Governance, Reciprocity, Redistribution and Food Security among Tseltales in Los Altos.

by

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ABSTRACT

In Latin America food insecurity is still prevailing in those regions where extreme poverty and political instability are common. Tseltal communities are experiencing changes due to religious conversions and the incursion of external political institutions. These changes have diminished the importance of traditional reciprocal and redistributive institutions that historically have been essential for personal and community survival. This dissertation investigated the impact that variations on governance systems and presence of reciprocal and distributional exchanges have on the food security status of communities. Qualitative data collected in four communities through 117 free lists and 117 semi-structured interviews was used to elaborate six scales that correspond to the traditional and civic authority system and to inter-community and intra-community reciprocity and redistribution. I explore the relationship that the scores of four communities on those scales have on the food security status of their inhabitants based on their results on the National Health and Nutrition Survey 2012. Findings from this study suggest that in marginalized communities that many scientists would described as experiencing market failure, participation in inter-community reciprocal, intra-community reciprocal and intra-community redistribution are better predictors of food security than enrollment in food security programs. Additionally, communities that participated the most in these non-market mechanisms have stronger traditional institutions. In contrast, communities that participated more in inter-community redistribution scored higher on the civic authority scale, are enrolled in more food aid programs, but are less food secure.
DEDICATION

A mi familia.
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CHAPTER 1

INTRODUCTION

Today, one in eight people worldwide are deeply affected by food insecurity, understood as limited or uncertain access to sufficient, safe and nutritious food that meets dietary needs and food preferences for an active healthy life (FAO, 2013). Food insecurity occurs virtually everywhere (Misselhorn, 2005). Despite an overall decrease in food insecurity in the last decade (FAO, 2013), in Latin America food insecurity is still prevailing in those regions where extreme poverty and political instability are common (Roman-Ruiz & Hernandez-Daumas, 2010). In Mexico, indigenous inhabitants of southern states like Chiapas suffer from food insecurity at disproportionately higher rates than the rest of the Mexican population (Juarez & Gonzalez, 2010). Among those regions Los Altos (the highlands), Chiapas is one in which food insecurity is widespread.

Extensive research shows that an effective coping mechanism against food insecurity is to engage in reciprocity and redistribution (Broughton, Janssen, Hertzman, Innis, & Frankish, 2006; Frankenberger & McCaston, 1998a). In much of Latin America institutions such as cooperation and reciprocity are essential for personal and community survival (Cohen, 2010). In Los Altos, ongoing changes to the structure of many communities due to migration, religious conversions and political conflict have diminished the importance of traditional reciprocal institutions (Gossen, 2013; Perez-Enríquez, 1994; Urbalejo Guerra, 2003; Veltmeyer, 2000). In many cases these changes have altered existing redistributive and governance systems, replacing traditional institutions with new ones or causing adaptations. When under stress, a society’s capacity to adapt and cope resides in its ability to act collectively and while decisions to adapt are made at different levels – individual, society, government – vulnerable groups are often excluded from the
decision making process (Adger, 1999). However, this exclusion does not imply that the vulnerable will not come up with institutional arrangements by themselves (Adler de Lomnitz, 1975; O. Lewis, 1961; Ostrom, 2002). In fact, research shows that actors who have autonomy to design governing rules for their institutions frequently achieve better economic and more equitable outcomes than when others design them (Ostrom & Basurto, 2011). This dissertation explores how four Tseltal indigenous communities in Los Altos, Chiapas, Mexico have transformed their traditional reciprocal and redistributive institutions and their governance systems and how those transformations relate to their food security status.

**Background of the Problem**

Over time, indigenous groups in Mexico have developed reciprocal and redistributive institutional arrangements to cope with food scarcity (Adler de Lomnitz, 1975) by engaging in food transfers (Quijano, 2006; Vázquez Estrada, 2006) that act as an insurance mechanism in lean times (Chance & Taylor, 1985; de León de Santiago, Ma Guadalupe & Carvajal Godoy, 2005; Monaghan, 1990; Stern, 1983; Utrilla & Prieto, 2009; Van den Berghe, Pierre L, 1978; Wolf, 1986). Reciprocity, the exchange of goods based on symmetrical relationships between social entities (Polyani, 1944), and redistribution, the relocation of resources through a central agency (Polyani, 1944), were an important part of existing informal relations that influence the food security status of a social entity (Castillo Escalona, 2000; de León de Santiago, Ma Guadalupe & Carvajal Godoy, 2005). Partaking in these institutions could impact the amount of food that is accessed as well as the diversity of the food consumed.

Recent changes in the structures of the communities as well as external factors have decreased the use and importance of these traditional arrangements.
Lately, functions of traditional redistributive and reciprocal institutions have been taken over by modern institutions (i.e. comites, basketball, protestant churches etc). Cohen (2010) states that these new institutions invent new relationships and practices in response to global forces. In many cases these new institutions while novel are still built on the foundation of reciprocity and redistribution (Cohen, 2010; Feinberg, 2003; Springwood, 2006). One of the motivations of this dissertation is to explore if these new mechanisms still have the same importance on the food security status that traditional arrangements have.

Reciprocity and redistribution occur through institutions that are embedded in society. Institutions evolve over time to respond to internal and external disturbances by adapting (Janssen, 2006; Ostrom, 2009). For instance, reciprocal ties change and adapt throughout time to internal disturbances like fluctuations in the status and wealth of the partakers reacting to the response rate of the participants. Reciprocity and redistribution also adapt to external disturbances such as the incursion of new religious groups, new government policies and new cultural values and patterns that come with them.

Customarily, in southern Mexico institutions through which redistribution and reciprocity of foodstuffs occur in communities are part of a traditional political-religious system (López Meza, 1996). In Los Altos, this complex system is based on a syncretic form of Catholicism and a traditional governance system that links community and municipal level authorities and institutions through a cargo system (Cámara Barbachano, 1952; López Meza, 1996). Traditional institutions are transformed in modern settings. Changes in the configuration and governance system of communities prompted by government interventions, religious conversion and migration have altered the way in which these non-market and governance institutions function and the importance they have (Cancian, 1994Dow, 2001). This
study focus on these changes in four study communities with the intent of showing what are the implication of these changes for food security.

Throughout this dissertation I show that these changes occur in the four study communities on their own terms. Institutional change is a collective choice process in which rules are altered (Kingston & Caballero, 2009), thus each community takes part in the way that governance, reciprocal and redistributive institutions respond to perturbations. Actors that are vulnerable to food insecurity are active agents that respond to stress in diverse ways and food security is one of the many objectives that they have to balance with other competing interests such as retaining social status or maintaining assets (Frankenberger & McCaston, 1998).

Redistribution and reciprocity are considered the outcome of collective actions and choices, made within communities that are used to negotiate, adapt and cope with social, economic and political changes (Cohen, 2010). Cancian (1994) found that in the municipality of Zinacantan in Los Altos, cooperation, redistribution and reciprocity still take place in some communities where there are external disturbances such as migration. In Santa Ana, Oaxaca the disuse of the traditional cargo system prompted new patterns of cooperation and reciprocity still have the same functions, but occur in new social settings such as basketball tournaments (Cohen, 2010).

In addition to community organized redistributive institutions there are also government sponsored redistribution programs. At the time of the study, there were eight programs that were being implemented in Los Altos. In our framework these programs are considered external disturbances. The effectiveness of these programs solving food insecurity is contested (Behrman & Hoddinott, 2005; Rivera, Sotres-Alvarez, Habicht, Shamah, & Villalpando, 2004). They may overlook the importance
of existing informal relations and exchanges between households and among communities. Local community governance systems may play a role in these relationships since there remains a link with outside institutions. Interventions that neglect or undermine this “social infrastructure” can fail (Putnam, 1993), reduce the effectiveness of those interventions or reduce the performance of existing local institutions. These relations may be more critical to understand in contexts of market failures and the poor reach of official programs (Kranton, 1996). Thus understanding the evolution of traditional practices for food access can provide insights into how communities respond in face of formal institutional failures (public programs) and how evolution of local institutions interacts (or not) with public programs, affecting their ultimate success.

Food security is a public good, thus participation in government programs that aim to increase food security among marginalized households have an impact in non-participating households and could either “crowd out” traditional community transfers (Dercon, 2004) or be used to expand existing risk sharing networks (Angelucci & De Giorgi, 2009) altering the institutional landscape of the communities.

Statement of the Problem

Despite extensive research on the state of food security in southern Mexico and the constant use of resources on food insecurity alleviation through government programs, indigenous inhabitants of Los Altos are still among the most food insecure groups in the country. Limited understanding of the institutional landscape of Tseltal people and the disturbances that they face has prompted a social consensus in which the government attributes their food insecurity to poverty and culture. Focusing their efforts on increasing food access (getting food to them) and blaming program
failures on their ethnicity. This myopic approach neglects the importance that local institutions have on food security. While the ethnographic records shows that redistribution and reciprocity directly impact food security it is still unknown how local governance systems impact food security.

This dissertation specifically studies how changes in the institutional landscape of four Tseltal communities impact the food security status of their inhabitants. Throughout the dissertation I will present how some traditional institutions are transformed as new religious groups and government institutions become part of the four study communities. I use previous ethnographies of the region and the communities in an effort to understand the changes that the institutions in these communities are going through.

**Research Question and hypothesis**

The inhabitants of communities in Los Altos like many other communities around the world are increasingly facing the effects of ongoing long term processes such as migration and religious conversion that affect their traditional governance systems. These communities are also experiencing a recent economic shift characterized by a greater market integration and a change in power and social norms. This dissertation asks: What is the role of inter-community institutional arrangements in coping with threats to food security? Based on the literature on new institutionalism, social capital and reciprocity I expect to find:

H1. Communities with a greater (frequency and amount) presence of inter-community reciprocal institutions will be more likely to cope successfully against food insecurity.

H2. Communities with stronger (frequency) local institutions are more likely to secure outside resources from governmental programs, therefore their inhabitants are less food insecure.
To test the hypothesis (H1) that communities with a greater presence of inter-community reciprocal institutions are more likely to cope successfully against food insecurity I ask three questions: (1) Are patterns of reciprocity and redistribution different between the studied communities? and (2) How do these mechanisms affect the communities’ population’s capacity to achieve food security? And (3) How have patterns of reciprocity and redistribution changed?

I ask three questions to test hypothesis (H2) that communities with stronger local institutions are more likely to secure outside resources from governmental programs, therefore their inhabitants are less food insecure: (1) Are governance systems (civic and traditional) present at different rates in the communities? (2) Is there a relationship between the kind of prevalent governance system in a community and the amount of food aid programs in which its inhabitants are enrolled? and (3) Is there a relationship between the kind of prevalent governance system and the ELCSA (Latin American and Caribbean Food Security Scale) median score in a community?

**Research Design**

Data presented in this dissertation were collected simultaneously in four different Tseltal communities of Los Altos, Chiapas through team-based multi-sited ethnography. Free lists (n=135), semi-structured interviews (n=117) and participant observation took place during fieldwork. I accessed anthropometric measurements, and an EBFSS (experienced based food security surveys) that were collected as part of National Health and Nutrition Survey 2012 (ENSANUT 2012). Qualitative and quantitative methodologies were used in a comprehensive approach to analyze the relationship between institutions and food security.

Free lists were analyzed using cultural consensus to determine the saliency and frequency of each type of reciprocity present in each community. Interviews
were coded using grounded theory. Qualitative data was used to elaborate six scales that correspond to the traditional and civic authority system and to inter-community and intra-community reciprocity and redistribution. I explore the relationship that the scores of four communities on those scales have on the food security status of their inhabitants based on their results on the National Health and Nutrition Survey 2012.

**Significance of the Study**

In recent decades, studies about reciprocity and redistribution have focused on the role these elements play on household food security. The present research attempts to go beyond the study of food security as a household phenomenon to include higher level institutions such as the governance system. I move to the community level by studying food security as a nested phenomenon.

Another significant contribution of my study is that it expands the ethnographic record on community heterogeneity as a variable in collective action. Empirical research has identified a large number of contextual variables that affect endogenous collective action. Community heterogeneity is one of the least researched variables (Ruttan, 2006). This dissertation focuses on the religious heterogeneity of the communities because it has direct impact on the way that the traditional political-religious system functions.

One of the findings of this study is that despite the growth of public interventions to support food security among these four Tseltal communities participation in inter- and intra-community reciprocity and/or intra-community redistribution is a better indicator of experience based and anthropometric measurements of food security than participation in government programs. Qualitative data collected in the field and anecdotes shed light into probable causes of this result. Current government programs tend to use money or food transfers to
enhance access to food stuffs. For instance there is a lack of monitoring and enforcement by the government on proper use of the resources given to the beneficiaries of the programs. Some of the causes of inappropriate use of these resources is a lack of knowledge of what is considered culturally appropriate food, how non-market exchange strategies work and how the governance systems of the communities act and redistribute some of these foodstuffs based on a different set of values. This study is a first attempt to understand these variables in a specific geographic area.

Additionally, this dissertation research contributes to the ethnographic record of Los Altos by giving a detailed account of the current state of local governance systems. Combined with previous ethnographies this account gives a baseline on how institutions are changing in Los Altos.

Limitations
The results presented in the next chapters were collected in four Tseltal communities (villages) and are not representative of the rest of the indigenous communities in the region. However, they open a window to understanding the institutional change processes that are taking place in other communities. Additionally, these results offer good insight into the shortcomings in implementation (monitoring and enforcement) of some of the state-run programs and offer qualitative explanation on the results of the Latin American and Caribbean Food Security Scale in the region.

General Overview of the Dissertation
This document is divided into seven chapters. The first chapter is an introduction to the research question and hypothesis. Chapter two offers a revision of the theoretical approaches used to study food security, the measurements used to calculate food security and the food security scales. It also contains a section on vulnerability to food insecurity. Chapter three focuses on the research design section includes the
sampling strategy, general materials for data collection and analyses. Chapter four introduces the research setting of Tenejapa and Oxchuc in Los Altos of Chiapas, Mexico. It includes information about the political history of Tseltales and recent demographic data of the municipalities and communities. Chapter five addresses institutional change with a focus on how reciprocal and redistributive institutions have adapted. Chapters six presents a discussion on the links between food security and the current institutional arrangements in the four study communities. Chapter seven offers a brief general discussion of the key findings, limitations of the research, potential areas of further research and a conclusion addressing the question of inter-community reciprocity and food security.
A primary pursuit of the social sciences, particularly economics, in the past decades, was to uncover the market mechanisms at the national level that made food available and the ways in which market exchange worked. The limitations of this focus, known as Food Availability Decline (FAD), came to light during the African famines of the mid-1980s, making it clear that adequate food availability at the national level does not translate in food security at the household or individual level. As a consequence the focus shifted to study those situations in which food was available, but people could not access it.

Amartya Sen’s entitlement theory—which argues that an individual’s capacity to access food is based on their ability to transform his assets into food—also prompted an increased focus on how individuals and households acquire food through non-market exchange. Researchers became rapidly aware that reciprocal and redistributive exchanges are an important part of existing informal relations that influence the food security status of a social entity—individuals, households, communities.

New to that approach was the realization that vulnerable populations responded to economic stress, that they are not passive, but active. Social scientists found that food security cannot be treated as a fundamental need, but as one of the many objectives of a poor household and that it is related to other livelihood considerations (Frankenberger & McCaston, 1998b). Thus, there are diverse ways in which individuals, households, communities and even nations self-organize to respond against food insecurity. Some of these responses are in fact the result of coordination among several units of people that have evolved overtime.
Reciprocity, Redistribution and Institutional Change

Traditionally, modern Mesoamerican indigenous groups have developed reciprocal and redistributive institutional arrangements to cope with food scarcity (Adler de Lomnitz, 1975). Reciprocal arrangements, understood as informally enforced exchange of goods based on symmetrical relationships between social entities (Polyani, 1944), consist mainly of inter-household exchanges and the use of safety networks. Redistribution refers to the systemic movement of goods from a local level to a hierarchical center that reorganizes and sends the goods back to the local level (Polyani, 1944).

I analyze two types of redistribution: government and non-government. In non-government redistribution the collectors and redistributors are chosen by community members and the resources are collected through monitoring and enforcement of rules within the community and outside donations. In government sponsored redistribution the government acts as a collector and re-locator of resources. This kind of redistribution is understood here as the targeted relocation of government funds through cash or food rations that are aimed at food insecurity reduction. Such transfers can be made by any level of the government and any of the governmental institutions (Coady & Harris, 2004). I study government programs that aim to reduce food insecurity by giving bimonthly stipends or food aid. The programs that I focus on are OPORTUNIDADES and the Chiapas DIF food security programs.

According to Sahlins (1972) there are three kinds of reciprocity. Generalized reciprocity includes a system of giving things without taking into account how much has been given with the assumption that in the future something will be given back; it takes place between the closest social relations (Sahlins, 1972). Balanced exchange consists of a direct exchange in which something of equal value is
expected back in a short amount of time; it may occur at a social level more distant than the family (Sahlins, 1972). However, without reciprocation in the appropriate time frame, the relationship ends and the system is terminated. Generalized and balanced reciprocity foster trust among the entities that participate in the exchange (Wilk & Cliggett, 2007). In contrast, negative reciprocity is an attempt to get something for nothing and does not foster trust nor cooperation, thus there is no reciprocity system fostered (Wilk & Cliggett, 2007) and I do not include it in this research. Generalized and balanced reciprocity constitute important parts of the exchanges that occur within and among the study communities. I will present specific examples of balanced and generalized reciprocity in chapters 5 and 6.

Generalized and balanced reciprocity build social capital. For Coleman (1989) social capital is based on obligations, expectations, and trustworthiness; basically the same qualitative relationships that are established by reciprocity. Social capital is self-reinforcing when reciprocity increases connectedness between people, leading to greater trust, confidence and capacity to innovate (Pretty & Ward, 2001). Interpersonal relationships give form to social capital and are a site and outcome of reciprocity. They can be categorized as bonding and bridging:

“Bonding ties are shared between co-identifying individuals typified by ethnic or religious groups. Bridging ties are used to describe social relationships of exchange, often of associations between people with shared interests or goals but contrasting social identity. A sub-category of bridging ties have been termed linking ties, these describe relationships that cross group boundaries in a vertical direction, for example, between social classes, or community groups and donors” (Pelling & High, 2005, p.310).

Redistribution and reciprocity happen among (inter-community) and within communities (intra-community) through socially embedded institutions.
Redistribution and reciprocity happen in the study communities through various settings such as basketball, religious groups, cargo systems, kinship, etc. As seen on Table 1, I study four kinds of exchanges in this dissertation based on their geographic extent and the type of exchanges. I use these categories to better represent the diversity in institutions and strategies used by community members. Understanding the balance between these different kinds of interactions can help us understand how adaptations and responses to stressors work.

Table 1.

_Type of exchanges studied._

<table>
<thead>
<tr>
<th></th>
<th>Reciprocity</th>
<th>Redistribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among community</td>
<td>Inter-community reciprocity</td>
<td>Inter-community Redistribution</td>
</tr>
<tr>
<td>Within community</td>
<td>Intra-community reciprocity</td>
<td>Intra-community Redistribution</td>
</tr>
</tbody>
</table>

Exchange is an institutional arrangement. Thus, I study the different types of exchange from an institutional perspective. Institutions are the repetitive rules, norms and strategies that govern interaction between people (Janssen, 2006; Ostrom, 2007). Institutions reduce uncertainty by providing structure to human interactions and include formal and informal rules (North 1990). Formal rules or rules in form are written rules that are enforced by actors with specialized roles. Informal rules or rules in use are implicit rules that are used de facto even if they are not written or if they differ from formal rules. Rules are often enforced and monitored by either actors that occupy specific positions (i.e. police officer) or by other participants that occupy the same position as the actor obeying or disobeying the rule (i.e. gossip through the rest of the community). An actor disobeying rules can be sanctioned (i.e. with a speeding ticket, or a low reputation). The use of rules helps order relationships because, when in use, rules rule out and rule in certain behaviors.
Rules and institutions are not static. They evolve over time (Janssen, 2006). There are different processes through which institutional change occurs and various reasons why it happens. Institutions can change as a response to external disturbances internal disturbances or to increase outcome efficiency (Janssen, 2006; Ostrom, 2009). Internal disturbances "refer to rapid reorganization of the ecological and social system induced by the subsystems of the ecological or social system (Anderies, Janssen, & Ostrom, 2004)" External disturbances include biophysical disruptions (i.e. climate change, floods) and socioeconomic changes (i.e. population increases, economic change, and major political changes). While it is understood that institutional change aims to achieve efficiency, not all changes make institutions more efficient. For instance, inefficient change can be caused by actors that hold incorrect beliefs about the effects of institutional change (Ostrom, 2009).

Institutional change occurs through rule change, but there is no scientific agreement on the process of rule change (Ostrom & Basurto, 2011). In this dissertation I use a collective choice and evolutionary framework that has been associated with works produced at the Workshop in Political Theory and Analysis at Indiana University (Ostrom, 2010). I utilize this framework because it uses a non-exclusionary approach that can be used to explain most real world institutional changes (Kingston & Caballero, 2009). Under this framework institutional change is seen as a collective choice process in which actors engage in collective action to try to change rules for their own benefit. This approach also acknowledges that sometimes actors that are experimenting with institutional change attempt to imitate successful institutions observed elsewhere (Ostrom, 2009). I use this framework to analyze the current state of the governance systems in each study community.

Understanding local governance as it relates to food security is important since the kind of governance system used affects resource allocations in
communities. One of the lessons learned through institutional analysis of irrigation systems is that “resource users that have relative autonomy to design their own rules for governing and managing common-pool resources frequently achieve better economic (as well as more equitable) outcomes than when experts do this for them” (Ostrom & Basurto, 2011, p. 219). Thus, one of the objectives of this dissertation is to analyze if those communities that have a governance system that sits towards the most traditional end of the governance spectrum are in fact those in which the reported food security status of its inhabitants has less variation.

**Reciprocity, Redistribution and Food Security**

The existence of reciprocal institutional arrangements to cope with food scarcity has been documented at various levels of the food system in urban and rural areas throughout the world (Adler de Lomnitz, 1975; Baro & Deubel, 2006; De Waal, 2004; D. G. Maxwell, 1996; Watts, 1983). At the community level, scholars have pointed the existence of reciprocal inter-community institutions that serve to engage in food transfers (Quijano, 2006; Vázquez Estrada, 2006). Watts (1983) points out that among the African Hausa, various networks, institutions and exchanges that exist at the intra and inter-village levels acted as shock absorbers spreading the possibility of food security further. In Mexico, many authors have pointed out that one of the functions of Cargo systems (religious offices occupied on a rotating basis by the men of the community) and Mayordomias (Catholic institutions that help to organize religious festivities) is to redistribute wealth and food among community members and among communities acting as an insurance mechanism in lean times (Chance & Taylor, 1985; de León de Santiago, Ma Guadalupe & Carvajal Godoy, 2005; Monaghan, 1990a; Stern, 1983; Utrilla & Prieto, 2009; Van den Berghe, Pierre L, 1978; Wolf, 1986). The importance that reciprocal institutions have on community food security is undeniable since food security is a nested phenomenon. For Maxwell
and Smith (1992) all the sources of risk to household food security at the community level reside on the breakdown of reciprocal institutions.

Social capital fostered by reciprocity has a positive impact on food security in rural households in developing countries and even in low income households in developed countries (Martin, Rogers, Cook, & Joseph, 2004; Oni, Salman, & BO, 2011). However, social capital is not a panacea for all problems relating to rural poverty. Ali (2005) found that as proposed by Putnam (1993), social capital is less accessible to poor people and those who have social capital tend to accumulate more. Really poor people, who do not own land or assets, have difficulties in accessing social capital and they are less likely to find support. Social capital is crucial to enhancing food access and coping with food insecurity as long as the social entities rely on using some type of resource that can be used in reciprocal exchanges in the future or has already been used in the past. Protestantism, increased market integration expressed in migration, and reliance on a money economy can undermine reciprocal institutions (Cancian, 1994; Cohen, 2010; Dow, 2009). Yet, cooperation and reciprocity still take place in communities like Zinacantan (Cancian, 1994) and Santa Ana (Cohen, 2010) where these phenomena occur. New patterns of cooperation and reciprocity still have the same functions, but occur in new social settings (Cohen, 2010).

Food redistribution is key in solving the most urgent needs of the food insecure as it addresses inequitable distribution of food. However, there exist contradictory views regarding the short and long term consequences of food redistribution policies. I focus on formal safety nets. Formal social safety nets, an important component of social protection, refer to cash or in-kind transfer programs that seek to reduce poverty and vulnerability by redistributing wealth and protecting households against income shocks. Food safety nets are a subset of social safety
nets, and aim to ensure a minimum amount of food consumption and to protect households against shocks to food consumption (FAO, 2006). Food aid, in turn, is one of many food safety nets.

**Vulnerable populations**

Different studies have identified a number of subgroups that are particularly vulnerable to food insecurity due to impaired physical access (from disability, lack of transportation, and remoteness) or economic access (poverty or low socioeconomic access) to supplies of healthy food (Palermo, Walker, Hill, & McDonald, 2008). For instance, worldwide geographically marginalized populations tend to pay higher prices for food (FAO, 2013) which makes them more likely to experience hunger or starvation. Poor people tend to be the most vulnerable since they tend to be those at risk of experiencing lack of access to food due to entitlement failures. In addition, studies of food access have brought attention to uneven intra-household food distribution (Barrett, 2010). Even within vulnerable households there tend to be individuals (usually women) that are less likely to eat appropriate amounts of food or eat foods that have less nutritional value (ELCSA, 2012).

In recent years, knowing who is vulnerable has not been enough, it has been recognized that it is essential to identify the individuals, households or the communities who are more at risk of suffering hunger in the future and that analyses of vulnerability should stop focusing on poverty (Turner et al., 2003). In other words, there has been increasing awareness that the analysis of food insecurity should be carried out in a dynamic context (Scaramozzino, 2006) that considers changes in social and institutional relations that are likely to affect food access and distribution.

This dissertation contributes to the understanding of vulnerabilities by identifying if participation in specific non-market mechanisms in these four study communities is linked to food security.
CHAPTER 3
RESEARCH DESIGN AND METHODS

In this section I explain the sampling strategy and the rapid assessment multi-sited ethnography research design used in the study. The methods included free lists, semi-structured interviews and participant observation. In addition I used and an EBFSS (experienced based food security surveys) and anthropometric measurements as data sources. Both qualitative and quantitative methodologies were used in a comprehensive approach to analyze the relationship between institutions and food security.

Once in the field the research proceeded in two phases. The first phase consisted in recruitment, training, and selection of three field assistants/ translators, requesting permission in the villages, and data compilation. The first phase took place in San Cristobal de las Casas in December 2013 and January 2014 and laid the groundwork for the second phase (February to April 2014). During the second phase an ethnographic study on the intra- and inter-community institutional landscape of four villages was conducted using a multi-sited ethnography approach.

**Rapid Assessment Multi-sited Ethnography**

Ethnographic data collection took place simultaneously in four different communities of Los Altos, Chiapas. Both the research topic and the region where fieldwork took place are complex. A multi-sited ethnography is that in which data is collected in different locations at the same time to address complex objects of study (Marcus, 1995). Its main advantage is the increased number of observations and the comparability of the results. On the other hand, the main concern is attenuating the power of fieldwork. This concern is based on the idea that ethnographers should be culturally proficient and knowledgeable in the community that they are working in.
There is a presumption that attaining such proficiency becomes difficult or impossible if researchers spend time in several communities instead of one during fieldwork. This difficulty was overcome by having a research team (See Appendix A on team recruitment, selection, training, and rigor and Appendix B to see the training manual) where individual team members focus on specific communities. Thus, the team was able to have sufficient understanding about each field site while being able to gather enough qualitative data (Marcus, 1995; Rogers-Dillon, 2005; Woods, Boyle, Jeffrey, & Troman, 2000).

**Sampling**

Each one of the four communities was treated as a separate study area, thus all the sampling described here is at the community level.

**Free lists.** An initial purposive convenience sample of 20 individuals was recruited for the free list protocol in each community. The sample size was large enough that it allowed us to produce valid and reliable data about a specific cultural domain (Bernard, 2011) allowing us to come up with a comprehensive list of all the meso-level institutional arrangements in each community and their micro-region. To ensure a diversity of age and gender in the sample, the target recruits were 5 women >35 years old, 5 women <35 years old, 5 men >35 years old, and 5 men <35 years old. The 35 years of age cut off was chosen after asking participants in the pilot study about who they considered “old” or “experts” on specific institutions, and validating their selections with the research team members that have local knowledge of the area. In addition, men occupying top positions in local community institutions, such as churches or comites, are usually more than 35 years old.

Additional criteria for participant eligibility were that subjects had to be older than 18 years of age, and were community members.
A total of 135 free lists were conducted in the four communities (Mesbilja \( n=26 \), Pajaltón \( n=44 \), Cañada Grande \( n=27 \), and Balun Canal \( n=38 \)). In each community the team first targeted the initial sample to see if any of the age by gender groups was more knowledgeable than the others. When it was determined that a group was more knowledgeable, more free lists were done with members of that gender and age group until saturation was reached. Saturation in this study is understood as the point in data collection when no new or relevant information emerges (Saumure & Given, 2008). The use of free listing allowed the team to acquire specific information quickly and effectively.

Various strategies were used to recruit participants for the free lists. Most of the participants were interviewed at their home, and team members reached them while doing community walks. In the beginning, almost anyone who was contacted, who fell under the sampling categories, and was willing to participate could do so since there were slots available for each category; but as the study progressed the team started to target specific categories to fulfill our quota of 20. On some occasions when the team members reached houses and asked for specific categories (i.e. women over 35) the person asked would recommend someone else that fell under that category, converting it into a snowball sample. Once saturation was reached in all categories, saliency analysis was performed to identify the most prominent institutions in each community as well as key informants.

**Interviews.** Once the inter-community institutions and key informants for each kind of institution were identified, the team started to collect data on specific institutions using semi-structured interviews. The informant with the most knowledge on an institution was used as a seed for snowball sampling. Another seed was started with the second most knowledgeable informant if no information or saturation had not been reached on an institution through the initial seed. Seeds
were started until informant saturation was achieved or data on all the salient institutions had been collected. The final number of interviews performed in each community varied depending on the number of seeds, how fast saturation was reached, and the number of institutions that were present in each community \( (n=51 \text{ Balun Canal}, n=55 \text{ Cañada Grande}, n=72 \text{ in Pajaltón, and } n=57 \text{ Mesbilja}) \).

**Ethnography of Institutional Arrangements.**

**Free lists.** Participants were asked to respond to three free list questions: 1) Tell me all the ways in which anyone can acquire food in this community without buying it; 2) Tell me all the reasons why someone can give you food; and 3) Tell me if ever in your life you have exchanged food with someone from another community, and if so, list the communities.

Participants were probed using redundant questioning and no specific cueing to elicit more information. Doing free lists in Tseltal with illiterate people proved difficult, as one of the most common probing techniques is alphabetical probing. The research team was instructed to do alphabetical probing with literate subjects as they were used successfully during the pilot study. However, alphabetical probing was dropped as a probing technique after the first day of data collection as it proved to be problematic due to differences in the Tseltal and Spanish alphabets and the low number of literate participants.

Despite the probing, some participants only answered one or two of the free lists. Additionally, samples size varied from community to community depending on how fast saturation was reached. However this is not problematic since only a small sample of informants (10-15) are needed to produce valid and reliable data about a specific cultural domain (Bernard, 2011). Data analysis took sample differences into account by adjusting frequency and saliency calculations to represent the total.
number of respondents in each free list rather than in the whole protocol. Frequency and saliency were calculated using the following formulas:

\[
\text{Freq} = \frac{F}{N} \\
\text{S} = \left(\frac{F}{N}\right) \left(\frac{(L-mP)}{(L-1)}\right)
\]

in which relative Frequency (Freq) results from dividing the frequency of mention of an item in a specific community (F) by the number of respondents in each list in a specific community (N). Saliency (S) is calculated by multiplying frequency with the result of the second factor \((L-mP)/(L-1)\). The second factor results from the mean length of a list \(L\) minus the mean position \(mP\) in which the term is named in that list, divided by the mean length of the individual lists \(L\) minus 1 (Sutrop, 2000).

**Participant observation.** The bulk of the data obtained in the field came from participant observation and interview transcripts. Since this study used a rapid assessment approach, team members were instructed (and monitored) so that notes referred to transcriptions by informant code and that notes and transcriptions did not repeat information. Accuracy of notes and transcriptions was double checked by myself and one other team member by asking about X researcher’s week, contrasting it with their interview log, community interviewee list, and the notes. This step ensured that important or relevant findings and information were contained in one document.

Participant observations were used to generate adequate rapport, develop experiential knowledge, and to contextualize data from the interviews (Spradley, 1980). This method was used with field informants, as well as with the host families and at public events (i.e. *asambleas*, *comite* reunions). Participant observation mainly took place in the house of the interviewees or in public spaces like the school or church. Comments and social interaction that alluded to food reciprocity and redistribution were recorded in the field notes. Field notes are the foundation of
ethnographic work, making observations usable and allowing researchers to make them public. Proper and accurate recording of field data are necessary for theory building (Schensul & LeCompte, 2013).

Writing field notes is a complicated task. Since team members had some previous knowledge on how to write field notes, they were instructed on how to transcribe their notes to standardize them. Standardizing field notes reduced data preparation time; allowing data analysis to start faster. Researchers were provided with a laptop or an internet coffee allowance so that they could do their transcriptions in the field when possible. However, due to the high amounts of data collected, they also spent some days in San Cristobal transcribing.

**Interviews.** After Cultural Consensus Analysis to check for saliency was performed, the team realized that not all the types of inter-community reciprocal institutions were present in each community. At one of our meetings we prepared a list of interview protocols that were necessary to capture the reciprocal and redistributive institutions. Then we elaborated protocols for each kind of interview. Since each community in the study is different from the other and has slight dialect differences, each protocol was a guideline that contained questions to ask and the information each question was going after. Interviews were performed at the researcher’s discretion. In addition, informal interviews were used by the researchers to enrich their field notes, build rapport in the communities, and explore related topics. Interviews were performed until saturation was reached. At least two interviews on institutions that did not appeared in the cultural consensus analysis were done in each community.

The semi-structured interviews focused on the practical functioning of institutional arrangements. A major focus was placed on rules in use, rules in form,
sanctions, and monitoring. Interviewees were asked about the members of each institution and its functions. This strategy was used to collect information to inform the authority and social capital scales.

*Table 2.*

**Data collection**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Balun Canal</th>
<th>Cañada Grande</th>
<th>Pajaltón</th>
<th>Mesbilja</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of participants</td>
<td>42</td>
<td>42</td>
<td>59</td>
<td>51</td>
</tr>
<tr>
<td>Free lists</td>
<td>38</td>
<td>27</td>
<td>44</td>
<td>26</td>
</tr>
<tr>
<td>Exchange interview</td>
<td>4</td>
<td>8</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td><em>Comite</em> interview</td>
<td>10</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Basketball interview</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Religious exchange interview</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>End of class interview</td>
<td>8</td>
<td>5</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

Additionally, I conducted qualitative analysis on the transcripts of 99 semi-structured interviews (Mesbilja *n*=28, Pajaltón *n*=24, Cañada Grande *n*=23, and Balun Canal *n*=24) to inform how reciprocal and redistributive exchanges function and take place within and across communities and the current state of the communities’ governance systems. Interviews were coded using grounded theory. That information was used to elaborate two scales on governance (civic authority scale and traditional authority scale) that represent the spectrum of governance systems found in the communities and four scales on exchange strategies (inter and intra-community reciprocity, inter- and intra-community redistribution) that encompass the diversity of exchange strategies reported. Each scale was tested for internal consistency and reliability for the sample using Cronbach’s Alpha test. Table 2 contains a list of the interviews that were performed by type and community. Aside
from the free lists all the other types of interviews refer to a type of institution that was identified through the free lists.

Exchange interviews were used to collect information on inter-household exchanges of food stuffs that occur among residents in different communities. Such exchanges can occur between family members or between opportunistic strangers. Comite interview refers to the interviews that we did with the local comite or local authorities regarding the specifics of the organization in the community. These interviews also included information on community membership and affiliation, institutions, sanctioning, monitoring, and history. In addition, the team conducted interviews regarding the basketball tournaments and the rise of basketball as a new form of cooperation.

In some of the communities it became apparent early on that religious institutions played a large role on inter-community reciprocity. These interviews were framed to understand how far these inter-community links extend, the nature, and the products exchanged. One of the biggest celebrations where food is exchanged in the region is the clausura or end of classes. We interviewed teachers, organizing authorities and parents about how they work, who is invited and the specifics of feasting in this celebration.

**Food Security**

Data from the National Health and Nutrition Survey (ENSANUT) 2012 was used to calculate the degree of household and community food security. This study uses: 1) ELCSA (Latin American and Caribbean Food Security Scale); 2) reliance on food redistribution; 3) Z score (Weight/Height) of infants, children, and teenagers and BMI for adults; and 4) Z score (Height/Age) of infants, children, and teenagers. These are reliable measurements of food security that have been validated in other
countries. By combining food experience scales as well as anthropometric measurements, the study has a strong understanding of the food security status of each community.

Data collection for ENSANUT in Tenejapa and Oxchuc was done during February and March of 2012. There were 1712 households sampled in each state. Sampling was done using AGEBs (Geographic and Statistical Basic Areas) as the primary units for sampling. Stratified sampling was done using two strata: urban level and marginalization. The sample has a 95% validity.

**Anthropometric measurements.** The most common measurement of food utilization is growth in children and body mass in adults. Despite the widespread use of these measurements to denote food insecurity and malnutrition their accuracy is contested. Academics acknowledge that these measures can be problematic since the rates of nutrition absorption and growth of an individual can be affected by external variables. Additionally, there is a debate regarding the relationship of food security and malnutrition. One view argues that food security and nutrition are synonymous, while another view argues that nutrition is independent of food security (Maxwell and Smith, 1992). Household food security is necessary but not sufficient for adequate nutrition. In that same way nutrition is necessary, but not sufficient for adequate growth.

Body Mass Index (BMI) \((\text{weight in kg}/(\text{height in meters})^2)\) and Body Mass Index for age are other anthropometric measurements that help to indicate undernourishment or obesity in adults and teenagers respectively. The use of these measurements is limited by their high cost and the distrust that they might cause in the field. Recently the use of Z scores, the deviation of an individual’s value from the median value of a reference population, divided by the standard deviation of the
reference population, has also been used in adults as a reliable tool to assess under nutrition and obesity (de Onis, Blössner, & World Health Organization, 1997).

Growth in children is measured using two common indicators 1) weight/height and 2) height/age. The score of this measurements is compared against the World Health Organization (WHO) child growth standards collected through the Multicentre Growth Reference Study to identify abnormal growth patterns due to malnutrition in infants and children. The Z scores (standard deviation scores) presented by the WHO take into account gender differences as well as feeding method (formula or breast milk) for infants. They are a reliable way to indicate if a child is under nourished or obese, but are unable to identify the sources of the problem. For population based assessment the Z-score is widely recognized as the best system for analysis and presentation of anthropometric data because of its advantages compared to the other methods (de Onis et al., 1997). For that reason, Z scores for weight/height and height/age in children and adults collected through the National Nutrition and Health Survey (ENSANUT) (*Encuesta Nacional de Nutricion y Salud*) will be used as a proxy for food security.

**Latin American and Caribbean Food Security Scale (ELCSA).** ELCSA is an experience-based food security scale (EBFSS) that directly measures food security by allowing individuals to express their perception of the food security situation in their households (Pérez-Escamilla, Melgar-Quiñonez, Nord, Álvarez, & Segall-Correa, 2007; Pérez-Escamilla & Segall-Corrêa, 2008; Pérez-Escamilla, 2012).

ELCSA was built using the US Household Food Security Supplement Module (HFSSM), the Brazilian Food Insecurity Scale (EBIA), the Lorenzana Scale validated and applied in Colombia, and the USAID Household Food Insecurity Access Scale (HFIAS) as point of references (ELCSA, 2012).
The questions that comprise the ELCSA refer to situations that people face during a time period in households, related to the quantity and quality of food available and the strategies respondents use in an attempt to alleviate food shortages. In addition, the instrument also collects data on the experience of hunger in people by age group (under 18 and over 18). ELCSA collects data on the perception of food security and objective measurements of food security. For instance, the first question records perception by asking about "the concern of food running out at home". While the remaining in the instrument collect data about self-reported objective situations that household members experience, such as reducing the amount of food served, skipping some of the meals, the presence of hunger in any household member, and the delay of meals due to lack of money or other resources (ELCSA, 2012).

When a household suffers from mild food insecurity there is anxiety and its members are worried about their food supply. Moderate food insecurity occurs in households that have made adjustments to their budget that affect the quality of the diet and adults limit the amount and quality of their food intake. Lastly, when food insecurity is severe the quantity and quality of the children’s food supply is affected.

The scale is composed of 15 questions that can be answered as yes or no (see Appendix D for a complete list of the questions). The scale makes differences between households where children are present and where they are not. This has its foundation in the idea that households members try to protect children from experiencing food insecurity (Segall-Correa et al. 2007). In households with children under eighteen six extra questions (Q9 to Q15) are asked. These questions relate to conditions affecting children under 18 at home. Therefore a household without children answers 8 questions (Q1 to Q8) while a household with children answers 15 questions (Q1 to Q15). Each question collects data about a different situation. Thus,
each question is intended to capture specific information related to the theoretical construct that supports ELCSA. Questions can only be answered “YES”, “NO” or “DOES NOT KNOW/DID NOT ANSWER” (ELCSA, 2012).

A household can be classified as being Food Secure, or having mild moderate or severe food insecurity based on the number of “YES” responses given. For example, a household without children would be considered food secure if all the questions were answered “NO”, mildly food insecure if 1-3 answers were given “YES” as a response, moderately food insecure if 4-6 answers were ”YES” and severely food insecure if more than 7 answers were “YES”. Meanwhile, a household with children would be considered food secure if all the questions were answered “No”, mildly food insecure if 1-5 answers were given “YES” as a response, moderately food insecure if 6-10 answers were “YES” and severely food insecure if more than 11 answers were “YES” (ELCSA, 2012).

ELCSA is an instrument that has been validated in Mexico and in other countries of the region and that provides reliable information on objective and subjective measures of the food security status of households and whose data can be analyzed at different levels. For that reason I will use the results of the 2012 ELCSA as one of the proxies for the food security variable.

**Community attributes**

Specific population data for each community was retrieved from the INEGI (National Institute of Statistics and Geography) 2010 Census. These data were used to complement community descriptions and to inform our understanding of certain community attributes such as religion and migration.
**Ethical Considerations**

Human subjects’ protection focuses on making sure that the people that are part or involved directly or indirectly in the study or are not harmed as a consequence of the study. All consent forms, questionnaires, interview guides, and recruitment materials used in this study were translated and back-translated between English, Spanish, and Tseltal and were approved by the Institutional Review Board of Arizona State University. All the questionnaires and instruments used in this study can be found in Appendix C.

Informed consensus was granted orally in Tseltal or Spanish depending on the subject. A copy of the consent form in the mother language of the subject was given to each participant. The form was read to each person before consent was granted.

Compensation for participation was given either at the community level or at the personal level depending on what the community authorities decided when they granted the team permission to do the study. Participants in most of the communities (3/4) were compensated individually, while one community opted to be compensated at the community level. In all of the communities, the community leaders and I negotiated how to compensate. In the three communities we compensated was given to each participant the team gave a kilogram of rice. Meanwhile in Pajaltón, the community that was compensated at the community level, I paid twice for 6 boxes of ½ a liter of Coca-cola for each man in the general assembly.

Additionally, each household that hosted a team member was compensated each week with a substantial amount of groceries. At the end of the fieldwork I also made a gift to each one of the host houses that consisted of chicken for the entire family and a gift for the household (i.e. blanket, basketball). I decided to
compensate with food to the participants despite that this is a food security research because it did not alter the data that we were collecting as the team did not collect data on food security; community leaders specifically asked for food to compensate their community members; and since food access is limited in all the communities I wanted to ensure that the researchers will not go hungry.

![Figure 1. Picture of a week’s grocery supply given to a host family.](image)

*Figure 1. Picture of a week’s grocery supply given to a host family.*
CHAPTER 4
RESEARCH SETTING

This study took place in Los Altos, a geographic, sociocultural, historical, and administrative region located in the southernmost state of Mexico: Chiapas. The region is of particular interest due to the different degrees of food insecurity present among its communities (villages) and the recent changes in the conformation of its communities and their institutions. In Mexico, indigenous and rural populations experience food insecurity at higher rates than the rest of the population. The degree of food insecurity experienced by Los Altos residents varies from extremely food insecure to food insecure (CONEVAL, 2012). Los Altos residents have suffered from food insecurity and government neglect since the Spanish conquest, allowing local, collective responses to emerge. This history makes this an ideal location to study the effects that inter-community reciprocal and redistributive institutions have on food security.

In this chapter I describe the research setting, including historical background, and the most recent demographic information on the region and the four study communities. This chapter also includes specifics on the logistics of conducting this multi-sited ethnography.

Research Site Description

The Chiapanecan government recognizes the highlands as a socioeconomic region called “altos Tsotsil-Tzeltal” that is formed by 17 municipalities: Aldama, Amatenango del Valle, Chalchihuitán, Chamula, Chanal, Chenalhó, Huixtán, Larrainzar, Mitontic, Oxchuc, Pantelhó, San Cristobal de las Casas, San Juan Cancuc, Santiago el Pinar, Tenejapa, Teopisca and Zinacantán (CEIEG, 2012). Culturally, the region is subdivided in Tsotsil and Tzeltal. Spanish is the main language spoken in
San Cristobal, however in all of the rural municipalities the main language spoken is either Tsotsil or Tseltal. In fact, Tsotsil is the lingua franca in the region and is spoken amongst many indigenous peoples of other ethnicities (i.e. Lacandones, Tseltales, Choles) and some ladinos.

**Brief history of Los Altos, Chiapas and its Tseltal inhabitants.** The Chiapanecan highlands constitute a portion of the Central American Highlands that run from the Tehuantepec Isthmus in Mexico to the lowlands of Nicaragua (Encyclopedia Britannica, 2013). The highlands of Chiapas comprise a limestone mass with extrusive volcanic rocks at the highest peaks, extending for over 11,000 km², 160 km along a northwest–southeast axis, and 70 km at its widest (Mullerried, 1957 cited by Ochoa-Gaona & González-Espinosa, 2000). The height of the relief varies from 300 meters to 2,898 m above the sea level (CEIEG, 2013) with a land area of 3,711.90 km². The higher elevations are covered by extensive pine forests, while oak and liquidambar stands are found at lower elevations (Encyclopedia Britannica, 2013).

The seasons comprise a hot dry season (March through May) and a rainy summer (May through September). The winter (October through February) has alternating dry and damp spells. The seasonal pattern of rain is ideal for the cultivation of maize and beans, which are the staple food for most indigenous peoples. However, at high elevations in *tierra fria*, production only reaches subsistence levels. On the flanks of the highlands between an altitude of 1,220 and 1,670 m. coffee can be produced. Coffee constitutes a major crop and unlike beans and maize it is sold for cash (Menegoni, 1990). Other cash crops are also produced for local consumption and commerce within the region such as cabbage in Chamula or Mandarin oranges in Tenejapa, but their importance is negligible compared with
coffee. Cattle and sheep are other commercial enterprises undertaken in some of the municipalities (Brown, 1993; Menegoni, 1990).

Figure 2. Map of Los Altos region highlighting the field site.
Economic activity in Los Altos is constrained by a high degree of marginalization. The region's total population is 601,190 distributed in 1,182 villages of which only two have more than 15,000 inhabitants (CEIEG, 2011). According to CONEVAL (2012) 74.7% of the population lives in poverty. The vast majority of people live in communities with less than 2,500 inhabitants. In fact, there are more than 900 communities with fewer than 500 inhabitants (CEIEG, 2011). The largest population center is San Cristobal de las Casas with 158,000 inhabitants. This city is the economic and political center of the region (Lewis, 2008). San Cristobal or 'Jovel' (in Tsotsil) was founded in 1528 as “Ciudad Real” by Spanish conquerors as the capital of the province and the headquarters of Hispanic control in the highlands. In colonial times the Chiapanecan region was a marginal territory due to its lack of precious metals and the long distance to the main commerce routes or the sea; making it an unattractive region for Spanish conquerors to settle in (Viqueira, 1995).

In Los Altos the social order was composed of extreme castes; the majority of the inhabitants were impoverished Indians while the few Spanish concentrated the social and economic power (Viqueira, 1995).

Ethnic segregation was and still is at the core of the economic system. Since colonial times and until recently, the Los Altos indigenous population has provided a steady flow of labor to other regions and to the non-indigenous living within the region. As described by Viqueira (1995), San Cristobal was a “parasitic city that used its political, administrative, and religious powers to strip the Indians of the fruits of their labors (p. 109).” The city was key in establishing an exploitation system in the region. At the center of the exploitation system are long term ethnic divisions where mestizos (persons of Hispanic culture from outside of Los Altos), ladinos (persons of Hispanic culture from within Los Altos, historically San Cristobal) and indigenas (persons of indigenous descent, most of them Tsotsiles or Tzeltales) have a
place (Brown, 1993; Fabrega & Manning, 1973; Menegoni, 1990; Whitmeyer, 1997). Brown (1993) talks extensively about the inequalities that the system has created for indigenous peoples and how, despite the efforts of the Mexican government, those inequalities still persist.

Starting in the 1940s the National Indigenist Institute (INI) (Instituto Nacional Indigenista) ran a program aimed at "integrating" the indigenous people into the modern world. The public policy was known as indigenismo. Acculturation took place through the training of promotores - indigenous instructors - that taught Spanish, hygiene, and cultural norms to indigenous communities. Another important component of the program was to introduce much needed infrastructure like roads, schools, health clinics, and commerce to the communities since, as pointed out by Lewis (2008), during the 1950s modern infrastructure was virtually nonexistent outside of San Cristobal. Despite many difficulties and the use of controversial approaches, the program created a rudimentary highway system in which some of the communities are connected by all-weather roads, while most have access through dirt roads that are unusable during the rainy season or no road at all (Brown, 1993; CEIEG, 2013). As a consequence, bringing products (food and non-food) to the communities can be a difficult task. Producers (usually indigenous) also face hardships when trying to commercialize their produce, as described by Brown (1993): it is a usual practice for intermediaries known as coyotes (usually ladinos) to charge producers a high fee to transport their harvest from their community to the cabecera municipal (seat of the municipality) or San Cristobal to be sold. For this same reason, products sold directly in the communities tend to be more expensive than when sold in San Cristobal. This situation, along the collapse of INMECAF (Mexican Coffee Institute) and the politics of zapatismo, have resulted in some indigenous coffee producing communities self-organizing into coffee cooperatives;
offering an alternative way for independent indigenous producers to commercialize their product (Brown, 1993).

As described above, there is a low level of commercial infrastructure in the state, particularly in Los Altos (Lopez Arévalo, 2007). During the 18th century and the first half of the 19th century it was common practice to ensure a constant supply of Indian workers in the coffee plantations through the use of *engancho*, a recruitment system in which plantation agents would hook (*enganchar*) indigenous peasants to work by giving them a cash advance for three or four months of their work (Menegoni, 1990). The *engancho* then allowed plantation owners to set up stores where the cash advance could be used. Thus, commerce was used as an instrument of oppression against Indians by inserting them in the cash economy.

When the *indigenismo* policy was underway, one of its objectives was to increase the number of commercial outlets in the region; especially in the indigenous communities where the only commerce was owned by *ladinos*. The INI did so by establishing *tiendas* CONASUPO (National Company of Popular Subsistence). *Tiendas* CONASUPO gave community residents an alternative by offering a wide variety of products at prices that were set by the federal government (Yunez–Naude, 2003).

While CONASUPO stores increased food availability in the communities, they also forced rural residents to use cash, and could have played a role in the abandonment of non-cash strategies. Today, the importance of *tiendas* CONASUPO (now DICONSA) has diminished due to a loss in government funding and an increasing amount of small commerce (Yunez–Naude, 2003). However, last year the federal government started a new anti-hunger campaign called National Crusade against Hunger (*Cruzada Nacional contra el Hambre*), in which DICONSA stores play a key role.

Most of the new commerce in the rural communities in Los Altos is owned by indigenous people (Brown, 1993), but these stores carry a limited supply, offer
mainly non-perishable goods, and all of them carry Coca-Cola or Pepsi. Thus, the amount of food and non-food products found is still limited and most of the people that live in the communities acquire their supplies during market days at their *cabecera municipal*. On market days vendors from communities and neighboring municipalities set up stands in the center of the town and sell grains, produce, manufactured items, and prepared food. Los Altos’ late integration into the general cash economy has also been marked by a strong opposition against capitalism by the Zapatista Army of National Liberation (EZLN) (*Ejercito Zapatista de Liberación Nacional*) and the communities that support it (Guerrero, 2002). The EZLN’s declared war against corporate incursions in Chiapas in 1994 and the idea of civil resistance amongst indigenous people in the region and other supporters has altered how indigenous communities perceive themselves and how governance in the region takes place. Although such opposition to trade liberalizations is not prevalent in all the communities there is a sense of autonomy and indigenous pride in most of the region that is related to the prevalent marginalization of the region (Skeffington, Morales, & Ferguson, 2006).

Rus (2010) hypothesizes that changes to the labor system in Los Altos -such as *engancho* – and an increase in population -partially due to immigrants from Central America- have posed problems to the communities by making it difficult for everyone to have a living. As a result, many communities have been “shaking out”: getting down to a more reasonable population density. Some of the changes in the social composition have been a widespread expulsion of inhabitants from the “traditional communities” to the new neighborhoods – *colonias* - of San Cristobal. One of the most common reasons for such expulsions has been conversion to Protestantism. Traditionally inhabitants of the communities were Catholic, but since the 1950s there has been a change to Protestantism. In many communities less than
half of the community’s population identifies as Catholic. In other communities like Chamula religious change has been rejected, and converts are expelled from the community. There have also been expulsions due to political reasons (Rus III, 2010). Such expulsions have altered traditional patterns of reciprocity and governance that in some cases included food.

Historically, religious institutions such as the cofradías and mayordomias (Catholic institutions that help to organize religious festivities) have played an important role in the region among both indigenous and non-indigenous inhabitants. Palomo Infante (2002) points out how, since their beginnings, such institutions have had as their main characteristics fraternity, solidarity, and mutual help among their members. Additionally, both cofradías and mayordomias have the specific function to assist with the preparations of the festivities, which include feasting. The importance of cofradías has decreased and by the XX century mayordomias had taken over (Palomo Infante, 2002). As expressed by Urbalejo Guerra (2003), mayordomias are a fundamental part of the political and religious system of Tsotsil and Tseltal communities. Traditionally, all adult (male) members of the communities had to participate in the mayordomia system (sistema de cargos) at least for one year in which they would be in charge of organizing and paying for religious festivities. Mayordomias require a substantial expenditure of economic resources. They help to distribute resources among community members, making communities more homogeneous (Urbalejo Guerra, 2003). One of the main resources that is reallocated during festivities is food, which travels from the hands of the families that have access to resources at that moment to the hands of those who do not (Obregón Rodríguez, 2003). Since the mayordomia system is based on Catholic Saints, recent conversions to Protestantism have altered the system making it loose its importance (Urbalejo Guerra, 2003).
INI policies also marked the beginning of a long history of “help” that the government has given to the communities to better their living conditions. In terms of nutrition, the region still receives resources to attack hunger and malnutrition through programs that run at the federal, state, and municipal level. In fact, there are at least eight programs that the government funds and several more that international non-governmental organizations and non-profits sponsor (DIF CHIAPAS, 2014). However, the cultural accuracy and effectiveness of these programs is contested (Angelucci, Attanasio, & Shaw, 2004; Behrman, Parker, & Todd, 2004; Farfán, Genoni, Rubalcava, Teruel, & Thomas, 2011; Fernald, Gertler, & Neufeld, 2008; Leroy et al., 2008; Ulrichs & Roelen, 2012).

OPORTUNIDADES is the principal anti-poverty program of the Mexican government. Its main objective is to reduce poverty in rural and urban communities by investing in human capital. OPORTUNIDADES provides cash transfers and food supplements to households conditional to regular school attendance and health clinic visits. OPORTUNIDADES provides services in 100,000 communities nationwide (OPORTUNIDADES, 2009). However, there are some communities in which the high level of geographic and social marginalization prevents their inhabitants from accessing healthcare. In those communities OPORTUNIDADES cannot be in place, since health clinic visits are mandatory, and as a consequence those inhabitants are covered by the Alimentary Support Program (PAL) (Programa de Apoyo Alimentario). PAL’s target population represents .87% of the national population, but Chiapas contains 24.5% of PAL’s target population, much of it concentrated in the highlands (SEDESOL, 2012b).

Despite the efforts outlined above, malnourishment is still prevalent in all the municipalities that compose the highlands and between 50 and 68 percent of kids in the region suffer from it in some degree (R. Rojas, 2013). While food insecurity is
prevalent in all the municipalities that are part of the highlands, the level of food insecurity that affects each community differs greatly.

**Tseltales in Los Altos.** While Tsotsil people are more predominant in Los Altos, Tseltal or Bats'il k'op (true language) is the second most spoken language after Spanish in the state of Chiapas. In 2010, almost 600,000 people spoke Tseltal as their first language. Tseltal speakers traditionally reside in the municipalities of Ocosingo, Altamirano, Amatenango del Valle, Tenejapa, Yajalon, Sitala, Socoltenango, Villa las Rosas, Chilon, Oxchuc, San Juan Cancuc, and Comitan. Due to migration, Tseltal speakers now also reside in San Cristobal de las Casas, Palenque, and Tuxtla Gutierrez (INEGI, 2010).

Siverts (1969) explains that while all the “tribes” in the highlands are similar, there are several identifying characteristics that distinguish the inhabitants from one municipality from the inhabitants of another municipality. These characteristics are: traditional rights over a common territory, their own political-religious formal organization, a specific saint or tribal God, tribe endogamy, a productive specialization, a traditional suit, and a moral code and common etiquette.

Tseltales from each municipality can be distinguished by non-indigenous people by their clothing and language. During colonial times the Catholic Church promoted municipal variation as a way to fragment and control the indigenous population. This policy aided in segregating and dividing groups that had been part of a señorío (kingdom) before the Spanish conquest. This might have helped each municipality to develop their own institutions to self-govern and combat collective action problems (González Esponda, 2013). Despite this, Tseltales have a shared history, and despite regional variations, the same language and Cosmo vision (Gómez Muñoz, 2004).
Tenejapa and Oxchuc are two of the three Tseltal municipalities in Los Altos. The other Tseltal municipality in the region is San Juan Cancuc. The three municipalities are contiguous and located in the north-east corner of the region, where they occupy roughly one fourth of the territory of Los Altos (see figure 3).

Los Altos Tseltales have links with other Tseltales that live in other regions. Residents of Oxchuc have a long history of maintaining relationships with Tseltales from Ocosingo rather than San Cristobal partially because until recently they were part of the municipality of Ocosingo. Likewise, Tenejapa has strong relationships with San Juan Cancuc and San Cristobal probably due to its geographic location between both of these municipalities.

**Land tenure in Los Altos.** There are three types of land tenure in the region: private property, *ejidos*, and communal use indigenous property.

Communal lands in the region of Los Altos are constituted by individual smallholder plots worked by independent family units that can be bought and sold between community members known as *comuneros*. They constitute the basis of a traditional social organization based on kinship and governed by a politico-religious structure that is based in land tenure and community membership. These communities are known as *parajes* in the region. This name distinguishes them from newer communities based in the *ejido* system. All of the four study communities are *parajes*.

In Chiapas, part of the commons became *ejidos*. Since then the dichotomy between communities and *ejidos* in indigenous regions has had huge implications for the application of development models and projects (López Meza, 1996). The *ejido* represents one of the ways in which the rural space is organized. While communal land escapes the formal governmental institutions and constitutes a type of space
where the traditional, informal territorial organization typical of indigenous areas takes place. Moreover, since the ejidos are the product of the promotion of the state, they are permeable to any government intervention. The government also determines the organizational procedures of the ejido.

In Oxchuc, six agrarian cores were constituted after the agrarian reform: a) Santo Tomas, b) Guadalupe Bakja ', c) The Niz and Las Cabañas, d) San Ramon, e) Reforma Santa Teresa and f) El Retiro. The first two are communal use indigenous property, while the latter are under the ejido scheme (Gómez Santiz, 2011).

The last type of property in Los Altos is private property. This kind of property is structured under ethnic divisions, meaning that communal properties and ejidos are indigenous landholdings while private property is ladino or foreigner owned. Private property in the region tends to be land of better quality than that owned by comuneros (López Meza, 1996). It is important to distinguish private property as a type of land tenure from the small parcel land holdings that Indians sell, buy, and trade under the configurations of communal property and ejidos. There are many differences between these kinds of land tenure. For example, among indigenous landholders, changes in land tenure are not registered in the Public Property Registry, properties are not taxed, and any violation of the oral contracts is solved by the traditional community authorities (López Meza, 1996). Since 1994 federal protections on the communal aspect of ejidos were lifted by the federal government and ejido land could be sold in the market. However, most if not all ejido land in Tenejapa remains under the possession of indigenous people. Lopez Meza (1996) attributes the maintenance of indigenous ownership to the Zapatista fight for the land.
In addition, during the last 20 years there has been a strong process of re-indianization, meaning that *ladinos* and *mestizos* have been pushed out of Los Altos either in a pacific or violent manner. This process has also significantly reduced the amount of private property in the region as communities re-appropriated the land after the non-indigenous left. Re-appropriation can be done by selling the land directly to indigenous people or after 1994 through the government. In Tenejapa there are co-properties, communal land holdings that were bought back from *ladinos* to be administered like communities, but have not yet reached the government protection of being traditional communities.

**The Communities**

While there are many units of social organization in Los Altos (ethnic group, lineage, family, etc.) communities are the unit at which religion and politics are self-organized as well as the unit the state uses to organize their incursions into the region. In simple terms a community is a group of people living in the same place or having a particular characteristic in common. In Los Altos the word *comunidad* (community) is used to describe a group of people that reside in the same village, obey the same authorities and participate actively in the community decision process.

All the communities that participated in the study have set geographical boundaries and only community members can reside within those boundaries (although land can be owned by other indigenous people that reside outside of the community). Community membership is a family affair since the social organization of the communities is based on the family structure. Community members and their family have rights and responsibilities in and to the community. Among the four communities studied, the two boundary rules used are compliance with local authorities and residence patterns.
This study was conducted in three communities of the municipality of Tenejapa and one community in the municipality of Oxchuc. I will proceed by introducing some of the geographic and demographic characteristics of each municipality followed by a general description of the communities that participated in the study. I will start by introducing the municipality of Tenejapa and the communities of Balun Canal, Cañada Grande and PAJALTON. Following these descriptions I will introduce the municipality of Oxchuc and the community of Mesbilija.

**Tenejapa.** Tenejapa means “río calcáreo” (noisy river) in náhuatl. It is located in the limits of the Chiapanecan Central highlands and the Northern Mountains, which makes all its territory mountainous. Its geographic coordinates are 16°49' N y 92°30' W. Tenejapa has an extension of 99.4 km² (INAFED, 2014).

Before the arrival of the Spanish, Tseltal groups settled in the present territory of the municipality. During the second half of the sixteenth century, the Dominicans settled in the region and struggled to found a ceremonial center that would help them implement the structure of colonial organization. The Dominicans settled in the town and erected the church of San Alfonso. López Meza (1996) asserts that what is known as the “traditional organization” in Tenejapa is the result of the colonial imposition of a monotheist cosmovision against the polytheist Tseltal cosmovision, as well as the insertion of the “teología de la liberación” (Liberation Theology) during the 70’s, and the introduction of Protestantism. The latter processes have altered and degraded the so-called traditional organization. According to that tradition, each community has a Poxiletik (shaman), a Muk’ul kaviloetik (person that prays), Pas A’teletik (religious cargo system), and A’tel patan (political cargo system). In the following chapter I will explain in more detail how this
traditional organization is structured and what role it has in the reciprocal inter-community relationships of each village.

The territory in Tenejapa is controlled from the seat of municipality, where the traditional A’tel Patan and non-traditional authorities are located. The town of Tenejapa is the largest and most important village in the municipality. Since colonial times the town of Tenejapa functioned as a Catholic ceremonial center, whose importance has now been diminished due to religious conversion (Medina Hernández, 1991). The material structure of the village reflects ladino and indigenous influences. Ladino households are permanent and follow a Spanish grid-like pattern, while indigenous houses are found in the periphery and are used as family property which family members could inhabit while they held the position of traditional authorities (López Meza, 1996; Medina Hernández, 1991). Today, few ladinos live in Tenejapa and the houses of the ladino families are now occupied by indigenous families. This is a consequence of re-indianization, the ongoing process of re-appropriation of the rural territories by indigenous people in Los Altos.

The rest of the population centers in the municipality can be classified as parajes or ejidos. Paraje is the name given to the communities that follow the traditional organization system outlined before. While ejidos are communally owned land used for agricultural production created by the Federal government during the first half of the XXth century by expropriating ranches owned by ladinos and foreigners.

While my focus for this study is on the relationships among communities, it is crucial to understand what communities are and how are they organized. I will explain each communities’ institutions in greater detail in Chapter five, but for now it is necessary to understand that a community is a group of people linked by internal
relationships that reside in a territory that they control. Community members are usually linked by the same social and cultural traditions and through institutions that help them satisfy their individual and collective necessities (Medina Hernández, 1991).

**Balun Canal, Tenejapa.** Out of the four communities where we conducted research, Balun Canal was where we had the most difficulties. Despite the fact that it is the most connected community through transport of all, and that a lot of people are bilingual, we had several misunderstandings with the authorities regarding our role in the community.

*Figure 3. Picture of Balun Canal.*

This community is located 22 km east of San Cristobal de Las Casas, at 16 46’ 49” north and 92 32’ 17” west. It is 2245 m asl (INEGI, 2010). It has a temperate sub humid climate with temperatures around 14-16 C with a rainy season during May
to September (Gómez, Castro, Junghans, Ruíz Montoya, & Villalobos, 2000). The locals classify this set of geographical variables as cold weathered land or *tierra fria*.

The village of Balun Canal has a total population of 420, of whom 87% speak an indigenous language. While Balun Canal has the largest prevalence of Tsetsal speakers in this study, it is also the community with the lowest rate of monolingualism (42.31%) (INEGI, 2010). Despite the high prevalence of bilingualism and the presence of a kindergarten, an elementary school, a middle school, and the frequent taxi trips connecting the village with Tenejapa where the high school is located, the average person has attended school for 3.79 years (the lowest average of the study communities) (INEGI, 2010). This means that, on average, an adult in this community has not finished fourth grade. This is important to keep in mind when I explain the relevance that the elementary 6th grade commencement celebration has for households and communities.

While the team was conducting research in Balun Canal we rapidly noted the amount of Protestant and Evangelical temples in the community. Unsurprisingly, only 16% of the community remains catholic, while 65% identified themselves as evangelical, protestants, or biblical during the 2010 census.

As observed during fieldwork, fields are used for slash and burn agriculture, intensively for two years. Fields are prepared for sowing in late winter and early spring (February and March) and sowing is done before or at the beginning of the May rainy season. Maize and beans are the two most common crops, and corn is harvested during autumn. Other crops are planted throughout the year to supplement their food, like peas and different kinds of pumpkins. Most houses also have at least one free range chicken that is fed food scraps and scavenges on the
property. Cattle are not a common possession among indigenous people, but we saw at least three households that owned cows during our stay there.

Men supplement household income by working outside the community as taxi drivers, construction workers, or seasonal workers at coffee plantations outside of Los Altos (Gómez et al., 2000).

**Cañada Grande, Tenejapa.** Cañada Grande is known in the municipality for its proximity to Tenejapa. In the past it was also known for its high involvement in the traditional catholic festivities. It is located about 3 km north of Tenejapa, at 16 49’ 05” north and 92 31’ 21” west (INEGI, 2010). The community is connected by an all-weather road from Tenejapa. There is no regular public transportation connecting these towns, but one can walk from Cañada to Tenejapa in about 25 minutes. Walking the other way usually takes a little bit longer since one has to gain elevation. The community sits at 2126 m asl, however households can be found on the top of the adjacent hills. The rainy season from May to September. This community is also considered *tierra fria*.

According to the 2010 census there are 544 inhabitants in Cañada Grande, 267 males and 277 women. All inhabitants identified themselves as living in an indigenous household or being indigenous, 82% of the population speak an indigenous language, and 53% of the population 5 years and older are monolingual in that language (INEGI, 2010).

The average years spent in school is 5, one of the highest averages in the municipality (INEGI, 2010). Among the Tenejapan communities that participated in the study, this is the only one where we met males that had left their community to get a college degree instead of migrating as seasonal workers. Moreover, we met middle aged men that had accounting and education degrees.
Figure 4. Picture of Cañada Grande. The picture shows the new kindergarten (right) the old community buildings (left) and the roof of the new elementary school (top).

In the past, Catholicism played an important part in the village identity. Today, roughly 50% of the population is Catholic and 20% of the population identified themselves as being Protestant or Evangelical (INEGI, 2010). In this community people also identified themselves as practicing the “old” religion, meaning that they practiced a combination of prehispanic beliefs and Catholicism.

As a tierra fria community, Cañada Grande’s production is limited to corn, beans, stone fruits, certain types of squash, and peas. Cañada Grande has a history of migration to other states in Mexico, so rather than migrating to the coffee plantations 40-50 years ago, people from Cañada migrated to Mexico City or Guadalajara as construction workers, housekeepers, or merchants.
Households in Cañada Grande have land within the limits of their community, and use slash and burn agriculture to produce corn and beans on steep hills with a two year rotation. People supplement their food by having chickens and pigs, and some households also have cows. We also talked to people that still hunt for small rodents and that gather herbs and other plants to eat.

**Pajaltón, Tenejapa.** Out of the three communities in Tenejapa where data were collected for this study, Pajaltón is the most isolated. According to SEDESOL (2014), Pajaltón has a very high degree of marginalization. It is located on the top of a hill close to the border of the Tsotsil municipality of Chamula. Pajaltón and Cañada Grande are connected by a precarious, windy, dirt road that is practically impassable during the rainy season. Pajaltón is located at 16 50’ 04” north and 92 31’ 51” west at an altitude of 2299 m asl (INEGI, 2010).

*Figure 5.* Picture of the main road that connects Pajaltón to Cañada Grande.
According to the 2010 census the total population of Pajaltón is 715 inhabitants (344 males and 371 women (INEGI, 2010)). All community members identify themselves as indigenous, 85% of the population speaks an indigenous language, and 54% of the population 5 years and older are monolingual in that language (INEGI, 2010).

Pajaltón has a kindergarten and an elementary school. All the teachers and instructors are from outside the community and, as in most rural villages in Mexico, they reside in the village only during the school week. Getting a hold of the professors that work in Pajaltón was extremely difficult as classes were rarely held during fieldwork despite the fact that classes were in session. The average adult in Pajaltón went to school for 4.23 years; in other words, the average is less than fifth grade (INEGI, 2010).

Pajaltón´s Catholic population represents 43% of the community and 47% of inhabitants identify themselves as Protestant, Evangelicals or Biblical (INEGI, 2010). Among these religions the Iglesia de Dios (Church of God) is the most important in the community. It has a prime location, situated next to the road, and has more attendees than the other churches.

Pajaltón sits higher than any other community in this study. It is usually surrounded by a thick fog that allows the soil to be moist all year long. Walking around the community I observed apple, peach, and plum trees. However, the residents say that the fruit is too small to be sold and is usually eaten by them or their animals.

Pajaltón inhabitants also practice slash and burn agriculture. Their main staples are corn and two different varieties of beans (long and short stock). They harvest local kinds of squash like chilacayote in December, snow peas in April, and
other herbs throughout the year to supplement their diet and income. Most houses have chickens that roam freely in the household and very few have any other kind of domesticated animal used for food consumption.

**Oxchuc.** Oxchuc means three knots in Tseltal. The municipality is located within the boundaries of the Central Highlands and the Northern Mountains with geographical coordinates of 16° 47' N and 92° 21' W. Development in the municipality is favored by its location between the cities San Cristobal de Las Casas and Ocosingo, which are regional centers of economic dynamism; and its proximity to the Pan American highway. To the north of Oxchuc lie Ocosingo and San Juan Cancuc, to the east lie Ocosingo and Altamirano, while Chanal is located south of Oxchuc, and Huixtán and Tenejapa west of the municipality.

The municipality has an area of 72.00 km² representing 1.9% of the surface of the Altos region and 0.1% of the state. Its altitude varies from 1000 to 2500 m asl, breaking the territory into warm and cold zones, which affects agricultural activities and socio-economic dynamics, presenting different challenges for regional development (INEGI, 2010).

Oxchuc was an important ceremonial center. During the mid-sixteenth century Spanish missionaries responsible for the evangelization of the area gave the people the foundations of a colonial government. By the year of 1712 the town's inhabitants were actively involved in the Indian uprising; on June 19, 1778 the first internal territorial division in the province of Chiapas was made and in that division Oxchuc stayed under the governance of Ciudad Real (San Cristobal). The 1900 Population Census listed Oxchuc as a municipality, however years later it descended to the status of municipal agency under the municipality of Ocosingo. In 1915 it was transferred to the municipality of Chilón and then in 1936 it regained the status of
municipality and is classified as corresponding to the region of Los Altos. As a result, this region still shares strong links to the Palenque region where Chilón and Ocosingo are located (INAFED, 2003). Throughout all these changes ladinos and mestizos were at the top of the political hierarchy holding the political power.

In the early fifties the mestizo dominion over the municipal institutions was terminated by the rise of indigenous political power. In the eighties and nineties, due to structural changes and reform of the municipal structures in the federal Mexican government, there was a great struggle for power in Oxchuc. Two distinct indigenous political forces (democratic and vanguardistas) fought for the power and ended up determining the political conditions that currently dominate the municipality (INAFED, 2003).

Despite its location Oxchuc became connected with San Cristobal through an all-weather road in 1968. Today the trip between Oxchuc (seat of the municipality) and San Cristobal takes an hour and can be done by car, bus, or colectivo (shuttle vans). The seat of municipality is larger than Tenejapa and is constantly busy with people commuting from San Cristobal to Ocosingo.

Oxchuc has a population of 41,423 inhabitants, of which 20,755 inhabitants are men and 20,668 are women, with a population density of 575.31 inhabitants per km². The population is distributed over 97 sites, of which only 11 sites have more than 1,000 inhabitants (CIBCEC, 2013). Oxchuc’s population is mainly indigenous, with 96.07% speaking Tseltal, and almost 50% being monolingual.

Almost the entire surface of the municipality (99.2%) is used for agriculture (CIBCEC, 2013). The most common crops are milpas, coffee production, and horticulture in which vegetables are interspersed between coffee or corn.
Mesbilja, Oxchuc. Mesbilja means “water that sweeps”. The residents think that the name arose because during the rainy season the Mesbilja’ river that runs through the locality sweeps away everything within its reach. Weather in Mesbilja is diverse; in spring it is dry and semi-hot, in the summer months it is rainy with showers in the morning and at night, and in autumn and winter it's cold in the mornings and at night.

Mesbilja is located on the bottom of a valley through which a small river flows. The town is connected to the San Cristobal-Palenque paved road by a dirt road that goes through the community of El Corralito. Mesbilja is located at 16°48’01” north and 92°14’47” west at an altitude of 1511 m asl (INEGI, 2010).

According to the 2010 census the total population of Mesbilja is 1793 inhabitants (893 males and 900 women) (INEGI, 2010). All community members identify themselves as indigenous, 86% of the population speaks an indigenous language, and 24% of the population 5 years and older are monolingual in that language (INEGI, 2010).

Mesbilja has a kindergarten, an elementary school, an Agricultural junior high (Secundaria Agropecuaria) and a high school. The average adult in Mesbilja went to school for 5.9 years, which makes it the study community with the highest average of completed education (INEGI, 2010). The team also met several middle aged men that had college degrees mainly in education.

Most of Mesbilja inhabitants practice evangelical Presbyterianism. In fact, 83% of the population identified themselves as Protestant, Evangelical, or Biblical, while the Catholic population represents less than 10% (INEGI, 2010). Conversion to Protestantism started in 1961 when American missionaries arrived in the community (Corbeil, 2013).
Figure 6. Picture of the Mesbilja’ river. Picture shows the river (center), the dirt road (right) that connects the community with the paved road and a protestant church on top of the hill (left).

Mesbilja sits at a much lower altitude than any of the other study communities and is considered a “hot soil”, or tierra caliente, community. The temperate weather affects the production cycles and produce. Community members’ land is situated within the borders of the community and to a lesser degree outside of it.

Subsistence and cash crop farming are practiced in Mesbilja. Subsistence farming in the milpa consists of corn, beans, coffee, peach, avocado, banana, radish, lemon, lime, orange, tangerine, squash, pumpkin, sugar, tomatoes, peppers, and herbs. Corn planting begins in late February and sowing ends in May. Depending on the variety of corn and how early it was put in the ground, harvest could take place anywhere from July to November. Families consisting of parents, children, and
relatives (extended family) and neighbors help plant and harvest their crops. Families also raise chickens. When families raise cows they do so to sell them in Oxchuc or Ocosingo and they do not consume their milk.

Cash crop farming is limited to coffee. Most households have a milpa and also have coffee trees. Coffee is used for household consumption and in good years surplus is sold. It is a common practice to sell the dry beans to coyotes that come to the community rather than commercializing them directly in Oxchuc or Tenejapa. To our knowledge there are no coffee producing cooperatives in the community.

Community Selection

Since the use of indigenous languages is predominant in this region, I needed to find research assistants that were fluent in Tsotsil or Tseltal. Contrary to my expectations, I was only able to find three assistants, all of whom spoke Tseltal. Thus, for practical reasons research only took place in Tseltal communities.

I restricted community selection to those villages that participated in ENSANUT (National Health and Nutrition survey) 2012. So, the sample was limited to three communities in Oxchuc and three communities in Tenejapa. The research team decided that for practical reasons it was best for all the assistants to do fieldwork in communities that were close by to each other. Thus, assistants did work in the three communities in Tenejapa first.

After concluding fieldwork in Tenejapa the whole team started to conduct fieldwork in Mesbilja, where I had already been granted permission to work back in January. The other two communities in Oxchuc were not part of the study because we could not find one of them (I later learned that it is a small caserio with only 2 houses and a dozen inhabitants) and we were not granted permission.
**Gaining Access to the Communities**

When I visited Los Altos in winter 2011-2012 to do the pilot study for this project I was told by several researchers from ECOSUR (South Border College) that getting permission to work in the communities was a daunting task. I was advised to go accompanied to the communities, bring a translator, and be prepared to wait in-between 6 to 8 weeks for an answer and to not offer anything in exchange.

Gaining access and permission to conduct research in Northern and Central Mexico is an “easy task” in which the researcher brings and an ID from their research institute and approaches the highest ranking authority in the community. The researcher presents the project and addresses any possible questions from the authority. Unlike most communities in central Mexico where entrance to the villages is without restrictions, entrance to autonomous and Zapatista (that adhere to the National Liberation Zapatista Army) communities in Los Altos is restricted. Non-autonomous and non-Zapatista communities in the region are likely to impose and enact restrictions on who can be in their communities and a permit to be there has to be requested as soon as one enters the community.

In December 2013, I selected four communities in four (two Tsotsil and two Tzeltal) municipalities to participate in the study. I spent one week visiting one community every day to request permission to collect data there in February and March. Gaining access to the communities was easier than expected. All the communities agreed to participate in the study the same day we were there (I took my dad and toddler along). In all the communities I had to speak to the authorities. The first day I spoke to the General assembly of Pajaltón that consisted of all the men between 16-45 years old that reside in the community (~160). One of the men functioned as a translator. Permission was granted and in exchange they requested
five boxes of Coca-Cola. The men drank it there. As I later learned coke is used to seal the deal and I bought cokes for all the members of the community that were present when I requested permission in each one of the communities. At the end of the week I had been granted permission to collect data in all four communities: Pajaltón, Tenejapa; Mesbilja, Ouchuc; La Granadilla, Zinacantán; and Majomut, Chenalhó.

However, after recruiting the team in February and deciding with them that we would work in Tenejapa, I had to request permission in Balun Canal and Cañada Grande (I had already been granted permission in Mesbilja and Balun Canal). During the week of training the three assistants and I visited Balun Canal and Cañada Grande to request permission. In each of these communities we requested permission directly with the comité de educación, which as we will learn in the next chapter is the facto authority of these communities. By the end of the training week we had been granted permission to work in these communities and were ready to start with data collection.
CHAPTER 5

INSTITUTIONAL CHANGE IN GOVERNANCE AND NON-MARKET EXCHANGE

In this chapter I explore the changes that two systems of institutions have had in the study communities: governance and non-market exchange. I explore the governance system since the traditional political-religious system used in these communities influence the way that communities are governed (referred here as the civic system) and their trade networks (Cámara Barbachano, 1966; López Meza, 1996). Non-market exchange institutions have also adapted to changes in local governance. Non-market exchange institutions such as reciprocity and redistribution are seen in this dissertation as coping or adaptive mechanisms used to deal with fluctuations in the amount of food available. Thus, I consider the use of institutional arrangements to govern resource use and distribution as a response to spatial and temporal resource variability. Each one of the diverse patterns of social organization described in this chapter have emerged to deal with resource variability among other functions.

**Governance System**

While there are many units of social organization in Los Altos (ethnic group, lineage, family, etc.) communities are the unit at which religion and politics are self-organized as well as the unit the state uses to organize their incursions into the region. Community authorities are the most immediate governance level for Tseltsales living in Los Altos. The governance system of each community is the result of a unique process in which community members participate actively to establish rules and regulate life within their villages. These rules also affect the way in which interactions with members of other communities happen.

A community’s governance system can range from very traditional to civic. Traditional authorities in this study refer to the presence of traditional political-religious authorities in a community. In Tenejapa this means presence of bankilal
and *rerol* and in Oxchuc it refers to *Mayores*. Civic authorities refer to the use of secular groups such as *comites* and *asambleas generales* to lead the community. The four study communities sit in different places of this continuum.

**Traditional Political-Religious Governance System.** The traditional political-religious system used in the municipalities of Tenejapa and Oxchuc was imposed by the Spanish during the conquest to solve contentions between the indigenous populations and linked them to the colonial justice system (López Meza, 1996). Segmentation politics imposed by Spaniards and continued by the Mexican government resulted in different traditional systems in each municipality. In Tenejapa the traditional organization system is composed of four institutions: *poxiletik* (healers), *kaviloetik* (prayers), *pas a’teletik* (religious system) and *a’tel patan* (political system) (see figure 7). In this system each institution has a position in each spatial scale (i.e. community, inter-community, municipal). In Oxchuc the traditional system is based on adscription to one of two calpules: *Mucul calpul* or big calpul and *Chin calpul* or small calpul (see table 4). *Calpules* were not binded by geographic or kinship delimitations; members of a *calpul* can be inhabitants of any community or be part of any clan (Villa Rojas, 1990). *Calpules* are the institution through which religious festivities and justice administration, monitoring and enforcing happened in Oxchuc.

In Tenejapa the traditional political system or *A’tel patan* was represented in each community by two *fiadores* (tiviniketik) and two *regidores* (roletik). Throughout the municipality there were 90 *roletik* and 90 *tiviniketik* (see figure 8). They represented all the *parajes* of the municipality. Reroletik and tiviniketik were a link between their community and the higher level political system. Their main function was to monitor and enforce justice according to the local tradition (rules in use) and their good judgment. Through them justice administration was a
community affair that rarely exceeded the village limits. Additionally, they served as messengers between the *Ladino* political system, higher ranking traditional authorities and the communities. They occupied their position for one year, during which they were the highest ranking authorities in their communities.

**Figure 7.** Traditional organization system in Tenejapa, Chiapas.


In Oxchuc traditionally *sindic*os and *cornales* function as judges and policeman enforcing rules and apprehending people. They were also in charge of
distributing the news from the authorities throughout the municipality (see table 3).

Unlike in Tenejapa, there were only two actors occupying each of these positions per *calpul* in the entire municipality. Since most communities did not have a direct representative of the traditional political system, justice administration and enforcement was usually done by people from outside the community. Justice enforcement and monitoring had a high transaction cost. After their cargo ended *sindicos* and *cornales* were well respected members of society that had prestige and were called *cabildos* or *principales*.

Table 3.

**Religious authorities in each Calpul in Oxchuc.**

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Tseltal name</th>
<th>Position</th>
<th>Special feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Catinab</td>
<td>Supreme chief of the calpul</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Okil-cabil</td>
<td>Chief helper</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Chuyacacales</td>
<td>Church workers</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Dzunubiles</td>
<td>Great “pulzdor”</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>“alcalde”</td>
<td>mayor</td>
<td>Baton</td>
</tr>
<tr>
<td>2</td>
<td>Cornales</td>
<td>governor</td>
<td>Baton</td>
</tr>
<tr>
<td>2</td>
<td>Sindicosis</td>
<td>sindico</td>
<td>Baton</td>
</tr>
<tr>
<td>4</td>
<td>x-tules or rej-rol</td>
<td>Regidores or councilors</td>
<td></td>
</tr>
</tbody>
</table>

**Inter-community Civic Governance System.** In 1937 Tenejapa and Oxchuc gained the status of municipality and their governance system suffered changes. Currently, both municipalities have an *Ayuntamiento Municipal* that is product of the constitution. The constitution states that the *Ayuntamiento Municipal* ought to have a *presidente* (mayor), a *sindico propietario* (main trustee), a *sindico suplente* (substitute trustee), six *regidores propietarios* (main councilors) and three *regidores suplentes* (substitute councilors) that have to be elected by relative majority. However, Oxchuc and Tenejapa have adapted this institution in different ways (see figure 8).
Figure 8. Political organization of Tenejapa.

Red boxes represent traditional institutions, blue boxes represent the Ayuntamiento Municipal and the purple box represents where they intersect.

In Tenejapa the A’tel patan and the Ayuntamento are interlinked. The actor occupying the position of mayor also occupies the position of tatik kunerol (see figure 10). He (no women has ever occupied this position) has been elected in different ways through the last century. Medina Hernández (Medina Hernández, 1991) states that according to oral history the tiviniketik used to elect the tatik kunerol before 1940, and later during the 1950-1980 period ladino professors and bilingual promoters gained influence in the election by promoting party affiliations.
While the election of the mayor closely resembles the election system stated in the federal constitution, the other positions are still chosen by the mayor instead of being elected as it is stated in the constitution. The changes in norms of how to elect the mayor caused secularization of the A’tel patan and further divided religious and civic institutions. According to tradition, the mayor, or Tatik Kunerol, is not the highest ranking person in the political hierarchy in Tenejapa. He has to obey and seek council in the Tatik Martir, a council formed by four elders that have occupied several religious and political positions and that are usually also healers or Poxiletik. (Medina Hernández, 1991). However, in the current arrangement the Mayor is the most powerful man in the political structure, probably because embodying the positions of Tatik Kunerol and Mayor gives him access to information and power available to members of both institutions, but at the same time is responsible for complying with two different sets of norms that sometimes can be contradictory.

In Oxchuc the two political organizations co-exist without being inter-linked. In the beginning, the Ayuntamiento Municipal became another instrument used by the Oxchuc ladinos to maintain local power, but the importance of this institution was almost null in the communities. By 1940 there was an agreement stating that the mayor had to be an indigenous man. When this rule took effect the most important man was still a ladino that occupied the role of secretary. In 1942 the mayor was paid 10 pesos per month, while his secretary was paid 20 (Siverts, 1969). In the sixties, tribal leaders from each calpul still had a say in who was a good candidate to become a mayor (Siverts, 1969). In 2004, elections in Oxchuc worked in two stages, first a plebiscite and then a formal election that obeys the constitution (Rodriguez, 2004). That year was also the first year in which a woman was elected mayor of the municipality; she became the first indigenous woman ever to occupy that position in the state of Chiapas. Her campaign was filled with death threats. Her election also
serves as proof that the new powerful groups in the county are family groups as her husband is the current mayor and she is trying to run for reelection. Calpul leaders no longer have a saying in the election of a candidate.

In Tenejapa the A’tel patan has remained in use probably because it merged with the Ayuntamiento Municipal, however it is far from being as important as it once was. Decrease in its importance can be quantified by the current state of two of their positions tivinikeik and reroletik that have gone from 90 members in 1937 to 86 and 50 respectively in 2014. Likely causes of this loss of importance are the incursion of Protestantism and changes in the land tenure regime. Since the A’tel patan is a religious system a decreasing pool of young men interested in occupying these positions can be related to their decreasing numbers as task specialization is related to the size of the population (Anderies, 2006). In addition, the creation of ejidos during the 1960s and 1970s that are governed through a political and judicial system known as comisaria ejidal that is completely secular and in which traditional authorities do not have a place set an example of communities that were doing well (mainly due to an injection of government resources) without investing resources in the traditional system, encouraging other communities to not participate.

Currently the traditional political system in Oxchuc is in disuse while the traditional religious system is in use only among Catholics in some communities. At the municipal level adscription to a calpul has lost importance due to religious conversion and the emergence of new ways to access power. The incursion of Protestantism has impacted the amount of men interested in occupying Calpul positions. Also, it is increasingly more difficult to fill out Calpul positions because power can be accessed through participation in the Ayuntamiento municipal and local governance institutions. Additionally judicial functions are now being met by
members of each community through the local *comite*. Thus, transaction costs for justice enforcement have diminished.

In summary the traditional religious-political system in Tenejapa has adapted to the *Ayuntamiento Municipal* by linking to it. External factors have had an impact on the importance that the traditional religious-political system has. Some of its functions are being replaced by other institutions. In Oxchuc, the traditional political system has also been affected by external institutions that have substituted some of its functions. In both municipalities the traditional religious-political system is no longer the only way in which actors can access power.

**Local Governance.** Presently the most important political organizations within the community are the *Asamblea General, Comites, and patronatos*. These men lead the organizations where decisions that forge the future of the community are made. In the micro-region where Mesbilja is located, the current civic organizational structure is represented by the civil authorities who are municipal police officers, comites of education, water, electricity, road, and traditional authorities called *mayores*; people that are more experienced and have been authorities in their community and are respected for the decisions of greater importance in all locations. In the municipality of Tenejapa the civic organization at the community level consists of a general assembly and several committees and can include members of the traditional-political system.

The *Asamblea general* is a democratic decision making organ that is designed to represent all the households of the community. Every man in between the ages of 16 and 45 years of age that are not studying are part of a list and have a vote. All voters have a voice and voting is decided by majority. Probably one of the most important functions of the general assembly is to ensure that all men enrolled in the list are active in their community. Enforcement of this function is by checking
attendance by reading all the names in the list and enforcing monetary sanctions to those that do not attend. Another function of the Asamblea general is to keep community members informed. The Asamblea meets whenever it is necessary; in other words there are no set dates, but the meetings are called by the comites when there are important decisions or announcements that need to be made public. Topics that are usually discussed in an Asamblea include, but are not limited to water distribution for the households, electricity bills, school related issues (i.e. teacher attendance, upgrades), and calls to participate in events or get enrolled in government programs. Asambleas are usually held in the basketball court of the community. Due to the location of the meetings men are likely to play basketball before and after the meetings which has reinforced the importance of basketball as a sport played by men.

The comite of the community is the common formal expression of the political activity that takes place within the community. Sieverts (1994) indicates that this organizational system dates from 1930s, while Laurent Corbeil (2013) dates it in the 1950s. Despite their differences both authors associate the incursions of comites to elementary schools. According to Corbeil, INI requested the support of some male parents and local boards of education for the resolution of school problems and to develop education programs. This group of parents was called comite de educación. The comite altered the prior political structure and the internal dynamics of the communities by adding another institution to the institutional landscape of the communities (Pineda Sánchez, 1993). Comites became important in the communities because they administered a great amount of resources that were given by the government to maintain and improve the schools. The Comite also represented an alternative to access power and prestige even if a person religious affiliation was non-Catholic.
Currently, local governance system of the communities is conformed by several comites (infrastructure, electricity, water, etc). The comite de educacion remains the most important of all the comites since one of its main functions is to organize and secure resources for the fiesta de clausura (end of school year celebration), monitoring that teachers work, and requesting and implementing infrastructural improvements to the school. Each comite is conformed by a president, secretary, treasurer and assistants. Each person occupying a position in the civic political system has a specific function depending on the comite or patronato (lower ranking comite) that they are part of, its composition, and their position. The organization of each communities comites is shown in Appendix E.

The president of the comite de educacion is the one that organizes the meetings, he is the one that decides on the agenda for each meeting and the point of contact for anyone interested in approaching the comite or community. He is also the man that signs all the letters that are sent to request resources from external sources. Since the president is the “face” of the community during the year that he is in his position, it is not uncommon for him to travel to San Cristobal or the seat of the municipality to request funds for the fiesta de clausura or improvements in the school or community. The president also acts as a de facto president of the Asamblea general. The secretary is the person that is in charge of keeping a list of the members, reading their names before every meeting, tracking all the points discussed in a meeting, and writing letters to request funds. This position is usually occupied by a person that is literate and fluent in Spanish, and when that is not the case another actor such as the principal of the elementary school, or the vocals (asistants) can assists the secretary. The treasurer is the person that keeps track of the money that has entered or exited the comite and community funds. He keeps track of who donated for the fiesta and how much; that information could be used in
subsequent years to decide if that person is worth requesting money from and how much should be requested. The treasurer also keeps track of the money that is collected through monetary sanctions to *lista* and community members. He keeps track of everything in paper and at the end of the year he has to pass all the information and money to the next treasurer. The first and second vocal (asistant) are general assistants of the *comité*; they do activities depending on their personal qualifications ranging from carrying coke boxes to writing letters. The actors in the vocal position have access to more information than a regular community member, but not all the information that the president or secretary have access to.

Historically community authorities were elected based on reputation and status. Thus, not every man in the community had a chance to occupy a position as an authority (Cohen, 2010). Reputation and status increased based on the good performance and appropriate behavior of the authority (Cancian, 1994). Currently community authorities’ election in three quarters of the communities are based on a democratic system in which names are picked out from a *lista* enabling all male community members to occupy a position at least once in their lifetime. This switch from status driven to democratic election has been linked with the incursion of schools in the communities (Corbeil, 2013). Surprisingly the community in which traditional authorities still have a saying in the election of local authorities is the one with the longest presence of schools: Mesbilja. Despite that the election of the president of the *comité de educación* (the highest ranking man in the community) is still based on reputation in Pajaltón, Cañada Grande and Balun Canal.

I elaborated two scales to situate the study communities in the traditional-civic governance continuum described earlier. The first scale called “Traditional Authority Scale” was designed to measure the presence or absence of 10 items identified as markers of traditional Tseltal Mayan authority defined by earlier
ethnographers (RW.ERROR - Unable to find reference:103; A. V. ROJAS, 1969; Villa Rojas, 1990). The second scale called “Civic Authority Scale” measures the strength (frequency of mention) of sanctions imposed by the comites and asambleas in the semi-structured interviews (Balun Canal n=32, Cañada Grande n=28, Pajaltón n=28 and Mesbilja n=28).

Table 4.

**Traditional Authority scale measuring presence or absence in study communities.**

<table>
<thead>
<tr>
<th>Item</th>
<th>Mesbilja</th>
<th>Pajaltón</th>
<th>Cañada Grande</th>
<th>Balun Canal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community has traditional authorities</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Traditional authorities wear traditional attire</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Traditional authorities are part of comite</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Traditional authorities are part of Asamblea General</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Traditional authorities have a saying in electing comite members</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Comites are based on list</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Comites are based on performance</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Community has jail</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Community has policeman</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Community has strict boundary</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>3</td>
<td>9</td>
<td>3</td>
</tr>
</tbody>
</table>

The Traditional Authority Scale includes items about blatant presence of traditional authorities in a community (items 1 and 2). The scale also includes items about actions that historically correspond with those of traditional authorities (items 1-8) to illustrate if in communities were the position of traditional authorities has disappeared other institutions have adopted those actions. Items about actions can
be divided in two categories those that denote executive powers (items 3-7) and those that refer to judicial powers (items 8-10). Executive power items refer to those in which traditional authorities have a voice in community politics either by participating in meetings or helping choose the local (civic) authorities. Judicial items are those in which the actions are aimed at enforcing order in the community. This scale has a Cronbach’s Alpha value of .84 suggesting very good internal consistency reliability for the scale with this sample.

In the Civic Authority Scale sanctions were coded depending on how they are paid: monetary or non-monetary. I differentiated between the kind of payment as the use of monetary sanctions is a proxy of market integration. Then they were classified depending on who is aggravated: the institution, a community member, or the environment. The seven item scale described on Table 5 has a Cronbach’s Alpha value of .76 suggesting very good internal consistency reliability for this sample.

According to the two scales, communities that score the highest in the traditional scale tend to score lower in the civic scale indicating that a process of substitution might be occurring. Currently, we can find traces of both the elder's influence and the increasing importance of the civic authorities in Mesbilja. Mayores are a selective group of men that have served in all the important service positions in the community (i.e. president of the comite de educación, president comite de obras) and are respected and recognized for their good performance. Mayores have a say on the election of new comite members. Also, Mesbilja is the only community in the study in which the selection is done depending on a person’s status and influence in the community. Thus, this is the only community where the research team encountered middle aged men (30-40) that had never served in a comite.

According to the Civic scale Mesbilja is the community that enforces the least sanctions despite the fact that it has a jail and policeman. The transaction cost of
enforcing rules and norms is in theory lower than it used to be when the traditional-political religious system was in use, however the size of the community (n=1793) might be a deterrent to enforce rules. I also hypothesize that the large number of men enrolled in the list has an impact on the way in which elections of authorities takes place (by prestige rather than use of the list).

Table 5.

*Civic Authorities scale measuring frequency of mention in study communities.*

<table>
<thead>
<tr>
<th></th>
<th>Mesbilja</th>
<th>Pajaltón</th>
<th>Cañada Grande</th>
<th>Balun Canal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Monetary Sanctions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Comité to Community</em></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Monetary Sanctions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Comité To Community</em></td>
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<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Comité to Lista</em></td>
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<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Monetary Sanction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attendance</td>
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<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Monetary sanctions for</td>
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<td></td>
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<tr>
<td>inappropriate behaviors</td>
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<td>1</td>
<td>1</td>
<td>0</td>
<td>3</td>
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<td>Non-monetary sanctions</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for inappropriate</td>
<td>3*</td>
<td>6*</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monetary Sanction Trash</td>
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<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>14</td>
<td>5</td>
<td>3</td>
<td>22</td>
</tr>
<tr>
<td>Total monetary</td>
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<td>2</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Total non-monetary</td>
<td>3</td>
<td>7</td>
<td>3</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Total offended</td>
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<td>5</td>
<td>3</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>institution</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total offended</td>
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<td>7</td>
<td>2</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>community member</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* *paid in boxes of Coca-cola.*
Balun Canal is the community that enforces the least kind of sanctions (1/6). Balun Canal is the only community that only enforces monetary sanctions to its members and none of the community members spoke about community cooperation systems like *cooperacion* or *tequio* (cooperation of work to build a community asset) denoting an erosion of community ties that has been replaced by money and churches. Mesbilja also presents a similar situation in which the rate of monetary sanctions (when adjusted) is three times higher than that of non-monetary sanctions and similarly there were few mentions of reciprocity and redistribution in the community.

Pajaltón is the community that scored the highest on the civic authorities scale and is also the community that enforces the most types of rules. It is also one of the two communities that scored the lowest on the Traditional Authority scale. On the other hand Balun Canal scored the lowest and is the one that enforces the least kind of sanctions. While clear delineation of rules and sanctioning is only one of the indicators of strong institutions (Triplett, Gainey & Sun 2003) it is the proxy used in this study. According to these we can conclude that Pajaltón is the community with the strongest civic institutions while Balun Canal is the one with the weakest traditional and civic institutions.

Traditional authorities in Cañada Grande take part of *comite* meetings and *Asambleas*. In Mesbilja *Mayores* are not required to participate in meetings, but are welcome to express their voice and more importantly when the community faces a difficult challenge they might act as an “advisory board” for the current authorities.

I described earlier how traditional authorities in Tenejapa and Oxchuc were in charge of solving disputes at the community level. Table 5 shows that in Cañada Grande and Mesbilja there are still local policeman that enforce community rules. In Pajaltón and Cañada Grande there is no designated jail nor position for someone that
acts as a policeman, but when there is a dispute that requires the intervention of the authorities they use a classroom as a jail and a comite member acts as a policeman.

To summarize, none of the communities has a written set of regulations (with the exception of some written announcements), but there are rules in use that are known widely by all community members. Through qualitative analysis I identified three kinds of rules: those that regulate how institutions work, those that regulate communities’ members behavior and those that regulate the use of resources (i.e. water, electricity, trash). Rules in use are not in practice for the three kinds of rules in all communities. Although rules are known for the first and last category, most sanctions for inappropriate behavior are not pre-established and they seem to be established on a case to case basis. There is a trend of paying sanctions with money instead of time or community service which is the customary way described by the elders and the ethnographic record. This trend is more marked in Pajaltón and Balun Canal. Also, Balun Canal and Pajaltón (n=3) have the lowest presence of traditional authorities while Cañada Grande (n=9) is the one with the highest presence.

**Non-Market Exchange**

Redistribution, the systemic movement of goods from a local level to a hierarchical center and back to the local level, and reciprocity, the exchange of goods based on symmetrical relationships between social entities, are two non-economic mechanisms that are used to provide food resources to those who are unable to fully participate in market economies (Morton, Bitto, Oakland, & Sand, 2008). In urban populations these mechanisms thrive on and are seen as necessary to make up for the shortcomings of the market inefficiencies (Lomnitz, 2002). In Mesoamerican societies they are seen as adaptive mechanisms used by households to strengthen social ties and to increase access to various resources, including food (Monaghan, 1990a).
Reciprocity and redistribution can also be the result of collective actions, made within communities to negotiate, adapt, and cope with political and socio-economic changes (Cohen, 2000).

In the next section I will describe the state of the mechanisms and institutions associated with four different kinds of exchanges: inter-community reciprocity, intra-community redistribution, inter-community reciprocity and intra-community redistribution. This section includes a succinct explanation on the changes that have occurred in these institutions.

**Food Reciprocity.** In the past in Tenejapa food reciprocity and redistribution at a the inter-community and intra-community level occurred through the traditional religious-political system. Exchange of foodstuffs was prescribed throughout the year by the cargo system between communities from different ethno-environments (*tierra fria* and *tierra caliente*) (López Meza, 1996). This prescription ensured that non-kinship relationships could be kept between members of different communities and it facilitated exchange of different products. Today these traditional institutions have changed, below I describe the current mechanisms through which exchange takes place.

**Intra-community reciprocity.** Community members that exchange food within the community limits are often linked by kinship or vicinity and have developed trust relationships over time either by becoming acquaintances, friends, *compadres* (ritual kinship) or through reputation (good person, be polite, speak Spanish, performed a favor, respected in the community, etc). Currently reciprocal exchange within communities happens for three main reasons: visit, celebration or necessity. These reasons are not exclusionary.

A visit or *visita* is the act of stopping over at a friend or relative’s house for a period of time that ranges between a couple of hours to days (when they occur at
Visitors can visit people from their same community (i.e. neighbors, family, friends) or people from other communities (i.e. extended family). The person visiting is provided with nourishment and shelter during the duration of the stay. This is a deferred exchange, meaning that the person visiting will repay the exchange of goods in a future visit in which he or she will host (Siverts, 1969).

Usually visitors are greeted with a seat under the shade or next to the fire depending on the weather. After a couple of minutes the visitor is presented or offered water, coca-cola, pozol (a traditional drink made with ground nixtamalized corn and water, in some communities it is considered a meal), or any other drink available. In some rare cases the visitor is also offered a tortilla or a piece of fruit. What is offered depends on the season, the social proximity of guest and host, and the physical distance of the visitor’s house. For example, it is not uncommon for a visitor in Pajaltón to get some pozol before leaving if their house is more than an hour by foot as the visitor might need some extra energy. In some cases when there is abundance of a crop visitors are sent with some product. On other occasions the visit is purposefully made because the visitor is enduring hardship and will express his necessity to the person he is visiting; in those cases the visitor will almost surely be sent with some foodstuffs if the visited household is not enduring hardship as well.

Siverts (1969) reported the use of visits in Oxchuc in the early 1940s. The team observed little changes on the way that visitas take place from what Siverts observed however I hypothesize that there has been a change in who can be visited. As explained during field work the team reported that new institutions particularly churches had impacted social networks within the communities. For example in Mesbilja, were Siverts reported that kinship was very important now members of the same kinship group that belong to different religions reported not taking. Thus, while the mechanism of visitas persist, it has adapted.
Birthday parties are a new way of reinforcing reciprocal and redistributive ties. Older community members rarely keep track of their age. They often do not know their birthday because recording births was not a common practice. Birth recording has become increasingly common with the incursion of outside institutions in the communities that require people to have a birth certificate, like schools and government programs such as OPORTUNIDADES. Birthday parties in the communities happen under specific religious prescriptions. Celebrations can range from a mass where only members from the same religious group are invited and a drink of pozol is offered to the attendees, to big celebrations in which all community members are invited. The latter could be explained by a decrease in the importance and frequency of traditional religious festivities in which people from all the communities could socialize, eat together, and where the party sponsor can gain prestige and status. These all-community birthday parties are fairly uncommon as they require a lot of resources, but were described in Cañada Grande among the wealthy and prestigious community members. Simple food is offered at these celebrations, such as a soup or beans and rice and tortillas.

On occasions when a household is in a difficult situation, the household can engage in reciprocal exchanges with other households under the understanding that they will repay at a later time. Another less common option is to borrow either money or foodstuffs from the local store. Borrowing is associated with having to pay interest and with the interest being increasingly higher as time goes by. At least one participant in each community reported having to engage in borrowing in difficult times during the semi-structured interviews. And other informants reported knowing how borrowing works and what the interest rate is in their community (10%-20%). Borrowing was not reported by earlier ethnographic accounts probably because
private stores are recent in communities and borrowing was not a practice of government run stores such as CONASUPO.

In Mesbilja participants reported that the decline in intra-community reciprocal exchanges is due to the presence of tienda CONASUPO (DICONSA) where they can borrow corn at no interest and pay it back next year. CONASUPO is present in all the communities, but no one from the other communities reported interest free lending in the stores. Participants in Pajaltón reported that they are now ashamed of asking for food from their neighbors since they can borrow from the CONASUPO store. This practice was not reported in other communities and is probably an isolated case of the administrator giving personal credit to community members not a government policy. The incursion of stores owned by community members has had little impact on reciprocal exchanges because they rarely carry food; they usually carry a small supply of Coca-Cola, candies, and junk food, so borrowing there is not a strategy to alleviate food insecurity.

To summarize, there are three non-exclusionary avenues through which intra-community reciprocity occurs among community members. Visits are the most frequent of them in all communities, followed by celebrations and necessity. While the use of visits have been recorded previously even when the traditional reciprocal system was fully functioning celebrations have emerged as adaptations to declining traditional institutions. Balun Canal is the community that engaged in more scenarios to reciprocate while Pajaltón engaged in the least. However frequency of participation in each scenario in Balun Canal was lower (avg freq=.10) than in Pajaltón (avg freq=.42). Participants in Pajaltón reported an average of 5.52 items per list while participants in Balun Canal reported an average of 2.65 items per list.

The process of religious conversion has altered the nature of reciprocity, but these forms of reciprocity persist to some extent. Visitas are still in use and meet
their function, but the participants are now shaped by other institutions. Necessity is one of the reasons why people reciprocate, different communities participate in inter-household reciprocity at different rates probably caused by varied degrees of integration of external institutions. While these changes are subtle they might have implications on the food security status of vulnerable populations.

**Inter-community reciprocity.** As explained in Chapter four the current state of inter-community relationships among communities in Oxchuc and Tenejapa are very different. Traditional political and religious systems that traditionally dictate inter-community relationships are still in use in some communities in Tenejapa while they have almost vanished in Oxchuc. These differences in organization affect the way that food reciprocity takes place. During our fieldwork the team identified several ways in which food was distributed in a reciprocal manner among members of different communities.

The most frequent and salient kinds of inter-household reciprocity occurred across and within communities through visitas (visits) (see Table 6) among members of an extended family. In addition to shelter and food, the host usually sends out of town visitors with a small present composed of fruits or corn. Other appropriate gifts are chosen depending on the community that the visitor is from; for example if the visitor is from tierra fria, products from tierra caliente such as a coffee, cane, and certain fruits will be much appreciated. For people from the same ecosystem, the exchange of goods can be limited to specialty items from the domestic group. For example, if a person from another tierra caliente community visits a family from Mesbilja, an appropriate gift consists of something that the household produces that the recipient household does not (i.e. bananas, bol ha). This kind of reciprocity helps to add variety to the diets of households (Morton et al., 2008).
On rare occasions households will engage in reciprocal exchanges with people outside of their social network (non-kin, non-neighbors, non-church members). Since reciprocal exchanges are based on trust and reputation, and a household reciprocating with strangers lacks that information, exchanges tend to happen in a shorter time frame. Reported food exchanges with strangers happened in Cañada Grande and Balun Canal. On both occasions they followed the same pattern: taxi drivers from the community were bringing people from San Cristobal (tierra caliente) to Tenejapa (seat of the municipality, and tierra fria); one of the passengers started small talk with the driver about where are they were from and what gets produced in their community; later they agreed to exchange products between their tierra caliente and tierra fria communities. They agreed on a time, location, product, and appropriate rate for the exchange. The exchange occurs at the set time and location and is immediate, meaning that one person gave a product and then received another product in return immediately, instead of waiting for weeks or months for the exchange to be repaid.

Informants conducting these exchanges reported that they participate because it allows them to get products “cheaper” than at the market, it added variety to their diet, and they gained some status among their family members who often received a “sample” of the foodstuff exchanged. If the informant lacks the product that will be exchanged they are often able to find it within their family group; in such cases they give half of the product received to the family member or friend that supplied the product. The person conducting the exchange (taxi driver) keeps the other half as a compensation for their time and energy. The certainty and amount of detail provided by the three informants that reported this kind of exchange leads me to think that this is not an isolated case. However, their positions
as taxi drivers puts them at an advantage because they become brokers with outsiders.

Another household in Pajaltón reported participating in a similar kind of exchange, but in this family they lacked a “broker” so they depended on having contact with other people through other channels like inter-community church reunions or having one of our team members visiting them. After talking to one of the team members and learning that she is from Chilon, a tierra caliente municipality where coffee is produced, the family grew interested in knowing if they could arrange an exchange of coffee for corn. The family reported doing similar exchanges in the past, especially during advantageous years, when corn in tierra caliente is scarce or when coffee prices are low. Current exchange rates are 10 kilos of corn per kilo of coffee, but they reported doing a 1-1 exchange in the past.

Table 6.

*Frequency of mention of reciprocity at the inter-community and intra-community level according to semi-structured interviews.*

<table>
<thead>
<tr>
<th></th>
<th>Mesbilja</th>
<th>Pajaltón</th>
<th>Cañada Grande</th>
<th>Balun Canal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intra-community Reciprocity HH TO HH neighbors</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Intra-community Reciprocity HH TO HH family</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Inter-community Reciprocity HH to HH family</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Inter-community Reciprocity HH to HH No Social Network</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

In summary, while *visitas* are the most frequent kind of reciprocal exchange in all communities at the intra-community and inter-community level they occur at different frequencies among the studied communities (see Tables 5 and 6). Intra-community reciprocity occurs more frequently in Pajaltón, while inter-community
reciprocity was more frequent in Cañada Grande. Mesbilja is the community in which interviewees reported engaging in reciprocal exchanges the least.

**Food Redistribution.** Redistribution is still largely influenced by political and religious institutions. Redistribution has been the dominant, formal response of governments with market economies to address food insecurity issues in the regions where there are market failures (Morton et al., 2008). Religious institutions have long been seen as key mechanisms for the circulation of goods in Mesoamerican communities (Monaghan, 1990a).

Table 7.

*Frequency of mention of intra-community food redistribution in each community in semi-structured interviews.*

<table>
<thead>
<tr>
<th>Intra-community Redistribution</th>
<th>Mesbilja</th>
<th>Pajaltón</th>
<th>Cañada Grande</th>
<th>Balun Canal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Church to HH</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>HH to Church</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>May 3rd (water fiesta)</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Religious festivities</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>Other Celebrations</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

Data from the free lists showed two subsets of redistribution mechanisms, those organized by the state and those organized by other institutions (local political systems such as comites or churches). Interview data also demonstrates the existence of such categories (See Table 7). Further, it shows a pattern in which intra-community redistribution is heavily marked by religious institutions and
celebrations while inter-community redistribution is marked by a combination of religious and political institutions.

**Intra-community redistribution.** Catholic and protestant religious groups are still at the core of the redistribution within the community. The most common kind of redistribution mentioned in the free lists (Frequency SUM=2.42) and the interviews (n=19) was the one in which a church acted as the hierarchical center of the distribution. Intra-community redistribution through the church happens either through help offered to church members in need or through religious celebrations.

*Ayuda mutua,* or mutual help, refers to when a church helps the needy. It is a common practice in all the studied communities (Mesbilja n=.45, Pajaltón n=61, Cañada Grande n=1.38 and Balun Canal n=.80). The way this mechanism functions varies slightly from church to church, but tends to follow this pattern: When a church member needs help either another church member or themselves will report their situation to the head of the church in the community. Then someone from the church will pay that person a visit to assess their situation. That person will get an idea of what the most pressing necessities are for the person enduring the hardship (i.e. medicine, food, money). He or she will talk to the head of the church (if he is not the person occupying this position), and they will decide what they can ask for from the rest of the church members. At the next meeting they request a *cooperación* (cooperation) or *ayuda* (help) and collect it in the next meeting. After the resources have been collected, an entourage will pay a visit and deliver them. *Ayuda mutua* constitutes a clear example of redistribution because households give resources to the church and then the church delivers them, avoiding the creation of reciprocal ties, but enforcing a sense of community by diffusing the burden of the affected household (Mtika, 2000).
Semi-structured interviews reported that *Ayuda mutua* is more prevalent in Mesbilja \((n=5)\) than in Cañada Grande \((n=3)\), Balun Canal \((n=1)\) and Pajaltón \((n=0)\). Frequency of *ayuda mutua* does not correlate with the number of churches in the community \((\text{Mesbilja } n=7, \text{Pajaltón } n=3, \text{Cañada Grande } n=3 \text{ and Balun Canal } n=5)\) \((\text{Field data})\) nor the percent of religious conversion \((\text{Mesbilja } n=82.59, \text{Pajaltón } n=47.41, \text{Cañada Grande } n=20.77 \text{ and Balun Canal } n=64.52)\) \((\text{INEGI, 2010})\). One explanation could be the strong influence and presence that Catholicism has in Cañada Grande since frequency of *ayuda mutua* would correlate with the number of churches and percent of religious conversion if Cañada Grande was excluded from the sample. Ethnographic accounts of redistribution in the region do not mention any mechanism that is similar to *ayuda mutua*, which leads me to think that is a new mechanism that has emerged as a result of religious conversion since it is based in the existence of differentiated churches within the community.

The other mechanism through which religious institutions redistribute food in the community are religious festivities \((\text{Cancian, 1994})\). In this context, redistribution means a movement of goods from those who sponsor a fiesta to other members of the community, through the serving of sumptuous meals to fiesta guests \((\text{Monaghan, 1990a})\). But as explained previously, religious conversion has altered the way religious festivities work. Instead of finding a wide participation in the traditional Catholic based religious systems like the *Pas a’teletik* in Tenejapa or the *Calpul* in Oxchuc, the team found either religious festivities in which only members of a specific church participate \((i.e. \text{Holy week, Christmas, Easter})\) or some "traditional festivities that still remain as a community event" \((i.e. \text{water celebrations and corn production rituals})\). The later kind seem to persist because their function is to ensure harmony in the region \((i.e. \text{maintaining peace, supplying water, having a good harvest})\) and they have a clear pre-Hispanic origin.
Every third day of May Mayan communities throughout the region have a celebration in which religious authorities request water from the cave or spring where the community gets their supply. This ritual ensures the fertility of the land and, consequently, the good harvest (Méndez-Pérez, 2014). In Cañada Grande, the celebration proceeds like this:

On May 3rd the principales [generic term to describe traditional authority] have to fast, meaning that they leave their house early without eating nor drinking anything and they go for a walk on the hill, because on the other side of the hill there is a spring. On that day the principales walk all day until they find 23 angels each one of whom they burn a candle to. Angels are the crosses in each waterhole and they cannot come back until they find each one of them. They have to walk all day and their point of arrival is at the school. Their food is prepared for them. They are fed tamales or pozol. (Interview participant 30, March 19, 2014) [My translation from Spanish].

In Cañada Grande and Pajaltón the comité de aguas is in charge of organizing the feast for the May 3rd celebration. The comité gathers the necessary resources for the candles and food. Food is provided by the whole community, but only served to the principales as a way of paying them. Other people are welcome to eat in the school at the same time, but most bring their own food. This is similar to what happens in Balun Canal, with the exception that Las Manzanas (a nearby community) and Balun Canal share the same spring and they coordinate their festivities. In Mesbilija the emic explanation for not celebrating this festivity is that they no longer have a spring, thus there is no place to celebrate. However, Mora (2008) argues that the loss of these indigenous traditions can be attributed to the colonizing politics of the Mexican state that have broken local traditional institutions throughout the region.

The other type of redistribution that occurs through religious institutions are those celebrations in which only specific members of a church participate. In Mesbilija, the community with the highest religious conversion rate in the sample (81% of the population are non-catholics), several churches celebrate Easter, but in different ways. For instance, Catholics organize a procession through the streets of
the community in which they carry an image of Jesus Christ called *viacrucis*. They have different stations where they read the bible and pray. Each station is decorated with palm tree leaves. Presbiterians have meetings during the evenings of the three holy days. In these meetings they preach, pray, and sing praises. On Easter Sunday priest officiates a mass in which brothers from other communities, especially choirs are invited (people from Mesbilja are also welcomed in other Presbyterian churches). After the mass they eat a meal. The meal is put together by the members of the church who contribute 100 mxn (9usd) to pay for the meal.

In summary, data shows that there are three kinds of redistribution at the community level: *ayuda mutua*, religious festivities and traditional festivities. All of these mechanisms are associated with a religious institution, but there is a tendency to secularize the traditional festivities that do not happen inside a specific church (i.e. May 3rd). This tendency is part of a larger process of secularization that has taken place in Oxchuc and is taking place in Tenejapa in which traditional political religious institutions are displaced by secular institutions.

**Inter-community redistribution.** While intra-community redistribution is heavily marked by religious institutions, inter-community redistribution is mainly dictated by secular institutions. Free list data shows that there are two differentiated kinds of inter-community redistribution that happen at the community level: government based and non-government based. Here I use the term government to refer to state and federal level outside institutions that comply with the Mexican Constitution and the Chiapas state Constitution. Non-government refers to institutions that dictate the life of the communities and e: merge from them, they include churches and civil institutions locally referred as *comites*. Semi-structured interviews were used to collect information on the frequency and specifics on non-government inter-community redistribution. Data from ENSANUT (National Health
and Nutrition Survey) was used to inform the section on government inter-community redistribution.

*Non-government inter-community redistribution.* Some inter-communal redistributive exchanges happen through religious institutions. Churches acquire the resources they redistribute at the inter-community level either by collecting them at the community or by securing them through the organization that they are part of. Churches in the communities (i.e. Presbyterian, Evangelical, Pentecostal) that are part of regional, state, national and in some cases international organizations (López Meza, 1996) are sometimes able to secure resources for their members through donations of missionaries or the organization themselves. Regional level churches like the “Iglesia de Dios” depends more heavily on collecting resources at the community level.

During fieldwork the *Iglesia de Dios* from Pajaltón hosted their regional meeting. Church members had to prepare in advance as they hosted 400 out-of-town guests and had to provide six meals for each of them during a two day period. The menu was set in advance and consisted of beans, rice, tortillas, chicken and beef. Coca-cola, coffee and kool-aid were served as drinks. Every married male that is part of the community and the church had to cooperate with 300 mxn (~25 usd). Some males donated more money to ensure that there was enough food which gained them status among other church members. Money collected was used to buy tortillas, chicken, beef, sugar, coffee, dish detergent, etc. Additionally, the Saturday previous to the event each married women donated two cups of dried beans.

In the *Iglesia de Dios*, regional reunions occur every year and they rotate location. Church members of the host community are expected to provide food and do so because they know that they will be able to eat for free at the next reunions. In that sense, this constitutes an inter-community reciprocal arrangement. However,
since links are not made from social unit to social unit and resources have to be administered and reallocated through a central institution this also constitutes inter-community redistribution.

![Figure 9. Attendees at the “Regional Reunion Los Altos of Chiapas” in Pajaltón. The reunion was celebrated on March 11-12, 2014. Assistants are standing up outside of the temple eating.](image)

Another example of inter-community redistribution that is funded by local communities is that of *ayuda mutua* that transcends community limits. In other words, in some occasions members of a church have a food drive and give that food to needy members of their church that reside in other communities. This kind of inter-community reciprocity was only reported in Mesbilja (see Table 8).

Traditional fiestas and cargo systems are still important in Cañada Grande where half (51%) of the community members are still Catholic (INEGI, 2010). Cañada Grande inhabitants participate as attendees and sponsors of regional fiestas
occupying cargos like *Kaptanetik* and *Martometik*. Feasting is a key element of these fiestas in which resources from a wealthy family or individual are reallocated to other community members (Cancian, 1994; Monaghan, 1990a).

Table 8.

*Frequency of mention of inter-community food redistribution in each community in semi-structured interviews.*

<table>
<thead>
<tr>
<th>Inter-community Redistribution</th>
<th>Mesbilja</th>
<th>Pajaltón</th>
<th>Cañada Grande</th>
<th>Balun Canal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Church To HH</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Church to Church</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>HH to Church</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Basketball</td>
<td></td>
<td>6*</td>
<td>3*</td>
<td>5</td>
</tr>
<tr>
<td>Clausura (end of school year)</td>
<td></td>
<td>0</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Religious Festivities</td>
<td></td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note.* *Money is offered instead of food.*

Non-religious inter-community redistribution occurs through activities organized by the *comites*. In Tenejapa two activities that are organized by the *comites* in which food is reciprocated are *fiestas de clausura* (end of school term) and basketball tournaments. People from communities across the region are invited to attend these festivities, however written invitations are also delivered to some communities’ *comites*. Formal invitations are extended to high ranking authorities like the Mayor and those communities with which there is a strong relationship or reciprocal tie (meaning that they mutually invite the other in a formal way). In some occasions the invitation to participate in a basketball tournament is also made
through *radio comunitaria* (community radio station) that broadcasts throughout the region in Tsotsil and Tseltal.

*Fiestas de Clausura* are the most important event in the studied communities. It takes place in June or July, each community has a set day to celebrate the *clausura* that does not overlap with other community’s day allowing people from all the municipality to attend despite the fact that official last day of school is the same throughout the country. Having a set day also ensures that high ranking authorities from the *Ayuntamiento Municipal* will be able to attend without any conflict. This is important as it legitimizes the good standing of the community and its authorities among the civic political system. It also enables the *comite de educación* to ask the mayor to be the *padrino de generación* (person sponsoring the graduating class) enabling them to secure much needed resources for the celebration.

All three Tenejapan communities in the study use the *clausura* celebration to change their local authorities (change of authorities in Mesbilja takes place on December, 31st). Thus, if the Mayor is present the legitimization of local authorities takes place in front of both a traditional and civic authority (the mayor also occupies the role of *Kunerol*). Communities that have traditional authorities like Cañada Grande also appoint their new *rerol* and *bankilal* that same day.

Another purpose of the celebration is to authenticate that sixth graders have completed elementary school and in the communities where there is a *secundaria* to legitimize that ninth graders finished junior high. The program for a *clausura* has some variants, but follows a similar schedule among communities. First, there is a basketball tournament that starts in the morning and continues in to the afternoon when the *padrino de generación* arrives. Then the national anthem is sung, there is *cambio de escolta* (*flag ceremony*), dance performances, students graduating are named and they are given their diplomas, graduates dance the waltz, then the
change of authorities and finally the prize for the basketball tournament is given. After the two-to-three-hour-long ceremony is finished food is served and music starts to play so that attendees can dance.

Food redistribution in each community happens differently. Balun Canal is the only community in which everyone is invited to the ceremony and at which every attendee is fed. The first people to be served are the Mayor and the incoming comite members, then the comite members that just finished their cargo, then graduates and their padrinos. After that all the community members and then all non-community members are served. Everyone is served the same food. The community is known in the municipality for giving away beef as they buy, kill and cook an entire bull for all attendees. Money used to buy the bull comes from monetary sanctions and requests made to high ranking people from the municipality (usually politicians) and other municipalities.

In Cañada Grande the tradition is to provide a meal to the authorities, the graduates, their padrinos and parents. All other attendants are fed bread and a Coca-cola. Resources to buy food are collected through donations from important community members and requests to local authorities. Cañada Grande inhabitants have a lot of pride in the length and quality of the music they play for this celebration and people from other communities attend the clausura just to be able to dance.

In Pajaltón no food is served. The parents of the graduates cook a meal at their homes and invite the padrino to eat at their home. Since it is a special occasion most households try to buy beef or chicken. The Mayor is not invited to eat in any house and usually leaves right after the graduates are awarded their diploma. Throughout the year Pajaltón inhabitants collect some money through monetary fines and sanctions and that money is used to give a 5000 mxn (450usd) prize to the
winners of the basketball tournament and to pay for music. Pajaltón is known in the region for this substantial price.

Basketball tournaments happen as part of the clausura, but also to celebrate the opening of a new structural feature in the communities (i.e. new classroom, road, health clinic). Playing basketball and celebrating clausuras are a direct result of the incursion of schools in the communities. Basketball was introduced by school teachers when they first came to the communities as each school was built with a basketball court. Informants in Pajaltón that were part of the first set of students at the community’s school recounted how the teacher brought a basketball and taught them the rules during recess.

The importance of basketball in these communities resides in the fact that it is a male-only sport in which ties among young males can be forged despite their religious affiliation. Team membership gives good players status, community and in some cases regional recognition. Basketball works much like compadrazgo (ritual kinship) and other kinds of ties that are no longer in practice among community members due to religious conversion by establishing cross-linkages between community members (Cohen, 2010).

In tournaments teams represent their communities. Thus, basketball functions to celebrate local identity (Cohen, 2010). They provide cohesion based not on sameness, but based on interaction between differentiated communities (Springwood, 2006). Similarly, if a team wins they strengthen their community’s reputation. Tournaments are an important part of playing basketball as they help validate a team or community’s standing. They also allow participants from various communities to know one another and exchange information. Tournaments favor a function that used to be covered by participating in traditional and religious systems. Feinberg (2003) notes that basketball tournaments are a contemporary form of an
institutionalized system of inter-regional travel that has gone in disuse as fiestas are no longer important.

There are no set teams, young males play at their community’s court during the evenings or prior to an *Asamblea general*. Matches are 10-15 minutes long so that every team can have a chance to play. When a community has been invited to a tournament players start to coordinate amongst each other who will attend so that they can have a headcount. The day of the tournament team members find a way to get to the community where the tournament is being hosted and play. Most of the players own jerseys with their last names and they wear them to the tournaments.

The winner of a tournament is awarded a cash prize. Team members decide how to divide it and what to do with it. It is not uncommon to use the money to provide a meal to friends and family back in their community or to use it for their personal expenses. In the past food was offered to basketball players by the community hosting the tournament and a feast was served to celebrate the winning team who received a trophy. Currently most communities only provide winners with a cash prize.

In summary, non-government inter-community food redistribution happens through civic or religious institutions. Redistribution among communities has adapted to the incursion of external institutions. The decline of Catholic Church in the region has put traditional inter-community redistribution systems based on religious festivities in disuse. Meanwhile the incursion of Protestantism has shaped new inter-community links among Tseltsales in Los Altos, depending on the church these links have expanded or contracted the number of communities and area where redistribution can take place. An aspect of inter-community redistribution that has persisted is that it is mediated by religious or political institutions. In many ways these new exchanges serve the same functions that the Catholic based exchanges
served. Frequency data show a higher presence of religious institutions in Mesbilja and lower presence in Balun Canal. While secular institutions were stronger in Balun Canal and lower in Mesbilja.

*Government inter-community redistribution.* The federal and state government have a variety of programs aimed to reduce food insecurity. The two most important federal programs are PAL and OPORTUNIDADES. Federal programs have a set “enrollment period” in which SEDESOL workers visit communities, contact people, fill out forms and enroll new beneficiaries. The state of Chiapas has eight programs that are enacted by DIF (Family Integral Development). DIF programs are coordinated at the municipal level and beneficiaries enroll within each community, this means that programs are not in place automatically in each community, but that each *Ayuntamiento Municipal* has to request to participate in the program and that each community’s *comité* has to be aware of the program to be able to affiliate beneficiaries from their community. In practice this bureaucratic process is translated in variability in the programs that communities participate in.

Table 9.
*Frequency of redistributive government programs according to ENSANUT 2012.*

<table>
<thead>
<tr>
<th>Program</th>
<th>Mesbilja</th>
<th>Pajaltón</th>
<th>Cañada Grande</th>
<th>Balun Canal</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPORTUNIDADES</td>
<td>0.75</td>
<td>0.9</td>
<td>0.62</td>
<td>0.85</td>
</tr>
<tr>
<td>Grocery bag DIF</td>
<td>0.16</td>
<td>0.5</td>
<td>0.12</td>
<td>0.14</td>
</tr>
<tr>
<td>70 y más</td>
<td>0.08</td>
<td></td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td>School Breakfast</td>
<td></td>
<td>0.7</td>
<td>0.12</td>
<td>1</td>
</tr>
<tr>
<td>Folic Acid</td>
<td>0.1</td>
<td></td>
<td></td>
<td>0.14</td>
</tr>
<tr>
<td>Iron</td>
<td>0.2</td>
<td></td>
<td>0.28</td>
<td></td>
</tr>
<tr>
<td>PAL</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIF soup kitchen</td>
<td>0.3</td>
<td>0.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitamin A</td>
<td>0.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boarding school for indigenous children</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day care</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LICONSEA milk</td>
<td></td>
<td>0.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Data from ENSANUT 2012 shows that there are 12 different government programs in the region, but not all of them are present in all communities. Program presence in communities ranges from three programs in Mesbilja to 10 programs in Pajaltón. OPORTUNIDADES and Grocery bag from DIF are present in every community while other programs like LICONSA, day care, PAL and Vitamin A supplements are only present in one community.

It is not surprising that OPORTUNIDADES is the most frequent program mentioned in all communities since it is the principal antipoverty program of the Mexican government. It focuses on helping poor families throughout the country to invest in human capital through several components. The food component part of the program includes the delivery of a monthly direct monetary support to beneficiary families, to contribute to improve the quantity, quality and diversity of their diet, aiming to increase their nutritional status (SEDESOL, 2012a). Similarly, food supplements are delivered monthly or bimonthly delivery food to enhance infant, pregnant and lactating women’s nutrition. Additionally, Oportunidades provides monthly monetary support, called Better Living Food Support (Apoyo Alimentario Vivir Mejor) that aims to compensate the families from the effect of the rise in international food prices. Child Support Live Better (Apoyo Infantil Vivir Mejor) is a monthly monetary support received by families for each child between 0 and 9 years to help strengthen its development and nutrition (OPORTUNIDADES, 2009). It is important to note that not all the families enrolled in the program receive all the components of the program and that one of the biggest criticisms of the program is that there is no monitoring to ensure that cash transfers are used to buy food (Ulrichs & Roelen, 2012).
The other program that is present in all communities is Despensas DIF (Grocery bag DIF). This program consists of a grocery bag that is delivered bi-monthly by the state government to expecting and nursing mothers. Once infants reach six months of age the grocery bag includes formula. In some communities the team members observed pigs eating the formula as breastfeeding beyond two years of age is the norm in these communities. Supplying formula also goes against current WHO (World Health Organization) recommendation to breastfeed for at least two years.

School Breakfast (Desayunos Escolares) is a DIF program that provides bimonthly food supplies to children attending public schools preschool and primary education in the state of Chiapas, to help improve their diet. Ideally the program is designed to ensure that school age children eat a nutritious hot breakfast at school. This meal should be prepared by parents at the school kitchen using the supplies given by the government and some fresh vegetables supplied by the parents. DIF gives the school a menu with every bimonthly grocery delivery. All communities in the sample are enrolled in this program, but they implement it differently.

In Pajaltón, the comité de educación has to pick up the groceries in Tenejapa (seat of the municipality) using resources provided through cooperación by the list members. The asamblea general has decided that since they “pay” for the groceries that they should benefit and each list member receives a grocery bag. If there are no active members of the list in a certain household they do not receive any food even if there are school aged children, putting children from older parents (>65) and single mothers at a disadvantage. In Balun Canal beneficiaries receive a grocery bag, in Mesbilja the comité de educación prepares a meal when they get the groceries and feed all children.
PAL (Programa de Apoyo Alimentario) is an umbrella program that covers those that are not able to be served by OPORTUNIDADES due to their level of marginalization. PAL includes: 1) monetary support aimed to improved nutrition of children, adolescents and pregnant women, 2) support for families with children of 0-9 years of age to strengthen its development, 3) nutritional supplements for children over six months and under two years of age and for pregnant or nursing women, and 4) fortified milk for children between two and five years. Between OPORTUNIDADES and PAL virtually all the communities in the region are covered. Among the study communities PAL is only present in Pajaltón.

Government programs in the communities also supply specific supplements such as iron, folic acid and vitamin A that are aimed at specific populations. For instance, folic acid is given to pregnant women, while iron is given to children. Supplements given by the government have a monetary exchange value in the black market and it is not uncommon to see these supplement being sold at the local market in San Cristobal. Other food items like milk and tuna that are not culturally appropriate often become animal feed. Finally, some supplements are used in the household by members which the program did not intend to serve (i.e formula being drank with coffee by adults).

In addition to lack of enforcement and lack of monitoring government programs also lack cultural accuracy. These programs overlook the importance of existing reciprocal and redistributive institutions between households and among communities. Angelucci & De Giorgi (2009) found that cash transfers to eligible households had a positive indirect effect on the food security status of an ineligible households. Food preference should be taken into account too, for instance tuna, soy and milk are commonly used through these programs and while they are universally consumed foodstuffs in urban Mexico, they are rarely used in most rural villages.
especially among indigenous groups. When these foodstuffs are redistributed in Los Altos they usually end up being consumed by animals or traded in the black market.

In summary, there exists differentiated access to food security programs provided by the government depending on the local authority's ability to enroll in the programs. Once a community is enrolled in a program lack of enforcement and monitoring and a variety of sociocultural factors such as food preference affect the correct implementation of the programs. For instance, community members can decide not to operationalize programs as they are intended or households may decide not to use the resources that they are given to cope with food insecurity. Thus, program enrollment does not necessarily translate to increased nutrition for the beneficiaries.

On the other hand, the amount of programs in which a community participates can be a good indicator of medium term ability of their local authorities to secure access to specific resources and to deal with outside institutions. According to this assumption Pajaltón is the most efficient community securing access to government programs while Mesbilja is the least efficient.

**Reciprocity and Redistribution Patterns**

The purpose of this chapter is to explain if the patterns of reciprocity and redistribution differ between the study communities. Throughout the chapter I have shown that participation in reciprocity and redistribution is not exclusionary and that communities engage in these exchanges at varied rates and for different reasons.

Intra-community reciprocity occurs more frequently in Pajaltón, while inter-community reciprocity was more frequent in Cañada Grande. Mesbilja is the community in which interviewees reported engaging in reciprocal exchanges the least citing the incursion of outside institutions as what caused these mechanisms to go in disuse.
Reallocation of resources through redistribution happens via non-government and government institutions. Religious institutions play an important role in intra-community redistribution among all communities and inter-community redistribution in Mesbilja. Data collected through semi-structured interviews explain the existence of differentiated religious communities within the studied communities through which redistribution take place. I found a negative correlation between the frequency of mention between presence of religious institutions and secular institutions. Leading us to think that when redistributive functions are covered by secular institutions, religious institutions do not play a strong role in redistribution, and vice versa. In the next chapter I will study if the presence of traditional or secular institutions have effects on food security.

Before I conducted research I hypothesized that participation in government redistribution programs could be considered an indicator of how efficient a community is dealing with external institutions. However, data shows that Mesbilja, the community with the longest history of government influence, is the one enrolled in the least amount of programs. A possible explanation might be that communities active agent in how external factors affect them.

Ethnographic data also confirms a pattern of institutional change among communities in which religious conversion has boosted the presence of secularized institutions that act to serve the functions of traditional religious institutions that are now in disuse. While the process of religious conversion has altered the nature of reciprocity and redistribution to some extent, their functions still persist through adapted or new mechanisms. However, while some functions off reciprocity and redistribution like prestige, status, expanding social networks might be covered by these new or adapted mechanisms hey might have implications for the food security status of the communities or households. In the next chapter I will expand on the
implications on food security that participation in governance and non-market exchange has.
CHAPTER 6
FOOD SECURITY AND INSTITUTIONS

The purpose of this chapter is to explore the relationship between food security and the current institutional arrangements in each community. In the last chapter I presented an overview of the distinct non-market exchange and governance systems that are in use in each community. I will start this chapter by presenting the Food Security panorama of each community according to ENSANUT 2012 results. I will follow by testing the hypothesis presented in the introduction and discussing the results.

Food Security Status of the Communities

Food security is a difficult phenomenon to assess. The concept of food security has been used extensively as a measure at the household level. A household is considered food secure if it has the ability to acquire the food needed by its members to have adequate nutrition. However this does not mean that all members in the same household experience food security the same way nor that food security can be translated into improved nutritional status. Due to the difficulty of assessing food security and the variable units of analysis (household and individual) of the data that I am using this section aims to give a “big picture” of the food security status of most households in the study communities. This approach is limited because some of the analysis is at the household level, and to acknowledge the variability of food security status within each community I avoid labeling communities as a whole as food secure, mildly food secure, moderately food secure, or severely food secure.

According to ELCSA scores it is clear that most of the households in these communities are unable to have a constant food supply. However, the number and degree of food insecurity suffered in these communities differs. First, none of the households in the sample scored as food secure. Most of the households fall under
the mildly food insecure category. Followed by moderately food insecure households. Severely food insecure households are the most uncommon. In Mesbilja and Balun Canal there is the same amount of moderately and severely food insecure households representing three thirds of their population. In Pajaltón the proportion of severely food insecure households is almost three times lower than that moderately food insecure. There are no severely food insecure households in Cañada Grande (see Table 10 and Figure 10).

\[\text{Figure 10. Boxplot of ELCSA results per community.}\]

Figure 10 shows that while there are severely food insecure households in three of the communities (Balun Canal, Mesbilja, and Pajaltón) the severely food insecure household in Pajaltón is an outlier. Balun Canal and Pajaltón share a median value of five (moderately food insecure), while Mesbilja and Cañada Grande have
median values of four and three (mildly food insecure). Cañada Grande has both the lowest median value and the highest prevalence of moderate food insecurity. Which would make it the most food secure of the study communities according to ELCSA.

Figure 11. Boxplot of number of programs in which a household is enrolled in by community.

The second survey used to analyze food security by ENSANUT 2012 is an indicator of the amount of food aid and cash transfer programs aimed at alleviating food insecurity in which a household is enrolled in. As shown on Figure 11, there is some variability in the amount of programs a household is enrolled in ranging from zero to eight. Pajaltón is the community with the greater variability (0-8) and the one of the highest medians (Md=2). Balun Canal also has a median of two, but its
range is shorter (0-3), with the exception of an outlier that is enrolled in five programs. Cañada Grande and Mesbilja share a median of one program per household. A closer examination of the programs in which households are enrolled is part of Chapter 5.

Table 10.

*Distribution of food insecurity levels among households in each study community in 2012.*

<table>
<thead>
<tr>
<th>Level of food insecurity</th>
<th>Mesbilja</th>
<th>Pajaltón</th>
<th>Cañada Grande</th>
<th>Balun Canal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secure</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Mild</td>
<td>50%</td>
<td>63%</td>
<td>82%</td>
<td>56%</td>
</tr>
<tr>
<td>Moderate</td>
<td>25%</td>
<td>27%</td>
<td>18%</td>
<td>22%</td>
</tr>
<tr>
<td>Severe</td>
<td>25%</td>
<td>10%</td>
<td>0%</td>
<td>22%</td>
</tr>
<tr>
<td>Sample size</td>
<td>13</td>
<td>11</td>
<td>11</td>
<td>9</td>
</tr>
</tbody>
</table>

ELCSA is an experience based survey, meaning that participants self-report their food security status as experienced by them in the last three months. This measurement is reliable and valid, but might leave behind other aspects of food security such as the nutritional status of an individual. ENSANUT 2012 addresses that shortcoming by including an anthropometric component. When combined with ELCSA scores this component can shed light into the relationship between nutritional status and food security. For instance, anthropometric measurements in the study communities show a tendency that goes from underweight toddlers to normal kids and teenagers to overweight and obese adults (see Appendix F). Thus, while adults are overweight according to anthropometric measurements, they are food insecure according to ELCSA scores. Similar findings have been found among poor Americans and are referred to as the “hunger-obese paradox”.

Anthropometric measurements also show that preschoolers are short for their age. The average HAZ (Height for Age Z score) score in Mesbilja and Balun Canal is <-2SD. Low stature also affects scores on BMI (Body Mass Index) by Age since short
kids with a weight in the 10 percentile for their age can score “normal” (see Table 11).

Table 11.

*Anthropometric measurements of participants in ENSANUT 2012 in study communities.*

| Community          | Adults BMI | Adults BAZ | Adults WHZ | Adults HAZ | Adults WAZ | Adults BAZ | Teenagers BMI | Teenagers BAZ | Teenagers WHZ | Teenagers HAZ | Teenagers WAZ | Teenagers BAZ | School aged BMI | School aged BAZ | School aged WHZ | School aged HAZ | School aged WAZ | School aged BAZ | Preschoolers BMI | Preschoolers BAZ | Preschoolers WHZ | Preschoolers HAZ | Preschoolers WAZ | Preschoolers BAZ |
|--------------------|------------|------------|------------|------------|------------|------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Mesbilja           | 27.76      | 0.67       | -0.06      | 0.63       | -2.04      | -0.70      | 0.71          | 0.25          | -1.76         | -1.03         | 0.25          | 0.69          | 27.08         | 0.2            | 0.59           | -1.76         | -1.03         | 0.25          | 0.69          | 0.71          | 0.25          |
| Pajaltón           | 26.11      | -0.00      | -0.38      | 0.46       | -1.83      | -0.72      | 0.69          | 0.25          | -2.75         | -1.41         | 0.55          | 0.69          | 26.38         | 0.62           | 0            | -2.75         | -1.41         | 0.55          | 0.69          | 0.71          | 0.25          |
| Cañada Grande      | 26.83      | 0.37       | 0.04       | 0.33       | -2.1       | -0.97      | -0.55         | 0.25          | -2.75         | -1.41         | 0.55          | 0.69          | 26.83         | 0.37           | 0.04           | -2.1          | -0.97         | -0.55         | 0.69          | 0.71          | 0.25          |
| Balun Canal        | 6          | High       | 4          | Low        | 1          | Low        | 0             | 0             | -2.75         | -1.41         | 0.55          | 0.69          | 3            | Medium        | 9              | High          | 1              | Low           | 1             | Low           | 0.25          |

BMI stands for Body Mass Index; BAZ stands for Body Mass Index by Age valid Z score; WHZ stands for Weight by Height valid Z score; HAZ stands for Height by Age Valid Z score. The table is color coded to reflect the nutritional status of the participants. Scores that denote underweight are shown in red, normal scores appear on gold, and overweight scores are shown on green.

**Food Security, Reciprocity and Redistribution**

In this section I discuss the hypothesis (H1) that communities with a greater presence of inter-community reciprocal institutions are more likely to cope successfully against food insecurity.

Table 12.

*Non-market exchange scores by scale in each community.*

<table>
<thead>
<tr>
<th>Community</th>
<th>Intra-Community Redistribution</th>
<th>Inter-Community Redistribution</th>
<th>Intra-Community Reciprocity</th>
<th>Inter-Community Reciprocity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesbilja</td>
<td>6 (High)</td>
<td>4 (Low)</td>
<td>1 (Low)</td>
<td>0</td>
</tr>
<tr>
<td>Pajaltón</td>
<td>1 (Low)</td>
<td>9 (High)</td>
<td>4 (High)</td>
<td>1 (Low)</td>
</tr>
<tr>
<td>Cañada Grande</td>
<td>7 (High)</td>
<td>6 (Medium)</td>
<td>2 (Medium)</td>
<td>3 (High)</td>
</tr>
<tr>
<td>Balun Canal</td>
<td>3 (Medium)</td>
<td>9 (High)</td>
<td>1 (Low)</td>
<td>1 (Low)</td>
</tr>
</tbody>
</table>

The intra-community redistribution scale identifies three avenues through which foodstuffs are exchanged among members of the same community: church,
church, religious festivities and other celebrations (i.e. birthdays). The inter-community redistribution scale is composed of four mechanisms through which inter-community redistribution happens: church, basketball, clausura, and religious celebrations. The inter-community reciprocity scale codes two items, exchange of foodstuffs from households to households of a family member living in another community or to a stranger. Similarly the intra-community reciprocity scale identifies exchanges that occur within two households from the same community that are related by vicinity or kinship.

As explained in chapter three this study presents results from four study communities. The sample size of communities is small and since it does not constitute a large random sample these results should not be generalized. However, the statistical analysis presented here is used to detect patterns which are subsequently explained and contextualized by the rich qualitative data collected by the research team. The statistical analysis used here cannot be used to generalize or to determine general conclusions of relationships.

I used non-parametric tests to test if the median ELCSA scores of the communities differed based on their grouping (see Table 12) according to their score on the two redistribution and two reciprocity scales. There was no pre-set point for the groupings since the range in each scale varied considerably. I tried to be consistent and group the results in at least three groups since the non-parametric tests used compare the medians of the groups based on their nominal “score”. A similar procedure was used to test H2 in the next section.

As reported in the free lists, participation in redistribution happens via non-government and government institutions. Religious institutions play an important role in intra-community redistribution among all communities and inter-community redistribution in Mesbilja. Data collected through semi-structured interviews explain
the existence of differentiated religious communities within the studied communities through which redistribution take place. I found a negative correlation between the frequency of mention between presence of religious institutions and secular institutions. Leading us to think that when redistributive functions are covered by secular institutions, religious institutions do not play a strong role in redistribution, and vice versa.

As shown on Chapter five, intra-community redistribution is more prevalent in Mesbilja and Cañada Grande due to the role of protestant and Catholic churches respectively, while Pajáltón and Balun Canal scored lower in the scale. An Independent Samples Kruskal-Wallis Test revealed a significant difference in the ELCSA scores across three different groups (see Table 12) on the intra-community redistribution scale (Gp1, n=11 Low, GP2 n=9 Medium, Gp3 n=23 High, p=001). Mesbilja and Cañada Grande, the communities that reported the most intra-community redistributive exchanges have a combined median ELCSA score of 4 (Mesbilja Md=4.5 and Cañada Grande Md=3) statistically significantly lower than Balun Canal and Pajáltón (Md=5). According to this test there is a positive relationship between the median ELCSA scores of households and the amount of intra-community redistribution exchanges that community members reported to engage in. Communities that reported more intra-community redistribution are more food secure according to ELCSA measurements.

Participation on intra-community redistribution is positively correlated with food security. This can be explained by a sharing risk effect in which ill, and needy people are able to access resources from their religious group. Mesbilja and Cañada Grande the two communities that engaged the most in intra-community redistribution did so through religious institutions. Mesbilja is the community in the sample that has the highest Non-catholic rate while Cañada Grande is the most
catholic of all the study communities. This suggests that there is no relationship between the religious affiliation and reciprocity rather than well established religious groups. Conversion in Mesbilja started in the 1930s and is not an ongoing process, but has well established religious groups that act as small communities at the interior of the larger community of Mesbilja. On the other hand Cañada Grande still remains one of the most active communities in the traditional political-religious system and the cargo systems and festivities associated with it. Similarly to what occurs in Mesbilja affiliation to a religious group, Catholicism in this case, allows individuals and families to participate in a group in which resources are redistributed and risks are shared.

Inter-community redistribution was mentioned more frequently in Pajaltón and Balun Canal due to a high participation in civic events such as basketball tournaments and clausuras, while Mesbilja and Cañada Grande rank in the middle of the score. Mesbilja and Cañada Grande showed higher participation on inter-community redistribution mediated by a religious institution. Another Independent Samples Kruskal-Wallis Test showed a statistically significant difference in the ELCSA scores across three different groups (see Table 11) on the inter-community redistribution scale (Gp1, n=12 Low, GP2 n=20 Medium, Gp3 n=11 High, p=001). Pajaltón and Balun Canal (Md=5), the communities that reported the most inter-community redistributive exchanges have higher median ELCSA scores than Mesbilja (Md=4.5) and Cañada Grande (Md=3). Meaning that Pajaltón and Balun Canal inhabitants are more food insecure than their Cañada Grande and Mesbilja counterparts. Communities that reported more inter-community redistribution are more food insecure according to ELCSA measurements.

Statistical analysis also shows a negative correlation between frequency in reported participation in inter-community redistribution and ELCSA scores. This
might be explained by the amount of resources that Pajaltón and Cañada Grande use to engage in inter-community redistribution such as clausuras and basketball tournaments and the low return in terms of foodstuffs for its inhabitants. Their returns appear to be in prestige and status of the community, this is in agreement with the food security and livelihood approach that recognizes that food security is not the only goal that a household has, but is one of many (Frankenberger & McCaston, 1998b).

Additionally, it is also worth exploring the impact that different kinds of inter-community redistribution have on food security. For instance not only frequency of mention, but the kind of institution (religious or secular) through which the exchange takes place might affect the way that it impacts food security. However, our data is not suited to determine the effects of this cofounding variables.

Intra-community reciprocity was reported more frequently in Pajaltón, Further, Independent Samples Kruskal-Wallis Test and Independent Sample Mann-Whitnney U test showed a statistically significant difference in the ELCSA scores across three different groups on the intra-community reciprocity scale (Gp1, n=21 Low, GP2 n=11 Medium, Gp3 n=11 High, p=001).Mesbilja and Balun Canal the communities that reported engaging the least in intra-community reciprocal exchanges have higher median ELCSA scores (combined Md=5), than Cañada Grande (Md=3) and equal to Pajaltón. Results also indicate that the communities that scored the lowest on the inter-community reciprocity scale are those in which preschool kids are underweight according to ENSANUT 2012 anthropometric measurements (see tables 11 and 12). This finding is supported by other authors that have reported a direct relationship between participation in iner’household reciprocity and an increased food security status (Martin et al., 2004)
Inter-community reciprocity was more frequent in Cañada Grande. Mesbilja is the community in which interviewees reported engaging in reciprocal exchanges the least ($n=0$). Independent Samples Kruskal-Wallis Test and Independent Sample Mann-Whitney U test showed a statistically significant difference in the ELCSA scores across two different groups on the inter-community reciprocity scale (Gp1, $n=20$ Low, GP2 $n=12$ High, $p=0.01$). Balun Canal and Pajaltón (ELCSA Md=5) the communities that reported the least inter-community reciprocal exchanges have higher median ELCSA scores than Cañada Grande (Md=3). Meaning that Pajaltón and Balun Canal inhabitants are more food insecure than their Cañada Grande and counterparts. Thus, participation in inter-community reciprocity might be linked to higher food security.

As reported by interviewees participation in inter-community reciprocity seems to be associated with adding variety to a household diet rather than increasing the amount of food available at a certain moment. According to the semi-structured interviews, some of inter-community reciprocal exchanges are done with a stranger and the exchange of food is simultaneous and immediate. The ethnographic record shows that in Tenejapa exchanges across households from different ethno climates used to be mediated by religious institutions (Cámara Barbachano, 1952; Cámara Barbachano, 1966; López Meza, 1996; Medina Hernández, 1991). There is little ethnographic evidence showing that was the case in Oxchuc (Siverts, 1969). The emergence of a new pattern in which a “broker” is needed to engage in inter-community reciprocity shows that the function and necessity for this kind of exchange persists. However, the institution through which it has customarily taken place might no longer be sufficient to take care of the demand or might be in disuse. Emic explanations on the reasons of a decrease in inter-household reciprocity at any level is the presence of external institutions such as tienda CONASUPO (DICONSA).
Etic explanations based on participant observation also include sectorization (breaking in groups) of the community due to religious conversion. A claim that is supported by recent findings from Keuschnigg and Schikora (2014).

Numerous studies have proven that inter-household reciprocity is an effective risk sharing strategy that protects its participants against food insecurity. This study results are consistent with these observations as I found that communities that engaged the least in inter and intra-community reciprocity had a higher median ELCSA score. Mesbilja and Balun Canal the two communities that reported engaging the least in intra-community reciprocity (the most studied kind of reciprocity and the one that is directly associated with higher food security levels) are also the two communities where preschool aged children score the lowest in their anthropometric measurements reinforcing previous findings from other studies.

I have shown that participation in reciprocity and redistribution is not exclusionary. In fact, our results confirm Monogahan’s (1990b) claim that reciprocity and redistribution are interlinked. This is clear in religious festivities where for instance, community wide redistributive religious festivities could not be possible without “pulling” resources from the sponsor’s social capital in form of reciprocity. Redistribution through civic institutions (i.e. clausura, basketball tornaments) follow this pattern at a different level, resources for an event are solicited from a high ranking authority whom in repayment might ask for a favor (i.e. political support from the community). Thus, religious redistributive arrangements use inter-household reciprocity, while civic redistributive arrangements use institution to actor reciprocity.

In summary, communities engage in reciprocal and redistributive exchanges at varied frequencies and for different reasons. Engagement in reciprocal and intra-community redistribution is positively associated with higher levels of food security.
while inter-community redistribution is negatively associated with food security. Reciprocal and redistributive arrangements happen through religious and non-religious institutions. In communities where religious institutions have a decreased importance civic institutions have taken over their non-market functions. However, new mechanisms do not act in the same way that traditional mechanisms do. For instance, foodstuffs obtained through participation in government redistribution do not adapt to fluctuations in the need of households and are not based on reciprocal ties. Participation in redistribution that occurs through traditional religious-political system serves as a mean for upward mobility by providing access to scarce resources (i.e. products from another ethno-climate) and affirms ethnic identity and community solidarity (Barlett, 1980).

Another important aspect to think about is that participation in civic or secular institutions might be fostering individual ethics rather than a community sense. Though our research did not directly collected data on this, civic or secular institutions seem to be associated with fostering competition (i.e basketball) and individual status (i.e. comite de educación) instead of collaboration (i.e. ayuda mutual). From all the kinds of institutions and mechanisms studied here only government redistribution has the explicit function of increasing food security, all the other mechanisms have a variety of functions and increasing food supply or variety is only one of them. Social entities might engage in one kind of non-market exchange rather than other based on these other functions.

Cañana Grande the community that has the lowest ELCSA median score is the one whose inhabitants reported participating the most in intra-community redistribution and inter-community reciprocity. Similarly, Pajaltón and Balun Canal the communities that engaged the least in these two kinds of exchange were ranked as more food insecure according to ELCSA scores. Another finding is that
communities (Pajaltón and Balun Canal) that reported participating in more inter-community redistribution are more food insecure than their counterparts. A probable cause could be that they are focusing a great amount of resources into engaging in food exchanges with other communities and they are not receiving back food, but recognition and status.

**Governance and Food Security**

In this section I discuss the hypothesis (H2) that communities with stronger local institutions are more likely to secure outside resources from governmental programs, therefore their inhabitants are more food secure.

Through the use of grounded theory and confirmed by the ethnographic record (Cámara Barbachano, 1952; Cámara Barbachano, 1966; Gómez Santiz, 2011; Medina Hernández, 1991; Siverts, 1969; Villa Rojas & Echánove Trujillo, 1946; Villa Rojas, 1990) I identify two distinct governance systems in the study communities. Using the Traditional Authority and Civic Authority scales I placed the study communities in a governance continuum that goes from traditional to civic. The scales showed that there is a trend among communities where a strong presence of traditional authorities leads to a low presence of civic authorities and vice versa (see Table 13). This trend is clearer in Pajaltón and Cañada Grande, while Balun Canal and Mesbilja rank in the middle on both scales. These two non-exclusionary systems are present in all communities, but the importance that either one of them has differs. Findings suggest that importance of one system decreases as importance of the other system increases.

James Dow (2009; 2001) suggests that the religious authority against which Protestantism in indigenous communities is protesting is not the Catholic Church, but the authority of “traditional civil-religious hierarchies” (traditional authorities). Thus one can suspect that religious conversion can be linked to a decrease in the
importance of traditional governance systems evidence does not support that claim. In our four community sample, Pajaltón (47.4 % protestant) scored the highest in the civic authority scale and lower in the traditional scale, Mesbilja (82.5% protestant) scored in the middle of both scales, Balun Canal (64.5% protestant) scored low on both scales and Cañada Grande (20.8% protestant) scored high on the traditional scale and low on the civic scale. If religious conversion was associate with decreased importance of traditional authorities, Mesbilja would scored highest on the civic scale followed by Balun Canal, Pajaltón and Cañada Grande.

Table 13.

Authority scales scores band ELCSA median by community.

<table>
<thead>
<tr>
<th></th>
<th>Civic Authority</th>
<th>Traditional Authority</th>
<th>Median ELCSA score</th>
<th>Median No of programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesbilja</td>
<td>4</td>
<td>Medium</td>
<td>6</td>
<td>Medium</td>
</tr>
<tr>
<td>Pajaltón</td>
<td>14</td>
<td>High</td>
<td>3</td>
<td>Low</td>
</tr>
<tr>
<td>Cañada Grande</td>
<td>3</td>
<td>Low</td>
<td>9</td>
<td>High</td>
</tr>
<tr>
<td>Balun Canal</td>
<td>3</td>
<td>Low</td>
<td>3</td>
<td>Low</td>
</tr>
</tbody>
</table>

A Kruskal-Wallis Test and an independent samples median test revealed a significant difference in the distribution of the number of food aid programs in which households are enrolled across three different groups (see Table 19) on the Civic Authority scale (Gp1, n=20 Low, GP2 n=12 Medium, Gp3 n=11 High, p=0.001). Pajaltón, the highest ranking community in the Civic Authority scale, recorded a higher median score (Md=2) than the other three communities (Cañada Grande and Balun Canal combined Md=1.5, Mesbilja Md=1). According to this test there is a statistically significant difference in the median number of food aid programs in which a household is enrolled in and the community’s score on the civic authority scale and those who scored lower. The relationship between high score on the civic authority scale and level of food insecurity is positive.
Another Kruskal-Wallis Test and Independent Samples Median Test revealed a statistically significant difference in the number of food aid programs in which households are enrolled across three different groups on the Traditional Authority scale (Gp1, n=9 Low, GP2 n=21 Medium, Gp3 n=12 High, p=001). Pajaltón, the two lowest ranking community in the scale, recorded a higher median enrollment (Md=2) than Mesbilja and Balun Canal the medium ranking community (Md=1.5) and Cañada Grande the highest ranking community (Md= 1) in the Traditional authority scale. Suggesting a negative relationship.

Results from these tests suggest that communities with a higher civic score are more likely to be enrolled in more programs, while communities with a higher traditional authority score will be enrolled in fewer programs. However, these tests do not establish if there is a relationship between being enrolled in more programs and being more food secure. The experience based food insecurity survey (as measured by ELCSA) and the number of governmental programs in which a household is enrolled (as described by the Survey on Nutrition and Distribution of Foodstuffs) were investigated using Spearman’s rank order correlation. Preliminary analyses were performed to ensure no violation of the assumptions of linearity and homoscedasticity. There was a small positive correlation between the two variables (rho=.102, n=43, p<.01), indicating that there is a weak relationship between participation in food aid programs and the perceived food security status of the households. The coefficient of determination of .01 also shows that there is not much overlap between the two variables.

I used another Kruskal-Wallis Test to test if there is a relationship between the kind of prevalent governance system used in the community and the median ELCSA score. The results revealed a significant difference in the distribution of food security levels over households based on ELCSA scores across three different groups.
on the Civic Authority scale (Gp1, n=20 Low, GP2 n=12 Medium, Gp3 n=11 High, 
p=001). Pajaltón, the highest ranking community in the scale, recorded a higher 
median score (Md=5) than the other three communities (combined Md=4.5). 
According to this test there is a statistically significant difference in the median food 
security status of those communities that ranked low on the civic authority scale and 
the community that scored the highest. The relationship between high score on the 
civic authority scale and level of food insecurity is positive.

Another Kruskal-Wallis Test revealed a statistically significant difference in the 
distribution of food security levels based on ELCSA scores across three different 
groups on the Traditional Authority scale (Gp1, n=9 Low, GP2 n=21 Medium, Gp3 
n=12 High, p=001). Balun Canal and Pajaltón, the two lowest ranking communities 
in the scale, recorded a higher median ELCSA score (combined Md=5) than Mesbilja 
the medium ranking community (Md=4.5), and Cañada Grande the highest ranking 
community (Md= 3) in the traditional authority scale. There was a statistically 
significant difference on the median ELCSA score of the communities based on their 
traditional authority score. The relationship is negative, thus communities that score 
higher on the traditional authority scale tend to have higher median ELCSA values 
than their lower scoring counterparts.

Statistical analysis shows that communities with a higher score on the civic 
authority scale tend to participate in more programs than their lower scoring 
counterparts. Since there is a negative relation between the importance of civic and 
traditional governance systems, this finding also suggests that communities that 
rank higher in the traditional authority scale tend to participate in less government 
programs. A short coming of this finding that the traditional scale uses sanctioning 
and enforcement as a proxy and due to monetization comites that sanction more 
have access to more monetary resources needed to enroll its members in programs.
However participation in food security programs does not translate in increased food security.

During fieldwork we found that unlike in most Mexican communities enrollment in government programs only happens in the study communities if the community authorities (*comites*) decide to enroll in a program. For state programs this means that *comites* should know about the existence of a program, gather the recruitment forms and enroll their community members in the seat of the municipality. This process is costly (time and resources) for the authorities since they have to invest time and money in recruitment, filling out formats and traveling. Enrollment to federal programs occurs after being selected by the program administrators in San Cristobal or Tuxtla Gutierrez (state capital), then community leaders are contacted and they decide in a junta de *comite* or *asamblea* general if they will allow program recruiters to enter the community. Thus, enrollment in programs is mediated through the local authorities.

The amount of programs in which a community participates can be a good indicator of medium term ability of their local authorities to secure access to specific resources and to deal with outside institutions. Reallocation of resources through government redistribution programs can be considered an indicator of how efficient a community is dealing with external institutions. However as described in the previous chapter, this relationship can be attenuated by ineffective use of resources once they get to the communities.

In summary, communities that score higher on the civic authority scale are more likely to secure outside resources (cash transfers and food aid) through government programs. This can be explained by their ability to deal with external institutions (i.e. state agencies) and the amount of resources needed to get enrolled in these programs.
There exists differentiated access to food security programs provided by the government depending on the local authority’s ability and willingness to enroll in the programs. Statistical analysis suggests that there is little relationship between the amount of programs that a household is participating in and an increased food security status. Ethnographic evidence shows that a lack of enforcements, monitoring and a variety of sociocultural factors affect the correct implementation of the programs. For instance, community members can decide not to operationalize programs as they are intended or households may decide not to use the resources that they are given to cope with food insecurity. Thus, program enrollment does not necessarily translate to increased nutrition.

This statistical result is in line with our initial finding that communities that rank as having a higher presence of traditional authorities (which are the ones that participate in less government programs) are more food secure according to ELCSA scores than the ones that score the highest on the Civic authority scale. Since statistical analysis for the first finding (ELCSA score and anthropometric scores as related to participation in programs) where done using the household as unit of analysis, confirming our previous finding done using the community as the unit of analysis further validates the results presented in the previous sections.
CHAPTER 7

CONCLUSIONS

This study was designed to answer how local reciprocal and redistributive institutions have changed and what are their implications for food security? Through this study I have presented data about four Tseltal communities in Los Altos de Chiapas that have a deep shared history and culture, but whose recent history has taken them through different institutional adaptation paths. These communities are active agents on the way that their institutions change.

Summary

Mesbilja, Pajaltón, Cañada Grande and Balun Canal the Tseltal communities studied in this dissertation differ from each other. Mesbilja, Oxchuc is the only hot weathered or tierra caliente community in this study. Mesbilja’s history of institutional changes started in the 1930s via government intervention through schools and religious conversion through American missionaries. Despite that, with Cañada Grande they are the two communities in the study that still have traditional authorities. Traditional authorities in Mesbilja are called mayores and participate actively in the election of the civic authorities in the communities. In Mesbilja, traditional and civic authorities are secular. Religious secularism is important as close to 90% of the population is not Catholic. There are seven different religions in Mesbilja and religious affiliation commands inter-household interactions including reciprocity. Semi-structured interviews show that inter-community reciprocity, intra-community redistribution an inter-community redistribution happen mainly among members of the same religious group. Mesbilja has not much food so distributing among their own households is the only thing they can do. Mesbilja is also the only community in the study that produces a cash crop. When the price of coffee is good selling coffee is another strategy that households use to secure resources including food. Variability
in the price of coffee affects all producers in the community at the same time, thus if one household is in need others might be in need too preventing households from practicing inter-community reciprocity.

Pajaltón, Tenejapa is the most geographically marginalized community in this sample. It is located on the top of a mountain and its rocky terrain makes it costly for its inhabitants to commute from one household to another or to go to other communities. Foodstuffs are scarce in Pajaltón. Stores have a limited supply of non-perishable products mainly junk food and Coca-cola. The dirt road that connects Pajaltón to the commercial center of Tenejapa is practically unusable during the rainy season. Thus, acquiring, selling or exchanging foodstuffs from May to October is complicated. Reciprocity occurs between households in the community as “lending” or “selling” on credit at no or very low interest. Inter-community reciprocity and redistribution are limited, perhaps due to the difficulty in accessing other communities. Residents of Pajaltón have an active *comité de educación* and their *Asamblea General* meets frequently. There are no traditional authorities in Pajaltón. I suspect they had traditional authorities until recently since some people were unaware of the fact that they no longer elected *bankilal* and *reroll* in the community. The authorities in Pajaltón take justice enforcement seriously and fine people for a variety of reasons (i.e. attendance, wasting water, not behaving properly). Most of the sanctions are paid in money or cases of Coca-cola. Money collected through sanctions is used to pay for the fiesta de clausura. Residents of Pajaltón have great pride in the cash prize that they offer for the basketball tournaments.

Cañada Grande is the community that has the lowest percent of religious conversion and the highest score on the Traditional Authority Scale from the study communities. In Cañada Grande institutions from the traditional and civic governance systems function together. This kind of syncretism is also seen at the
municipal level in Tenejapa. The bankilal and reroll are active members of the comité de educación, and are part of the Asamblea General. Women and children are regular assistants to the Asamblea General in which they have voice, but cannot vote. Justice is administered by the bankilal and reroll. Most sanctions are paid in community service. Inter-community redistribution takes place in Cañada Grande through religious festivities, including the cargo system and May 3rd whose function is to maintain the universe in equilibrium. Occupying and acting well in positions in the traditional political-religious system still gives actors good reputation that can be used to access higher positions within the civic or traditional governance systems.

Balun Canal is the community with the lowest degree of education and one of the two communities that is most food insecure according to ELCSA 2012 scores. Balun Canal scored lowest on both governance scales. There are no traditional authorities. Civic authorities are in charge of organizing the fiesta de clausura in which they kill a bull and feed any assistants to the fiesta. Balun Canal is known in the region for this meal. Resources used to pay for the bull come from monetary sanctions paid to the comité and through donations from high ranking politicians. Balun Canal was the most difficult community to work in because comité members were inconsistent about what they had agreed with us. In addition, many community members were reluctant to participate in the study. Participant observation of several meetings of the comité lead me to think that the prestige that killing a bull gives to the community is a priority. For instance, there was a heated debate about what should I provide the community in exchange to permission to collect data, some members of the comité including the president thought that I should pay them as a community for the rights to be in the community, other members thought that a compensation in foodstuff (1k of rice) to participants was fair. The discussion in Tzeltal in which my assistants interfered to convinced them about the economic
limitations that I had finished on an agreement to compensate participants and provide the comite with four boxes of Coca-cola (one for them to drink in that moment and three more for the fiesta).

**Main findings**

Through this study I have presented evidence that in Tenejapa and Oxchuc traditional religious-political institutions are being replaced. In Oxchuc, the traditional governance system (*Calpulli*) is being replaced by external institutions (*Ayuntamiento Municipal*) that have been imposed by the federal and state government since the 1930s. In Tenejapa, external and traditional governance institutions have merged. Non-market exchange institutions are also changing, inter-community redistribution occurs now through government and Protestant institutions displacing Catholic *fiestas*. The disuse of region wide festivities has altered the way in which contact between people from different communities take place and has modified the manner in which inter-community reciprocity happen. The incursion of external institutions and disturbances has prompted a shift in social organization and resource use patterns. Though, these changes seem to be occurring in the terms of each community. Communities incorporate their existing needs and functions in the new institutions, and privilege different functions such as prestige, food security, maintaining inter-communities ties and histories.

Variation in the process of religious conversion and the increase of secular (civic) organization has altered the nature of reciprocity and redistribution. Religious organization remains a primary mechanism of redistribution and reciprocity, but in most communities religious membership dictates who can exchange with whom. Practices of social exclusion restrict flux of foodstuffs among members of a community which can be translated in more intra-community variability in food access and security. Also different churches might have different norms (i.e.
communal, individualistic) that can impact food redistribution practices. An increase in secularism has prompted the use of external institutions to comply with the functions of institutions that are in disuse or have lost importance (i.e. cargo system, traditional authorities). Since food procurement is one of many of the functions that traditional and new institutions have, the use of these new institutions might fulfill other functions, but have different effects on the food security status of the communities. For example, the substitution of basketball for religious ceremonies may fulfill the functions of prestige and recognition within and between communities but the implications for access to and distribution of food at the household and community level might be different than that of fiestas because they are based in money rather than the exchange of foodstuffs. Despite these changes, these non-market exchange mechanisms persist to some extent and are positively associated with food security.

*Table 14.*

*Governance, non-market exchange and food security scores of the study communities.*

<table>
<thead>
<tr>
<th>Community</th>
<th>Religious Conversation Percent</th>
<th>Civic Authority Score</th>
<th>Traditional Authority Score</th>
<th>Intra-community Redistribution</th>
<th>Inter-community Redistribution</th>
<th>Intra-community Reciprocity</th>
<th>Inter-community Reciprocity</th>
<th>ELCS Median Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesbilija</td>
<td>91.8</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>4.5</td>
</tr>
<tr>
<td>Pajaltón</td>
<td>56.8</td>
<td>14</td>
<td>3</td>
<td>1</td>
<td>9</td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Cañada Grande</td>
<td>49</td>
<td>3</td>
<td>9</td>
<td>7</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Balun Canal</td>
<td>73.6</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>
I explored the relationship between types of governance systems and forms of reciprocity and redistribution, and between these institutions and food security. I found that participation in each of these mechanisms fulfills a different function. For instance, participation in reciprocity affects the amount and diversity of a household’s food supply. While participation in intra-community redistribution (ayuda mutua) is an emergency strategy. As described in chapters five and six many forms of reciprocity and redistribution are episodic and irregular and the food distributed is not substantive. Participation in these exchanges might not have a long term effect on the nutritional status of individuals, but might serve to establish goodwill and social capital, that is then implemented in inter-household reciprocity such as visitas.

Findings from this study suggest that in marginalized communities that many scientists would describe as experiencing market failure, participation in inter-community reciprocal, intra-community reciprocal, and intra-community redistribution are better predictors of food security than enrolment in food security programs. Moreover, I found that communities that participated the most in these non-market mechanisms have stronger traditional institutions, which previous decade long government policies like indigenismo have tried to diminish. A shortcoming of the study is that it is not clear if the effectiveness of government programs would be increased by acknowledging the existence of these non-market mechanisms or by other strategies such as monitoring and enforcing. However, it is clear that an increased awareness of sociocultural norms such as food preference or knowledge of the governance system could improve program implementation.

Another implication emerging from my research is that communities have differentiated access to food redistribution programs. In theory, state food security programs in Chiapas are intended to benefit those who need them the most
regardless of their location, but current operationalization of the programs requires monetary resources, time, and understanding of outside institutions to be implemented. For some communities these requirements might seriously limit their ability to enroll in programs. Careful planning from state authorities is needed to level the chances of all communities to participate in these programs, even if enrollment in programs is not directly associated with better food security.

Another interesting finding is that mention of participation in non-market mechanisms in free lists did not necessarily match the qualitative data collected through semi-structured interviews. Answering questions about participation in reciprocal and redistributive arrangements provided more information on which communities engage in these exchanges than the free lists. For instance, according to the free lists Mesbilja residents do not participate in intra-community reciprocity. Nonetheless, participation in intra-community redistribution in Mesbilja was recorded through semi-structured interviews. This accentuates the importance of combining quantitative instruments with more in-depth qualitative narratives.

**Limitations**

This dissertation addresses how governance systems, reciprocity and redistribution affect food security in four Tseltal communities. One of the limitations of this research is that there are only four communities in the study. A larger sample size would help us to understand if the findings from these four communities are part of a broader regional pattern.

Other limitations include the mismatch between ENSANUT 2012 data and the ethnographic data collected by the research team. First, there is a two year mismatch between the data sets. Since we were collecting data on institutions that act within longer time frames I did not foresee this mismatch having a big impact on
our results, yet this does not exclude the possibility that this mismatch can affect the results.

Additionally, there is a discrepancy on the unit of analysis. ENSANUT 2012 measurements are collected at the household level while we were trying to collect data at the community level. Data were collected from actors in a variety of positions that represent the community and were contrasted and complemented with data obtained from lay community members that are part of households. However, since we lack specific information on which households participated in ENSANUT we did not attempt to pair them. Nonetheless, since statistical analysis done with ENSANUT variables confirmed statistical analysis done with our data set I assume that this discrepancy has a limited effect on the study results.

**Policy implications**

There is a mismatch between the current theoretical holistic view on food and nutritional security that some scientists have gained and the FAO’s food security definition that is extensively used by governments and governmental institutions. This mismatch has tended to focus official approaches combatting food insecurity on improving food access through food and/or cash redistribution at the household level. This study shows that redistribution programs in Mexico overlook the importance of existing informal relations and exchanges between households and among communities; putting these interventions at serious risk of failing due to incorrect implementation.

This study provides evidence that in these communities government redistribution programs are not a successful strategy to increase food security. Qualitative data shows that lack of monitoring and enforcement affect the implementation of these programs at the community and household level. For instance culturally inappropriate foodstuffs were used to feed animals or sold in the
black market. Operational rules of Oportunidades and other programs prohibit selling these foodstuffs, and while program promotors are aware that the foodstuffs are sold in the black market they do not sanction nor investigate the issue. Any effort on enforcing or monitoring appropriate use and distribution of the food aid would be unsuccessful if it does not take into account cultural norms. Personnel that implements these programs should be trained in cultural competency and regional variation of the programs should allow for differences in the implementation in each region.

Also, attention to existing forms of reciprocity and redistribution could be significant in increasing food security. Foodstuffs can be redistributed through existing institutions such as fiestas de clausura, but enforcement would be needed to ensure that resources are used to distribute food. Investing in strengthening local governance systems (being careful to not form cacicazgos) might support existing relationships between communities, and promote inter-household reciprocity that enhances food security. In general, forms of government intervention that support social capital formation rather than attempt to substitute it might be more successful.

**Recommendations**

An area for future research includes examining the effect that religious heterogeneity has on cooperation and governance systems. There are few studies on the effects that heterogeneity of participants have in cooperation games (Santos, Santos, & Pacheco, 2008), but there is little ethnographic data about the effects of religious heterogeneity in governance systems.

Another area that needs further examination is the presence of the obesity-hunger paradox among Tseltal adults. ENSANUT 2012 captures quantitative information about this phenomenon, but this issue has not been explored in Mexico.
Qualitative data could also shed light into how food insecurity and overweight intersect among indigenous populations. Similarly, studies about the food environments of these communities are important to understand the paradox. The other, important line of research, which is tied to the paradox, are ethnographies of the body that capture indigenous expectations and preferences about male and female bodies.

Finally, the questions this research addressed, and some of the findings also need to be studied in other populations. There are groups that continue to be cited as traditional and engaging in reciprocal and redistributive arrangements, and those cultural assertions need to be reassessed in light of changes in the structures of communities. The effectiveness of food aid programs also needs to be reconsidered.
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APPENDIX A

TEAM RECRUITMENT, SELECTION AND RIGOR.
**Team member selection.** The team was formed by me and three local college graduates in the social sciences (two sociologists and one historian) that were hired as assistants (Bernard, 2011; 198). The assistants were researchers and translators performing data collection and transcription. The team was trained exhaustively during one week to familiarize them with the research protocol.

I spent the first 10 days of my stay in San Cristobal recruiting and interviewing possible team members. Prior to my arrival I contacted the Social Sciences Department at the Universidad Autonoma de Chiapas. The academic secretary and a professor where crucial in aiding me in the recruitment process and provided me with materials and a place to conduct the interviews and the training. I interviewed 15 individuals most of who spoke Tseltal, however despite the fact that 7 prospects agreed to participate in the study only 4 went trained. At the end 3 of those completed the training satisfactorily.

The training period helped me to determine the interpersonal dynamics of the group that was composed by me, twin sisters and a college friend of them. The team members are all social scientists that are proficient in different techniques, but had to learn ethnographic methods. I had planned to recruit team members under the assumption that knowledge and proficiency in research methods can be acquired, but developing appropriate team dynamics would be difficult (Canon-Bower & Salas, 1998).

**Team training.** The goal of the training was to enable all the team members to interact interdependently and adaptively toward a common goal (research objectives). In addition, each member's roles and functions were explicitly defined. The training was designed keeping in mind that team training works when the training is theoretically driven, focused on required competencies, and designed to
provide trainees with realistic opportunities to practice and receive feedback (Salas & Cannon-Bowers, 2001).

Using the Interviewer's Manual from the Survey Research Center at the University of Michigan (1976) as a guide I created a manual in Spanish that detailed the approach of the study, the objective, each researcher’s responsibilities. The manual also included explanations of all the research techniques that were used in the field, step by step procedures and exercises that were used during the training. In addition the manual had information on data management and naming procedures for files. The training manual was designed using a constructivist approach to teach the team members data collection techniques.

A crucial part of the training was to establish a horizontal hierarchy and to include me in the team. Rogers-Dillon (2005) has pointed out the importance of a team's hierarchy on their success. He points out at least two critical issues that have to be taken into account when planning qualitative field research: first, many ethical issues and judgment calls cannot be anticipated in advance and must be addressed while in the field (see ethical dilemmas section); second there is the need to create consistency in the research protocol and internal validity among observations by different team members. To address the second concern, team members were made aware of how subjective their own observations are. Then we tested internal validity until they agreed on the observations.

Team members were instructed to practice self-correction techniques as that is the naturally occurring tendency for effective teams. Members had the opportunity to debrief themselves by reviewing their past performance, identifying and diagnosing errors, discussing remedial strategies, and planning for the future (Canon-Bower & Salas, 1998). As part of the training and acknowledging the
expertise of the team, members were allowed to correct the protocol before we started. They aided in diagnosing and solving practical problems in the protocol. Including them in the decision making process increased the level of commitment with the research and reduced the hierarchical structure of the team.

**Research rigor.** As pointed out before, special considerations have to be taken at each stage of the research process due to the multi-site and team based nature of the study. McLellan, MacQueen and Neidig (2003) state that robust data collection techniques as well as research procedures are necessary when conducting team based research at each stage. Additionally, Crawford, Leybourne & Arnott (2000) suggest that developing a framework prior to commencing data collection and analysis helps to ensure rigor. Rigor is shown in the clear documentation of the research process since it allows replicability.

In addition, Guba and Lincoln (1985) point out four criteria conventionally used for assessing the quality of research: internal validity, external validity, reliability and objectivity. Internal validity is the extent to which variations in an outcome or dependent variable can be attributed to controlled variation in an independent variable (Crawford, Leybourne & Arnott, 2000). In other words, internal validity means that the changes in the dependent variables are probably caused by the treatment (Bernard, 2011). However, the use of internal validity is more prevalent in quantitative research rather than qualitative. Specifically, there is a strong tradition of assessing internal and external validity in experiments started by Donald Campbell and his team (Bernard, 2011; Onwuegbuzie & McLean, 2003). Although we will not be conducting experiments some of the threats to internal validity described by Campbell are still applicable. Due to the nature of our study special attention will be paid to the history, maturation, testing and instrumentation confounds as defined by Bernard (2011).
External validity is the inference that the presumed causal relationship can be generalized across alternate measures of cause and effect and across different types of persons, settings and times (Crawford, Leybourne & Arnott, 2000). External validity is achieved through continual replication (Bernard, 2011). Bernard (2011), argued that ultimately, the validity of a concept depends on the utility of the device that measures it and the collective judgment of the scientific community that a construct and its measure are valid. Valid measurement makes valid data, but validity itself depends on the collective opinion of researchers”. This study will achieve external validity by having a high level of replicability due to clear documentation of the research process and by investigating a wide spread phenomena ensuring that different settings, populations and treatment variables exist to replicate the study.

Reliability is a precondition for validity and refers to a study's consistency, predictability, dependability, stability and accuracy (Crawford, Leybourne & Arnott, 2000). This study is concerned with achieving instrument and inter-rater reliability. Instrument reliability refers to whether or not someone gets the same answer by using an instrument to measure something more than once (Bernard, 2011). Instrument reliability will be achieved by using instruments that have been used by other researchers like the NEMS-S survey (CITE) and by testing and modifying the instruments that the team will develop. Further, exit quality data measures such as suspiciousness of lie, interference by another subject or any other circumstance that could have altered the data collection process will be collected with each instrument. These measurements will be used to test instrument reliability.

Inter-rater reliability is used to determine whether two observers are being consistent in their observations. During the training team members performed different inter-rater reliability exercises to enable them to ”see with the same eyes”.
Since data collection was performed in different communities at the same time there was no way to check inter-rater reliability once data collection started.

Objectivity is a demonstration that the inquiry is free of bias, values and prejudice (Crawford, Leybourne & Arnott, 2000). Objectivity is the skill to become aware of one's experiences, opinions and values and acquire accurate knowledge by transcending our biases (Bernard, 2011). Bernard points out that objectivity is not equivalent to value neutrality since every researcher is affected by the work he or she does. Objectivity is the hardest of all the quality criteria to acquire since it requires observer's detachment from subjective experience and in this case there are four researchers. Objectivity will be achieved by switching back and forth between insider's view and that of analyst by having a colleague with whom the research team can talk things over regularly as suggested by Jorgensen (1989 cited by Bernard, 2011).
APPENDIX B

TRAINING MANUAL
El Papel de las Instituciones recíprocas inter-comunitarias para hacer frente a la inseguridad alimentaria: Estudio de caso de los Altos de Chiapas, México.

Manual para asistentes de campo.

Universidad Estatal de Arizona

Sindy De La Torre Pacheco

2014
1. Trabajo en equipo

“Un equipo es un numero pequeno de personas con habilidades complementarias que estan comprometidas con un proposito en comun, metas de desempen y enfoque el cual son mutuamente responsables” (Katzenbasch and Smith 1993:45).

Introduccion
Este proyecto se desarrollara con la ayuda de un equipo de trabajo donde cada miembro tendra a su cargo la recoleccion de datos en una comunidad. La validez y calidad de los datos recolectados depende directamente de la manera en la que cada uno de los miembros del equipo lleva acabo la recollection y transcripcion de datos. En este manual encontraremos una guia para estandarizar y hacer eficiente cada parte de la investigacion y ejemplos de las transcripciones. Asi como una descripcion del proyecto y un calendario de actividades y metas.

Reglas basicas
El exito de este proyecto depende de todos los miembros del equipo, de nuestra capacidad para diagnosticar problemas, crear soluciones y trabajar juntos con un fin comun. Trabajar en equipo a pesar de que estaremos trabajando de manera individual puede ser dificil por eso es necesario siempre tener en cuenta que las primeras semanas seran parte de un period en el que nos estaremos familiarizando tanto con las herramientas, last areas y los miembros del equipo. La comunicacion es clave en esta etapa. Todos los comentarios y sugerencias son siempre bienvenidos en este equipo. Tambien es importante tener bien en claro cuales son las tareas que acda uno de los miembros del equipo ova a realizar, como, cuando y donde se deben realizar. Todos tenemos un rol especifico. Pregunta, pregunta, pregunta si tienes alguna duda. Todos podemos ayudarte. Opina si tienes una idea. Este se un equipo donde las jerarquias son minimas y yo (Sindy) asumire la ultima palabra cuando haya algun conflicto.
2. El Proyecto

Este estudio utiliza el caso de Los Altos de Chiapas para examinar el papel que las instituciones de reciprocidad entre las comunidades juegan para hacer frente a la inseguridad alimentaria a nivel meso. Usando el marco de Análisis Institucional y Desarrollo (IAD) de Elinor Ostrom esta tesis explora la relación que las variables exógenas, como el tamaño y composición de las comunidades, el régimen de uso del suelo y la presencia de programas de ayuda alimentaria tienen sobre el uso de las instituciones de reciprocidad entre las comunidades para hacer frente contra la inseguridad alimentaria. Una amplia investigación sobre la reciprocidad en los hogares muestra que los hogares que reciprocan son menos vulnerables a la escasez de recursos. De la misma manera, se espera que las comunidades que se dedican a la reciprocidad intercomunal serán menos vulnerables a la inseguridad alimentaria transitoria y otros tipos de escasez.

Las comunidades de Los Altos, como muchas otras comunidades de todo el mundo (por ejemplo, el valle central de California, zonas cafeteras de Colombia) se enfrentan a la paradoja de que se dedican a la producción de cultivos comerciales, mientras que sus habitantes sufren de inseguridad alimentaria. Estos cambios en la producción de subsistencia a producción para exportación señalan modificaciones profundas en la estructura de poder y las normas sociales de estas comunidades. En Los Altos, los investigadores han encontrado que las conversiones religiosas y los conflictos políticos han causado expulsiones generalizadas reconfigurando la región. Las teorías actuales de la Nueva Institucionalidad prevén que nuevas instituciones surgirán o/y que las instituciones actuales se adaptarán. Es imperativo examinar las instituciones recíprocas intercomunitarias ya que muchas de las fuentes comunitarias de riesgo para la seguridad alimentaria de las familias residen en el desmoronamiento de las instituciones de reciprocidad.

**Preguntas de investigación e hipótesis**

Esta tesis utiliza el Marco de Análisis Institucional y Desarrollo (Ostrom, 2005) para preguntar: ¿Cuál es el papel de los arreglos institucionales entre las comunidades para hacer frente a las amenazas a la seguridad alimentaria? Con el fin de adquirir conocimientos sobre estos acuerdos, primero tenemos que determinar:

1) ¿Qué instituciones recíprocas hay en distintos niveles?
2) ¿Qué papel desempeñan estas instituciones recíprocas para hacer frente a la inseguridad alimentaria?
3) ¿De qué manera los atributos específicos de cada comunidad, las normas y las condiciones biofísicos afectan la presencia de instituciones intercomunitarias recíprocas?

Con base en la literatura sobre la nueva institucionalidad, el capital social y la reciprocidad se esperan encontrar una mayor presencia (cantidad y frecuencia de uso) de las instituciones intercomunitarias recíprocas en las comunidades donde:

H1. Hay menor número de cambios en el tamaño y composición de las comunidades debido a la menor migración y conversión religiosa.
H2. Hay mayor estabilidad en los regímenes de producción expresan en cambios de uso del suelo con menor frecuencia de la subsistencia a la producción de cultivos comerciales.
H3. Hay baja presencia y dependencia de ayuda alimentaria externa y los programas
gubernamentales como se expresa en las respuestas de la Encuesta Nacional de Salud Y Nutrición (ENSANUT).

Además, se espera que las comunidades con mayor presencia de instituciones intercomunitarias recíprocas serán menos vulnerables a la inseguridad alimentaria transitoria causada por una disminución temporal de la seguridad de los derechos de sus habitantes, haciéndolos más propensos a hacer frente a la inseguridad alimentaria.

Como resultado de esta investigación, vamos a adquirir conocimientos sobre la forma en que las comunidades se auto-organizan y responden a la escasez de alimentos a largo plazo, el panorama institucional que las comunidades y sus miembros tienen a su disposición para hacer frente y adaptarse a la inseguridad alimentaria y la interrelación entre los cambios en variables exógenas, cambios en los arreglos institucionales y el estado de la seguridad alimentaria en estas comunidades.

**Metodología**

Este estudio recoge información empírica detallada acerca de las instituciones recíprocas intercomunitarias de 8 comunidades a través de un equipo de investigación que realiza etnografía multi-local. Los métodos utilizados son listados libres, entrevistas semi-estructuradas, análisis de consenso cultural y la creación de una escala de reciprocidad intercomunitaria. Datos de archivo se utilizaran para explorar la relación entre la presencia / ausencia de instituciones recíprocas entre comunidades con los cambios en los atributos de las comunidades en los últimos 25 años, la estabilidad en el uso de la tierra en los últimos 25 años y la presencia y la dependencia de los programas alimentarios mediante análisis estadístico. Por último, la relación entre el estado de la seguridad alimentaria de las comunidades y la presencia / ausencia de instituciones recíprocas inter-comunitarias se examinará con el uso de estadísticas y se enriquecerá con el fino entendimiento que sólo el trabajo etnográfico puede dar.

**Recopilación de datos y análisis.**

El equipo de trabajo realizara una etnografía multi-local simultáneamente en 8 comunidades.

1) ¿Qué instituciones recíprocas existen en distintos niveles?
Se utilizará Análisis de consenso cultural para llegar a una lista de todos los acuerdos institucionales a nivel meso. Se les pedirá a los informantes clave que libremente listen (free list) todas las instituciones de la región en la que los participantes se involucran en la reciprocidad de los alimentos ( por ejemplo, mayordomía , cofradía , tequio ). Cuestionamiento redundante, el sondeo no específica y el uso de un mapa será utilizado como ayuda para recopilar el mayor numero de informacion. Informantes de dominio específicos serán elegidos en base a sus conocimientos sobre las relaciones intercomunitarias . La muestra constará de 10 o 15 informantes ya que se necesitan sólo una pequeña muestra de informantes para producir información válida y confiable acerca de un dominio cultural especifico (Bernard , 2011 ) . Las listas libres resultados se limpiarán y se analizó la relevancia utilizando Anthropac . Además , los informantes serán entrevistados por el método de obtención marco para recopilar datos sobre la direccionalidad del intercambio recíproco . Una lista de las comunidades 20 por 20 se utilizará para pedir " hace ___ intercambios de alimentos con ___ " . Los resultados serán analizados en Anthropac mediante escalamiento multidimensional.
2) ¿Qué papel desempeñan estas instituciones recíprocas y se han desempeñado en el pasado para hacer frente a la inseguridad alimentaria?

Una vez que las instituciones intercomunitarias se han identificado mediante el análisis de consenso cultural, el informante que haya demostrado el mayor conocimiento sobre los arreglos institucionales a nivel meso en el análisis de consenso cultural se identificará y se utilizara como una semilla para un muestreo de bola de nieve. Otra semilla se iniciará con el segundo informante que más sabe si no hay información sobre todos los arreglos institucionales más destacados a través de la semilla inicial. Las semillas se iniciarán hasta que se alcanza la saturación. Los datos sobre las reglas de forma y las reglas en uso de las instituciones serán recolectados a través de entrevistas semi-estructuradas. Además, los datos sobre el estado anterior y el papel de las instituciones en el año 1994 se recogieran usando una técnica de fecha de recuerdo histórico. Este año ha sido elegido por su importancia regional ya que el levantamiento del Ejército Zapatista de Liberación Nacional se llevó a cabo. El uso de eventos históricos son ayudas de recuperación de la memoria eficaces (van der Vaart y Glasner, 2010 ). Se recopilará información para desarrollar una escala de la presencia e importancia de las instituciones recíprocas intercomunitarias (VD). La escala se desarrollará mediante el análisis factorial. Si se otorga el permiso de los informantes, las entrevistas serán grabadas y transcritas en un programa de procesamiento de textos. Siempre que sea posible las grabaciones de sonido se complementan con notas de campo. Con base en el estudio piloto, se espera que un alto número de participantes no otorgará permiso para grabar. Métodos de entrenamiento de la memoria y de recuerdo serán utilizados para mejorar la calidad de las transcripciones (Werner, 1999). Los resultados se analizaron usando análisis de texto.

Análisis de texto. Los entrevistadores harán notas estandarizadas de cada entrevista. Usando transcripciones estandarizadas disminuye el costo y tiempo de las transcripciones. La estandarización asegura que las transcripciones se generen de forma sistemática y consistente. Se utilizarán los siete principios de Mergenthaler y Stinson (1992) para el desarrollo de normas de transcripción como base para nuestro protocolo de transcripción. Se espera que un enfoque desnaturalizado es mejor para las transcripciones de este proyecto ya que se utilizaran traducciones (McLellan - Lemal , 2008 ; Mero - Jaffe, 2011). Los datos de las entrevistas se codificarán. Repeticiones, similitudes y diferencias, y de corte y se utilizarán para identificar los temas (Ryan & Bernard , 2003). Además, estas técnicas pueden ser realizadas por hablantes no nativos o no fluido de la lengua. Se creará un libro de códigos con no más de 30 códigos estructurales y de contenido. En esta etapa la confiabilidad entre codificadores es crucial. El uso de una guía de entrevista permitirá a los miembros del equipo para aumentar la validez y fiabilidad de los datos y facilitar la transcripción y la codificación. Además, las entrevistas no estructuradas o informales se llevarán a cabo a discreción de cada investigador. Las entrevistas informales ayudarán a los investigadores para enriquecer sus notas de campo, creación de relaciones en las comunidades y explorar temas relacionados. Los resultado del análisis de texto se utiliza para enriquecer resultados cuantitativos.
Las comunidades

Este proyecto pretende obtener una perspectiva regional a cerca de la inseguridad alimentaria, para ello desarrollaremos trabajo de campo simultaneamente en varias comunidades. En la región existen ~1770 comunidades por lo que la selección de las comunidades donde se realizara el trabajo etnográfico es una parte crucial de la investigación. El investigador principal y su comité de tesis han decidido utilizar los datos sobre seguridad alimentaria recopilados a través de la Encuesta Nacional de Salud y Nutrición (ENSANUT, 2012) lo cual limita las comunidades a 21. De esas 21 comunidades se ha utilizado el muestreo intencional para seleccionar una comunidad de cada uno de los siete municipios que participaron en la ENSANUT.

A continuación se presenta un listado de las 21 comunidades que participaron en el ENSANUT 2012 por municipio.

<table>
<thead>
<tr>
<th>Municipio</th>
<th>Nombre</th>
<th>Lengua</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chamula</td>
<td>Chuchulmctic</td>
<td>Tsotsil</td>
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4. Trabajo etnográfico

Además de las técnicas de investigación que se explicaran en otras secciones es importante que los investigadores pongan a tención a la vida de la comunidad. Estamos realmente interesados en entender la manera en que las instituciones recíprocas a todos los niveles funcionan para combati r la inseguridad alimentaria. Sin embargo, hemos decidido enfocar nuestros recursos en las instituciones intercomunitarias ya que desconocemos de estudios que se enfoquen en estos y pretendemos utilizar los datos acerca de las instituciones recíprocas a nivel de hogar que fueron recolectadas por ENSANUT. La observación participante, directa, la realización de entrevistas informales (platcas) con los miembros de la comunidad acerca de TODAS las instituciones recíprocas es crucial para entender los datos proporcionados por ENSANUT.

Los datos que se recaben mediante la observación y las entrevistas informales se entregaran al investigador principal en forma de **notas de campo**. Escribir notas de campo es un trabajo tardado y que requiere practica. Estas notas de campo al igual que todos los productos que se le entreguen al investigador se haran de una manera estandarizada, es decir, todos haremos las notas de campo de la misma manera para eficientizar el análisis. Aquí los pasos que se eguiremos para crear nuestras notas de campo:

1) Participar, observar y platicar. No hay manera de poder tener material para escribir en las notas de campo si no estamos en la comunidad y no participamos de las actividades diarias. Lo primero que debemos hacer es insertarnos en la comunidad y adquirir la mentalidad de ser parte de esa comunidad“.

2) Poner atención y crear notas mentales. Obviamente no basta con estar en la comunidad para poder escribir lo que observamos o escuchamos, hay que crear notas mentales sobre los hechos o datos que creemos que son relevantes. También es necesario identificar aquellos momentos “emblematicos” que pueda utilizar para una introducción de un capítulo o reporte. Yo confio en que cada uno de ustedes sabra cuales son estos elementos y me podra proporcionar varios para la tesis. Tomar notas mentales nos ayuda a conservar esa primera impresión sobre lo que ocurre en la comunidad, impresiones que tienden a cambiar mientras pasamos más tiempo allí.

3) Crear notas escritas o grabadas (grabadora de voz). Es común ver que todos los antropólogos siempre traen una libretita donde escriben estas “impresiones” y “notas” para hacerlas más duraderas. Ustedes tendrán esas libretas pero también contarán con grabadoras de voz donde pueden hacer narraciones más completas. Cada uno de ustedes tiene que decidir si quiere escribir las notas frente a las personas de la comunidad o de manera privada. Su decisión depende de las características de la comunidad, la confianza que tienen con la persona con la que están hablando y su capacidad para retener la atención de los entrevistados. La manera en la que se toman las notas no debe de afectar la calidad de las notas de campo sin embargo puede comprometer la cantidad de notas y la manera en la que las interaccionse se llevan acabo.
Tomar notas de manera privada implica que el tiempo entre la platica u observación y escribir la nota es más largo, por lo que el investigador tiene que hacer uso de su buena memoria. Escribir las notas frente a el sujeto puede hacer que la persona se sienta incomoda y que el investigador a ltere el ritmo y calidad de la conversación. Las notas se pueden escribir en frente de la persona con la que estan conversando siempre y cuando hallan dado autorización para que escriban ahí. Recuerden que hay personas que están dispuestas a hablar pero la grabadora o el cuaderno pueden inhibirlos. Si la persona no se siente comoda o ustedes deciden que se mejor platicar sin escribir notas par a no afectar la fluidez de la conversación las notas se pueden escribir inmediatamente después de que la conversación acabe. Es bueno siempre ser discretos y abiertos sobre lo que se graba o escribe. Si alguien les pregunta que es lo que estan haciendo explíquenle con calma y claridad. Recuerden que la información que estamos recolectando es de ellos. Los datos que se deben de incluir en estas notas son fecha, hora y lugar. Datos numéricos o de nombres siempre deben de registrarse en las notas ya que tienden a olvidarse rápido. No confíen mucho en su memoria y apunten todo o que puedan. Las notas deben de contener información que les ayude a recordar y reconstruir sus notas de campo mas adelante, por ejemplo nombres, acciones importantes que les ayden a recordar toda la historia, etc. En algunos (raros) casos las notas pueden ser muy detalladas, por ejemplo si vas a la casa de alguien a pagar una visita puedes ir narrando tus notas a la grabadora cuando camines de regreso a otra casa.

Ejemplo de notas

4) Grabar y o escribir notas de campo. Lo ideal es tener un tiempo cada tarde para escribir notas de campo detalladas. Tradicionalmente estas notas de campo se escriben en un cuaderno, pero recientemente con fines de agilizar y aminorar el trabajo se escriben directamente en un procesador de palabras (word). Como no todos ustedes cuentan con computadora portátil las notas se podrán grabar en la grabadora y luego las transcribirán. Cada investigador entregará las notas de campo en procesador de palabras como las grabaciones que las acompañen si es que existen.

Grabar o escribir notas no es un proceso fácil. Cada palabra que queda asentada en el procesador es resultado de horas de observación y de reflexión por parte del investigador. Tomen en cuenta que ustedes son mis hojos en cada comunidad y que estas notas de campo son los anteojos a travez de los cuales yo puedo observar las dinámicas de cada una de las localidades. Si ustedes omiten algun a acontecimiento de sus notas tambien lo estan excluyendo de mi entendimiento de las dinamicas de su comunidad. Es
por esto que la selección de lo que se escribe es un proceso crucial para el resultado final de mi tesis.

Es crucial que cada uno de ustedes encuentre un buen ritmo entre sus obligaciones de campo (hacer entrevistas) y el tiempo que dedican a escribir sus notas. Esta es la única parte en la que no hay linamientos específicos. De cualquier manera se debe tomar en cuenta que cada observación implica horas de trabajo en un escritorio, escribiendo y describiendo lo que paso. Linda Shaw (2011) aconseja no hablar con nadie acerca de lo que uno va a escribir en sus notas de campo ni dormir antes de escribir las notas ya que esto puede afectar la cantidad de información que se retiene o nuestra interpretación sobre los hechos.

5) Recordar para escribir. Una vez que cada uno de ustedes se disponga a escribir o grabar sus notas de campo debe de tratar de recordar lo que sucedió para poder tener material para escribir. Este proceso consiste en reimaginar y revivir lo que sucedió en el día para poder escribir. En este estudio utilizaremos un enfoque de rememoración cronológico, es decir, cada uno de ustedes pensará en los eventos del día en orden cronológico. Es aquí donde uno puede hacer uso de las notas o grabaciones que contienen los datos específicos del día (2 y 3). Las descripciones que se generen deben de ser lógicas y tener sentido.

6) Escribir. Hay muchas maneras de escribir las notas pero nosotros nos limitaremos a organizar nuestras ideas en párrafos y a describir escenas. Los párrafos son la manera más práctica e intuitiva de organizar la información y a que contienen la descripción completa de un hecho pequeño o dato importante. También son fáciles de empezar, continuar y terminar si hay interrupciones. Aunque en este estudio se utiliza un enfoque cronológico para recordar lo acontecido durante el día los párrafos no siempre tienen un orden cronológico cuando se escriben en principio. De cualquier manera el resultado final (las notas de campo que se me entreguen) deben de tener cierto orden y coherencia.

Las escenas son narraciones más largas y complejas en naturaleza. En una escena las descripciones son lo suficientemente densas para que cada uno de los lectores sienta que están ahí y que son parte de lo que ahí ocurre. No todos los días es necesario escribir una narración. Una narración unifica los detalles descriptivos de un lugar, individuo o incidente que tiene una secuencia inata y tiene carácter. Incluso se pueden hacer narraciones de episodios que son similares a las escenas pero tienen movimiento y no son estáticas.

7) Comentarios y glosas. Siempre es bueno leer y revisar lo que se contiene en las notas. Cuando se hace se la lectura a veces es necesario incorporar algunos comentarios o expandir y a clarar las notas. Esto se puede hacer de manera de glosas. Hay que tomar en cuenta que el mero proceso de escribir las notas altera nuestra visión sobre lo que ocurrió en el campo, es por eso que se tas notas se consideran de carácter analítico, interpretativo o secundario.
Las notas de campo y las entrevistas serán transcritas de acuerdo a las siguientes reglas:

- **Escritas en mayúsculas.**
- **Escritas en español.**
- Las notas que se transcriban directamente desde grabaciones deben contener textualmente lo que las grabaciones contienen. No debe haber perdida de información.
- Las transcripciones de entrevistas no deben de ser traducciones directas a menos que incluyan información muy importante.
- Las transcripciones se harán de manera desnaturalizada, es decir, se cuidará que los significados y percepciones de los entrevistados se capturen en las transcripciones incluso cuando no se escriba palabra por palabra lo que hayan dicho.
- Se seguirán las siguientes notaciones.

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<tr>
<td>(texto)</td>
<td>Parentesis</td>
<td>Discursno no audible o que esta en duda</td>
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<tr>
<td>((texto))</td>
<td>Doble</td>
<td>Anotación de una actividad no verbal</td>
<td>(se toco la cara, indico con la mano el lugar)</td>
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<td></td>
<td>parentesis</td>
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<td></td>
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<tr>
<td>E</td>
<td>entrevistador</td>
<td>Se usara para marcar quien esta hablando</td>
<td>E: Digame mas acerca de la fiesta.</td>
</tr>
<tr>
<td>R</td>
<td>Entrevistado</td>
<td>Se usara para marcar qioen esta hablando</td>
<td>R: Antes aquí había muchas gallinas</td>
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**Ejemplo de una transcripción.**

E: Y ¿Por qué dejó de tomar esas pastillas, esas gotas? ((apuntando a las pastillas))
R: Por que yo tuve otra enfermedad... lo que pasa es que me puse mal y me llevaron con el medico. Y me sacaron exámenes de sangre antes de comer y después de comer y salió que estaba ... que estaba normal que no estaba alto. El medico me dijo “no tiene diabetes señora esta normal”. Y otra cosa que he hecho es que tengo cuidado para comer, como mas fruta y camino todos los días una hora al día, entonces yo me he sentido mejor.

**Ejemplo de notas de campo**

Phoenix, AZ 18 de enero, 2014 80 F nublado

LLEGUE DOS HORAS ANTES DEL SERVICIO RELIGIOSO A LA IGLESIA DE CRISTO DEL VALLE PARA OBSERVAR LAS ACTIVIDADES PREVIAS A LA MISA.

EL CAMPUS DE LA IGLESIA ABARCA UNA MANZANA Y TIENE UN EDIFICIO PRINCIPAL AL CENTRO Y DOS EDIFICIOS MAS PEQUENOS EN LA PARTE NORESTE. LOS EDIFICIOS SE UTILIZAN PARA LA ESCUELA DOMINICAL MIENTRAS QUE EL EDIFICIO PRINCIPAL SE UTILIZA COMO TEMPLELO. EL EDIFICIO PRINCIPAL TIENE 4 ENTRADAS INDEPENDIENTES: UNA EN EL LADO NORTE, DOS EN EL LADO OESTE Y UNA EN EL...
LADO SUR. EL ALTAR SE SITUA EN EL LADO ESTE. EL EDIFICIO TAMBIÉN CUENTA
CON UNA CAFETERÍA Y UN AUDITORIO. HAY JARDINES ALREDEDORES DE LOS
EDIFICIOS Y UN ESTACIONAMIENTO COMO PARA 150 CARROS QUE SETA
PAVIMENTADO Y SE LOCALIZA EN LA PARTE SUDESTE DEL LOTE.
LA LLEGADA AL SERVICIO SE DIO DE MANERA LENTA AUNQUE MIENTRAS MAS SE
ACERCAB AL A HORA MAS GENET LLEGABA. LOS ASISTENTES SE CONCENTRABAN
ALREDEDOR DEL EDIFICIO PRINCIPAL ALGUNS EN LOS JARDINES OTROS EN LA
CAFETERÍA.
LA CAFETERÍA TENÍA UN MENÚ QUE CONSISTE EN 3 TIPOS DE SANDWICHES UNA
ENSALADA, REFRIGERIOS Y BEBIDAS...
6. Listados libres

Los listados libres son un método para explorar el contenido de los dominios culturales. Algunos investigadores los usan para identificar elementos en un dominio cultural y para calcular la relación de cada elemento con la prominencia cultural. También se pueden usar para medir las características cognitivas de los informantes.

En este proyecto los listados libres se aplicarán con dos finalidades:
1) Generar una lista de las instituciones recíprocas que existen en cada comunidad.
2) Identificar las instituciones recíprocas intercomunitarias en las que se intercambia comida.
3) Identificar informantes clave.

A pesar de que creemos que los hombres líderes que han servido en puestos comunitarios tendrán un mayor nivel de conocimiento acerca de las instituciones recíprocas inter-comunitarias también incluiremos en nuestra muestra a mujeres y hombres jóvenes y adultos.

En esta técnica a cada entrevistador se encarga de apuntar cada una de las palabras o frases que dice el entrevistado en el orden en el que se dicen. Se utilizarán tres tipos de ayuda para promover que los entrevistadores hagan memoria. Cada ayuda se utilizará en el orden pre escrito y una vez que el entrevistado ya no se acuerde de ningún otro nombre. Es importantes usar las ayudas. Si por alguna circunstancia las ayudas no se utilizaron, se debe de hacer una anotación en la hoja donde se recolectaron los datos.

En todos los sitios se realizara una aplicación piloto del instrumento con 5 sujetos, para asegurarnos de que los informantes entiendan las preguntas y para poder corregir las preguntas antes de su aplicación.

Se utilizará Análisis de consenso cultural para llegar a una lista de todos los acuerdos institucionales a nivel mero. Se les pedirá a los informantes clave que libremente listen (free list) todas las instituciones de la región en la que los participantes se involucran en la reciprocidad de los alimentos (por ejemplo, mayordomía, cofradía, tequio). Cuestionamiento redundante, el sondeo no específica y el uso de un mapa será utilizado como ayuda para recopilar el mayor número de información.

Informantes de dominio específicos serán elegidos en base a sus conocimientos sobre las relaciones intercomunitarias. La muestra constará de 10 o 15 informantes que se necesiten sólo una pequeña muestra de informantes para producir información válida y confiable acerca de un dominio cultural específico (Bernard, 2011). Las listas libres resultados se limpiarán y se analizó la relevancia utilizando Anthropac. Además, los informantes serán entrevistados por el método de obtención marco para recopilar datos sobre la direccionalidad del intercambio recíproco. Una lista de las comunidades 20 por 20 se utilizará para pedir "hace ___ intercambios de alimentos con ____". Los resultados serán analizados en Anthropac mediante escalamiento multidimensional.
Ayudas para la memoria
Cuestionamiento redundante. Esta es la más fácil de todas las ayudas y simplemente consiste en repetir la pregunta. Sin embargo, su simplicidad puede hacer que se utilice de manera inprevista, sin pensar.

Sonde no específico
Ayuda semántica
Uso de mapa

Procedimiento de la entrevista. Este procedimiento se repite con cada una de las preguntas del listado libre.

- Antes de empezar el entrevistador se asegura de tener el consentimiento informado de los participantes y de resolver todas las dudas que tenga el entrevistado sobre el estudio.
- Primero, se llena el formulario de los datos del entrevistado y el entrevistador.
- Segundo, se leen las instrucciones y se le explica al participante que no hay respuestas correctas ni incorrectas; que toda la información que dé valiosa.
- Tercero, se lee la pregunta. Por ejemplo “Dime todas las formas mediante las cuales se puede conseguir comida en la comunidad sin que uno la compre.” Espere a que el entrevistado mencione todas las respuestas de las que se acuerde en primer instancia. Deje pasar un pequeño lapso para asegurarse de que ya no tiene más respuestas.
- Cuarto, repita la pregunta: “Dime todas las formas mediante las cuales se puede conseguir comida en la comunidad sin que uno la compre.” Espere a que la persona responda. Espere una vez más, cuando haya terminado de responder prosiga ala siguiente ayuda.
- Quinto, pregúntele al entrevistado “De que otras maneras se pueden conseguir alimentos en esta comunidad si usted no lo compra”, deje que la

---

Preguntas de los listados libres.
Instituciones reciprocas.

1. Dime todas las formas mediante las cuales se puede conseguir comida en la comunidad sin que uno la compre.
2. Dime todas las razones por las que alguien puede darte o regalarte comida.
3. Dime si alguna vez en tu vida has intercambiado comida con alguna persona de __________ comunidad.
Una vez que finalice pregunte “De que otra manera se le llama cuando alguien te regala comida”. De igual manera se debe dejar que el participante conteste hasta que el participante no pueda pensar en mas respuestas y luego se prosigue a la siguiente ayuda.

7. Entrevistas

El uso de una guía de entrevista permitirá a los miembros del equipo para aumentar la validez y fiabilidad de los datos y facilitar la transcripción y la codificación.

Además, las entrevistas no estructuradas o informales se llevarán a cabo a discreción de cada investigador. Las entrevistas informales ayudarán a los investigadores para enriquecer sus notas de campo, creación de relaciones en las comunidades y explorar temas relacionados. Los resultado del análisis de texto se utiliza para enriquecer resultados cuantitativos.

Ayudas para recolectar mas información durante las entrevistas

El sondeo estimulante durante las entrevistas se utiliza para producir más información, de manera contralada limitando la manera en la que cada entrevistador se inserta en la entrevista aumentando la calidad de los datos.

- **El eco** - El eco consiste en simplemente repetir lo último que alguien ha dicho. Es útil cuando un informante está describiendo un proceso o un evento. “No veo ...... (repita los pasos ) ... Entonces, ¿qué sucede? "Esta sonda es neutral y no redirige la entrevista. Alienta al informante para continuar con la narración.

  No se debe utilizar con demasiada frecuencia, ya que puede ser molesto.

- **Uh Uh** - fomenta al informante mediante comentarios que afirman, es decir, uh -huh uh -huh

  Tenga cuidado de no utilizar éste con demasiada frecuencia y aque también puede ser molesto.

- **Diga me mas** - la sonda más común delos entrevistadores experimentados es preguntar “digame mas”

  Los encuestados le dan una respuesta y los entrevistadores solicitan más información diciendo " dime más" " ¿por qué exactamente dice eso " "¿por qué es exactamente que se siente de esa manera "

- **La pregunta larga** es cuando se trata de preguntar lo mismo pero con mas palabras. En lugar de como se puede preguntar “entonces, como me decía usted”

  Esta técnica es muy buena para romper el hielo y conseguir la entrevista. Se puede utilizar al principio de la entrevista usando una pregunta “grand tour”, que consiste en una historia mas o menos larga con una preguntita al final.

  Esto produce más información

  Puede construir una buena relación con el informante porque el entrevistador hablo un buen rato y demuestra su interés en la entrevista
- **El silencio** - este silencio es la más difícil de aprender y desplegar. Usted sólo tiene que mantenerse tranquilo y esperar a que el demandado para continuar con su / su respuesta. Puede acompañar el silencio con un movimiento de cabeza o farfulló "uh -huh ", como usted se está centrándolo en su bloc de notas.

   Esta manera de solicitar información es muy importante en las entrevistas no estructurada ya que el entrevistado puede abarcar más temas y el entrevistador tiene la habilidad de decidir qué tema explorar más a fondo. Esta técnica es una técnica que puede ser de alto riesgo si la persona en realidad ya terminó de hablar ya que puede producir un “silencio incómodo”.

- **El Eco - sonda consiste en la simple repetición del último pensamiento que alguien ha dicho y les pedimos que continúe.**

   Es muy útil cuando una persona está describiendo un proceso o evento. Puede repetir lo que dijeron (en más o menos sus propias palabras) y luego preguntar "¿qué pasa después?"

   Esta sonda es neutral y no dirige la conversación de otra manera.

   Esta sonda de muestra que usted entiende y está escuchando al informante y los anima a continuar

- **Sondeo de líder - también llamadas " sondas directiva " comienzan con algo así como " como yo lo entiendo ..... " o " esto puede ser obvio, pero .... " Y pidiendo al informante que aclara su comprensión.**

   Estos pueden basarse en algo que el entrevistado acaba de terminar de decir o algo que usted aprendió de otro informante en días anteriores, semanas, meses.

Otras cosas que deben de tenerse en cuenta

- **Los encuestados - Algunos verbales personas tratan de decir demasiado.**

   o Usted puede darles una " falta de atención gentil " por poner en su pluma, mirando a otro lado , hojeando sus notas.

   o No ser reacio a cortar informantes - este tipo de informantes se utilizan probablemente para ser interrumpido.

- **Los encuestados - algunos no verbales de la gente simplemente le dirá " no sé "**

   o Trate de usar las sondas listadas aquí , si no trabajará sólo tendrá que aceptar que lo que obtuvo de ellos y seguir adelante .
• La ética de sondeo
  o No hacer daño a personas inocentes que le han brindado información n de buena fe.
  o El mejor que podemos encontrar en hacer que la gente " se abren " , el más responsable te conviertes en que ni posteriormente sufren algún malestar emocional por haberlo hecho .
  o Se detiene a veces mejor que el informante de revelar información confidencial hasta que construir una relación de confianza mutua
  o Si usted siente que un participante se siente remordimiento por la divulgación de información sensible , poner fin a la entrevista con una conversación ligera y garantías sobre su discreción.

APPROVAL: EXPEDITED REVIEW

Marcus Janssen
SHESC: Human Evolution and Social Change, School of
480/727-7067
Marco.Janssen@asu.edu

Dear Marcus Janssen:

On 1/6/2014 the ASU IRB reviewed the following protocol:

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</table>

The IRB approved the protocol from 1/6/2014 to 1/5/2015 inclusive. Three weeks before 1/5/2015 you are to submit a completed “FORM: Continuing Review (HRP-212)” and required attachments to request continuing approval or closure.
If continuing review approval is not granted before the expiration date of 1/5/2015 approval of this protocol expires on that date. When consent is appropriate, you must use final, watermarked versions available under the “Documents” tab in ERA-IRB.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Sindy De La Torre Pacheco
    Sindy De La Torre Pacheco
Solicitud de permiso para comunidades
Adquisición de alimentos en Los Altos, México.

Soy un estudiante de posgrado bajo la dirección del profesor Marco Jannsen en la Escuela de la Evolución Humana y Cambio Social en la Universidad Estatal de Arizona. Estoy realizando un estudio de investigación para determinar donde se pueden adquirir alimentos en su comunidad; la cantidad de comercios que hay en la comunidad, la cantidad de productos que se venden en ellos, los programas de gobierno que atacan la malnutrición y los intercambios de comida que se llevan a cabo entre barrios y comunidades.

Estoy solicitándole permiso para llevar a cabo mi investigación en su comunidad. Si usted y los otros líderes de la comunidad ame autorizan realizar mi investigación aquí yo u otro estudiante vendrá entre los meses de marzo y abril a platicar con algunas amas de casa, líderes comunitarios y dueños de tiendas. A las amas de casa se les preguntará acerca de donde compran los alimentos de su familia, a los líderes comunitarios se les preguntará sobre la variedad de frutas y verduras que vende en su tienda y a los líderes comunitarios se les preguntará acerca de las fiestas en las que se intercambian comida con otros barrios o comunidades. A todos los individuos que decidan participar en esta investigación se les pedirá su consentimiento verbal que indica que su participación es voluntaria. A nadie se le va a obligar a participar en el estudio incluso cuando las autoridades locales ya nos han dado permiso de estar aquí. Para proteger la privacidad de los miembros de la comunidad a ningún participante se le pedirán sus datos personales (nombre, dirección). De igual manera los datos obtenidos se manejarán de acuerdo a los procedimientos marcados por la Junta de Revisión Institucional de la Universidad Estatal de Arizona.

No preveremos que la participación de su comunidad o los miembros de su comunidad en este estudio le causen ningún riesgo o inconveniente. Tampoco hay ningún beneficio directo para su comunidad al participar en este estudio. Sin embargo, la participación de su comunidad en este estudio me dará oportunidad de entender como las comunidades de Los Altos de auto organizan para combatir la seguridad alimentaria.

La participación en este estudio es voluntaria. Si usted tiene alguna pregunta sobre el estudio de investigación, por favor llámeme al (602) 4000188.
Estimado residente de ____________:

Mi nombre es Sindy De La Torre y soy un estudiante de posgrado en la Universidad Estatal de Arizona. Estoy realizando un estudio de investigación para determinar de que manera las personas de su comunidad adquieren comida.

La estoy invitando a participar, en una entrevista acerca de como consigue usted comida, donde compra, si da o recibe alimentos. Usted tiene el derecho a no contestar alguna pregunta, o detener la entrevista en cualquier momento.

Su participación en este estudio es voluntaria. Si usted decide no participar o retirarse del estudio en cualquier momento, no habrá penalización. Usted debe tener 18 años o más para participar en el estudio.

No hay beneficios directos asociados con su participación en este estudio, pero sus respuestas y conocimientos nos permitirán tener una mejor comprensión de los cambios en la alimentación en su comunidad. No hay riesgos previsibles o molestias causadas por su participación.

Sus respuestas serán confidenciales, le asignare un código y ese código se utilizara en lugar de su nombre, nadie sabrá quién es usted. Si durante la entrevista nos da información que pueda conducir a otras personas para identificarlo el equipo de investigación sustituirá la información con un alias o apodo, por ejemplo, si menciona el nombre de la calle donde vive, vamos a cambiar el nombre de la calle. Los resultados de este estudio pueden ser utilizados en informes, presentaciones o publicaciones, pero su nombre nunca será utilizado.

Me gustaría grabar esta entrevista. La entrevista no será grabada sin su permiso. Por favor, hágamelo saber si usted no desea que la entrevista sea grabada, también puede cambiar de opinión después de que la entrevista comienza, sólo hágamelo saber. Las grabaciones de la entrevista se transcribirán y luego se destruirán y como he mencionado antes, cualquier información personal en las transcripciones serán sustituido por un alias o apodo.

Si usted tiene alguna pregunta sobre el estudio por favor póngase en contacto con el equipo de investigación: Marco Janssen (4807277067) marco.janssen@asu.edu o Sindy de la Torre (6024000188) sydelato@asu.edu. Si usted tiene alguna pregunta sobre sus derechos como un participante / en esta investigación, o si usted siente que ha sido colocado en situación de riesgo, puede comunicarse con el Presidente de la Junta de Revisión de Sujetos Humanos Institucional, a través de la Oficina ASU de Integridad en la Investigación y Control, al (480) 965 a 6.788. Por favor, hágamelo saber si usted desea ser parte del estudio.
CARTA DE INFORMACIÓN
ENTREVISTA A OFICIALES

Adquisición de alimentos en Los Altos, México.
Diciembre 6, 2013

Estimada autoridad:

Soy un estudiante de posgrado bajo la dirección del profesor Marco Janssen en la Escuela de la Evolución Humana y Cambio Social en la Universidad Estatal de Arizona. Estoy realizando un estudio de investigación para determinar los cambios en los niveles de seguridad alimentaria en Los Altos en los últimos 20 años.

Estoy invitando lo a participar, en una entrevista acerca de los programas gubernamentales que combaten la malnutrición en Los Altos. Esta entrevista está diseñada para recabar información acerca de las comunidades que usted cubre como parte de su empleo. Usted tiene derecho a no contestar alguna pregunta, o detener la entrevista en cualquier momento.

Su participación en este estudio es voluntaria. Si usted decide no participar o retirarse del estudio en cualquier momento, no habrá penalización. Usted debe tener 18 años o más para participar en el estudio.

No hay beneficios directos asociados con su participación en este estudio, pero sus respuestas y conocimientos sobre este tema nos permitirán tener una mejor comprensión de los efectos de la liberalización comercial en la seguridad alimentaria de su comunidad. No hay riesgos previsibles o molestias causadas por participación.

Sus respuestas serán confidenciales nosotros le asignaremos un código y ese código se utilizara en lugar de su nombre, nadie sabrá quién es usted. Si durante la entrevista nos da información que pueda conducir a otras personas para identificarlo el equipo de investigación sustituirá la información con un alias, por ejemplo, si menciona el nombre de la calle donde vive, vamos a cambiar el nombre de la calle. Los resultados de este estudio pueden ser utilizados en los informes, presentaciones o publicaciones, pero su nombre no será utilizado.

Me gustaría grabar esta entrevista. La entrevista no será grabada sin su permiso. Por favor, hágame saber si usted no desea que la entrevista sea grabada, también puede cambiar de opinión después de que la entrevista comience, sólo hágamelo saber. Las grabaciones de la entrevista se transcribirán y luego se destruirán y como he mencionado antes, cualquier información personal en las transcripciones serán sustituido por un alias.

Si usted tiene alguna pregunta sobre el estudio por favor póngase en contacto con el equipo de investigación: Marco Janssen (4807277067) marco.janssen@asu.edu o Sindy de la Torre (6024000188) sydelato@asu.edu. Si usted tiene alguna pregunta sobre sus derechos como un participante / en esta investigación, o si usted siente que ha sido colocado en situación de riesgo, puede comunicarse con el Presidente de la Junta de Revisión de Sujetos Humanos Institucional, a través de la Oficina ASU de Integridad en la Investigación y Control, al (480) 965 a 6.788. Por favor, hágame saber si usted desea ser parte del estudio.
Dime todas las formas mediante las cuales se puede conseguir comida en la comunidad sin que uno la compre.

1. Dime todas las razones por las que alguien puede darte o regalarte comida.
2. Dime si alguna vez en tu vida has intercambiado comida con alguna persona de ____________ comunidad.
APPENDIX D

ELCSA QUESTIONNAIRE
Cuestionario de Seguridad Alimentaria ENSANUT-2012
“Escala latinoamericana y caribeña de seguridad alimentaria” (ELCSA)

Esta sección se le aplicará a la madre o mujer encargada de la preparación de los alimentos.

1. En los últimos 3 meses, por falta de dinero u otros recursos, alguna vez ¿Usted se preocupó de que los alimentos se acabaran en su hogar?

   SI.......................... 1
   NO.......................... 2
   No Sabe..................... 99
   No Responde............. 88
   ___ SA101

2. En los últimos 3 meses, por falta de dinero u otros recursos, alguna vez ¿En su hogar se quedaron sin alimentos?

   SI.......................... 1
   NO.......................... 2
   No Sabe..................... 99
   No Responde............. 88
   ___ SA102

3. En los últimos 3 meses, por falta de dinero u otros recursos, alguna vez ¿En su hogar dejaron de tener una alimentación (saludable, nutritiva, balanceada, equilibrada)?

   SI.......................... 1
   NO.......................... 2
   No Sabe..................... 99
   No Responde............. 88
   ___ SA103

4. En los últimos 3 meses, por falta de dinero u otros recursos, alguna vez ¿Usted o algún adulto en su hogar tuvo una alimentación basada en poca variedad de alimentos?

   SI.......................... 1
   NO.......................... 2
   No Sabe..................... 99
   No Responde............. 88
   ___ SA104
5. En los últimos 3 meses, por falta de dinero u otros recursos, alguna vez ¿Usted o algún adulto en su hogar dejó de desayunar, (comer, almorzar) o cenar?

   SI ..............................  1
   NO ..............................  2
   No Sabe........................  99  ___II__ SA105
   No Responde..................  88

6. En los últimos 3 meses, por falta de dinero u otros recursos, alguna vez ¿Usted o algún adulto en su hogar comió menos de lo que debía comer?

   SI ..............................  1
   NO ..............................  2
   No Sabe........................  99  ___II__ SA106
   No Responde..................  88

7. En los últimos 3 meses, por falta de dinero u otros recursos, alguna vez ¿Usted o algún adulto en su hogar sintió hambre pero no comió?

   SI ..............................  1
   NO ..............................  2
   No Sabe........................  99  ___II__ SA107
   No Responde..................  88

8. En los últimos 3 meses, por falta de dinero u otros recursos, alguna vez ¿Usted o algún adulto en su hogar solo comió una vez al día o dejó de comer todo un día?

   SI ..............................  1
   NO ..............................  2
   No Sabe........................  99  ___II__ SA108
   No Responde..................  88

8.1. ¿En su hogar viven personas menores de 18 años?

   SI ..............................  1  Pase a la pregunta 9
   NO ..............................  2  FIN DE LA SECCIÓN SA108A
9. En los últimos 3 meses, por falta de dinero u otros recursos, alguna vez ¿Algún menor de 18 años en su hogar dejó de tener una alimentación (saludable, nutritiva, balanceada, equilibrada)?

   SI............................. 1
   NO............................ 2
   No Sabe.......................... 99
   No Responde..................... 88
   SA109

10. En los últimos 3 meses, por falta de dinero u otros recursos, alguna vez ¿Algún menor de 18 años en su hogar tuvo una alimentación basada en poca variedad de alimentos?

   SI............................. 1
   NO............................ 2
   No Sabe.......................... 99
   No Responde..................... 88
   SA110

11. En los últimos 3 meses, por falta de dinero u otros recursos, alguna vez ¿Algún menor de 18 años en su hogar dejó de desayunar, (comer, almorzar) o cenar?

   SI............................. 1
   NO............................ 2
   No Sabe.......................... 99
   No Responde..................... 88
   SA111

12. En los últimos 3 meses, por falta de dinero u otros recursos, alguna vez ¿Algún menor de 18 años en su hogar comió menos de lo que debía?

   SI............................. 1
   NO............................ 2
   No Sabe.......................... 99
   No Responde..................... 88
   SA112

13. En los últimos 3 meses, por falta de dinero u otros recursos, alguna vez ¿Tuvieron que disminuir la cantidad servida en las comidas a algún menor de 18 años en su hogar?

   SI............................. 1
   NO............................ 2
   No Sabe.......................... 99
   No Responde..................... 88
   SA113
14. En los últimos 3 meses, por falta de dinero u otros recursos, alguna vez ¿Algun menor de 18 años en su hogar sintió hambre pero no comió?

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15. En los últimos 3 meses, por falta de dinero u otros recursos, alguna vez ¿Algun menor de 18 años en su hogar solo comió una vez al día o dejó de comer todo un día?

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APPENDIX E

STUDY COMMUNITY´S GOVERNANCE SYSTEM
Local authorities in Pajaltón, Tenejapa.

Local authorities in Cañada Grande, Tenejapa.
Local authorities in Balun Canal, Tenejapa.

Local authorities in Mesbilja, Oxchuc.
APPENDIX F
ANTHROPOMETRIC MEASUREMENTS OF PARTICIPANTS IN ENSANUT 2012 IN STUDY COMMUNITIES.
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BMI stands for Body Mass Index; BAZ stands for Body Mass Index by Age valid Z score; WHZ stands for Weight by Height valid Z score; HAZ stands for Height by Age Valid Z score. Anthropometric measurements of participants in ENSANUT 2012 in the study communities are shown by household ID. The table is color coded to reflect the nutritional status of the participants. Scores that denote stunting are presented in red, scores of underweight individuals are shown in orange, normal scores appear on gold, overweight scores are shown on green and blue scores denote obesity. Household with more than one individual per age group in the sample are shown in two rows.

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