Project Participants |
|---|---------------------------|---------------------|----------------------------------|--------------------------|------------------------|---------------------------------------|--|
| Action Against Hunger | International NGO | 4-6 | International donors | \$100,000 | Yes | No | 1,225 individuals directly served; |
| CATIE | Academic and outreach NGO | 4-6 | International donors | Unknown | Yes | Yes | Unknown |
| Center of Communication for Development | Local NGO | ≤ 3 | International donors | \$229,000 | No | No | Unknown |
| Doctors of the World | International NGO | 7-9 | International donors | \$246,000 | No | Yes | 140,000 individuals (60% female) |
| Environmental Management Unit (San Juan Ermita office) | Local government | 4-6 | Government | \$15,270 | Yes | No | 540 families (60% female) |
| Guatemalan Ministry of Agriculture, Livestock and Food (Copanch'orti' office) | National government | ≥ 10 | Government; international donors | \$12,500 | Yes | Yes | 1,000: 700 males; 300 females |
| Health Center | Local government | 4-6 | Government | Unknown | No | No | Unknown |
| Jocotan Municipal Planning Office | Local government | 7-9 | Government; international donors | Unknown | Yes | Yes | Unknown |
| Jocotan Municipal Women's Office | Local government | 4-6 | Government | \$80,000 | No | Yes | 5,060 adults 1,225 youth |
| La Manncomunidad Copanch'orti' | Local government | ≥ 10 | International Donors | \$20,000,000 | Yes | Yes | 524 families in food security project (30% female) |
| Observatory of the Right to Food and Nutritional Security | National NGO | ≤ 3 | International donors | Unknown | No | Yes | 50 individuals 50% females |
| Proyecto Chorti | Local NGO | 4-6 | International donors | \$270,000 | Yes | Yes | 450 families (average family size is 5-6 people) |
| Strategic Project for Food Security (Camotan office) | International NGO | ≤ 3 | International donors | \$35,000 | Yes | Yes | 568 individuals: 270 males; 298 females |
| World Food Program | International NGO | ≤ 3 | International donor | \$16,800 | Yes | Yes | 557 families (40% female) |

Farm Diversification

Farm diversification in this dissertation refers to those activities that increase the types of agricultural products grown on the region's farms. Currently, 75% of the region's agriculture is devoted to basic grains (Figure 5-3), and an additional 14% is in coffee (Mancomunidad Copanch'orti', 2009, p. 24). Each year approximately 6,000 of the region's families lack sufficient grain supplies. Additionally, families do not have adequate income to purchase grain from the market, as there are few employment opportunities available for earning an income. Regional grain production would need to increase by 58% percent to cover the deficit faced each year by farm families (Mancomunidad Copanch'orti', 2009, p. 31). However, even if adequate grain production is achieved, the lack of dietary diversity would still need to be addressed, as a wide range of nutrients that comprise a healthy diet are lacking from most families' normal diets of corn and beans (Lee, Houser, Must, De Fulladolsa, & Bermudez, 2010; Swindale & Bilinsky, 2006).

FIGURE 5-3: CULTIVATION OF BASIC GRAINS IN COPANCH'ORTI'



To address this problem, in addition to technical assistance to improve grain yields, TAPs are helping farmers diversify food production through the establishment of home gardens, fruit and nut orchards, and milk, egg, and poultry production⁹. Support for these initiatives is given through provision of seeds, fertilizer, tree seedlings, tools, and training and, for the livestock initiatives, through the distribution of egg-laying hens and cows. Farm diversification also occurs through establishment of community greenhouses for the production of horticultural crops such as tomatoes, peppers, onion, and carrots and the construction of inland fisheries for small-scale aquaculture production. One local NGO (Proyecto Chorti) is also helping families begin honey production both for home consumption and sale at local markets. All of the aforementioned initiatives are designed so that families will have surplus products that can be sold within the community or at local markets.

Farm Diversification Vignette: La Mancomunidad Copanch'orti'

One TAP particularly active in the area of farm diversification is the regional association of municipal governments in the Copanch'orti' area La Mancomunidad Copanch'orti, comprised of the municipalities of Camotan, Jocotan, Olopa, and San Juan Ermita. This organization employs twenty-eight people who work in the areas of administration, institutional strengthening, water and sanitation, food security, environment, local economic development, gender, and geographic information systems. La Macomunidad Copanch'orti works with a budget of \$20 million (USD); their sources of financial support include the Spanish Agency for

⁹ Nine TAPs, representing 64% of the sample and inclusive of all TAP organizational types represented in this study, local NGOs, international NGOs, local and national government agencies, and the academic/agricultural extension organization, are engaged in farm diversification initiatives (Table 5-1). Given the diversity of TAP organizations engaged in farm diversification activities, there was no observable commonality among TAPs in this activity area. The number of employees for TAPs ranged between one and twenty-eight, and, although the level of financing was not disclosed by all TAPs, among those that did report this information, the level of financing ranged from \$35,000 USD to \$20,000,000 (USD).

International Development Cooperation, CATIE, the communities of Valencia and Castile-La Mancha, Spain, and the nonprofit Paz y Desarrollo¹⁰. La Mancomunidad works both at the organizational level with other TAPs and directly with families. They work in nine villages or *aldeas*: La Mina, Suchiquer, and Oquen in the watersheds or *cuenca* Oquen; Carrizal and La Prensa in Cuenca Cayur; Tatstu in Cuenca Tatufu; and Tituque Abajo, Tuticopote Abajo, and Tuzuco Abajo in Cuenca Toeja. They currently have 524 families participating in their projects and report that 30% of their participants are women (La Mancomunidad Copanch'orti, Interview, March 16, 2011).

A principal objective for La Mancomunidad is to "serve the families who are currently at risk of food insecurity¹¹" (La Mancomunidad Copanch'orti, Interview, March 16, 2011). This objective is pursued through support for the production of basic grains, farm diversification, and value chain development. Mango, orange, lemon, mamey sapote (*Pouteria sapota*), soursop (*Annona muricata*), tomatoes, radishes, cilantro, onions and chili peppers are among the crops utilized in this farm diversification initiative. Families receive support from La Mancomunidad in the form of supplies to build greenhouses, seeds, fertilizers, tools and other farm inputs and training in crop production and harvesting. La Mancomunidad is also replicating a model from the Food and Agriculture Organization to encourage seed saving and maintenance of tree nurseries in each village so that families will not need additional disbursements of seeds in the

¹⁰ Paz y Desarrollo ("Peace and Development") is a nonprofit development organization working in 15 countries across Asia, Africa and Latin America with the objective of improving the living conditions of men and women and contributing to the generation of sustainable development and gender equity for persons living in poverty and social exclusion. This objective is pursued through activities in the areas of education, social awareness, and humanitarian and emergency aid (Paz y Desarrollo, 2011)

¹¹ Families at risk are identified using information from the National Information, Monitoring and Early Warning System on Food and Nutritional Insecurity, which routinely collects data on the number and location of families at risk of experiencing malnutrition throughout the year.

future (La Mancomunidad Copanch'orti, Interview, March 16, 2011). While the primary goal of La Mancomunidad's farm diversification initiatives are that families will have more food for direct consumption, farmers' associations are also being established to facilitate value chain development through the sale of excess produce at local markets. Representatives from the farmers' associations sell surplus products at local markets, and a portion of the profits are retained to cover marketing and production costs, including amortization, depreciation, and maintenance costs for the greenhouses. Remaining profits are then distributed to the association's members who worked to produce the crops sold at market.

A unique aspect of La Mancomunidad's farm diversification initiatives is that they seek to implement these actions as part of their organization's emphasis on gender equality. Agriculture investments often fail to adequately address gender inequalities, such as women's lack of decision-making and leadership roles, lower education levels, unequal domestic and childcare responsibilities, and discriminatory barriers to land ownership, credit, and agricultural inputs (Arend, 2011; Dennis, Zuckerman, & Action, 2006; FAO, 2011b). Moreover, while it has been well documented that international organizations often fail to collect sex-disaggregated data to measure their investments' real-life impact on women and girls (Arend, 2011; FAO, 2011b), La Mancomunidad is working with other TAPs in the region to account for the contribution of women when evaluating their project outcomes.

The first thing we do [when we enter a community] is to start working to form grassroots organizations. [...] As a part of that process we work to promote an understanding of the new masculinity - that is gender - which is talking with them so that they understand that there is a macho culture here that must change. Women have rights and obligations, the same as a man has. Both should have equal opportunities. Then, after

we talk to them about that we make it a reality in our projects. In every community we work with eight promoters and we have four promoters who are women, in each community. And this is the methodology that we work in coordination with the municipal mayors and other institutions. [...] What we are trying to do is to create a new paradigm. At the regional level, I think it's a major challenge, but it's a point with a lot of potential. We need to see the participation of women, not only as a filler issue, or just to say that you have them coming to your meetings, but actually allowing the work that women do as part of the productive [agricultural] projects, and the benefit she receives and that her community receives, to be a measure of your project [outcomes]. [In this way] you really begin to empower women (La Mancomunidad Copanch'orti, Interview, March 16, 2011).

Community Capitals and TAP Farm Diversification Initiatives

Indicators of natural, built, financial, human, cultural and social capital were identified from participants' descriptions of their farm diversification initiatives. TAPs are investing in the natural capital of the region through built and financial capital investments of farming inputs and infrastructure, and through human capital investments of training for participating families in farm diversification and marketing techniques. These investments impact the areas' stocks of natural capital in several ways. Diversified agricultural systems provide natural pest regulation and biologically regulated soil fertility, which can lead to improved and sustainable crops yields (Gliessman, Engles, & Krieger, 1998). Integrating livestock into farming systems can result in increased soil organic matter through application of manure, and, when these livestock systems are paired with legume cropping systems, enhanced nutrient recycling mechanisms (Rosset & Altieri, 1997). In diverse farming systems natural enemies of pest insects are in greater abundance, helping to minimize damage to crops from herbivore pests. Moreover, diverse

farming systems can result in a diversity of microclimates which provide habitat to pollinators and beneficial soil fauna and which contribute to greater levels of biodiversity in surrounding natural areas (Altieri & Nicholis, 2005).

Social capital is mobilized through the TAP's efforts to establish and maintain community nurseries and farmers' associations. These spaces offer opportunities for social capital to be strengthened among area families as they work together to achieve the common goal of earning additional income through the sale of surplus produce. Cultural capital is engaged through TAP emphasis on gender equality. This not only affects the culture of the farm families but also the organizational culture among area TAPs as methodologies for incorporating an emphasis on women into project actions and evaluations begin to be formulated and shared among TAPs throughout the region.

Reforestation through Payments for Ecosystem Services and Green Jobs

Since wood is the primary fuel source for farmers in the Copanch'orti' area, deforestation is a continual issue that exacerbates the food insecurity problem by leading to soil erosion and low productivity of the area's staple crops of corn and beans (Mancomunidad Copanch'orti', 2009, p. 12). While some reforestation occurs through TAP provision of fruit and nut trees as part of the crop diversification efforts described above, there are additional reforestation efforts taking place through payments for ecosystem services and 'green jobs' initiatives. Payments for environmental services can advance the goals of both environmental protection and poverty reduction through the transfer of financial resources from beneficiaries of the services provided by public environmental goods to the stewards who protect those environmental resources (McIntyre et al., 2009, p. 444).

In Guatemala, a primary source of funding for forest conservation initiatives is the Forestry Incentive Program for Small Holders administered through Guatemala's National Forest Institute. According to the Institute's website, the objectives of this program include the involvement of smallholders in forestry conservation initiatives through the provision of economic incentives, promotion of gender equity, and generation of employment in rural areas. Other objectives include promoting forest biodiversity, improving standards of living for families living in rural, forested environments, and "to contribute to the socio-environmental and territorial management for mitigation and adaptation to the effects of climate variability and change dynamics, strengthening the resilience of forest ecosystems to support national efforts in food safety, civil protection, water management, integrated rural development and reduction of natural disaster risks" (Instituto Nacional de Bosques, n.d.). This program is administered through local TAPs¹².

There are nine TAPs facilitating reforestation and forest protection efforts, four are governmental and five are nongovernmental. While all nine TAPs engaged in reforestation initiatives employ agricultural specialists, this is not a unique feature of reforestation-active TAPs, as there is also an agricultural specialist on staff of one of the TAPs not engaged in reforestation initiatives (the RFT Observatory). This broad diversity in the type and size of TAPs with reforestation initiatives and lack of any unique features of staff functions reveal the similarities across TAPs in the themes they prioritize in their efforts to enhance the region's food security.

¹² Guatemala's National Forest Institute does not maintain an office or staff in each municipality with a forestry incentive program. Rather, they distribute funding to TAPs located in municipalities throughout Guatemala to facilitate forestry related projects that are relevant for each locality.

Reforestation Vignette: Environmental Management Unit (San Juan Ermita)

One TAP particularly engaged in reforestation is the Environmental Management Unit (Spanish acronym: UGAM) in the municipality of San Juan Ermita, a local government agency that runs programs throughout the entire municipality. The office is comprised of six employees: an administrative assistant, two technicians facilitating agroforestry and reforestation projects, two technicians facilitating municipal nurseries projects, and one overall program coordinator. Funding for programming comes from within the municipality's budget (which includes funding from Guatemala's National Forest Institute's 'Forestry Incentive Program for Small Holders'), and from the regional association of municipalities, La Mancomunidad Copanch'orti'. They work with an annual budget of approximately 15,300 USD¹³ (UGAM San Juan Ermita, Interview, May 4, 2011).

The goals of UGAM in San Juan Ermita are to improve and protect the municipality's natural resource base and to improve the livelihoods of the poorest families in their jurisdiction. The agency works directly with 300 of the poorest families as well as with community groups and other TAPs, including the national environmental ministry, the trinational environmental commission Plan Trifinio, and La Mancomunidad Copanch'orti'. UGAM San Juan Ermita works to advance the goal of protecting the forests and promoting forest biodiversity in tandem with helping the poorest families raise their household income through payments for ecosystem services. Three hundred families are paid incentives to plant and maintain trees in their fields. The types of trees planted include cedar, oak, mango, avocado, orange, black sapote (a species of persimmon that is native to Central America), and cocoa. Trees are planted at the rate of 240 trees per hectare. The number of trees per family depends on the amount of land they own. On

¹³ Based on an exchange rate of 1USD = 7.83850 GTQ on June 7th, 2012 (XE.com Inc., n.d.).

average families own between 10 - 23 *tareas* (23 *tareas* = 1 hectare) and will receive 10 or fewer trees for their farm. The production of the trees is done in community nurseries that offer employment for production and maintenance of tree seedlings to be used as part of the payments for the ecosystem services project (UGAM San Juan Ermita, Interview, May 4, 2011).

An additional aspect of UGAM San Juan Ermita's work, which supports their reforestation efforts, is the provision of improved stoves made from cement. Since wood is the primary fuel source for farmers in the Copanch'orti' area, deforestation is a continual problem that exacerbates the food insecurity problem by leading to soil erosion and low productivity of the areas staple crops of corn and beans. The typical method of cooking among families in the area is with an open fire. The improved stoves are smaller and more efficient (because they retain heat and use much less wood than open fire cooking) (UGAM San Juan Ermita, Interview, May 4, 2011).

Community Capitals and TAP Reforestation Initiatives

Community capitals identified from participants' descriptions of their reforestation initiatives include natural, built, financial, human and cultural capitals. TAP reforestation initiatives impact the areas' stocks of natural capital in several ways. Reforestation aids in building a healthy ecosystem by restoring soil organic matter, sequestering carbon, improving water quality and water percolation, and reducing soil erosion. Reforestation can also aid in improving microclimates and promoting biodiversity both on farms and in nonfarm forested areas. At the landscape scale, forest landscape elements can provide filters for overland flow of water and sediments and establishment of wildlife corridors, which support safe migration and mating of wild animals and preserve wild and native flora by connecting on-farm forestry areas with forest conservation spaces (McIntyre et al., 2009, p. 37).

Although more information is needed on the amount of land being reforested through TAP initiatives, the fact that 64% of the TAPs participating in this study are investing in this strategy and the finding that these initiatives are undertaken through government and NGO, local and federal partnerships, indicates that there is great potential for these reforestation efforts to result in the ecological benefits described above and increase and improve the region's stock of natural capital in the long run. Both human and financial capital investments are being made in TAP reforestation efforts through both training in tree propagation and agroforestry and through direct monetary payments to participants. Cultural capital is also being mobilized through the emphasis TAP employees place on the importance of maintaining tree cover to aid in soil conservation:

Before we had a traditional hillside system and the land [was] without any protection. I think that it is something that is changing, but that has to do with the culture of the people here. [...] For example, [with the agroforestry system] the aim every year when these trees grow is to incorporate the pruned material into the ground. This serves as organic material, which will improve the whole system, the *microfauna*, and the soil. So this becomes a regeneration, but regeneration takes a long time (La Mancomunidad Copanch'orti', Interview, March 16, 2011).

Water Management Initiatives

TAP projects focused on water management seek to improve the quality of life of Copanch'orti' residents by improving the quality and quantity of water through increased and improved water infrastructure. Among the seven TAPs (representing 50% of the sample) facilitating these water management efforts, all types of TAPs represented in this study are included: local NGOs, international NGOs, local and national government agencies, and the

academic/agricultural extension organization, with accompanying diversity in the size, amounts, and sources of funding. Water is an important feature of food security because a lack of sufficient water that is safe for washing and personal hygiene can increase the risks of disease outbreaks including diarrheal diseases, intestinal nematode infections and trachoma which can prevent a person from retaining needed nutrients and reaping all the benefits of increased food availability (*Managing water under uncertainty and risk*, 2012, pp. 22–23). Access to water is also important for the region's food security from a production standpoint because, with the area's long dry seasons, water for irrigation is important for successful harvests. While some TAPs' initiatives focus on constructing aqueducts and establishing piped water systems, in other cases access to water is facilitated through provision of rainwater harvesting drums of various sizes. Needs assessments are conducted among families living within each watershed and projects are tailored to different situations and environmental conditions.

Increases in water quality are also pursued through initiatives designed to reduce the use of synthetic chemicals on area farms. Excessive use of pesticides on horticultural crops in the Lempa Upper River Watershed of which Copanch'orti' is a part, has led to water contamination, caused significant ecological harm to the fragile ecosystem, and resulted in chronic and acute toxicological harm to the farming families and rural communities in the area (CATIE, 2008). These chemicals impact water quality by infiltrating streams and rivers and groundwater when it rains. To address these problems, CATIE is working to increase the capacity of producer organizations to participate in value chains for vegetables produced without pesticides. The farmer's association partnering with CATIE in Guatemala, is 'Chorti Fresca' and is comprised of farmers living in the Copanch'orti' municipalities of Camotan and Jocotan. With the support of CATIE this farmer's organization is growing vegetables with fewer chemicals than traditional

crop production, improving their post-harvest handling of produce and marketing their produce at the largest market in the area as a value-added product. (CATIE and Chorti Fresca, Interview, March 1, 2011).

Water Management Vignette: Action Against Hunger (Copanch'orti')

One TAP working toward regional water enchantments for food security is Action Against Hunger (French acronym: ACF), an international nonprofit organization that runs programs in 40 countries and employs a global staff of more than 4,600 people. ACF aims to provide communities with access to safe water and sustainable solutions to hunger through programs "designed to bolster agricultural production, jumpstart local market activity, support micro-enterprise initiatives, and otherwise enhance a vulnerable community's access to sustainable sources of food and income" (Action Against Hunger, n.d.-a). ACF has been active in Guatemala since 1998, with a reported 55,356 individuals benefiting from their programs in 2011 (Action Against Hunger, n.d.-a).

The ACF office in Copanch'orti' is comprised of four staff members who work with 1,225 families across 14 communities in the small watershed, or *microcuena* of Oquen. An additional 7,885 families in the watershed are expected to benefit from ACF activities indirectly through enhanced access to water for irrigation. Funding for the activities of ACF Copanch'orti' comes from the City Council of Pamplona Spain, which supports ACF programming through its Municipal Development Cooperation Program (ACF Copanch'orti', Interview, April 7, 2011). According to ACF International's website, other funders of ACF's work in Guatemala include the Spanish Agency for International Cooperation and Development, the European Commission of Humanitarian Aid, the Government of Navarre, and EuropeAid (Action Against Hunger, n.d.-b)

The goal of ACF Copanch'orti's work is "to improve the quality of life for the families in the *microcuenca* with a focus on water" (ACF Copanch'orti', Interview, April 7, 2011). They seek to achieve this goal primarily by improving the quality and quantity of water through increased and improved water infrastructure. Residents living in the watershed install this water infrastructure and are compensated through a 'green jobs' program similar in design to those discussed previously in the section on reforestation.

With our water program we provide infrastructure materials, but we look to the community to find the labor. This is important because there are few employment [opportunities] here. And [even though] there are a lot of projects, farming projects to work with gardens, or basic grains, or agroforestry, you have to have land in order to work with those. And there are some very vulnerable families that do not own land. So how can you adopt [a system of] agroforestry if you do not own land to plant on? If you do not have space? This is where [the component of] our water infrastructure investment project – [called] Workforce - becomes important. Through this element our goal right now is that in the month of July, that is the most dangerous [part of] the hungry period, we will provide work for ten days; and for those ten days we will pay \$63.60[USD] – we will give them work and we [will] pay for that labor. With our water projects, the system we are using is always joined with labor. We are not giving anything, absolutely given, we put conditions on everything. We do not just *give* anything to people because we do not want to create paternalism – institutional paternalism, as previously done. Paternalism has happened and it has *malacostumbrando* the people. And we don't want to keep growing that, but on the contrary, we want people to do something to benefit the community (ACF Copanch'orti', Interview, April 7, 2011).

In addition to ACF Copanch'orti's work directly with families they are working with other organizations to institutionalize their field practice methodologies and to enable the municipal governments to take long-term responsibility for the sustainability of the project.

We have agreements with the United Nations and with the Ministry of Environment to do our work using their process, so that we are not working contradictorily to the steps they have designed. The objective is to cross, to tie together, the technical and field practice with the institutional side, tie the field practice to the municipality to make the work sustainable. We have created a management plan and account that we will come back and follow-up with. Hopefully, then, this process will be, maybe not fully institutional at all levels, but at least incorporated at the local level into the work of the municipality (ACF Copanch'orti', Interview, April 7, 2011).

ACF is also working to create leadership councils (social and political capital) that will be responsible for making decisions about future water use. Watershed councils are being formed at two sites: one within the municipal government and one within the watershed whose membership will be drawn from families living in the watershed. With the city watershed council, ACF is working with the municipality to create a municipal strategic plan that utilizes a "micro approach". They are teaching the municipal council members the community engagement techniques that ACF has been using to include community members in the decision making process that impact the watershed. The community watershed council is being formed to allow residents to "push from the bottom" in having their needs heard and to ensure that future investments made in the watershed are tailored to fit the needs of the community (ACF Copanch'orti', Interview, April 7, 2011).

For example, we thought that our next step would be to construct more nurseries, and we were planning to do this on a massive [scale]. But when we went to the communities and asked who is interested in making them, in constructing [the greenhouses] we were asked instead for stoves, energy saving stoves. And this is something that we are trying to support because really if they are using [these stoves] then they are saving energy, saving the forests. This improves water retention, and so yes it does contribute to improving the quality of life from the standpoint of water [which is] our goal. But we can't know to give [this type of] support if the needs are not arising from the community (ACF Copanch'orti', Interview, April 7, 2011).

Community Capitals and TAP Water Management Initiatives

Improving access to clean water can have a great impact on small-scale farmers who depend on water not only for health but also for food production and income (McIntyre et al., 2009, p. 24). Indicators of all seven capitals were identified from descriptions of TAPs' efforts to improve the quality and quantity of water available to rural families. TAPs are helping more families get immediate access to water through built capital investments (i.e., water pipes, wells, etc.) and in the case of ACF Copanch'orti', through financial capital investments for payment for labor. TAPs are making human capital investments through their sanitation infrastructure investments, which impact human health by reducing the problem of water-borne diseases obtained from drinking contaminated water. TAPs are also investing in the area's water quality (natural capital) through agricultural projects designed to reduce pesticide use (reducing water contamination from chemical runoff). Indicators of social and political capital investments identified include participants' reports that their organizations are devoting time and resources to building relationships between different groups within the watershed (i.e., connecting

landowners and the landless through their workforce and infrastructure investments) (social capital) and encouraging participation in local government by more community stakeholders via the watershed leadership councils (political capital). ACF's water management initiatives in particular are mobilizing cultural capital in several ways. Among the area's families their workforce initiatives and their responsiveness to the requests of the areas residents are promoting a cultural identity change with the people seeing themselves as capable of doing something for the good of the community and as having a right to have a voice in the political decisions that impact their lives.

Education

In addition to agricultural and environmentally focused activities, TAPs in Copanch'orti' working to enhance the region's food security also have projects in the areas of education, health, and organizational management. Local government agencies are supporting the construction of new schools in rural areas, which will allow easier educational access for children who do not live near town centers. Government TAPs are also providing scholarships for children in rural areas to help cover the costs of school supplies. A national conditional cash transfer program established in 2008, *Mi Familia Progresando* (My Family Progressing), designed to break the intergenerational cycle of poverty through human capital investments, also is facilitated by government agencies in the region. To receive funds from the program, children must attend school and have monthly medical exams. If the families fulfill these responsibilities, they are given Q300 (US\$37) per child, per month (Q150 for education and Q150 for health) (Gaia, 2010). There is an additional 'nutrition' bonus available for families in Copanch'orti' experiencing or at risk of experiencing malnutrition (Guatemalan Ministry of Agriculture, Livestock and Food (Copanch'orti'), Interview, May 2, 2011).

During interviews with TAP personnel, research participants from three of the six government offices¹⁴ described the program as having a positive benefit on education, particularly by increasing the number and consistency of girls attending school. Participants from nonprofit TAPs who commented on the program, however, reported having doubts about the program effectiveness¹⁵. They suggest that even if school attendance is increasing, since the program does not include investments to improve classroom resources or offer better pay for teachers, lasting increases in human capital are unlikely to occur. These participants believe that the program promotes an already exaggerated culture of family dependence on outside assistance. Finally, given that the program does not provide funding for the schools in the region to offer meals to the students, the ability of the students to perform well in school is also questioned. While the funds provided directly to the families are expected to be used to enhance food and nutritional security, there are no explicit rules for how the money should be used and two research participants expressed concern over inter-household food distribution equity, particularly regarding boys being favored over girls in household food distribution (Doctors of the World, Interview, May 10, 2011; Strategic Project for Food Security (Camotan), Interview, April 18, 2011).

Further TAP support for education is delivered through the recent establishment of the Official Technical Institute of the Chorti' Region, created through a broad partnership between local and national government agencies, the Copanch'orti' Center for Regional Development, and support from undisclosed donors from the United States. This technical institute offers youth

¹⁴ The three TAPs whose participants discussed the *Mi Familia Progressa* program during their interviews were the Guatemalan Ministry of Agriculture, Livestock and Food (Coapnch'orti'), the Jocotan Women's Municipal Office, and the Jocotan Municipal Planning Office. Research participants from the remaining three government TAPs did not comment on the program.

¹⁵ Nonprofit TAPs whose participants commented on the *Mi Familia Progressa* program during their interviews were Doctors of the World and La Mancomunidad. Research participants from the remaining nonprofit TAPs did not comment on the program.

training in the career areas of electrical technician, computing, and automotive technician (Guatemalan Ministry of Agriculture, Livestock and Food (Coapnch'orti'), Interview, May 2, 2011). Representatives from partnering TAPs consider the creation of this institute vital to the region's economic development because prior its creation, job opportunities available for students graduating from high school were limited. Now, as one participant explains: "With this opening to the job market, the day that the young people graduate from their studies, they can continue on to the university or open their own business" (Guatemalan Ministry of Agriculture, Livestock and Food (Coapnch'orti'), Interview, May 2, 2011). Notably, in addition to providing greater opportunities for all youth, there is a specific objective of ensuring participation by girls at the technical institute. At the time of my data collection, approximately 40% of the institute's students were female (Guatemalan Ministry of Agriculture, Livestock and Food (Coapnch'orti'), Interview, May 2, 2011).

Education Vignette: Jocotan Municipal Women's Office

The Women's Office in the municipality of Jocotan is a local government agency that runs programs throughout the entire municipality of Jocotan. Currently over 5,000 adult women and 1,225 youth participate in their projects. The office is comprised of five technicians, two in the area of 'children and adolescents' and three in the area of 'women and family'. They work with an annual budget of approximately \$35,000 (USD). Funding for programming comes from within the municipality's budget and from federal government agencies including the Guatemalan Ministry of Agriculture and The National Fund for Peace (FONAPAZ). According to their website, the mission of FONAPAZ is to "Implement solidarity, humanism and transparency of economic impact projects to consolidate peace, to contribute to reducing poverty and extreme poverty of the Guatemalan population" (FONAPAZ Guatemala, n.d.-a). As of

November 2011 FONOPAZ had invested over \$13 million (USD)¹⁶ in 443 projects in the Department of Chiquimula, which benefited a reported 526,167 people which averages out to an investment of approximately \$26 per beneficiary¹⁷ (FONAPAZ Guatemala, n.d.-b).

The goal of the Jocotan Municipal Women's Office is "to improve the condition of women in each community" (Interview, Jocotan Municipal Women's Office, April 2011). They seek to achieve this goal by facilitating increased participation of women in social and production projects taking place in the region through education.

We work with different groups of women and our objective is to improve the condition of women in each community...we cannot eradicate poverty, right?, but we want to carry something to the women so that they can participate and that they know that with participation in the projects, whether productive projects or social projects, only with their participation will it be possible to improve the quality of life for their families (Jocotan Municipal Women's Office, Interview, April 2011).

In explaining the specific activities undertaken to achieve this goal, five current projects were described: training, providing educational scholarships for children, distribution of grain mills, promotion of vegetable cultivation and distribution of hens. Trainings are held on the topics of citizen participation, self-esteem, how to be a better leader and on the functions of each of the municipal offices. The Jocotan Municipal Women's Office also holds workshops to educate women on the structure and function of the community commissions and they encourage

¹⁶ 108,020,939.33 GTQ (Guatemalan Quetzals) as reported by FONAPAZ Guatemala (FONAPAZ Guatemala, n.d.-b) converted to USD = 13,778,180.94 USD based on an exchange rate of 1 USD = 7.83850 GTQ as of June 7th, 2012 (XE.com Inc., n.d.).

¹⁷ 13,778,180.94 USD divided by 526,167 people = \$26.19 per person

women to get involved in these commissions to help make decisions for new projects in their communities.

What is really clear [about our work], is how many women are participating, at least in all the community councils we have some, so more than 140 women participating. That is a big step forward. Before there was no participation of women but now, well, women **are** participating (Jocotan Municipal Women's Office, Interview, April 2011).

These education workshops are open to all who are interested, but participation in other projects where materials or scholarship funds are distributed is limited to those families with the greatest need as determined by a socioeconomic diagnostic performed by the Jocotan Municipal Women's Office prior to starting the project. At the time of the interview the office was preparing to deliver 500 hand-mills (to use to grind corn to make corn meal) and 140 children's scholarships to cover school fees. The decision to focus on these two projects (hand mills (built capital) and scholarships (financial capital for human capital) was made after surveying the women to find out how the office could contribute to improving their quality of life (Jocotan Municipal Women's Office, Interview, April, 2011).

The other two projects of the Jocotan Municipal Women's Office are production of horticultural crops and establishment of small egg production enterprises. Support for these two initiatives is given through financial support for purchasing crop production inputs, distribution of egg laying hens, and technical instruction on production practices. The women can either keep the eggs for home consumption or sale to other households, or both. These aspects of the Jocotan Municipal Women's Office's work are promoting farm diversification, since these strategies allow families to diversify their agricultural production from a two crop system (corn and beans)

to include the production of three or more horticultural crops (typically tomatoes, chili peppers and onions but also potentially radishes, carrots, yucca or other vegetables) in addition to producing eggs. These investments are made with an emphasis on educating women to increase their technical knowledge of crop production and their knowledge of social and political issues and their ability to participate in leadership positions in community development councils.

Community Capitals and TAP Education Initiatives

Investment in education in rural areas increases agricultural productivity, enhances food security and improves rural livelihoods (Burchi & De Muro, 2007). The impacts are particularly high for women and girls, as research has shown that when women obtain the same levels of education, experience, and farm inputs as male farmers, they increase their yields, the nutritional status of children in the home increases, and the proportion of the population below the poverty line falls (Quisumbing et al., 1995). Investments in education can also result in social and institutional changes by enabling people to better access and utilize public information pertaining to health, nutrition, hygiene and natural resource management (Acker & Gasperini, 2009, pp. 14–17). TAPs are investing in human capital through built and financial capital investments of construction of new schools, and funding for social protection mechanisms through the *Mi Familia Progressa* program. TAPs are also investing in human capital through non-formal education¹⁸ with trainings offered in the areas of leadership development, the functions of the

¹⁸ In discussing formal and non-formal education initiatives I use the United Nations Education, Scientific and Cultural Organization's definitions as established in the 2011 International Standard Classification of Education: Formal education: "Education that is institutionalized, intentional and planned through public organizations and recognized private bodies and – in their totality – constitute the formal education system of a country. Formal education programs are thus recognized as such by the relevant national education authorities or equivalent authorities, e.g., any other institution in cooperation with the national or sub-national education authorities. Formal education consists mostly of initial education. Vocational education, special needs education and some parts of adult education are often recognized as being part of the formal education system." Non-formal Education: "Non-formal education. Education that is institutionalized, intentional and planned by an education provider. The defining characteristic of non-formal education is that it is an addition, alternative and/or complement to formal education

government, nutrition, hygiene and agricultural production and product marketing. These human capital investments may lead to a greater ability for families to mobilize social, political and cultural capitals, since, as Flora (2008) notes, investments in human capital for rural development can increase the skills and health of individuals to improve other community capitals. However, social, political, and cultural capital can be much more difficult to measure than built and financial capitals (Cutter, Burton, & Emrich, 2010; Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum, 2008; Peacock et al., 2008), and further research is needed to examine the impact of the TAPs educational initiatives on these other capitals.

Familial and Women's Health

Beyond the nutritional aspects of health that are targeted by TAPs through their agricultural interventions, TAP support for health is also facilitated through municipal health centers which function as treatment centers for illnesses and injuries much as a hospital would in a larger city. There are also specific initiatives at the health centers aimed at enhancing regional food security. The goals of food security actions at the municipal health centers are to contribute to reducing the index of severe to moderate nutrition for children in the area; to increase the awareness of parents in the ways to avoid preventable illness; and to increase awareness among community leaders in ways they can contribute to improving the nutritional health of area families (Health Center, Interview, May 5, 2011).

within the process of the lifelong learning of individuals. It is often provided to guarantee the right of access to education for all. It caters to people of all ages but does not necessarily apply a continuous pathway-structure; it may be short in duration and/or low-intensity, and it is typically provided in the form of short courses, workshops or seminars. Non-formal education mostly leads to qualifications that are not recognized as formal or equivalent to formal qualifications by the relevant national or sub-national education authorities or to no qualifications at all. Non-formal education can cover programs contributing to adult and youth literacy and education for out-of school children, as well as programs on life skills, work skills, and social or cultural development.”(United Nations Educational, Scientific and Cultural Organization Institute for Statistics, 2012, pp. 81–82)

To achieve these goals, 'food security technicians' employed by the health centers regularly visit rural communities to measure and weigh children under five years of age to determine if and when children become at risk for malnutrition so that they can be given immediate attention. These technicians also visit communities to speak with parents and community leaders about important health measures and to inform them of upcoming public health events occurring in their municipality. They also deliver food assistance to the families during these visits, often in the form of 'Vita Cereal', a fortified blend of maize, soy, and micronutrients developed by the World Food Program along with local Guatemalan experts. Vita Cereal is designed to increase birth weight in babies, facilitate normal physical growth and development, and help provide a foundation for a healthy life. It is distributed to pregnant and nursing mothers as well as to children from six months until three years of age (Penner, 2008).

Familial and Women's Health Vignette: Doctors of the World

Beyond the municipal health centers, one TAP, particularly focused on family and women's health, is Doctors of the World which is an international NGO that works to realize the right to health for all people, especially those living in situations of poverty, gender inequality and social exclusion or who are victims of humanitarian crises. Doctors of the World works in sixty communities in the Copanch'orti' area, ten communities in each of the municipalities of Olopa, San Juan Ermita, and Jocotan, and twenty communities in Camotan. Participating in their projects are 140,000 individuals, of which 60% are female. The Doctors of the World staff in Copanch'orti' is composed of nine people in the areas of administration, logistics, institutional strengthening (of public health institutions) and outreach to victims of domestic violence. Their

funding comes from public funds from their international donor country and they work from a budget of \$252,140 (USD)¹⁹ (Doctors of the World, Interview, May 10, 2011).

A specific objective of this TAP is to contribute to improving the health conditions of women in the municipalities of Jocotán, Camotán, San Juan Ermita and Olopa by strengthening the comprehensive, holistic care of women in the region. The way they seek to achieve this in the long term is "by working to strengthen the public health system, so as to reduce maternal mortality, and eradicate violence" (Doctors of the World, Interview, May 10, 2011). In Copanch'orti', Doctors of the World works both with individuals and with other TAPs and they have a goal of increasing the number of TAPs that commit to the goal of reducing maternal mortality by 25%. This is an important objective because, as one research participant explains:

Cultural conditions, *machista* idiosyncrasies, not only in the rural communities, but also among men in the urban centers of these municipalities, interfere with the execution of institutional action and this results in increased rates of maternal mortality (Doctors of the World, Interview, May 10, 2011).

Efforts to achieve these goals are done through "a holistic approach that includes economic development, food security, security guarantees, together with human rights in general. And, especially governance and local governance" (Doctors of the World, Interview, May 10, 2011).

While Doctors of the World does consider partnerships to be important in advancing this holistic approach to improving women's quality of life, they do not view all TAPs within the generic category of 'stakeholder'. Rather, they work proactively from a standpoint of human rights, to make it clear both to the women they serve in the farming communities and to other

¹⁹ Based on an exchange rate of 1 USD = 0.794001 EUR computed on June 14th, 2012 (XE.com Inc., n.d.).

TAPs that the state institutions are the "holders of obligation", the NGOs are the helpers, "the holders of co-responsibility" and the people, the 140,000 people they seek to serve in the Copanch'orti' area, are the "rights' holders" (Doctors of the World, Interview, May 10, 2011). Thus they aim to strengthen the people's awareness of and ability to demand provision of their human rights, and to increase recognition by state institutions that they and not the NGOs are obligated to meet these demands. They consider that NGOs are there to help and support but not release the state from its responsibility (Doctors of the World, Interview, May 10, 2011).

Doctors of the World operates through thirty different activities in Copanch'orti', which are divided into three main categories. Forty percent of their activities are aimed at the first category of institutional strengthening, improving the technical and managerial capacity of public health structures. This strengthening is done primarily by providing health centers with medical equipment and supplies that aid in providing both care to women and better access to health care for all people (Doctors of the World, Interview, May 10, 2011).

The second major category of activities comprises efforts to strengthen community organizational capacity by working with community development councils, which are the highest authority in the community. Doctors of the World is working at this level to form and strengthen community health committees that will support communities in addressing issues of reproductive health as well as other health emergencies. Through these community health committees, Doctors of the World is working to "generate capabilities of solidarity and organization" among rural families (Doctors of the World, Interview, May 10, 2011).

These efforts have borne some positive results:

The community health commissions are keeping records so that now we can see that all the families contribute \$1 or \$2 quetzals per month to have fuel, gas to get to the town, in emergencies. There are some commissions that in three months have raised over \$1500 Quetzals, which stands out, considering that the average [income] from all the people in these four municipalities, is not even close to \$100 Quetzals monthly. We have an [average] wage of \$30 to \$35 Quetzals per month. [There are only] six hundred formal jobs in the four municipalities. The other ones are just subsistence jobs, without any social security guarantee. So to center the community around health, it contributes in part to prevent mortality, but also to increase citizens' actions or participation; enabling people to become responsible for their health care (Doctors of the World, Interview, May 10, 2011).

The third category of Doctors of the World's activities includes all activities that are related to the eradication of violence against women. The formation of 'Community Networks of Women Against Violence' is one major activity in this area. This network is comprised of community leaders who "courageously denounce [violence], and accompany and advise victims of sexual and intrafamiliar violence" (Doctors of the World, Interview, May 10, 2011). The other activities in this category are executed through the Doctors of the World office where they give direct attention to victims and provide economic assistance, counseling, case monitoring, and support in engaging the justice system. All of the activities in this area of eradicating violence against women are administered through permanent coordination with justice officials, health authorities, and in conjunction with civil organizations and municipalities (Doctors of the World, Interview, May 10, 2011). Interestingly, it was during our conversation about the need to eradicate violence that the topic of food security first came up with one participant:

The big problem here is that people do not have land to work, or have resources to grow [crops], or to maintain supplies, then, [it becomes] a vicious circle, with the food security issues related to [the] social issues, right? If they had guaranteed food, staple [crops] or the micronutrients [they need], I think that there would be less violence. Why? Because young people for \$35 or \$50 quetzals, [will participate in] drug trafficking. [And] For \$50 quetzals [they will] go and kill someone else because they will get paid \$50 quetzals [which] allows them to survive - a month – sometimes - because they live mainly [on] tortillas and corn, right? So we need to work, I think, on food security issues. We must work to generate better survival (Doctors of the World, Interview, May 10, 2011).

While Doctors of the World does not directly operate any agricultural projects they work to enhance regional food security through their partnerships with other health organizations to care for families at risk of malnutrition, and through support for community health commissions, through which they encourage families to work collectively to improve their situation (Doctors of the World, Interview, May 10, 2011).

Community Capitals and TAP Health Initiatives

A region's health can be measured in terms of "access to clean water, safe and nutritious food, improved sanitation, basic health care, and education; mortality and morbidity rates for various segments of the population; the incidence of disease and disability [and] the distribution of wealth across the population" (McIntyre et al., 2009, p. 30). Research has shown that when access to clean water, sanitation, immunization, basic health services and education increase in a nation, that nation's health profile also increases (McIntyre et al., 2009, pp. 30–31). The TAPs participating in this research are making important human capital contributions to improving the overall and long-term health of the Copanch'orti' population through built and financial capital

investments in upgrading the number and quality of health care facilities. Emphasis is being placed on improving the ability of the region's health providers to care for a greater percentage of the population and particularly to provide care in isolated communities. This will help expand the quality and scope of health care services available in the region. Additionally, health is also being advanced through capital investments in other areas, with natural capital investments in water quality and farm diversification for example, impacting health through increased water quality and greater dietary diversity. Indicators of social, cultural and political capital investments were also found particularly with Doctors of the World's work. They are mobilizing bonding social capital among families through the community health commissions they are forming and their emphasis on the human right to health is promoting a cultural shift in the way the people view their situation and what is possible to change. This can enable mobilization of political capital as people's awareness and ability to demand provision of their human rights is strengthened.

Coordination among TAPs

A final area of action by TAPS to enhance regional food security in Copanch'orti is to enhance coordination among TAPs towards this end. This is an area where action is critically needed given that a lack of a designated state actor responsible for food security, and inadequate coordination among development stakeholders, are two problems consistently preventing greater progress toward eradicating malnutrition (Shekar, Heaver, & Lee, 2006, p. 1). In terms of government action, as Shekar, Heaver, & Lee (2006) explain, nutrition is a multidimensional issues that is often "the partial responsibility of several sectoral ministries or agency departments, but the main responsibility of none" (p.13). Ineffective interventions against malnutrition are also a result of a lack of coordination, collaboration and agreements about how

to tackle the problem both within governments and between governments and partner organizations (Shekar et al., 2006). Examples of how TAPs are working to improve coordination among themselves have been detailed in the previous sections with action being taken to share best practice methodologies in agroforestry and watershed management with multiple NGO and municipal partners and health and education partnerships forming to promote collective action on these issues. In addition to these efforts there are two TAPs working specifically at the level of organizations (rather than directly with farm families) to advance greater TAP coordination.

TAP Coordination Vignettes: Observatory of the Right to Food and Nutritional Security and the Center of Communication for Development

Two of the TAPs I interviewed are working in unique ways at the level of organizational management to advance coordination among TAPs. The first, the Observatory of the Right to Food and Nutritional Security (RTF Observatory), is a nonprofit organization funded by the European Union and created to support the UN declaration of the right to food. Their pilot projects are located in the Departments of Chiquimula and Totonicapán. This TAP, based in Guatemala City, has an overall staff of four employees, with one person working full-time in the Copanch'orti' area. The aim of the RTF Observatory staff is to establish a regional strategy to advance the right to food in the Chorti area by working through local community development commissions and with other TAPs. Through these groups this TAP works with approximately 50 participants with equal numbers of women and men included (RTF Observatory, Interview, May 2011). The RTF Observatory works to educate TAPs and community groups about the importance of the right to food and to create tools to assist these groups in adapting their projects to include (and evaluate progress towards advancing) the right to food. According to

representatives of the RTF Observatory, the right to food is established as a fundamental right for the citizens of Guatemala in the Guatemalan Constitution:

In the region there are many organizations working, but each one going after their own objectives [which are] not based on a policy. The policy around food sovereignty as set forth in the constitution of Guatemala is one of the best in Latin America, but contradictorily, in Guatemala we have the highest indexes of malnutrition, because they [the standards set forth in the constitution] are not fulfilled. So our goal is to help enforce the constitution (RTF Observatory, Interview, May 2011).

This project is only a pilot project and therefore funded only for two years. In that time, the staff in Copanch'orti' hope to educate the regional food security work groups (known as Municipal Commissions for Food and Nutritional Security and comprised of both TAPs and community groups) about Guatemala's national policy on the right to food. When they first began working in Copanch'orti', the staff at the RTF Observatory undertook a diagnostic study to examine the extent to which the food security projects in the area are based on Guatemalan law (RTF Observatory, Interview, May 2011). What they found was that none of the TAPs were using the Guatemalan Constitution as a basis for their projects:

The diagnostic [was done] to establish to what extent they [the TAPS in Copanch'orti'] are working on the basis of the law. And we saw that although there are actions that they are taking [to enhance food security], not one of them uses the law as a reference. Can you imagine? There are many actions for food security that may be going on here, but nobody knows that there is a law, that there is a way forward (RTF Observatory, Interview, May 2011).

The second TAP working uniquely at the level of organizational management is the Center of Communication for Development, an organization working to improve the living conditions of the rural poor through better communication among development stakeholders and, as a result, better coordination of development projects. This TAP's goal is "to improve the capacities of the families in the care and nutrition of their children, especially the little ones, 0-5 years, through knowledge and learning about good eating practices, good hygiene practices, good health and everything that is related to the good nutrition of the children. We do that through the strengthening of the communication structures of local organizations" (Center of Communication for Development, Interview, April 2011). To further these objectives the Center of Communication for Development works through the Municipal Commissions for Food and Nutritional Security, which are described by one interviewee as "the coordinating entities, that get together NGOs and the state institutions, in topics of nutrition and food security throughout food insecure regions of Guatemala" (Center of Communication for Development, Interview, April 2011).

A major aspect of this TAP's work has been to execute a diagnosis of the communication structures in the areas. Their investigation sought to identify "who was speaking in the communities, what were the messages being distributed about food and nutrition, and who was listening to the messages" (Center of Communication for Development, Interview, April 2011). The diagnostic of communication structures in the region revealed that "one of the big disadvantages is that there are a lot of organizations and each of them have very diverse work, and [the groups were] not focused. There were some existing spaces among TAPs for presenting results or projects but there were few spaces for coordination of activities" (Center of Communication for Development, Interview, April 2011).

To mitigate this problem, the Center of Communication for Development is creating a database of all the institutions working in the area with information on what organizations are working in each municipality in the area of food and nutritional security, the type of work they are doing, where (in which communities) they are working, with which part of the population (with the family, youth, women), the length of time for which the project will be maintained, and the impacts of each project. They hope that the Municipal Commissions for Food and Nutritional Security will be able to use this information to better coordinate activities:

In the region we are confronted with a very dispersed number of projects and organizations. With so many organizations and projects, we found individuals, families, and *aldeas* (small villages) that were served, that is to say, served by two or up to five projects at a time. And at the same time there were some *aldeas* and families that were not being served by any institution. What was missing was integration and focus on their work. We are in the planning process to make the work better and more complementary (Center of Communication for Development, Interview, April, 2011).

Regarding the goal of complementarity between TAPs, the Center of Communication for Development representatives point out that in the Copanch'orti' area some organizations provide production assistance through the delivery of inputs such as seeds, plants or chickens, while others provide filters or build sanitation facilities, and still others work in the area of education, providing training in topics like health, nutrition or the preparation of food. The Center of Communication for Development through the Municipal Commissions for Food and Nutritional Security has as their goal that TAPs cooperate and support each other but not duplicate projects in communities. However, TAPs should not reject working in a community because they see another TAP there:

"[Complementary?] It means that if one organization is doing production assistance [in the form of farming inputs such as seed, equipment or fertilizer] in a community, the other organization needs to do its training [providing technical advice on production practices or forming farmers associations] in that same community. The projects should be complementary and enhance each other, without putting more pressure or work in the activities that the organizations are already involved with the community. The goal of the planning is not to create new projects, but to better support the ongoing efforts.

Obviously each organization has their own projects, their own logic, their own times, so what this plan is about is just to put it together. [Complementary] means to do together whatever is planned or programmed" (Center of Communication for Development, Interview, April, 2011).

Community Capitals and TAP Coordination Initiatives

Innovation and change towards sustainable development are recognized to be dependent on harmonization of interlinking sociological, cultural, agricultural and environmental issues (FAO, 2005; Pretty, 2002). In rural areas, improved coordination, mediation and negotiation processes are needed to achieve more integrated natural resource management that can address environmental and food security challenges and balance differing and often conflicting land and water use needs. Collective action and partnership with diverse stakeholders can strengthen rural community and farmer organizations and enhance the ability of these groups to interact with policy-makers (McIntyre et al., 2009, pp. 146, 207).

The work of the RTF Observatory to educate rural families about their human rights is an important investment in cultural and political capital. Instead of being simply passive recipients of innovations and charity, families become aware of their legal rights as citizens and better

equipped to work with political decision makers to ensure that those rights are upheld and satisfied, particularly basic human rights to food and water and other rights impacting control of natural resources (political capital). By working both with families and other TAPS, these efforts also support improved coordination between TAPs, between area TAPs and rural families, and between these groups and outside officials, particularly with political officials at higher levels of government as a shared platform based on legally supported human rights. These reflect contributions to both bonding and bridging social capital. The Center of Communication for Development's efforts to both establish an information database about ongoing TAP activities and to open spaces that will enable greater partnership between TAPs in the future also impact bonding social capital among the community of TAPs. Both of these TAPs are making important investments towards enhancing the ability of development practitioners to work with one another more effectively, both thematically and geographically, which supports cohesive, regional progress towards sustainable food systems development.

Utilizing the Community Capitals Framework and Agency Theory to Examine Hindrances to TAP Success

The data presented thus far reveal that TAPs are working in targeted ways to enhance the region's food security. Multiple TAPs are working in each of the six thematic areas described with no particular distinctions being apparent regarding the type or size of TAP allocating resources in a particular area. This shows that in spite of the diversity of TAPs active in the region, there are common areas of resource allocation and similarities in the development agendas of the groups working in Copanch'orti'. An examination of the data for indicators of community capital investments in each area reveals that unlike many cases where only financial and built capitals investments are made (Ritchie & Gill, n.d.), in Copanch'orti' there are

initiatives targeted at enhancing bonding social capital within the farming communities and bridging social capital between farm families, TAPs and outside political groups. TAPs are also challenging cultural norms and investing in strengthened cultural capital by emphasizing gender equality and the rights and ability of the area's residents to act toward political change.

The CCF analysis conducted here has focused primarily on the ways TAPs are mobilizing and investing in the seven community capitals to enhance the stocks of each capital in the farming communities in which they work. This shows how TAP efforts can be better coordinated to result in long-term accumulation of development successes by positioning their efforts within a holistic framework that can help TAPs understand and work with their existing assets (C. B. Flora & J. Flora, 2008). In addition to this framing of assets at the level of the farming community, the community capitals framework can also be applied at the organizational level of the 'TAP Community'. As noted previously, agency theory when applied to organizations examines the transactions between groups and the pressures in place that influence the ability of each group to accomplish their objectives (Waterman & Meier, 1998). In this section, I combine an organizational application of the CCF with an application of agency theory to funder-TAP relationships, to examine the difficulties that exist and hinder accumulation of development successes.

Agency Theory Implications for Natural Capital

Natural capital challenges for the TAP community are largely the same as for the farming communities. In this region of Guatemala, the terrain is mountainous and the soil quality is poor – rocky, highly eroded, and with little organic matter content. This is in part due to flooding, and in part due to over-usage caused by high population growth and a dual, row crop farming system of corn and beans that contributes to both erosion and loss of soil nutrients. Few forests remain,

and the patches that are left are being used for timber and fuel wood collection at rates that will not allow for sustainable regeneration. Vegetation coverage has become inadequate to retain rainfall, humidity, and soil. The weather is becoming more erratic, the frequency of severe weather events is increasing, and it is likely that this pattern will only continue and worsen due to global climate change. These weather events have both immediate impacts, such as during a drought when families are not able to produce enough food for the current year, and long-term impacts that will be felt for generations, such as when floods occur and wash away needed silt, further degrading the soil (CATIE, 2008; Chacón, Naranjo, & Colaboradores, 2011).

TAPs are uniquely impacted by these challenges in several ways.

- 1) Communities in the more isolated areas in the mountains are difficult to reach. This means it takes more time and can be more challenging to deliver programs to families living in remote locations.
- 2) Infrastructure development projects in environmentally degraded areas can be more difficult, costly and time consuming. Outreach has to be adapted in difficult conditions, and some areas cannot benefit from certain investments (i.e., aqueducts), which can lead to TAPs not meeting their desired outcomes within the prescribed time frame.
- 3) Poor water quality means that other investments are less likely to result in positive results. For example, unsanitary water can cause health issues (i.e., diarrhea) so that even if TAPs are successful in increasing food access benefits to overall health may not accrue.
- 4) Increasing climate variability makes it difficult to plan long-term interventions.

None of these challenges are insurmountable, and TAPs are not without assets when it comes to addressing these challenges. Analyses have been done on everything from soil and water quality

to categorization of native trees and plants by both local and national/international research groups. Accordingly there are many actors already in place who specialize in the study, protection and development of the natural resource base. Applying agency theory to this situation, however, reveals that a principal agent dilemma may exist in the way TAPs are evaluated that hinders effective action towards sustainable natural capital investments. Representatives from TAPs participating in this research often noted that they struggled to provide outreach to all the families they were responsible for and to do so within the limited time periods associated with their funding contracts, as one participant explains here:

I am only one [person] and I have as a goal in three years [to serve] a thousand families. One thousand families directly served. It is very little [time] to assist a thousand families, bring them to attend training, educate, it is very difficult (Strategic Project for Food Security, Interview, April 18, 2011).

This pressure by donors (the principals) on TAPs (the agents) to impact large numbers of families in a short timeframe leads to TAPs having little incentive to locate in the most remote areas or work in the most challenging natural environments. Such was found to be the case by Morris, Hoddinott, Medina, & Begeron, (1999) in their study of an anti-poverty program to increase incomes of the rural poor in western Honduras. The authors found that the most deprived areas were least likely to receive assistance. They credit this finding to the project's implementation schedule and a project evaluation strategy that emphasized economic results for participating farmers. According to the authors these factors created an incentive (for the TAP who administered the project) to select areas that were easily reached and to target project benefits to less resource-limited households within these areas, since those tended to be the households best able to utilize project funds within the specified timeframe to achieve the

expected outcomes. Similar results were found by Galasso & Ravallion (2005) in their examination of a 'Food for Education' poverty reduction program in Bangladesh. Investigating the factors that influenced how communities were selected for participation and how program resources were allocated within selected communities, the authors find that structural features of the village were significant predictors of resource targeting across villages. Specifically, villages which were more isolated, or had higher levels of land inequality were less likely to be targeted for participation in the program, and the poor were significantly less likely to reap the benefits of the program in villages that did not have a telephone or were more distant from populated city centers.

Agency Theory Implications for Built and Human Capitals

Inadequate rural infrastructure (water, electricity, roads, etc.) results in a decreased ability of farming communities to utilize built capital to address their food security needs. The TAP community is also impacted through a diminished ability to carry out project activities that require these assets. More specifically, low levels of built capital within the office environment (i.e., inadequate office supplies, equipment, and technology and a lack of transportation) impact the TAP community's ability to meet their project objectives. This is a manifestation of a lack of financial capital that also impacts human capital with insufficient funds leading to both under-resourced and understaffed TAP offices struggling to carry out all project activities and provide outreach to all families in need of support. TAPs have an incentive to promise too much for too few resources in order to get the grant or contract, and may then struggle to fulfill an impossible contract.

Agency theory reveals two underlying incentive problems that lead to these challenges. The problem of inadequate office level built capital assets, such as office supplies, technology,

and transportation can be a result of perverse incentives between principals and agents created by project timelines and performance requirements. Donors have little incentive to fund costly built capital investments for office equipment and transportation where they have only short-term commitments, particularly given the information asymmetries inherent in the principal-agent relationship wherein donors (principals) lack the ability to know the extent to which these capital investments are utilized by TAPs (agents) for non-project related tasks. Relatedly, TAPs have little incentive to report a lack of adequate built or human capital within their office if it will make them look less competitive against other TAPs when competing for funding (Cooley & Ron, 2002; Sappington, 1991).

Regarding regional built capital (i.e., rural infrastructure) the incentive problem is related to accountability. Who is responsible for building and maintaining adequate roads, water, sanitation, and electricity infrastructure? Where outside donors and nongovernmental TAPs have a history of taking action to address these built capital issues, the pressure on state governments to follow through with these investments is reduced. Moreover, where state governments receive more of their funding from donors than they do from taxpayers, there is little incentive to maintain public infrastructure in response to public demand (Paul 2006; Moses et al. 2008). This may well be the case in Guatemala where, as reported by Otis in 2012, 75 percent of Guatemalan workers labor in the informal economy and tax receipts make up just 11 percent of the nation's Gross Domestic Product. This leads to a principal agent dilemma because, as explained by Buffardi (2011), state governments have a perverse incentive to be both politically and fiscally irresponsible, "knowing that they will not be held accountable either by their constituents whose taxes represent a small proportion of state resources, or by international donors who face a Samaritan's dilemma when they cannot credibly threaten to withdraw support" (p. 81). Local

level government TAPs receiving both state and donor funding are particularly impacted by this dilemma. Outside donors (principals) have little incentive to staff and equip local government offices (agents) that are responsible for a wide range of public services, many of which may not be related to the donor's own goals. Conversely, state governments (principals) lack the incentive to give these local offices (agents) more staff or better equipment when funding from outside sources is available to augment budget shortfalls (Paul 2006, Brautingam and Knack 2004).

Agency Theory Implications for Cultural, Social and Political Capitals

TAPs are working in holistic ways to mobilize social, cultural and political capital among farming communities in the region, as described previously in this chapter. These actions include educating farmers and TAPs on the human right to adequate nutrition, integrating gender into data collection and evaluation mechanisms, and supporting local level watershed management councils to give farm families a voice in the decisions that affect their access to clean water. Within the TAP community, however, there are challenges that hinder effective mobilization of available assets.

While the TAPs have individual political connections, there is a lack of collective mobilization that can result in ineffective efforts to influence regional politics. Research participants often remarked that each TAP has its own agenda, that they are not 'on the same page', and that there is little long-term vision towards systemic policy change (TAPs Copanch'orti', Interviews, February-June, 2011). This echoes the finding of Delgado (2010), who reports that there is a clear need for greater and better coordination and integration of food security programming in Guatemala, within and across sectors (agriculture, education, environment, health, etc.), as well as across local, regional, and national platforms (p. 22).

Government employees that were included in the study generally reported being frustrated by a lack of support from higher levels of government (TAPs Copanch'orti', Interviews, February-June, 2011). There are at least a dozen different political parties in Guatemala (Central Intelligence Agency, 2012), so there is frequent turnover in state agencies, making it difficult to form long-term alliances.

Regarding cultural capital, participants spoke of a culture of competition between TAPs, since they are all competing for limited development funds from outside donors interested in working in the region. This competitive funding environment may contribute to the existing low levels of bonding social capital within the TAP community. According to research participants, while the TAPs may know of each other and have some idea of the work the other groups are doing, they do not often work with one another (Strategic Project for Food Security, Interview, April 18, 2011; La Mancomunidad Copanch'orti, March 16, 2011). While there are TAPs working at the organizational level to increase capacity for leadership and collaboration between TAPs, participants from these groups report having difficulty getting TAPs to participate consistently. Monthly group meetings are ill-attended, and even for TAPs that do participate in group meetings, some send different representatives to each meeting. This results in a lack of continuity, makes it difficult to create plans that everyone agrees on, and prevents progression from one objective to the next (The Committee on Food and Nutrition Security, Interview, April 4, 2011).

All of these barriers to collaboration are linked to a principal-agent dilemma. What incentive do agents (TAPs) have to work together? How will doing so help them secure funding to continue as an organization when funding contracts are awarded competitively and principals (funders) want to know how their activities are new, unique, and different from other TAPs

applying for those same funds (Easterly, 2002)? In this institutional environment there is little incentive for TAPs to work cooperatively. Also short-term funding arrangements from funders can result in an environment of uncertainty (Sjöblom & Godenhjelm, 2009) making it difficult for TAPs to commit to long-term planning with other TAPs. Further, a lack of a unified political voice within the TAP community may be the result of a lack of coherence both within individual donor policies, and across donors. The level of aid fragmentation has increased for both donors and recipients over the last 35 years with 563 official aid agencies currently funding an estimated 60,000 aid projects worldwide (Kharas & Linn, 2009).

Agency Theory Implications for Financial Capital

Underlying all of the previously described principal-agent dilemmas is the financial capital issue of TAP reliance on donor funding. At the very core of this analysis is the assumption that TAPs (the agents) have few funding options and thus have considerable incentive to satisfy the principals. As succinctly put by one research participant: “[Funding agencies] They hold the strings. Yes, they are the ones setting up the rules of the game” (RTF Observatory, Interview, May 6, 2011). As has been shown, this can result in negative incentives for both states and TAPs to act in ways that hinder achievement of development outcomes.

One of the most pressing challenges for TAPs is the short-term nature of funding contracts (RTF Observatory, Interview, May 6, 2011). Over the past three decades there has been an increasing trend towards non-permanent instruments such as programs, partnerships, and projects (Sjöblom and Godenhjelm, 2007). The implications of this trend towards non-permanence, also referred to as 'projectification,' are unclear and as Clarke, Raffay, & Wiltshier, (2009) note there is “an absence of literature relating to the capacity of communities to learn

from short-term funded projects". If such capacity is lacking then the accumulation of assets necessary for a spiraling up of capitals may not occur.

As noted previously, short-term funding arrangements can also lead donors to measure impact through tangible results that are easily seen instead of intangible qualities, such as 'a greater sense of unity and trust'. That preference for the easily countable can impart negative incentives to TAPs and prevent real change in communities. For example, for some TAPs in Copanch'orti' 'enhanced gender equity' is measured by the number of women attending meetings where community decisions are being made. This is an inadequate evaluative measure, since, as Mohanty contends, "The mere presence of women in the decision making committees without a voice can be counter-productive in the sense that it can be used to legitimize a decision which is taken by the male members" (2002, p. 1). Moreover, social differences that privilege certain women over others need to be identified, as Shaheed (2009) notes in explaining that women do not have identical interests across class, ethnic, caste, religious and other identities. The formulaic solution of simply increasing the numbers of females within community development councils is not sufficient to ensure inequalities are being confronted and challenged. TAP incentive and ability to make more long-term, sustained investments to challenge these inequalities, however, is stymied by short-term funding arrangements that do not include evaluation mechanisms for building intangible capital assets.

Conclusion

TAPs in Copanch'orti' involved in food security enhancement are working to achieve this goal through both agricultural and nonagricultural activities. The agricultural activities can be grouped into the categories of farm diversification, forestry protection and water management. A variety of environmental benefits can result from adoption of the proposed agricultural practices,

including improved soil and water quality and enhanced biodiversity both on-farm and in non-farm forested areas. Moreover, livelihood improvements, such as increased dietary diversity and greater income generating opportunities, can also be realized from these activities. In addition to these agricultural and environmentally focused projects, TAPs are also making deliberate investments into human capital through investments in health and education infrastructure. These investments are intended to enhance both access to health and education services, and the capacity of these institutions to serve the needs of area families.

A common theme can be identified between two TAPs, Doctors of the World and the RTF Observatory, in that they both emphasize the need for state governments to follow the law regarding food security and health care for all citizens. In the case of the Doctors of the World, the role of the state, and not the nonprofits, as the primary provider of health care is emphasized, whereas with the RTF Observatory the responsibility of the state to ensure adequate food access is the focus. In both of these cases there is an emphasis on the need for change in the political arena in order to solidify progress for the long-term and sustained health of the region's families. A key finding from examination of all of these projects is that there is a lack of coordination among TAPs, which has negative implications both for regional ecosystem health and for long-term sustainability of livelihood improvement efforts.

The community capitals framework in conjunction with agency theory has been applied to the empirical data to examine opportunities and challenges to the mobilization of TAP assets for enhanced food security. The findings reveal that perverse incentives from the way funding arrangements are designed and implemented hinder improved TAP coordination. By applying incentive theory in the form of a principal-agent model of transactions, the analysis presented in this chapter enables a more holistic understanding of why development success are prone to

occur only on a case-by-case basis even where a robust development community is taking action in targeted ways to enhance food security within a single region.

CHAPTER 6: CONCLUSION

In this dissertation I have presented data I collected from a diverse group of development organizations inclusive of both government and nongovernmental groups that I refer to as technical assistance providers (TAPs) who are working toward the common goal of enhancing food security for rural, farming households in the Copanch'orti' region of eastern Guatemala. Over the past several decades, development successes have occurred as a result of targeted poverty reduction initiatives (Hill et al., 2008), but it is unclear why these successes have not been replicated across the region. What hinders the accumulation of such successes and how can such accumulation be facilitated to result in significant advancements toward secure livelihoods across the region and across time?

I addressed this question through a joint application of the community capitals framework and the agency theory of incentives to empirical data collected from TAPs regarding actions they are taking to improve food security among area families. The data provided first-hand insights from development practitioners working daily 'in the field' in terms of both mobilizing different community capitals and in the direct and indirect barriers to collaboration and cumulative development from the principal agents who funded their projects. The perspectives of these front line development professionals, particularly when examined across different organizations, are critical to advancing an understanding of how persistent, regional challenges can be addressed in the light of limited resources (community capitals) and the latent power of the variety of donors.

Summary of Research Findings on TAPs' Food Security Initiatives

The community capitals framework helps communities discover how existing assets can be mobilized and invested in to achieve economic security, ecosystem health, and social inclusion (C.B Flora, Emery, & J. Flora, 2012). To discover the assets available in the region, I have presented data on the types of activities TAPs are engaging in to enhance food security in Copanch'orti'. These initiatives emphasize increasing and diversifying home food production, promoting forest and water conservation practices, supporting education and health, and opening spaces for participation by women in TAP activities and public decision making spaces TAPs of all forms (local, national, international, government, academic, and nonprofit) and sizes are involved in these types of initiatives. I found a lack of spatial and organizational cohesiveness across TAP initiatives and the likelihood of these initiatives resulting in regional change is uncertain. However, my data do reveal that TAPs are pursuing holistic development in that the efforts are being made to enhance all seven capitals. This is an important finding, because rural families struggling with poverty face a wide range of social, political, cultural and human capital challenges that are unlikely to be addressed solely through injections of production inputs (Flora & Thiboumery, 2005).

My analysis of the agricultural and non-agricultural initiatives and outreach mechanisms being pursued in Copanch'orti' has revealed that TAPs seek to increase the capacity of farmers to increase on-farm production and work together to better their communities. This type of capacity development, which is inclusive of not only productive and technological improvements, but also of investment in the human factors of development, is an important feature of the work being undertaken by TAPs in Copanch'orti'. It is important to emphasize, however, that for long-term change to occur, investments by TAPs into human capacity building should not be restricted to

those actions that lead solely to a personal sense of self improvement, but to real ability to change the system. As critics of the empowerment rhetoric point out, making people responsible for their own development implies that they are responsible for their problems (Harriss, 2002). As Veltmeyer (2009) explains, this draws attention away from the global capitalist system and the associated "class struggle over the allocation of society's productive resources" ("Civil Society and Development," 2009, p. 221).

Fortunately, capacity building investments that enable people to challenge the structures of economic and political power are already underway in Copanch'orti', as explained in the previous chapters' discussion of the ways TAPs are mobilizing the various community capitals. The work of the RTF Observatory and Doctors of the World, for example, both to educate families of their human rights to adequate food and health, and to help other TAPs advocate for and support state responsibility in ensuring these human rights, are some ways TAPs can contribute to strengthening the ability of individuals and communities to effectively participate in negotiations that impact their livelihoods. These TAPs are working to advance a fundamental change in both cultural and political capital in the way the rural residents of Copanch'orti' view their situation and their livelihoods, not as a tenuous existence dependent on the charity and decisions of outsiders, but as a result of a failure of the state to uphold their rights, inherent to them as human beings, and established by law as theirs (Center for Food Justice, Interview, April 2011). Tandem investments in adult basic education would help such efforts be even more impactful, by enabling farmers to be more involved in the political arena and challenge the underlying power structures that continuously re-create inequalities and further embed the problems of poverty (Robinson, 2005).

Summary of CCF and Agency Theory Analysis

The incentives/disincentives that hinder or promote collaborative work among TAPs, were addressed through a joint application of the community capitals framework and agency theory. Principal-agent problems in the way funding contracts are designed, implemented and evaluated were found to cause a variety of negative incentives that may hinder greater TAP collaboration. What incentive do agents (TAPs) have to work together? How will doing so help them secure funding to continue as an organization when funding contracts are awarded competitively and principals (funders) want to know how their activities are new, unique, and different from other TAPs applying for those same funds (Easterly, 2002)? These challenges are not present only in Copanch'orti'. Sjoblom and Godenhjelm (2007) argue that the trend towards non-permanent instruments such as programs, partnerships, and projects, is one of the most important administrative changes in governance structures in the past several decades. The implications of this trend towards non-permanence, also referred to as 'projectification,' are unclear and many questions have been raised regarding the impacts of non-permanent or short-term governance on development institutions and outcomes.

One of the implications is that in spite of the need to reach out to geographically remote areas to effectively target marginalized groups, the short-term nature of funding arrangements puts pressure on TAPs to work with communities that are easier to reach geographically (Mansuri and Rao, 2004). With short-term projects, the incentives for TAPs are to work with those individuals who are more likely to produce positive results within the project's timeframe. The short funding spans also impact the type of projects that are undertaken, as there is a built-in incentive to produce results that can be quickly quantified or easily seen.

Another implication of short-termism is that TAP staff operate in an environment of continual uncertainty (Sjöblom & Godenhjelm, 2009). For example, many of the TAP employees participating in this research in Copanch'orti' are employed on a contractual basis. This means that their continued employment hinges on the ability of their organization to obtain continued funding. Given the pressure to secure future funding, TAPs have little incentive to report inappropriate projects since, if TAP staff were to be entirely truthful about implementation problems, they might hurt their chances of contract renewal and threaten their own survival (Cooley & Ron, 2002; Sappington, 1991). The result is that, in addition to the consequences previously noted, short-term funding arrangements themselves can actually have negative impacts on funding agencies, as contracted staff have few incentives to submit accurate information on project implementation to the donors.

Analyses of principal-agent interactions reveal that evaluations concerning a TAP's degree of success in achieving change can be more accurate and expectations of change can be made more realistic if the issues driving and influencing these organizations and the persons working in them are better understood. While TAPs are actors capable of driving change through their investments in education, health, sanitation, finance, etc., application of the agency theory of incentives to these efforts reveals that the scale and scope of the change that is possible can be influenced by the transactions that occur in the TAP-Donor environment and by pragmatic considerations that influence the working conditions of TAP staff (see also Brass, 2012; Fruttero & Gauri, 2005; Dierk Herzer & Nunnenkamp, 2012; Peter Nunnenkamp & Öhler, 2011). Such findings are relevant to examining planned social change because change should be examined within realistic parameters. Instead of simply asking whether or not an TAP targeted the very poor, we should first ask if this is a goal of the TAP to target the very poor and what pragmatic

barriers might hinder their ability to do so. Then, controlling for intervening variables identified by those responses, such as distance from the poorest, most marginal groups, short time period for producing results, low levels of human capital among those populations, etc., we can look across TAPs and discover which organizations have developing successful innovations for targeting these groups. We could ask, for example, not only what did they do differently but what is it about the way their funding was set up and the way their programs are evaluated that make it possible for innovative TAPs to succeed. Further research should seek to develop assets-focused tools and strategies that can be implemented by TAPs during regional TAP meetings, when working with farmers, and when discussing their work with donors and policy makers. Such tools and strategies should include deliberate emphasis on creating mechanisms that allow increased collaboration among TAPs, and provide incentives to long-term commitments to targeting and working with remote communities and marginalized individuals within those communities such as women, the landless, and those with disabilities.

Limitations and Future Research

Many studies of development offer individual case examples of development organizations (Barr, Fafchamps, & Owens, 2005; Lewis & Opoku-Mensah, 2006; Tvedt, 1998). This dissertation considered multiple TAPs' initiatives to enhance food security from a regional perspective. For a more balanced understanding of development processes, future research should seek to gather in-depth information from a wider range of actors, as I did not collect data directly from donors, but accessed information about them from publically available sources. Further, analysis could be greatly enhanced through the inclusion of farmer's associations, community groups, and other grassroots organizations that are recipients of TAP development interventions. To advance stakeholder collaboration, research should include a greater variety of

Copanch'orti' residents, both farmers and non-farmers, TAPs, and funding agencies throughout the entire process, including the design phase, and should seek to develop instruments that will help establish and maintain long-term commitments towards change.

APPENDIX: INTERVIEW GUIDE

- Name of Organization
- Number of employees working in Copánch'hortí'
- Functions of employees (area of emphasis/focus/responsibilities)
- Annual Budget (USD)
- What are the funding sources of your organization?
- In which *aldeas* do you work?
- With whom do you work? (Families? Farmer's Organizations? NGOs? Others?)
- How many people participate in your Project(s)? (Males?) (Females?)
- What are the objectives of your Project? (What problem(s) is your organization trying to resolve?)
- What specific activities do you engage in to obtain those objectives? (What are you doing to try to resolve those problems)?
- What challenges exist that make it difficult for you to achieve your objectives?
- Is sustainable agriculture included as a part of your project's goals?
- What sustainable agricultural practices are you promoting?
- What sources do you use to obtain information about sustainable agriculture?
- Does your project include a focus on enhancing gender equity?
- What types of activities are you undertaking to enhance gender equity in the region?
- What sources do you use to obtain information about gender?
- Are you required by your funding agencies to include a focus on gender equity in your project activities?

REFERENCES CITED

- Acharya, A., De Lima, A. T. F., & Moore, M. (2006). Proliferation and fragmentation: Transactions costs and the value of aid. *The Journal of Development Studies*, 42(1), 1–21.
- Acker, D., & Gasperini, L. (2009). *Education for rural people : the role of education, training and capacity development in poverty reduction and food security*. Rome: Food and Agriculture Organization of the United Nations.
- Action Against Hunger. (n.d.-a). Food Security | Solutions to Global Food Insecurity. Retrieved May 30, 2012, from <http://www.actionagainsthunger.org/impact/food-security-livelihoods>
- Action Against Hunger. (n.d.-b). Guatemala | Hunger Relief in Americas. Retrieved May 31, 2012, from <http://www.actionagainsthunger.org/countries/americas/guatemala>
- Agarwal, B. (1997). “Bargaining” and Gender Relations: Within and beyond the Household. *Feminist economics*, 3(1), 1–51.
- Alderman, H., Hoddinott, J., & Kinsey, B. (2006). Long term consequences of early childhood malnutrition. *Oxford Economic Papers*, 58(3), 450.
- Allen, L., & Gillespie, S. R. (2001). *What works?: A review of the efficacy and effectiveness of nutrition interventions*. Manila: Asian Development Bank. Retrieved from <http://www.ifpri.org/sites/default/files/publications/whatworks.pdf>
- Altieri, M. A., & Nicholis, C. I. (2005). *Agroecology and the search for a truly sustainable agriculture*. Mexico D.F., Mexico: United Nations Environmental Programme, Environmental Training Network for Latin America and the Caribbean.
- Alwang, J., Jansen, H. G. P., Siegel, P. B., & Pichon, F. (2005). *Geographic space, assets, livelihoods and well-being in rural Central America* (DSGD discussion papers No. 26). International Food Policy Research Institute (IFPRI). Retrieved from <http://ideas.repec.org/p/fpr/dsgddp/26.html>
- Arend, E. (2011, October 24). World Bank must put its money behind the rhetoric on gender equality. *The Guardian Poverty Matters Blog*. Retrieved from <http://www.guardian.co.uk/global-development/poverty-matters/2011/oct/24/world-bank-agricultural-investments-women>
- Bano, M. (2008). Dangerous correlations: Aid’s impact on NGOs’ performance and ability to mobilize members in Pakistan. *World Development*, 36(11), 2297–2313.
- Barr, A., Fafchamps, M., & Owens, T. (2005). The governance of non-governmental organizations in Uganda. *World Development*, 33(4), 657–679.

- Bebbington, A. (1999). Capitals and capabilities: A framework for analyzing peasant viability, rural livelihoods and poverty. *World development*, 27(12), 2021–2044.
- Behrman, J., Dillon, A., Moreira, V., Olney, D., & Pedehombga, A. (2011). Helen Keller International's Enhanced-Home Food Production Program in Burkina Faso. Retrieved from http://gaap.ifpri.info/files/2011/12/HKI-EHFP-baseline-3_27_2010.pdf
- Bernard, H. R. (2000). *Social research methods: Qualitative and quantitative approaches*. Sage Publications, Inc.
- Brass, J. N. (2012). Why Do NGOs Go Where They Go? Evidence from Kenya. *World Development*, 40(2), 387–401. doi:10.1016/j.worlddev.2011.07.017
- Buffardi, A. (2011). Incorporating Donor Dimensions into Aid Implementation and Effectiveness Research. *Libraries Test Journal*, 1(1), 75–91.
- Burchi, F., & De Muro, P. (2007). Education for rural people: A neglected key to food security? *University of Roma Tre and the Food and Agriculture Organization of the United Nations and the United Nations*. Accessed August, 19, 2007.
- C. B. Flora, & J. Flora. (2008). *Rural communities : legacy and change*. Boulder, CO: Westview Press.
- CATIE. (2008). *Implementation proposal for the "Mesoamerican Agroenvironmental Programme"*. Retrieved from <http://intranet.catie.ac.cr/intranet/MAP/Doc%20MAP/Final%20MAP%20proposal-%20Jan.%2019,%202009.pdf>
- Central Intelligence Agency. (2012, June 20). Guatemala. *The World Factbook*. Retrieved July 10, 2012, from <https://www.cia.gov/library/publications/the-world-factbook/geos/gt.html>
- Chacón, A., Naranjo, G. M. ., & Colaboradores, G. (2011). Conceptualización y elaboración de una base de datos que soporte la línea de base del MAP. Retrieved from <http://intranet.catie.ac.cr/intranet/MAP/Doc%20MAP/Linea%20base%20MAP%20documento%20finalmarzo2011%20cm.pdf>
- Chaskin, R. J. (2001). Building Community Capacity A Definitional Framework and Case Studies from a Comprehensive Community Initiative. *Urban Affairs Review*, 36(3), 291–323.
- Civil Society and Development. (2009). In *Introduction to international development : approaches, actors, and issues* (pp. 211–228). Ontario; Oxford; New York: Oxford University Press.
- Clarke, A., Raffay, A., & Wiltshier, P. (2009). Loosing it: Knowledge Management in Tourism Development Projects. Retrieved from <http://mpr.aub.uni-muenchen.de/25438/>

- Cohn, A., Cook, J., Fernández, M., McAfee, K., Reider, R., & Steward, C. (2006). *Agroecology and the Struggle for Food Sovereignty in the Americas*. London: International Institute for Environment and Development (IIED), the IUCN Commission on Environmental, Economic and Social Policy (CEESP) and the Yale School of Forestry & Environmental Studies (Yale F&ES). Retrieved from http://environment.research.yale.edu/documents/downloads/o-u/report_4_english.pdf
- Committee on Twenty-First Century Systems Agriculture. (2010). *Toward Sustainable Agricultural Systems in the 21st Century*. Natl Academy Pr.
- Cooley, A., & Ron, J. (2002). The NGO scramble: Organizational insecurity and the political economy of transnational action. *International Security*, 27(1), 5–39.
- Cutter, S. L., Burton, C. G., & Emrich, C. T. (2010). Disaster resilience indicators for benchmarking baseline conditions. *Journal of Homeland Security and Emergency Management*, 7(1).
- De Renzio, P., Booth, D., & Rogerson, A. (2009). Incentives for harmonisation and alignment in aid agencies. Retrieved from <http://dspace.cigilibrary.org/jspui/handle/123456789/22601>
- Defilippis, J., Fisher, R., & Shragge, E. (2006). Neither Romance Nor Regulation: Re-evaluating Community. *International Journal of Urban and Regional Research*, 30(3), 673–689. doi:10.1111/j.1468-2427.2006.00680.x
- Delgado, H. (2010). *Basis for addressing chronic malnutrition in Guatemala* (Technical Report). University Research Co., LLC. Retrieved from http://www.hciproject.org/sites/default/files/Basis%20for%20addressing%20chronic%20malnutrition%20in%20Guatemala_Oct10.pdf
- Dennis, S., Zuckerman, E., & Action, G. (2006). *Gender Guide To World Bank and IMF Policy-Based Lending*. Gender Action.
- Desnutrición Crónica. (n.d.). *Sistema Nacional de Información, Monitoreo y Alerta de la Inseguridad Alimentaria y Nutricional*. Retrieved from <http://www.siisan.gob.gt/Desnutrici%C3%B3nCr%C3%B3nica/tabid/66/Default.aspx>
- Easterly, W. (2002). The cartel of good intentions: the problem of bureaucracy in foreign aid. *The Journal of Policy Reform*, 5(4), 223–250.
- Ellis, F. (2000). *Rural Livelihoods and Diversity in Developing Countries*. Oxford University Press.
- Faber, M., Witten, C., & Drimie, S. (2011). Community-based agricultural interventions in the context of food and nutrition security in South Africa. *South African Journal of Clinical Nutrition*, 24(1). Retrieved from <http://www.ajol.info/index.php/sajcn/article/view/65388>
- FAO. (2003). *Trade Reforms and Food Security: Conceptualizing the Linkages*. Rome, Italy. Retrieved from <http://www.fao.org/docrep/005/y4671e/y4671e00.htm>

- FAO. (2005). *Eradicating world hunger : key to achieving the Millennium Development Goals*. Rome: FAO.
- FAO. (2010). *Addressing food insecurity in protracted crises*. Rome: Food and Agriculture Organization of the United Nations. Retrieved from <http://www.fao.org/docrep/013/i1683e/i1683e.pdf>
- FAO. (2011a). *The state of food and agriculture (2010-2011): women in agriculture : closing the gender gap for development*. Rome: FAO. Retrieved from <http://www.fao.org/docrep/013/i2050e/i2050e00.htm>
- FAO. (2011b). *The state of food and agriculture 2010-11 : women in agriculture : closing the gender gap for development*. Rome: FAO.
- Fey, S., Bregendahl, C., & Flora, C. B. (2008). The Measurement of Community Capitals through Research. *Online Journal of Rural Research & Policy*, 1(1). doi:10.4148/ojrrp.v1i1.29
- Fieser, R. (2012). Malnutrition Looms Over Guatemala's "Dry Corridor" | Catholic Relief Services. *Catholic Relief Services*. Retrieved February 21, 2012, from <http://crs.org/guatemala/dry-corridor/>
- Flora, C. B. (2001). Access and control of resources: Lessons from the SANREM CRSP. *Agriculture and Human Values*, 18(1), 41–48.
- Flora, C. B. (2008). Social capital and community problem solving: combining local and scientific knowledge to fight invasive species. *Journal of Interdisciplinary Development Studies and International Journal of Learning in Social Contexts, Special Copublication on Community Management of Biosecurity*, 30–39.
- Flora, C. B., Emery, M., Fey, S., & Bregendahl, C. (2005). Community Capitals: A Tool for Evaluating Strategic Interventions and Projects. 2005 Working Session on Community Capitals Framework: Research. *Evaluation, Practice*. Retrieved December, 30, 2006.
- Flora, C. B., Emery, M., & Flora, J. (2012). *Expanding the Community Capitals Framework*. Unpublished manuscript.
- Flora, C. B., & Gillespie, A. H. (2009). Making Healthy Choices to Reduce Childhood Obesity: Community Capitals and Food and Fitness. *Community Development*, 40(2), 114–122. doi:10.1080/15575330903001430
- Flora, C. B., Livingston, M., Honyestewa, I., & Koiyaquaptewa, H. (2009). Understanding access to and use of traditional foods by Hopi women. *Journal of Hunger & Environmental Nutrition*, 4(2), 158–171.
- Flora, C. B., & Thiboumery, A. (2005). Community capitals: Poverty reduction and rural development in dry areas. *Annals of Arid Zone*, 44(3/4), 239.

- FONAPAZ Guatemala. (n.d.-a). MISION. Retrieved June 7, 2012, from http://www.fonapaz.gob.gt/?page_id=1014
- FONAPAZ Guatemala. (n.d.-b). DEPARTAMENTO DE CHIQUIMULA PROYECTOS POR MUNICIPIO. Retrieved June 7, 2012, from http://www.fonapaz.gob.gt/proyectos_municipio/Chiquimula.pdf
- Ford Foundation. (2004). Building Assets to Reduce Poverty and Injustice. *Ford Foundation, New York*.
- Freeman, J. H., & Audia, P. G. (2006). Community Ecology and the Sociology of Organizations. *Annual Review of Sociology*, 32(1), 145–169. doi:10.1146/annurev.soc.32.061604.123135
- Fruttero, A., & Gauri, V. (2005). The Strategic Choices of NGOs: Location Decisions in Rural Bangladesh 1. *Journal of Development Studies*, 41(5), 759–787.
- Fuentes Orozco de Maldonado, M. A. (2007). *Caracterizacion de las Organizaciones No Gubernamentales (ONGs) Internacionales Acreditadas en Santa Cruz Barillas, Huehuetenango* (Thesis). Universidad de San Carlos de Guatemala, Guatemala. Retrieved from <http://polidoc.usac.edu.gt/digital/cedec5573.pdf>
- Gaia, E. (2010). Mi Familia Progresá: Change and Continuity in Guatemala's Social Policy. *Social Policy Review 22: Analysis and Debate in Social Policy*, 2010, 22, 199.
- Galasso, E., & Ravallion, M. (2005). Decentralized targeting of an antipoverty program. *Journal of Public Economics*, 89(4), 705–727. doi:10.1016/j.jpubeco.2003.01.002
- Gigerenzer, G., Todd, P. M., & The ABC Research Group. (1999). *Simple heuristics that make us smart*. Oxford University Press, USA.
- Gliessman, S. R., Engles, E., & Krieger, R. (1998). *Agroecology : ecological processes in sustainable agriculture*. Chelsea, MI: Ann Arbor Press.
- Green, J., Kleiner, A. M., & Montgomery, J. L. P. (2007). The Textures of Local Disaster Response: Service Providers Views following Hurricane Katrina. *Southern Rural Sociology*, 22(2), 28–44.
- Groves, R. M., Fowler, F. J., Couper, M. P., Lepkowski, J. M., & Singer, E. (2009). *Survey methodology* (Vol. 561). John Wiley & Sons Inc. Retrieved from <http://books.google.com/books?hl=en&lr=&id=HXoSpXvo3s4C&oi=fnd&pg=PR15&dq=groves+survey+method&ots=1BKwaxldfu&sig=WL4W-OraBvsBAHnrIj-nltVbW3E>
- Gutierrez-Montes, I., Emery, M., & Fernandez-Baca, E. (2009). The Sustainable Livelihoods Approach and the Community Capitals Framework: The Importance of System-Level Approaches to Community Change Efforts. *Community Development*, 40(2), 106–113. doi:10.1080/15575330903011785

- Gutierrez-Montes, I., Emery, M., & Fernandez-Baca, E. (2012). Why Gender Matters to Ecological Management and Poverty Reduction. In J. C. Ingram, F. DeClerck, & C. Rumbaitis del Rio (Eds.), *Integrating Ecology and Poverty Reduction* (pp. 39–59). Springer New York. Retrieved from <http://www.springerlink.com.proxy.lib.iastate.edu:2048/content/m2n3338081412k88/abstract/>
- Hall, G., & Patrinos, H. A. (2006). *Indigenous peoples, poverty, and human development in Latin America*. Houndmills, Basingstoke, Hampshire; New York: Palgrave Macmillan.
- Harriss, J. (2002). *Depoliticizing development : the World Bank and social capital*. London: Anthem Press.
- Herzer, D., & Nunnenkamp, P. (2012). The effect of foreign aid on income inequality: Evidence from panel cointegration. *Structural Change and Economic Dynamics*.
- Herzer, Dierk, & Nunnenkamp, P. (2012). The effect of foreign aid on income inequality: Evidence from panel cointegration. *Structural Change and Economic Dynamics*, 23(3), 245–255. doi:10.1016/j.strueco.2012.04.002
- Hill, R., Gonzalez, W., Frongillo, E., & Pelletier, D. (2008). *Mejorando la Seguridad Alimentaria y Nutrición en Guatemala: Logros y Retros*. Ithaca, NY: Cornell University. Retrieved from http://www.cals.uidaho.edu/igert2/PDF%20documents/Hill_Renee_MejorandolaSeguridadAlimentariayNutricionenGuatemala.pdf
- IAASTD. (2008). *Business as usual is not an option: The role of institutions* (Issues In Brief). Retrieved from http://www.agassessment.org/docs/10505_institutions.pdf
- INE Guatemala. (n.d.). Retrieved July 10, 2012, from <http://www.ine.gob.gt/np/encovi/encovi2011.htm>
- Instituto Nacional de Bosques. (n.d.). PINPEP. Retrieved June 7, 2012, from <http://200.30.150.38/Paginas%20web/Pinpep.aspx>
- Instituto Nacional de Estadística Guatemala. (2004). *Características Generales de las Fincas Censales y de Productoras y Productores Agropecuarios* (IV Censo Nacional Agropecuario). Guatemala: Instituto Nacional de Estadística Guatemala. Retrieved from <http://www.ine.gob.gt/np/agropecuario/index.htm>
- Instituto Nacional de Estadística Guatemala. (2011). *Pobreza y Desarrollo: Un enfoque departamental* (p. 31). Guatemala. Retrieved from <http://www.ine.gob.gt/np/encovi/encovi2011.htm>
- Instituto Nacional de Estadística Guatemala. (n.d.). Población en Guatemala(demografía). Retrieved September 5, 2012, from <http://www.ine.gob.gt/np/poblacion/index.htm>

- Keatinge, J. D. H., Chadha, M. L., Hughes, J. A., Easdown, W. J., Holmer, R. J., Tenkouano, A., ... others. (2012). Vegetable gardens and their impact on the attainment of the Millennium Development Goals. *Biological Agriculture & Horticulture*, 28(2), 71–85.
- Kharas, H., & Linn, J. F. (2009). Better aid: Responding to gaps in effectiveness. Retrieved from <http://dspace.cigilibrary.org/jspui/handle/123456789/25404>
- Knack, S., & Rahman, A. (2007). Donor fragmentation and bureaucratic quality in aid recipients. *Journal of Development Economics*, 83(1), 176–197.
- Kolb, D. M., & Bartunek, J. (1992). *Hidden Conflict in Organizations*. Sage Pubns.
- Krantz, L. (2001). The sustainable livelihood approach to poverty reduction. *An Introduction. SIDA*. Retrieved from http://www.forestry.umn.edu/prod/groups/cfans/@pub/@cfans/@forestry/documents/asset/cfans_asset_202603.pdf
- Kretzmann, J., & McNight, J. (1993). *Building communities from inside out—a path towards finding and mobilizing community assets ACTA Publications*. Chicago.
- Leathers, H. D., & Foster, P. (2009). *The world food problem : toward ending undernutrition in the Third World*. Boulder: Lynne Rienner Publishers.
- Lee, J., Houser, R. F., Must, A., De Fulladolsa, P. P., & Bermudez, O. I. (2010). Disentangling nutritional factors and household characteristics related to child stunting and maternal overweight in Guatemala. *Economics & Human Biology*, 8(2), 188–196. doi:10.1016/j.ehb.2010.05.014
- Lewis, D., & Opoku-Mensah, P. (2006). Moving forward research agendas on international NGOs: theory, agency and context. *Journal of International Development*, 18(5), 665–675. doi:10.1002/jid.1306
- Managing water under uncertainty and risk*. (2012). Paris: UNESCO, c2012-.
- Mancomunidad Copanch'orti'. (2009). *Plan de Desarrollo Economico de la Mancomunidad Copanch'orti'*. Guatemala.
- Mansuri, G., & Rao, V. (2004). Community-based and-driven development: A critical review. *The World Bank Research Observer*, 19(1), 1–39.
- Marsh, R. (1998). Building on traditional gardening to improve household food security. *Food Nutrition and Agriculture*, 4–14.
- Martens, B., Mummert, U., Murrell, P., & Seabright, P. (2002). *The institutional economics of foreign aid*. Cambridge University Press. Retrieved from <http://books.google.com/books?hl=en&lr=&id=fF4VMU7HDZMC&oi=fnd&pg=PP1&q=The+Institutional+Economics+of+Foreign+Aid&ots=RTsjnHWgZ1&sig=r1CW6rd0vArUFleKxjXloHBYUo8>

- Mathie, A., & Cunningham, G. (2008). *From clients to citizens : communities changing the course of their own development*. Bourton on Dunsmore, Rugby, Warwickshire, UK: Practical Action Pub.
- Maxwell, S., & Smith, M. (1992). Household food security; a conceptual review. In *Household food security : concepts, indicators, measurements : a technical review*. New York, N.Y.: UNICEF.
- McIntyre, Herren, Wakhungu, & Watson (Eds.). (2009). *Agriculture at a Crossroads. International assessment of agricultural knowledge, science and technology for development (IAASTD): global report*. Washington DC: Island Press.
- Metz, B. E. (1998). Without nation, without community: The growth of Maya nationalism among ch'orti's of eastern Guatemala. *Journal of Anthropological Research*, 325–350.
- Metz, B. E. (2001). Politics, population, and family planning in Guatemala: Ch'orti' Maya experiences. *Human Organization*, 60(3), 259–271.
- Metz, B. E. (2006). *Ch'orti'-Maya survival in eastern Guatemala: indigeneity in transition*. Univ of New Mexico Pr.
- Minority Rights Group International. (2011, July 6). State of the World's Minorities and Indigenous Peoples 2011 - Guatemala. Retrieved September 5, 2012, from <http://www.unhcr.org/cgi-bin/texis/vtx/refworld/rwmain?page=country&docid=4e16d37246&skip=0∓coi=GTM&querysi=xinca&searchin=fulltext&display=10&sort=date>
- Mohanty, R. (2002). *Women Participation in JFM in Uttaranchal Village*. Mimeo.
- Morris, S., Hoddinott, J., Medina, J., & Begeron, G. (1999). Will Rural Development Enhance Food Security: A Case Study of Western Honduras. *International Food Policy Research Institute, Washington, DC Processed*.
- National Development Agencies and Bilateral Aid. (2009). In *Introduction to international development : approaches, actors, and issues* (pp. 135–151). Ontario; Oxford; New York: Oxford University Press.
- Nord, M., Andrews, M., & Carlson, S. (2010). *Household food security in the United States, 2009* (No. ERR-108). USDA Economic Research Service.
- Norris, F. H., Stevens, S. P., Pfefferbaum, B., Wyche, K. F., & Pfefferbaum, R. L. (2008). Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *American journal of community psychology*, 41(1), 127–150.
- Nunnenkamp, P., & Öhler, H. (2011). Aid allocation through various official and private channels: Need, merit, and self-interest as motives of German donors. *World Development*, 39(3), 308–323.

- Nunnenkamp, P., Weingarth, J., & Weisser, J. (2009). Is NGO aid not so different after all? Comparing the allocation of Swiss aid by private and official donors. *European Journal of Political Economy*, 25(4), 422–438.
- Nunnenkamp, Peter, & Öhler, H. (2011). Aid Allocation through Various Official and Private Channels: Need, Merit, and Self-Interest as Motives of German Donors. *World Development*, 39(3), 308–323. doi:10.1016/j.worlddev.2010.08.001
- O’Gorman, T. L. (2006). *Species and People: Linked futures*. WWF International, Gland, Switzerland.
- Observatorio Interamericano de Seguridad - OEA. (n.d.). Retrieved March 11, 2013, from http://www.oas.org/dsp/espanol/cpo_observatorio_vinculos_ONG.asp
- Paul, E. (2006). A survey of the theoretical economic literature on foreign aid. *Asian-Pacific Economic Literature*, 20(1), 1–17.
- PAZ y DESARROLLO. (2011). What We Do. Retrieved June 11, 2012, from <http://www.pazydesarrollo.org/en/what-we-do>
- Peacock, W. G., Kunreuther, H., Hooke, W. H., Cutter, S. L., Chang, S. E., & Berke, P. R. (2008). Toward a resiliency and vulnerability observatory network: RAVON. *HRRC reports*.
- Penner, M. (2008, December 17). VitaCereal Helps Boost Birthweight in Guatemala. *UN World Food Programme*. Retrieved September 7, 2012, from <http://www.wfp.org/stories/15-minute-recipe-beat-chronic-malnutrition>
- Perrow, C. (1986). *Complex organizations : a critical essay*. Glenview, Ill.: McGraw-Hill.
- Physical status : the use and interpretation of anthropometry : report of a WHO Expert Committee*. (1995). Geneva: World Health Organization.
- Pretty, J. N. (2002). *Agri-culture: reconnecting people, land and nature*. Earthscan/James & James. Retrieved from <http://books.google.com/books?hl=en&lr=&id=f57JHmlqrOMC&oi=fnd&pg=PR6&dq=Pretty,+J.+2002.+Agri-Culture:+Reconnecting+people,+land+and+nature.+Earthscan,+London.&ots=Iy9h9thZQN&sig=4F3zIyqh3Wd3G5PkJ4zyYv8ylXE>
- Quisumbing, A. R., Brown, L. R., Feldstein, H. S., Haddad, L. J., & Peña, C. (1995). Women: The Key to Food Security. *Food policy reports*.
- Radelet, S. (2006). A primer on foreign aid. *Center for Global Development working paper*, 92. Retrieved from http://www.who.int/entity/hac/techguidance/training/analysing_health_systems/a_primer_on_foreign_aid_06.pdf

- Ritchie, L. A., & Gill, D. A. (n.d.). The Role of Community Capitals in Disaster Recovery. Retrieved from http://www.riskinstitute.org/peri/images/file/symposiums/Community_Recovery_from_Disaster/social,%20day%203.pdf
- Robinson, C. (2005). *Aspects of literacy assessment: topics and issues from the UNESCO Expert Meeting; UNESCO Expert Meeting on Aspects of Literacy Assessment; 2005*. Paris. Retrieved from http://www.unesco.org/ulis/cgi-bin/ulis.pl?catno=140125&set=50452686_0_246&gp=1&lin=1&ll=1
- Rosset, P. M., & Altieri, M. A. (1997). Agroecology versus input substitution: a fundamental contradiction of sustainable agriculture. *Society & Natural Resources*, 10(3), 283–295.
- Sanchez Dominguez, L. F., Toledo Chaves, P. F., & Rodriguez Valladares, F. (2011). *ENCOVI 2011 Executive Summary*. Guatemala: Instituto Nacional de Estadística Guatemala. Retrieved from <http://www.ine.gov.gt/np/encovi/encovi2011.htm>
- Sappington, D. E. . (1991). Incentives in principal-agent relationships. *The Journal of Economic Perspectives*, 45–66.
- Scoones, I. (1998). *Sustainable rural livelihoods: a framework for analysis* (IDS Working Paper No. 72) (pp. 1–22). Institute of Development Studies Brighton. Retrieved from www.ids.ac.uk/download.cfm?file=wp72.pdf
- Seabright, P. (2002). Conflicts of objectives and task allocation in aid agencies. *The Institutional Economics of Foreign Aid*, 34.
- Secretaría de Planificación y Programación de la Presidencia - Segeplan. (n.d.). Retrieved March 11, 2013, from <http://www.segeplan.gob.gt/2.0/>
- Sen, A. (1991). Public Action to Remedy Hunger. *Interdisciplinary Science Reviews*, 16(4), 324–336. doi:10.1179/030801891789710747
- Sheeran, J. (2008). The challenge of hunger. *The Lancet*, 371(9608), 180–181. doi:10.1016/S0140-6736(07)61870-4
- Shekar, M., Heaver, R., & Lee, Y.-K. (2006). *Repositioning Nutrition as Central to Development a Strategy for Large Scale Action*. Washington, DC: World Bank. Retrieved from <http://public.eblib.com/EBLPublic/PublicView.do?ptiID=459801>
- Sjöblom, P. S., & Godenhjelm, S. (2009). Project proliferation and governance—Implications for environmental management. *Journal of Environmental Policy & Planning*, 11(3), 169–185.
- Swindale, A., & Bilinsky, P. (2006). Household Dietary Diversity Score (HDDS) for measurement of household food access: Indicator guide. *Food and Nutrition Technical Assistance Project, Washington*.

- Tvedt, T. (1998). *Angels of mercy or development diplomats? : NGOs & foreign aid*. Trenton, NJ: Africa World Press.
- U.S. Department of State, Bureau of Democracy, Human Rights and Labor. (n.d.). Country Reports on Human Rights Practices for 2011: Guatemala. Retrieved from <http://www.state.gov/j/drl/rls/hrrpt/humanrightsreport/index.htm?dliid=186518>
- UDEFEGUA. (n.d.). Retrieved March 11, 2013, from <http://www.undefegua.org/>
- United Nations Educational, Scientific and Cultural Organization Institute for Statistics. (2012). *International Standard Classification of Education 2011* (p. 87). Montreal, Canada: UNESCO Institute for Statistics. Retrieved from <http://www.uis.unesco.org/Education/Documents/isced-2011-en.pdf>
- Valladares, A., & Neira, I. (2003). Impacto de la ayuda oficial al desarrollo en Centroamérica. *Estudios Económicos de Desarrollo Internacional*, 3(1), 1–19.
- Wane, W. (2004). The quality of foreign aid: Country selectivity or donors incentives? *World Bank Policy Research Working Paper*, (3325). Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=610370
- Waterman, R. W., & Meier, K. J. (1998). Principal-Agent Models: An Expansion? *Journal of Public Administration Research and Theory*, 8(2), 173–202.
- World Bank. (2005). *Repositioning Nutrition as Central to Development A Strategy for Large-Scale Action*. Washington: World Bank Publications. Retrieved from <http://www.worldbank.icebox.ingenta.com/content/wb/2142>
- World Health Organization. (2009). Global Health Observatory (GHO). Retrieved September 5, 2012, from <http://www.who.int/gho/en/>
- XE.com Inc. (n.d.). XE - The World's Favorite Currency and Foreign Exchange Site. Retrieved June 14, 2012, from <http://www.xe.com/>

ACKNOWLEDGEMENTS

I would like to thank my advisor Dr. Cornelia Flora for her unwavering support, without which I would not have completed this dissertation. I'd also like to thank my committee members, Dr. Jan Flora, Dr. Kathleen Delate, Dr. Michael Duffy, and Dr. Carmen Bain. Funding for this project was provided by the United State Department of Agriculture, International Travel and Research Award for National Needs Fellows. Support for research activities in Guatemala was provided by the Mesoamerican Agroenvironmental Programme of the Centro Agronómico Tropical de Investigación y Enseñanza (CATIE). Many thanks to Dr. Isabel A. Gutiérrez Montes and the CATIE team in Esquipulas with MAP's Proyecto Innovaciones Hortalizas: Nataly Cardona, Danilo Padilla Castillo, Liseth Oliveth Hernández, Laura Rodríguez, and José Gabriel Suchini.